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**Review Article** 

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#### Freshwater lampreys and fishes of Türkiye; an annotated checklist, 2023

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Abstract: Herewith, the current status of the inland waters ichthyofauna of Türkiye is revised, and an updated checklist of the freshwater lampreys and fishes is presented. As of November 2023, the freshwater ichthyofauna of Türkiye is known to consist of 427 species belonging to 20 orders, 37 families, and 97 genera. Among these, 21 species (4.9%) are alien, and 215 species (50.4%) are considered endemic to Türkiye. The orders with the largest numbers of species in the ichthyofauna of Türkiye are the Cypriniformes (297 species, 69.6%), followed by the Cyprinodontiformes (26 species, 6.1%), the Salmoniformes (25 species, 5.9%), the Gobiiformes (20 species, 4.7%), the Siluriformes (13 species, 3.0%), and the Clupeiformes (9 species, 2.1%). At the family level, the Leuciscidae has the greatest number of species (126 species; 29.8% of the total species), followed by Nemacheilidae (63 species, 14.8%), Cyprinidae (59 species, 13.8%), Cobitidae (29 species, 6.8%), Salmonidae (25 species, 5.9%), Aphanidae (23 species, 5.4%), Gobiidae (20 species, 4.7%), and Gobionidae (15 species, 3.5%). According to IUCN Red List criteria, among 403 naturally distributed species (alien species not included), four fish species are extinct, and 99 species (24.4%) are classified as threatened extinctions, including 28 (6.9%) CR, 44 (10.8%) EN, and 27 (6.7%) VU. After the latest checklist published in 2020, a total of 56 species, including 26 newly identified species from Türkiye and 30 new records documented from Turkish inland waters, were added. By the way, a total of 17 species have been excluded, mostly because of synonymization.

Key words: Freshwater ichthyofauna, diversity, endemism, introduced, Anatolia

#### 1. Introduction

The earliest record of the fishes of Türkiye was given by Abbolt K.E. (Bennett, 1835). Later work, during the following decades, significantly increased the knowledge of Turkish freshwater fish diversity. During the Ottoman Empire, fish samples were collected by foreign researchers (viz., Heckel, Günther, Boulenger, Güldenstädt, Steindachner, and Berg) in the territory of the empire and taken to museums. In these studies, both the species inventory was reported and new species were described.

Karekin Deveciyan was a Turkish-Armenian zoologist who directed the İstanbul Fish House and authored "Türkiye'de Balık ve Balıkçılık" (Fish and Fisheries in Türkiye), one of the earliest scientific investigations on fish and fisheries in Türkiye (Deveciyan, 1926). In this book, information is given, especially about the well-known species that are hunted and traded, but it is weak in terms of systematic information.

During the history of the Republic of Türkiye, foreign researchers continued to be interested in the biodiversity of Turkish fishes. It would not be wrong to say that the studies

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on hydrobiology at Turkish universities started with Prof. Dr Curt Kosswig, who carried out the most important studies between 1937 and 1955, and continued by his successors, viz., Battalgil and Akşiray, (Bilecenoğlu et al., 2014). The studies carried out by Prof. Dr Mustafa Kuru and Prof. Dr Süleyman Balık contributed significantly to the discovery of the ichthyofauna of Türkiye (Kuru, 1971, 1975, 1980; Balık, 1974, 1979, 1984).

The first comprehensive book on the freshwater ichthyofauna of Türkiye, including identification keys, their ecology, and distribution, was written by Geldiay and Balık (1988). Subsequent editions of this book were published in 1996, 1999, 2002, and a revised version was published in 2007 (Geldiay and Balık, 1996, 1999, 2002, 2007).

A first comprehensive checklist on freshwater fishes was published by Kuru (2004), who reviewed the literature published since 1856 and listed a total of 236 species and subspecies belonging to 26 families. Subsequently, Fricke et al. (2007) reported a total of 248 freshwater fish species (including 13 introduced ones) and 279 marine species

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(including eight introduced ones) from Türkiye. In Kuru et al. (2014), a total of 371 fish species belonging to 27 families and 92 genera were listed. In the first and second editions of the current checklist, a total of 368 and 384 fish species were reported from the inland waters of Türkiye, respectively (Çiçek et al., 2015, 2020). In the current updated version, we provide a list of freshwater fishes for Türkiye, with a discussion on the diversity of currently known species and some controversial cases that need to be clarified.

#### 2. Materials and methods

In this study, previous checklists were reviewed, and some errors were eliminated. The previously published identification key of Geldiay and Balık (2007), and the checklists by Bilecenoğlu et al. (2002, 2014), Kuru (2004), Fricke et al. (2007), Kuru et al. (2014), and Çiçek et al. (2015, 2020) are taken as baselines. In addition, newly described species from Türkiye until November 1, 2023 and species recorded for the first time have been added. The species in the following list were compiled from two different sources. The data were cross-checked and supplemented by information from recent publications dealing with species found in the inland waters of Türkiye and descriptions of new species from Türkiye. Furthermore, some fish records published without documentation in recent decades, as well as some questionable species found in previous checklists, were evaluated and either verified or removed from the list.

We follow the family classifications of van der Laan et al. (2023)<sup>1</sup>, Nelson et al. (2016), Tan and Armbruster (2018), and Esmaeili et al. (2020), with orders, superfamilies, and families arranged systematically but genera and species alphabetically within each family. The actual taxonomic status of the species follows Eschmeyer's Catalog of Fishes unless mentioned otherwise (Fricke et al., 2023)<sup>2</sup>. Information on common names and fish distribution in FishBase and IUCN were evaluated (Froese and Pauly, 2023; IUCN, 2023)<sup>3</sup>. IUCN categories of the species we checked and all species were classified according to their IUCN Red List categories (IUCN, 2023)<sup>4</sup>: The abbreviations are: [NE] not evaluated, [DD] data deficient, [LC] least concern, [NT] near threatened, [VU] vulnerable, [EN] endangered, [CR] critically endangered, and [EX] extinct.

The list of abbreviations in terms of the occurrence of fish species is as follows: [N] = native species, [E] = endemic to Türkiye, [I] = alien introduced species.

According to economic value, species are divided into six categories, including (E1) commercially important, (E2) locally commercially important, (E3) locally consumed but of no commercial importance, (E4) no commercial importance, (E5) valuable for the aquarium trade, and (E6) having potential to be used as aquarium fish.

The reasons for the introduction of exotic species were categorised under five groups. These are (R1) aquaculture/ research, (R2) fisheries: enhancement of wild stocks and sports fishing, (R3) biocontrol: to prevent eutrophication, aquatic plants, and pest control, (R4) ornamental fish industry, and (R5) unknown: inadvertently introduced by transboundary waterways for no known reason or method.

In the present list, some species are excluded from this list because of:

EQ-1: Marine species that occur in brackish water but not in freshwater habitats,

EQ-2: Species that have been incorrectly identified or have been reported but whose natural distribution range is not in Türkiye. These species need to be confirmed by field specimens,

EQ-3: Species that have been reported but recently synonymized,

EQ-4: Alien species that have not established themselves in the wild and therefore need confirmation by specimens for future establishment success.

In addition to the literature information, the distribution of the species according to Freshwater Ecoregions of the World (FEOW) (Abell et al., 2008) and Turkey River Basins (Çiçek et al., 2020) was also included. However, considering the inaccuracies in species identification and insufficient data, it should not be ignored that the distribution area information of the species should be continuously updated.

Türkiye is divided into 25 river basins, their codes and names are as follows; 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh, 24-Aras, 25-Van Lake.

Türkiye's geographical borders fall within 13 ecoregions and these are: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 434-Kura - South Caspian

<sup>1</sup> van der Laan R, Fricke R, Eschmeyer WN (editors) (2023). Eschmeyer's Catalog of Fishes: Classification [online]. http://www.calacademy.org/scientists/catalog-of-fishes-classification/ [accessed 14 April 2023].

<sup>2</sup> Fricke R, Eschmeyer WN, van der Laan R (2023). Eschmeyer's Catalog of Fishes: Genera, Species, References. [online]. www.fishbase.org [accessed 12 June 2023]. www.researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp [accessed 25 June 2023].

<sup>3</sup> Froese R, Pauly D (editors) (2023). FishBase [online]. www.fishbase.org [accessed 12 June 2023].

<sup>4</sup> IUCN (2023). The IUCN Red List of Threatened Species. Version 2022-2 [online]. https://www.iucnredlist.org/ [accessed 12 July 2023].

Drainages, 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates, 444-Lake Van, 445-Orumiyeh.

Abbreviations of threats are:

FIT-Fishery (target species): a species that is commercially exploited as a target species,

HAB-Habitat loss: a species that is threatened by the loss of its habitat (silted sand bottoms due to eutrophication, etc.),

EUT-Eutrophication: a species that is threatened by the effects of eutrophication (nutrient-rich water, lack of oxygen, etc.) or various effects of organic or inorganic pollution, such as oil spills, various chemicals, and hormones,

CON-Construction/Weirs: a migratory species that is threatened by construction measures, e.g., weirs, dams, AQU-Aquaculture: a species that is threatened by aquaculture or introduction (changes in genetics, predation, disease, or competition from introduced species),

ABS-Water abstraction: a species that is threatened by water abstraction for irrigation projects or other human needs,

CLI-Climate change: a species that is threatened by the effects of global and/or local climate change, including warmer temperatures and less rainfall,

COM-Competition: a species that is threatened by competition from nonnative, introduced species,

TOU-Tourism: A species that is threatened by the effects of tourism.

Acronyms for collections:

AMNH: American Museum of Natural History, New York, USA,

ANSP: Academy of Natural Sciences, Philadelphia, Pennsylvania, USA,

BMNH: Natural History Museum, London. Formerly British Museum Natural History, London, England,

CMNFI: Canadian Museum of Nature, Ottawa, Canada. Same as NMC - National Museums of Canada, Canada,

DUM: Zoological Museum, Zoology Branch, Department of Biology, Faculty of Science and Letters, Dicle University, Diyarbakır, Türkiye,

ESFM-PISI: Ege University, Faculty of Fisheries Museum, İzmir, Türkiye,

FCFUK: Fish Collection, Fish Department, University of Kurdistan, Iran,

FCME: Fish Collection, Kastamonu University, Fisheries Faculty, Kastamonu, Türkiye,

FFR: Faculty of Fisheries, Recep Tayyip Erdoğan University, Rize, Türkiye,

FMUL: Faculty of Medicine, University of Lille 2, Lille, France,

FSJF: Jörg Freyhof Fish Collection, Berlin, Germany,

GUIC: Ichthyological Museum, Department of Fisheries. Natural Resources Faculty, University of Guilan, Guilan Province, Iran,

HUIC: Hacettepe University, Faculty of Science, Department of Biology, Ichthyological Collection, Ankara, Türkiye,

IFC-ESUF: Inland Fishes Collection, Isparta University of Applied Sciences, Isparta, Türkiye,

IMNRF: Ichthyological Museum of Natural Resources Faculty, University of Tehran, Iran,

ISBB: Institute of Biological Sciences, Bucharest, Romania,

IUSHM: İstanbul University, Faculty of Science, Hydrobiology Museum, İstanbul, Türkiye,

LS: Linnean Society of London, Piccadilly, London, England,

MCSNC: Civic Museum of Natural History of Carmagnola, Torino, Italy,

MCZ: Museum of Comparative Zoology, Harvard University, Ichthyology Department, Cambridge, Massachusetts, USA,

MHNG: Museum of Natural History, Department of Herpetology and Ichthyology, City of Geneva, Geneva, Switzerland,

MHNL: Lyon Natural History Museum, Lyon, France,

MMB: The Moravian Museum, Ministry of Culture of the Czech Republic, Brno, Czech Republic,

MMNHS: Macedonian Museum of Natural History, Skopje, Macedonia,

MNH: Hungarian National Museum, Budapest, Hungary,

MNHN: National Museum of Natural History, Paris, France,

MRAC: Royal Museum for Central Africa, Tervuren, Belgium,

MSNG: Civic Museum of Natural History of Genoa 'Giacomo Doria', Genova, Italy,

MSNM: Municipality of Milan, Civic Museum of Natural History, Milan, Italy,

MZUF: University of Florence, Zoological Museum and Natural History of the Specola, Florence, Italy,

MZUSP: University of São Paulo, Museum of Zoology, São Paulo, Brazil,

MZUT: University of Turin, Department of Animal and Human Biology, Zoological Museum, Torino, Italy,

NHVUIC: Ichthyology Collections of Nevşehir Hacı Bektaş Veli University, Nevşehir, Türkiye,

NMC: Canadian Museum of Nature, Ottawa, Canada, NMNHS: National Museum of Natural History, Sofia,

Bulgaria,

NMW: Natural History Museum, Vienna, Austria, NRM: National Museum of Natural History, Stockholm, Sweden, NUIC: Ichthyology Collections of Nevşehir Hacı Bektaş Veli University, Nevşehir, Türkiye,

RMNH: National Museum of Natural History, Leiden, the Netherlands,

SCFK-SDU: Personal collection of F. Küçük, Eğirdir Fisheries Faculty, Süleyman Demirel University, Isparta, Türkiye,

SMF: Senckenberg Nature Museum and Research Institute, Frankfurt-am-Main, Germany,

SMNS: Stuttgart State Museum of Natural History, Stuttgart, Baden-Württemberg, Germany,

USNM: United States National Museum, Smithsonian Institution, Washington, USA,

ZFMK: Zoological Research Museum Alexander König, Department of Vertebrates, Ichthyology, Bonn, Nordrhein-Westfalen, Germany,

ZIN/ZISP: Zoological Institute, Academy of Sciences, St. Petersburg, Russia,

ZMB: Humboldt University, Museum of Natural History, Berlin, Germany,

ZMH: University of Hamburg, Zoological Institute and Museum, Hamburg, Germany,

ZMMU: Zoological Museum, Biological Faculty, M. V. Lomonosov Moscow State University, Moscow, Russia, ZMT (ex ZIN): S. Janashia State Museum of Georgia, Zoological Section, Georgian Academy of Sciences, Tbilisi, Georgia,

ZMUI: İstanbul University, Faculty of Science, Hydrobiology Museum, İstanbul, Türkiye,

ZMUU: Uppsala University, Zoological Museum, Uppsala, Sweden,

ZSL: Zoological Society of London, London, England.

This list of freshwater fishes is given in the following order:

### Species name with Author [Occurrence] — Common name/Local name

Taxonomy. Original description [+ type locality; primary types]. Synonyms. Revision. Illustration.

Status in Türkiye. Türkiye museum material.

Distribution and habitat.

Economic importance.

Reasons of introduction. (for exotic species)

IUCN conservation status. (for native species) Remarks. (if needed)

*Species name => valid species name* or current status in Türkiye with reference.

#### 3. Results

After the latest checklist published in 2020, here is a revised and updated checklist of the inland water lampreys and fishes presented (Çiçek et al., 2020). As of November 2023, the confirmed ichthyofauna of Türkiye is known to

consist of 427 species belonging to 2 classes, 20 orders, 37 families, and 97 genera. Information such as distribution, habitat, and IUCN categories for each species is given below, taking into account the systematic ranking.

#### Petromyzonti

#### Petromyzontiformes

#### Petromyzontidae Bonaparte, 1831 (lampreys)

*Caspiomyzon wagneri* (Kessler, 1870) => not occurring in Türkiye (see Çiçek et al., 2020)

Eudontomyzon lanceolata => Lampetra lanceolata

*Eudontomyzon mariae* (Berg, 1931) => not occurring in Türkiye (see Çiçek et al., 2020)

*Lampetra fluviatilis* (Linneaus 1758) => not occurring in Türkiye (see Çiçek et al., 2020) *Lampetra lanceolata* Kux & Steiner, 1972 [E] — Turk-

*Lampetra lanceolata* Kux & Steiner, 1972 [E] — Turkish brook lamprey/Türk dokuzgözlüsü

**Taxonomy.** Original description: *Lampetra lanceolata* Kux & Steiner, 1972: 377, figs. 1-3, 6, 10 [Upstream of Iyidere River, Trabzon, Türkiye; holotype: MMB (Mährischen Mus., Brünn) 2077/2]. — Synonyms: None. — Revisions: None. — Illustration: Kux and Steiner, (1972: 377, figs. 1-3, 6, 10).

**Status in Türkiye.** Recorded from Türkiye in the original description by Kux and Steiner (1972). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007) as *Eudontomyzon lanceolata*; Fricke et al. (2007) as *Eudontomyzon lanceolata*; Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Türkiye material: MMB.

**Distribution and habitat.** Distribution in Türkiye: Eastern Black Sea coasts of Anatolian watersheds. — Distribution in river basins: 22-Doğu Karadeniz. — General distribution: southern Black Sea basin (Türkiye). — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species occurs in piedmont zones in clear, well-oxygenated brooks Ammocoetes live in detritus-rich sands or clay sediments. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

#### Petromyzon marinus Linnaeus, 1758 [N] — Sea lamprey/Derebofa balığı

**Taxonomy.** Original description: *Petromyzon marinus* Linnaeus, 1758: 230 [Basel, Switzerland (original "in Mari Europæo", European seas; lectotype selected by Kottelat (1997: 29) as the specimen illustrated by Gesner (1604: 590) (specimen not preserved) which results in fixing the type locality]. — Synonyms: None. — Revisions: None. — Illustration: Kottelat and Freyhof (2007: 44, fig.). **Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Fricke et al. (2007); Çiçek et al. (2015, 2020). — Türkiye material: None.

Distribution and habitat. Distribution in Türkiye: All coasts of Anatolian watersheds. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan. - General distribution: northwestern Atlantic: northern Gulf of Mexico northward; North Atlantic: Greenland, Iceland; Baltic Sea; Mediterranean Sea; Black Sea (now extinct); northeastern Atlantic: White Sea and northern Norway south to northern Morocco. - Distribution in ecoregions: 423-Thrace, 429-Western Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. - Habitat: This species is anadromous. Adult fish migrate from the ocean or lake to spawning streams. Landlocked populations in lakes may migrate up to about 50 miles upstream for spawning. Anadromous populations with access to the ocean migrate up to a couple hundred miles. Females deposit numerous small eggs in nests made by males in the gravel, sand, and rubble of streams with a moderately strong current. Larvae burrow in sand and silt bottoms in quiet water downstream from spawning areas and filter-feed on plankton and detritus. Freshwater, brackish, marine.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: Localized threats may exist, but on a range-wide scale, no major threats are known. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Stable. — Moderate priority for conservation action.

#### Actinopteri

Acipenseriformes

#### Acipenseridae Bonaparte, 1831 (sturgeons)

*Acipenser baerii* Brandt, 1869 => not established in Türkiye (see Çiçek et al., 2022)

### Acipenser colchicus Marty, 1940 [N] — Sturgeon/Mersin balığı

**Taxonomy.** Original description: *Acipenser gueldenstadti* var. *colchica* Marty, 1940: 869 [Southeastern part of Black Sea near mouth of Rioni and Inguri rivers, Georgia, Eurasia; syntypes: (many)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Fricke et al. (2007); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea watersheds. — Distribution in river basins:

12-Sakarya, 13-Batı Karadeniz, 14-Yesilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: southeastern Black Sea basin and lower Danube River. — Distribution in ecoregions: 418-Dniester - Lower Danube, 430-Northern Anatolia, 433-Western Transcaucasia. - Habitat: This species is anadromous. Marine habitat for this species includes shallow coastal and estuarine zones. In freshwater, it occurs in the deep parts of large rivers with a moderate to swift current. Russian sturgeon spawns in strong currents (1-1.5 m/s) in large and deep rivers on stone or gravel bottoms. This species has anadromous and freshwater populations. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

#### Acipenser gueldenstaedtii Brandt & Ratzeburg, 1833 [N] — Russian sturgeon/Rus Mersin balığı

**Taxonomy.** Original description: *Acipenser gueldenstaedtii* Brandt & Ratzeburg, 1833: 13, Pl. 3 (figs. 2, 2A-E) [Caspian Sea and tributaries; Black Sea; no types known]. — Synonyms: None. — Revisions: Berg (1948: 78). — Illustration: Kottelat and Freyhof (2007: 51, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

Distribution and habitat. Distribution in Türkive: Black Sea watersheds and Sea of Marmara. - Distribution in river basins: 2-Marmara, 3-Susurluk, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eastern Atlantic; Europe and Middle East: Basins of Sea of Marmara, Black Sea, Sea of Azov and Caspian Sea and adjacent watersheds; introduced elsewhere. -Distribution in ecoregions: 418-Dniester - Lower Danube, 430-Northern Anatolia, 433-Western Transcaucasia. - Habitat: This species is anadromous, marine habitat includes shallow coastal and estuarine zones. In freshwater, it occurs in deep parts of large rivers with moderate to swift current and spawns in strong currents (1-1.5 m/s) in large and deep rivers on a stone or gravel bottom. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: CON, COM, EUT, FIT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

#### Acipenser nudiventris Lovetsky, 1828 [N] — Fringebarbel sturgeon/Sip balığı

**Taxonomy.** Original description: *Acipenser nudiventris* Lovetsky, 1828: 78, pl. 6, fig. 2 [Aral Sea; no types known; original description reproduced in Berg (1905: 2, footnote)]. — Turkish synonyms: None. — Revisions: Berg (1948: 66). — Illustration: Berg (1948: 68, figs. 55-56).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea watersheds. — Distribution in river basins: 2-Marmara, 3-Susurluk, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eastern Atlantic, Europe and Middle East: Basins of Black, Azov, Caspian and Aral seas and Sea of Marmara. — Distribution in ecoregions: 418-Dniester - Lower Danube, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species is anadromous: juveniles move to the ocean or inland seas; mature specimens migrate back into rivers for spawning, which takes place in strong-current habitats in the main courses of large and deep rivers on stone or gravel bottoms. Freshwater, transitional water, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: FIT, HAB, CON. — High sensitivity to human activities. — Keystone species. — Decline status: Regionally exterminated. — High priority for conservation action. *Acipenser persicus* Borodin, 1897 => not occurring in Türkiye (see Table 1)

Acipenser ruthenus Linnaeus, 1758 => not occurring in Türkiye (see Table 1)

#### Acipenser stellatus Pallas, 1771 [N] — Stellate sturgeon/ Mersin balığı

**Taxonomy.** Original description: *Acipenser stellatus* Pallas, 1771: 460 [Ascending (northern) rivers from Caspian Sea; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Mediterranean, Aegean, Marmara, and Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eastern Atlantic; Mediterranean Sea; Black Sea; Caspian Sea. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species is anadromous, spending at least part of its life in salt water and returning to rivers to breed. At sea, in coastal and estuarine areas, it mainly forages on clay-sand bottoms, as well as in middle and upper water layers. Juveniles inhabit shallow riverine habitats during their first summer. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: CON, COM, EUT, FIT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### Acipenser sturio Linnaeus, 1758 [N] — Atlantic sturgeon/Kolan balığı

**Taxonomy.** Original description: *Acipenser sturio* Linnaeus, 1758: 237 [Charente River at Saintes, France; neotype: MNHN 1962-1295]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Aegean, Sea of Marmara Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eastern Atlantic (currently only the Gironde Estuary, France, and adjacent waters); Mediterranean Sea; Black Sea; Sea of Marmara. Reintroduced in Germany. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This is an anadromous species (i.e. it spends at least part of its life in salt water and returns to rivers to breed). Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: CON, COM, EUT, FIT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### Huso huso (Linnaeus, 1758) [N] — Beluga/Mersin morinası

**Taxonomy.** Original description: *Acipenser huso* Linnaeus, 1758: 238 [Danube and the rivers of Russia; no types known]. — Synonyms: None. — Revisions: Berg (1948: 61). — Illustration: Berg (1948: 61, fig. 54).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

Distribution and habitat. Distribution in Türkiye: Aegean, Marmara, and Black Sea watersheds. Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Coruh. — General distribution: Eastern Atlantic; Mediterranean Sea; Sea of Marmara; Black Sea; Sea of Azov: Caspian Sea. Introduced elsewhere. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. - Habitat: This species is anadromous, spending the majority of its life in salt water and returning to its natal rivers to reproduce. At sea, this species is found in the pelagic zone, following food organisms. It spawns in the main course of large and deep rivers on a stone or gravel bottom. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: ABS, CON, COM, EUT, FIT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

#### Anguilliformes

#### Anguillidae Rafinesque, 1810 (freshwater eels)

#### Anguilla anguilla (Linnaeus, 1758) [N] — European eel/ Yılan balığı

**Taxonomy.** Original description: *Muraena anguilla* Linnaeus, 1758: 245 [Europe, Mediterranean Sea, Baltic Sea, northeastern Atlantic (original: "in Europa; maxima in lacu Cornachio Ferrariensi"); localities include Sweden; England; Belgium; Germany; Poland; France; Ferrara and Rome, Italy; Lesbos Island, Greece; Syria; no types known]. — Synonyms: None. — Revisions: Ege (1939: 90). — Illustration: Kottelat and Freyhof (2007: 62, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Türkiye material: None.

**Distribution and habitat.** Distribution in Türkiye: All coastal watersheds of Türkiye. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 22-Doğu

Karadeniz, 23-Çoruh. - General distribution: Western Atlantic: larvae in Sargasso Sea and Gulf Stream; eastern Atlantic, Baltic Sea, North Sea, White Sea, Mediterranean Sea, Sea of Marmara, Black Sea: European seas and adjacent watersheds, spawning and larval migration routes to and from the western Atlantic. Introduced in the Caspian Sea basin. - Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia. — Habitat: This species is catadromous and found in a range of habitats, from small streams to large rivers and lakes, and in estuaries, lagoons, and coastal waters. It also occupies open ocean areas during migrations, but it is rarely observed in this habitat. Under natural conditions, it only occurs in bodies of water that are connected to the sea; it is stocked elsewhere. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: ABS, FIT, HAB, EUT, CON, COM, TOU. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

#### Clupeiformes

Clupeoidei

Clupeidae Cuvier, 1816 (herrings and sprats)

Sprattus sprattus (Linnaeus, 1758) [N] — European sprat/Çaça

**Taxonomy.** Original description: *Clupea sprattus* Linnaeus, 1758: 318 [European seas; syntypes: Probably LS 46 & 47; others lost]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Fricke et al. (2007). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: All coasts of Türkiye. — Distribution in river basins: 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: North Sea; Mediterranean Sea; Sea of Marmara; Black Sea; eastern Atlantic: British Isles south to Morocco, including Madeira. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species is a pelagic, oceanodromous, and littoral species. This species forms schools. Freshwater, brackish, marine.

#### Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats:

EUT, FIT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

#### Ehiravidae Deraniyagala, 1929 (river sprats)

*Clupeonella abrau* (Maliatsky 1930) => not occurring in Türkiye (see Çiçek et al., 2020)

#### Clupeonella cultriventris (Nordman, 1840) [N] — Black Sea sprat/Tülka balığı

**Taxonomy.** Original description: *Clupea cultriventris* Nordman, 1840: 42 [Pont-Euxin (Black Sea); syntypes: MNHN 0000-3681 (3)]. — Synonyms: *Clupeonella abrau* (non-Maliatsky 1930) of authors. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Western part of Black Sea and Sea of Marmara watersheds. — Distribution in river basins: 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eurasia: Caspian Sea basin. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species is found in coastal waters, lagoons and lakes, estuaries, and the lower reaches of large rivers with salinities up to 13%, Absent from pure seawater. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

### *Clupeonella muhlisi* Neu, 1934 [E] — Marmara sprat, Apolyont sprat/Cüce ringa, filisa balığı

**Taxonomy.** Original description: *Clupeonella muhlisi* Neu in Woltereck and Neu, 1934: 446, fig. 1 [Lake Abuliont, Bursa Province, Türkiye; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Neu (1934). Listed in previous checklists from Türkiye by Kuru (2004) as *Clupeonella abrau muhlisi*; Geldiay and Balık (2007) as *Clupeonella abrau muhlisi*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Lake Uluabat (Apolyont). — Distribution in river basins: 3-Susurluk. — General distribution: Lake Uluabat, Bursa Province (Türkiye). — Distribution in ecoregions: 423-Thrace. — Habitat: This is a pelagic in lakes. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### Alosidae Svetovidov, 1952 (shads and sardines)

*Alosa agone* (Scopoli 1786) => not occurring in Türkiye (see Çiçek et al., 2020)

*Alosa braschnikovi* (Borodin, 1904) => not occurring in Türkiye (see Çiçek et al., 2020)

*Alosa caspia* (Eichwald, 1838) => not occurring in Türkiye (see Çiçek et al., 2020)

Alosa caspia nordmanni => Alosa tanaica

Alosa fallax (Lacepède, 1803) [N] — Twaite shad/Tirsi balığı

**Taxonomy.** Original description: *Clupea fallax* Lacepède, 1803: 424, 452 [Seine River at Rouen, France; neotype: MNHN 0000-3188]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Alosa fallax nilotica*; Geldiay and Balık (2007) as *Alosa fallax nilotica*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

Distribution and habitat. Distribution in Türkiye: All coasts of Türkiye. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Baltic Sea; North Sea: Mediterranean Sea: Sea of Marmara: southern Black Sea; northeastern Atlantic; also adjacent freshwater river habitats of Europe. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. -Habitat: This species is pelagic at sea. Juveniles remain close to shorelines and estuaries. Migrates from the sea to rivers and spawns in the main river, often only a few kilometres above the limit of brackish water. Spawning was also reported from small rivers over gravel bottoms. Freshwater, brackish, marine.

#### Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON,

EUT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

### Alosa immaculata Bennett, 1835 [N] — Pontic shad, spotless shad/Ringa balığı, tirsi balığı

**Taxonomy.** Original description: *Alosa immaculate* Bennett, 1835: 92 [Near Trabzon (Trebizond), Türkiye, Black Sea; no types known]. — Synonyms: *Clupea pontica* Eichwald, 1838; *Alosa pontica* (Eichwald, 1838); *Clupea eichwaldii* Grimm, 1901. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea watersheds. — Distribution in river basins: 2-Marmara, 3-Susurluk, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Black Sea, Sea of Azov and adjacent watersheds, Russia, and Georgia. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species is pelagic at sea, in deep water. Migrates to the middle reaches of large rivers, spawning where the current is strongest, close to the surface, usually at 2–3 m depth in the main channel. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: CON, FIT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

### Alosa maeotica (Grimm, 1901) [N] — Azov shad/Ringa balığı

**Taxonomy.** Original description: *Clupea maeotica* Grimm, 1901: 67 [Kerch Strait, between Black and Azov seas; neotype: ZIN 32230 (25.7 mm, 1 of 50)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Alosa fallax maeotica*; Geldiay and Balık (2007) as *Alosa fallax maeotica*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea watersheds. — Distribution in river basins: 2-Marmara, 3-Susurluk, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Black Sea, Sea of Azov, and adjacent watersheds. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species is pelagic at sea in deep water, entering brackish lagoons to spawn. Freshwater, brackish, marine.

#### Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

Alosa pontica => Alosa immaculata

### Alosa tanaica (Grimm, 1901) [N] — Black Sea shad /Tirsi balığı

**Taxonomy.** Original description: *Clupea tanaica* Grimm, 1901: 67 [Don River near Rostov-na-Donu, Russia; lectotype: ZIN 16115 (1 of 2, 147 mm) (not 16125)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) *Alosa (Caspiolosa) caspia tanaica*; Geldiay and Balık (2007) as *Alosa caspia tanaica* and *Alosa caspia nordmanni*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea watersheds. — Distribution in river basins: 2-Marmara, 3-Susurluk, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Black Sea, Sea of Azov, Sea of Marmara, and adjacent watersheds. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species is pelagic at sea in deep water (50-70 m) in coastal waters. Migrates from sea to mouth and lower reaches of large rivers, spawns in fresh or slightly brackish water, usually close to shore, in the upper 2–4 m of almost still water bodies such as flood plains or lakes. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CLI, CON, HAB, POL. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

Clupea pontica => Alosa immaculata

### Sardina pilchardus (Walbaum, 1792) [N] — European pilchard/Sardalya

**Taxonomy.** Original description: *Clupea harengus* var. *pilchardus* Walbaum, 1792: 38 [Cornwall, England, northeastern Atlantic; no types known]. — Synonyms: *Clupea pilchardus* Bloch, 1795. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Fricke et al. (2007). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: All coasts of Türkiye. — Distribution in river basins: 2-Marmara, 3-Susurluk, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Mediterranean Sea; Sea of Marmara; Black Sea; eastern Atlantic. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species is a pelagic, oceanodromous, and littoral species. This species forms schools. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: FIT. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

Dorosomatidae Gill, 1861 (thread herrings or gizzard shads and sardinellas)

Sardinella aurita Valenciennes, 1847 [N] — Round sardinella/Sardalya

**Taxonomy.** Original description: Sardinella aurita Valenciennes in Cuvier and Valenciennes, 1847: 263, Pl. 594 [Messina, Sicily, Italy, Mediterranean Sea; lectotype: MNHN A-9824]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Fricke et al. (2007). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: All coasts of Türkiye. - Distribution in river basins: 2-Marmara, 3-Susurluk, 12-Sakarya, 13-Batı Karadeniz, 14-Yesilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Mediterranean Sea; Sea of Marmara; Black Sea; eastern Atlantic. -Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. - Habitat: This pelagic species schools in subtropical coastal waters from inshore to the shelf edge. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: FIT. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

#### Cypriniformes

#### Cobitoidei

Cobitidae Swainson, 1838 (spined loaches)

Acanthopsis aurata => Sabanejewia aurata

*Cobitinula anatoliae => Cobitis turcica* 

### *Cobitis afifeae* Freyhof, Bayçelebi & Geiger, 2018 [E] — Afife's spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis afifeae* Freyhof, Bayçelebi & Geiger, 2018: 41, figs. 30-32 [Büyük Menderes River at Cindere about 9 km south of Güney, Denizli Province, Türkiye, 38.083 29.014; holotype: ZFMK ICH-99950]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2018: 41, figs. 30-32).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2018) Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: ZFMK.

**Distribution and habitat.** Distribution in Türkiye: Küçük Menderes and Büyük Menderes rivers drainages. — Distribution in river basins: 7-Büyük Menderes. — General distribution: Asia Minor: Küçük Menderes and Büyük Menderes River drainages (Türkiye) — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species lives in streams with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Cobitis aliyeae* Freyhof, Bayçelebi & Geiger, 2018 [E] — Aliye's spined loach/Taşısıran

Taxonomy. Original description: *Cobitis aliyeae* Freyhof, Bayçelebi & Geiger, 2018: 45, figs. 33-35 [Seyhan River below water regulation doors at Yüreyir, south of Adana, Adana Province, Türkiye, 36.975°N, 35.335°E; holotype: ZFMK ICH-97840]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2018: 45, figs. 33-35).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2018) Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: ZFMK.

**Distribution and habitat.** Distribution in Türkiye: Lower reaches of the Seyhan and Ceyhan river drainages. — Distribution in river basins: 18-Seyhan, 20-Ceyhan. — General distribution: Lower reaches of the Seyhan and Ceyhan river drainages (Türkiye) — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species lives in streams with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### Cobitis anabelae Freyhof, Bayçelebi & Geiger, 2018 [N] — Anabel's spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis anabelae* Freyhof, Bayçelebi and Geiger, 2018: 48, figs. 36-38 [Karasu River about 4 km south of Kırıkhan, Hatay Province, Türkiye; holotype: ZFMK ICH-98633]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2018: 48, figs. 36-38).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2018) Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: ZFMK.

**Distribution and habitat.** Distribution in Türkiye: Orontes River drainages. — Distribution in river basins: 19-Asi — General distribution: Asia Minor: lower reaches of the Orontes River drainage. — Distribution in ecoregions: 437-Orontes. — Habitat: This species lives in streams and lakes with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

Cobitis aurata => Sabanejewia aurata Cobitis balcanica => Sabanejewia balcanica

### *Cobitis battalgilae* Băcescu, 1962 [E] — Battalgil spined loach/Tașısıran

**Taxonomy.** Original description: *Cobitis battalgili* Băcescu, 1962: 437, fig. 1b [Türkiye (probably from Lake Beyşehir); lectotype: ZMH 4744]. — Synonyms: *Cobitis battalgili* Băcescu, 1962. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Băcescu (1962). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Lake Beyşehir basin and Manavgat River basin. — Distribution in river basins: 9-Antalya, 16-Konya. — General distribution: Asia Minor: Beyşehir and Lake Suğla basins, Manavgat River basin, and below the Apa Reservoir (Türkiye). — Distribution in ecoregions: 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species lives in flowing waters with gravel, sand, and silt bottoms, often with dense submerged vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CON, COM, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

*Cobitis battalgili => Cobitis battalgilae* 

### *Cobitis bilseli* Battalgil, 1942 [E] — Great Beysehir spined loach/Koca taşısıran

**Taxonomy.** Original description: *Cobitis bilseli* Battalgil, 1942: 292, fig. 4 [Lake Beyşehir, Türkiye; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1942). Listed in previous checklists from Türkiye by Kuru (2004) as *Cobitis elongata bilseli*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Lake Beyşehir and tributaries. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Beyşehir and tributaries (Isparta and Konya provinces) (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species prefers gravel and sand substrates in streams with dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, COM, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action. *Cobitis damlae* => *Cobitis fahireae* 

Cobitis dorademiri Erk'akan, Özdemir & Özeren, 2017 [E] — Spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis dorademiri* Erk'akan, Özdemir & Özeren, 2017: 83, fig. 1 [Balıklı stream, Köyceğiz Basin, Muğla Province, Türkiye; holotype: HUIC-AKDY1]. — Synonyms: None. — Revisions: None. — Illustration: Erk'akan et al. (2017: 83, fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Lake Köyceğiz basin and lower Dalaman River drainage. — Distribution in river basins: 8-Batı Akdeniz. — General distribution: Asia Minor: Lake Köyceğiz basin and lower Dalaman River drainage, Muğla Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species lives in streams with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Cobitis elazigensis Coad & Sarieyyüpoglu, 1988 [N] — Tigris spined loach

Taxonomy. Original description: Cobitis elazigensis

Coad & Sarieyyüpoglu, 1988: 426, figs. 1-2 [Creek at Cip, drainage of Murat Nehri, tributary of Euphrates River, Elazig Province, Türkiye, 38°42′N, 39°05′E; holotype: NMC 85-0679A]. — Synonyms: None. — Revisions: Freyhof et al. (2018: 16). — Illustration: Coad and Sarieyyüpoglu (1988: 426, figs. 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Coad and Sarieyyüpoglu (1988). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: NMC.

**Distribution and habitat.** Distribution in Türkiye: Euphrates River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Upper Euphrates River basin in Türkiye, Iran, and Syria. — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species lives in streams and lakes with sand or fine gravel bottoms. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: This species seems to have a very large population in Atatürk Reservoir and its tributaries, and maybe reservoirs in Syria, where no threats are obvious. Elsewhere, it is locally found in lowland streams and small rivers where pollution and water abstraction are threats. The loss of stream populations is suspected to be balanced by reservoir populations. — High sensitivity to human activities. — Keystone species. — Decline status: Stable. — Moderate priority for conservation action.

### *Cobitis emrei* Freyhof, Bayçelebi & Geiger, 2018 [E] — Sapanca spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis emrei* Freyhof, Bayçelebi & Geiger, 2018: 52, figs. 39-41 [Stream Kurtköy flowing to Lake Sapanca at Kurtköy, Adapazarı (Sakarya) Province, Türkiye, 40.713°N, 30.175°E; holotype: ZFMK ICH-099187]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2018: 52, figs. 39-41).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2018) Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: ZFMK.

**Distribution and habitat.** Distribution in Türkiye: Lake Sapanca basin. — Distribution in river basins: 12-Sakarya. — General distribution: Asia Minor: Lake Sapanca basin (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species lives in streams with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. —

High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### Cobitis erkakanae Freyhof, Bayçelebi & Geiger, 2018 [E] — Gölbasi spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis erkakanae* Freyhof, Bayçelebi & Geiger, 2018: 55, figs. 42-44 [River connecting Lakes Gölbaşı and Azaplı west of Gölbaşı, Adıyaman Province, Türkiye, 37.790°N, 37.626°E; holotype: ZFMK ICH-98958]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2018: 55, figs. 42-44).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2018) Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: ZFMK.

**Distribution and habitat.** Distribution in Türkiye: Gölbaşı lakes basin, Adıyaman. — Distribution in river basins: 20-Ceyhan. — General distribution: Asia Minor: Gölbaşı lakes basin (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species lives in streams with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Cobitis evreni* Erk'akan, Özeren & Nalbant, 2008 [E] — Ceyhan spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis evreni* Erk'akan, Özeren & Nalbant, 2008: 112, figs. 1-2 [Kömür Stream - Göksun-Kahramanmaraş, Türkiye, 38°00'52.24"N, 36°30'31.11"E; holotype: HUIC-CEY-2]. — Synonyms: None. — Revisions: None. — Illustration: Erk'akan et al. (2008: 112, figs. 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2008). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Kömür Stream. — Distribution in river basins: 20-Ceyhan. — General distribution: Asia Minor: middle Ceyhan River basin (Mediterranean tributary), Kahramanmaraş Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species lives in flowing waters with a gravel or sand bottom. Not known to inhabit reservoirs. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### Cobitis fahireae Erk'akan, Atalay-Ekmekçi & Nalbant, 1998 [E] — Aegean spined loach/Taşısıran

Taxonomy. Original description: *Cobitis fahireae* Erk'akan, Atalay-Ekmekçi & Nalbant, 1998: 10, figs. 2A-E [Küçük Menderes River, Selçuk-Aydın, Türkiye. holotype: HUIC uncat]. — Synonyms: None. — Revisions: *Cobitis vardarensis fahireae* Erk'akan, Atalay-Ekmekçi & Nalbant, 1998; *Cobitis fahireae* Erk'akan, Atalay-Ekmekçi & Nalbant, 1998; *Cobitis damlae* Erk'akan & Özdemir 2014. — Illustration: Erk'akan et al. (1998: 10, figs. 2A-E).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (1998). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Eagean Sea watershead basins. — Distribution in river basins: 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz. — General distribution: Asia Minor: eastern Aegean Sea basin (Türkiye). — Distribution in ecoregions: 429-Western Anatolia, 432-Southern Anatolia. — Habitat: This species lives ubiquitously and is found in rivers, lakes, and lake tributaries. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

Cobitis fusunae => Cobitis joergbohleni

### *Cobitis indus* Eagderi, Seçer & Freyhof, 2022 [E] — Spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis indus* Eagderi, Seçer & Freyhof, 2022: 414, figs. 2-5 [Dalaman River at Alci, Denizli Province, Türkiye, 37.1476°N, 29.1876°E; holotype: NHVUIC 1708-H]. — Synonyms: None. — Revisions: None. — Illustration: Eagderi et al. (2022: 414, figs. 2-5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Eagderi et al. (2022). — Turkish material: NHVUIC.

**Distribution and habitat.** Distribution in Türkiye: Middle Dalaman River drainage. — Distribution in river basins: 8-Batı Akdeniz. — General distribution: Asia Minor: middle Dalaman River drainage, Türkiye. — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species lives in streams with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### Cobitis joergbohleni Freyhof, Bayçelebi & Geiger, 2018 [E] — Sultan spined loach/Taşısıran

Taxonomy. Original description: *Cobitis joergbohleni* Freyhof, Bayçelebi & Geiger, 2018: 58, figs. 45-47 [Spring Soysallı, about 1 km north of Soysallı, Kayseri Province, Türkiye, 38.390°N, 35.365°E: holotype: ZFMK ICH-97624]. — Synonyms: *Cobitis fusunae* Özdemir, 2019. — Revisions: None. — Illustration: Freyhof et al. (2018: 58, figs. 45-47).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2018) Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: ZFMK.

**Distribution and habitat.** Distribution in Türkiye: Sultan Marsh. — Distribution in river basins: 15-Kızılırmak. — General distribution: Asia Minor: Sultan Sazlığı (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species lives in springs, streams, and lakes with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Suggested as CR by Sungur et al. (2023a). — IUCN: NE (2023). — Threats: ABS, CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

#### Cobitis kellei Erk'akan, Atalay-Ekmekçi & Nalbant, 1998 [E] — Diyarbakır spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis kellei* Erk'akan, Atalay-Ekmekçi & Nalbant, 1998: 10, figs. 1 A-E [Göksu Stream, Tigris catchment, Çınar, Diyarbakır, Türkiye. holotype: ISBB 4682]. — Synonyms: None. — Revisions: None. — Illustration: Erk'akan et al. (1998: 10, figs. 1 A-E).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (1998). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ISBB.

**Distribution and habitat.** Distribution in Türkiye: Göksu watershed, Tigris River Basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Göksu River drainage, upper Tigris River (Dicle Nehri) basin (Persian Gulf tributary), Diyarbakır Province (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species was described from a small lowland stream. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CON, EUT,

HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

**Remarks.** *Cobitis kellei* has never been studied and recollected live since description; therefore, it is still unknown wether it is living or not. Attempts to recollect the species from the type locality given in Erk'akan et al. (1998) have been unsuccessful up to date (Freyhof et al., 2018). The status of the species should be clarified by field specimens. *Cobitis lawsui => Cobitis fabinasa* 

Cobitis kurui => Cobitis fahireae

*Cobitis levantina* Krupp & Moubayed, 1992 => not occurring in Türkiye (see Table 1).

### *Cobitis phrygica* Battalgil, 1944 [E] — Phrygian spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis phrygica* Battalgil, 1944: 300, figs. 1-2 [Afyonkarahisar Province, Lake Acı, western central Türkiye; no types known. Author also seen as Battalgazi]. — Synonyms: None. — Revisions: None. — Illustration: Battalgil (1944: 300, figs. 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1944). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Acıgöl, Burdur, Salda, and Sögüt lakes watersheds. — Distribution in river basins: 8-Batı Akdeniz, 10-Burdur. — General distribution: Asia Minor: upper Dalaman River drainage and streams of Lake Gölhisar, central Anatolia (Türkiye). — Distribution in ecoregions: 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species lives in flowing and standing waters of springs and streams with sand or silt bottoms, often with dense submerged vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Cobitis pirii* Freyhof, Bayçelebi & Geiger, 2018 [E] — Spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis pirii* Freyhof, Bayçelebi & Geiger, 2018: 61, figs. 48-50 [Stream Aksu at Bağıllı, Isparta Province, Türkiye, 37.763°N, 31.033°E; holotype: ZFMK ICH-99635]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2018: 61, figs. 48-50).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2018) Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: ZFMK.

**Distribution and habitat.** Distribution in Türkiye: Lake Eğirdir basin, Aksu and Köprü river drainages.

Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Lake Eğirdir basin, Aksu and Köprü river drainages (Mediterranean coast) (Türkiye).
 — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species lives in streams with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Cobitis pontica* Vasil'eva & Vasil'ev, 2006 [N] — Burgas spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis pontica* Vasil'eva & Vasil'ev, 2006: 17, fig. [Veleka River, Bulgaria; holotype: ZMUU P-21363]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: European Black Sea, Sea of Marmara watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Southeastern Europe: Bulgaria and Türkiye. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace. — Habitat: This species lives in streams with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Cobitis puncticulata Erk'akan, Atalay-Ekmekçi & Nalbant, 1998 [N] — Brown spined loach/Taşısıran Taxonomy. Original description: *Cobitis puncticulata* Erk'akan, Atalay-Ekmekçi & Nalbant, 1998: 12, figs. 4 A-E [Karadere Stream, at the outlet of Manyas (Kus) Lake, Balıkesir Province, Türkiye; holotype: HUIC uncat]. — Synonyms: None. — Revisions: None. — Illustration: Erk'akan et al. (1998: 12, figs. 4 A-E).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (1998). Listed in previous checklists from Türkiye by Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Aegean Sea tributaries. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Eurasia: Aegean Sea tributaries (Greece and Türkiye). — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia. — Habitat: This species lives in well-oxygenated streams and lakes with muddy bottoms and abundant submerged vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: EN (IUCN, 2023). — Threats: ABS, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Cobitis saniae Eagderi, Jouladeh-Roudbar, Jalili, Sayyadzadeh & Esmaeili, 2017 [N] — Spined loach/ Taşısıran

**Taxonomy.** Original description: *Cobitis saniae* Eagderi, Jouladeh-Roudbar, Jalili, Sayyadzadeh & Esmaeili, 2017: 51, figs. 2-9, 11b, 12c, 13 [Bara Goor River a tributary of Sefid River, near Emamzadeh Hashem, Caspian Sea basin, Guilan Province, Iran, 37°00'11"N, 49°37'49"E; holotype: IMNRF-UT-1091]. — Synonyms: None. — Revisions: None. — Illustration: Eagderi et al. (2017: 51, fig. 2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Eagderi et al. (2017: 51, figs. 2-9, 11b, 12c, 13). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Choruck River basin. — Distribution in river basins: 23-Çoruh. — General distribution: Eurasia: Georgian Black Sea basin, Lake Urmia basin, and southwestern Caspian Sea tributaries (Türkiye, Armenia, Georgia, Azerbaijan, and Iran). — Distribution in ecoregions: 433-Western Transcaucasia.

— Habitat: This species lives in streams with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### Cobitis satunini Gladkov, 1935 [N] — Colchic spined loach/ Taşısıran

Taxonomy. Original description: *Cobitis taenia satunini* Gladkov, 1935: 73 [Lower stream of the Kintrich River, Kobuleti, eastern Black Sea basin, Georgia, Eurasia; holotype: ZMMU P-2852]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2018: 30, fig. 22).

**Status in Türkiye.** First record from Türkiye by Freyhof et al. (2018). — Turkish material: FSJF.

**Distribution and habitat.** Distribution in Türkiye: Stream Hopa, Artvin. — Distribution in river basins: 23-Çoruh. — General distribution: Eurasia: southeast coastal rivers of Black Sea basin, Georgia, and Türkiye. — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: Streams with still to moderately fast-flowing clear water and mud or sand bottom. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Cobitis simplicispina* Hankó, 1925 [E] — Sakarya spined loach/Taşısıran

Taxonomy. Original description: *Cobitis simplicispina* Hankó, 1925: 153, fig. 4; Pl. 3 (fig. 7) [Eminekin village, Porsuk River basin, Sakarya River system, Eskişehir, Türkiye; neotype: ISBB 4694]. — Synonyms: None. — Revisions: None. — Illustration: Hankó (1925: 153, fig. 4; Pl. 3 (fig. 7)).

**Status in Türkiye.** Recorded from Türkiye in the original description by Hankó (1925). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ISBB.

**Distribution and habitat.** Distribution in Türkiye: Sakarya and Kızılırmak river basins. — Distribution in river basins: 11-Akarçay, 12-Sakarya, 15-Kızılırmak. — General distribution: Asia Minor: Sakarya and Kızılırmak River basins (southern Black Sea tributaries) and Central Anatolia (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia, 431-Central Anatolia. — Habitat: This species lives in streams with still to moderately flowing clear water and a mud or sand bottom. Also in lakes and reservoirs. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Stable. — Moderate priority for conservation action.

#### *Cobitis sipahilerae* Erk'akan, Özdemir & Özeren, 2017 [E] — Spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis sipahilerae* Erk'akan, Özdemir & Özeren, 2017: 83, fig. 2 [Yediarıklar stream, Aksu River, Topçular District, Antalya Province, Türkiye; holotype: HUIC-AKD1]. — Synonyms: None. — Revisions: None. — Illustration: Erk'akan et al. (2017: 83, fig. 2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Kırkgöz marsches, Antalya. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Aksu River basin (Mediterranean tributary), Antalya Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species lives in streams with still to moderately flowing, clear water and a mud or sand bottom. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Stable. — Moderate priority for conservation action.

### *Cobitis splendens* Erk'akan, Atalay-Ekmekçi & Nalbant, 1998 [E] — Splendid spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis splendens* Erk'akan, Atalay-Ekmekçi & Nalbant, 1998: 11, figs. 3 A-E [Small stream tributary to the Black Sea, about 200 m from sea border, 16 km east of Akçakoca, and about 30 km southwest of Eregli (Black Sea), Türkiye; holotype: HUIC uncat.]. — Synonyms: None. — Revisions: None. — Illustration: Erk'akan et al. (1998: 11, figs. 3 A-E).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (1998). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Western Black Sea basin. — Distribution in river basins: 13-Batı Karadeniz. — General distribution: Asia Minor: Black Sea coastal watersheds, northern Anatolia (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species lives in the lower and middle parts of streams with still to moderately flowing, clear water with muddy or sandy bottoms. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Cobitis strumicae* Karaman, 1955 [N] — Struma spined loach/Taşısıran

Taxonomy. Original description: *Cobitis taenia strumicae* Karaman, 1955: 190, fig. 4 [Monospitovo swamp and Strumica River, Yugoslavia; syntypes: MMNHS (lost)]. — Synonyms: None. — Revisions: None. — Illustration: Karaman (1955: 190, fig. 4).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: European Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege. — General distribution: Eurasia: Aegean and Black Sea basins (Greece, Bulgaria, and Türkiye). — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia. — Habitat: This species lives in stagnant to flowing waters with sand or silt bottoms. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Stable. — Moderate priority for conservation action.

#### Cobitis taenia Linnaeus, 1758 [N] — Spined loach/ Taşısıran

**Taxonomy.** Original description: *Cobitis taenia* Linnaeus, 1758: 303 [Europe; possible type: ZMUU Linn. Coll. 205 (1)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Northwestern Anatolia. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 13-Batı Karadeniz. — General distribution: Central and Eastern Europe and northwestern Asia (southwestern Black Sea basin). — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 430-Northern Anatolia. — Habitat: This species lives in small lowland streams and large rivers. In channels, ditches, backwaters, and lakes on sand bottoms. Able to inhabit very degraded streams, especially if siltation is a problem. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Cobitis troasensis* Freyhof, Bayçelebi & Geiger, 2018 [E] — Spined loach/Taşısıran

**Taxonomy.** Original description: *Cobitis troasensis* Freyhof, Bayçelebi & Geiger, 2018: 65, figs. 51-53 [Stream Tuzla about 1 km south of Ayvacık, Çanakkale Province, Türkiye, 39.596°N, 26.438°E; holotype: ZFMK ICH-098603]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2018: 65, figs. 51-53).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2018) Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: ZFMK.

**Distribution and habitat.** Distribution in Türkiye: North Eagean basin. — Distribution in river basins: 4-Kuzey Ege. — General distribution: Asia Minor: Tuzla River basin, Aegean coast (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species lives in streams with clear water and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

**Remarks.** *Cobitis troasensis* lives sympatrically with *Cobitis taenia*. Freyhof et al. (2018) did not compare with *C. taenia* in the original description. Therefore, it is probable that *C. troasensis* is synonym of *Cobitis taenia* Linnaeus, 1758.

#### *Cobitis turcica* Hankó, 1925 [E] — Turkish spined loach/ Taşısıran

**Taxonomy.** Original description: *Cobitis taenia turcica* Hankó, 1925: 154, fig. 3; Pl. 3 (fig. 8) [Eregli, Türkiye. syntypes: MNH (2)]. — Synonyms: *Cobitinula anatoliae* Hankó, 1925. — Revisions: None. — Illustration: Hankó (1925: 154, fig. 3; Pl. 3 (fig. 8)).

**Status in Türkiye.** Recorded from Türkiye in the original description by Hankó (1925). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: MNH.

**Distribution and habitat.** Distribution in Türkiye: Konya Endorheic basin. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Mediterranean tributaries, southern Anatolia (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species lives in streams, lakes, and marshes with still to moderately flowing, clear water with muddy and sandy bottoms. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

*Cobitis vardarensis* Karaman, 1928 => not occurring in Türkiye (see Çiçek et al., 2020)

*Misgurnus fossilis* (Linnaeus, 1758) => not occurring in Türkiye (see Çiçek et al., 2020)

## Sabanejewia aurata (De Filippi, 1863) [N] — Golden spined loach

**Taxonomy.** Original description: *Cobitis aurata* De Filippi, 1863: 391 [Stream near Sartschem (apparently Sarcham-e Sofla, 39°07'N, 47°54'E), Iran; lectotype: MZUT 674; lectotype selected by Tortonese (1961: 188)]. — Synonyms: *Cobitis aurata* De Filippi, 1863; *Acanthopsis aurata* (De Filippi, 1863); *Cobitis aralensis* Kessler, 1877; *Sabanejewia* 

*aralensis* (Kessler, 1877); *Cobitis hohenackeri* Kessler, 1877. — Revisions: Berg (1949: 894) as *Cobitis aurata*, Vasil'eva et al. (2022: 12). — Illustration: Berg (1949: 894-895, figs. 644-645) as *Cobitis aurata*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Geldiay and Balık (2007) as *Cobitis aurata*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Caspian Sea basin. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species occurs in primarily hilly streams with moderate currents, clear water, and bottoms with sand or fine gravel. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### Sabanejewia balcanica (Karaman, 1922) [N] — Balcan spined loach

**Taxonomy.** Original description: *Cobitis balcanica* Karaman, 1922: 307, figs. 1-2 [Vardar River, Yugoslavia; Paratypes: MNHN 1928-0222 (1)]. — Synonyms: None. — Revisions: None. — Illustration: Karaman (1922: 307 (1), figs. 1-2).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: European Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Eurasia: Black Sea and Aegean Sea basin, Serbia, North Macedonia, Greece, and Türkiye. — Distribution in ecoregions: 423-Thrace. — Habitat: This species occurs in mostly hilly streams with clear water and a sandy or fine gravel bottom. In a moderate current with few plants at water depths up to 1.5 m. Also observed in large rivers. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Sabanejewia caspia* (Eichwald, 1838) => not occurring in

Türkiye (see Çiçek et al., 2020) Sabanejewia caucasica (Berg, 1906) => not occurring in Türkiye (see Çiçek et al., 2020)

#### Nemacheilidae Regan, 1911 (brook loaches)

*Barbatula araxensis* => Oxynoemacheilus araxensis Barbatula argvrogrammus => Oxvnoemacheilus argyrogramma Barbatula barbatula (Linnaeus, 1758) => not occurring in Türkiye (see Cicek et al., 2020) *Barbatula bergamensis* => Oxynoemacheilus theophilii Barbatula brandtii => Oxynoemacheilus brandtii Barbatula bureschi => Oxynoemacheilus bureschi *Barbatula cinica => Oxynoemacheilus cinicus* Barbatula cyri => Oxynoemacheilus cyri *Barbatula erdali => Oxynoemacheilus bergianus* Barbatula eregliensis => Oxynoemacheilus eregliensis *Barbatula euphratica => Oxynoemacheilus euphraticus* Barbatula frenata => Oxynoemacheilus frenatus *Barbatula germencica => Oxynoemacheilus germencicus* Barbatula mediterraneus => Oxynoemacheilus mediterraneus Barbatula paucilepis => Oxynoemacheilus paucilepis *Cobitis argyrogramma => Oxynoemacheilus* argyrogramma *Cobitis frenata => Oxynoemacheilus frenatus Cobitis insignis => Oxynoemacheilus insignis Cobitis tigris => Oxynoemacheilus tigris Nemacheilus alasanicus => Oxynoemacheilus bergi* Nemacheilus angorae => Oxynoemacheilus angorae Nemacheilus bergi => Oxynoemacheilus bergi Nemacheilus bergianus => Oxynoemacheilus bergianus Nemacheilus brandtii => Oxynoemacheilus brandtii Nemacheilus cyri => Oxynoemacheilus cyri *Nemacheilus euphraticus => Oxynoemacheilus euphraticus Nemacheilus frenatus => Oxynoemacheilus frenatus* Nemacheilus hamwii => Oxynoemacheilus hamwii Nemacheilus insignis => Oxynoemacheilus insignis Nemacheilus lendli => Seminemacheilus lendlii Nemacheilus lendlii => Seminemacheilus lendlii Nemacheilus namiri => Oxynoemacheilus namiri *Nemacheilus pulsiz => Oxynoemacheilus ercisianus* Nemacheilus tigris => Oxynoemacheilus tigris Nemachilus argyrogramma => Oxynoemacheilus argyrogramma Nemachilus bureschi => Oxynoemacheilus bureschi Noemacheilus (Paracobitis) seyhanensis => Oxynoemacheilus seyhanensis *Noemacheilus seyhanensis => Oxynoemacheilus* sevhanensis *Orthrias angorae => Oxynoemacheilus angorae Orthrias araxensis => Oxynoemacheilus araxensis Orthrias banarescui => Oxynoemacheilus banarescui Orthrias bergianus => Oxynoemacheilus bergianus* Orthrias brandtii => Oxynoemacheilus brandtii Orthrias bureschi => Oxynoemacheilus bureschi Orthrias cyri => Oxynoemacheilus cyri

Orthrias ercisianus => Oxynoemacheilus ercisianus Orthrias eregliensis => Oxynoemacheilus eregliensis Orthrias euphratica => Oxynoemacheilus euphraticus Orthrias euphraticus => Oxynoemacheilus euphraticus Orthrias frenatus => Oxynoemacheilus frenatus Orthrias samantica => Oxynoemacheilus samanticus Orthrias tschaiyssuensis => Oxynoemacheilus argyrogramma

Oxynoemacheilus afrenatus (Battalgil, 1941) [E] — Tigris loach/Çöpçü balığı

**Taxonomy.** Original description: *Nemachilus frenatus afrenatus* Battalgil, 1941: 183 [Small creek at Diyarbakır, tributary of the Tigris River, Türkiye; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1941). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Small creek at Diyarbakır, tributary of the Tigris River, Türkiye. — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits moderately fast-flowing waters, from small streams to the shores of large rivers. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

**Remarks.** The status of this species is ambiguous. Respectively, a synonym of *Oxynoemacheilus frenatus* (Heckel, 1843) but a valid subspecies *afrenatus* (Prokofiev 2009: 880; Freyhof et al., 2012: 308). Synonym of *Oxynoemacheilus frenatus* (Heckel, 1843) (Kottelat 2012: 96; Freyhof et al., 2017: 557). Genetic findings represent valid as *Oxynoemacheilus afrenatus* (Sayyadzadeh and Esmaeili, 2020: 203).

Oxynoemacheilus amanos Kaya, Yoğurtçuoğlu & Freyhof, 2021 [E] — Amanos loach/Amanos çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus amanos* Kaya, Yoğurtçuoğlu & Freyhof, 2021: 560, figs. 1-3 [Spring Incesu at Hassa, Hatay Province, Türkiye, 36.7935°N, 36.5135°E; holotype: FFR 15582]. — Synonyms: None. — Revisions: None. — Illustration: Kaya et al. (2021: 560, figs. 1-3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Kaya et al. (2021). — Turkish material: FFR.

Distribution and habitat. Distribution in Türkiye:

Streams originate in the Amanos Mountains. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor: spring İncesu at Hassa, northern Orontes basin, Hatay Province, Türkiye. — Distribution in ecoregions: 437-Orontes. — Habitat: This species inhabits moderately fast-flowing waters in small streams. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Oxynoemacheilus anatolicus* Erk'akan, Özeren & Nalbant, 2008 [E] — Burdur loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus anatolicus* Erk'akan, Özeren & Nalbant, 2008: 117, figs. 4-6 [Input of Karamanli Dam Lake, Burdur, southwestern Türkiye; holotype: HUIC-AKD-13]. — Synonyms: None. — Revisions: None. — Erk'akan et al. (2008: 117, figs. 4-6).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2008). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Karamanli Dam Lake, Burdur. — Distribution in river basins: 10-Burdur. — General distribution: Asia Minor: Burdur River basin and upper Dalaman River basin, Burdur Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits slow-moving streams with dense vegetation and sand, mud, or gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Oxynoemacheilus angorae* (Steindachner, 1897) [E] — Angora loach/Çamur balığı

Taxonomy. Original description: Nemacheilus angorae Steindachner, 1897: 693 [9), Pl. 4 (fig. 4a-c) [Tabakane-Sir and Tschibuk-Tschai, Türkiye; syntypes: (16) NMW]. — Synonyms: Nemachilus angorae Steindachner, 1897; Orthrias angorae (Steindachner, 1897); Barbatula phoxinoides Erk'akan, Nalbant & Özeren, 2007; Oxynoemacheilus phoxinoides (Erk'akan, Nalbant & Özeren, 2007). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Steindachner (1897). Listed in previous checklists from Türkiye by Kuru (2004) as *Orthrias angorae angorae*; Geldiay and Balık (2007) as

*Orthrias (Noemacheilus) angorae*; Fricke et al. (2007) as *Nemacheilus angorae*; Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: NMW.

**Distribution and habitat.** Distribution in Türkiye: Sakarya and Kızılırmak river basins. — Distribution in river basins: 2-Marmara, 3-Susurluk, 13-Batı Karadeniz, 15-Kızılırmak. — General distribution: Asia Minor: western and central Anatolian Black Sea basin (Marmara, Susurluk, Sakarya and Kızılırmak River basins) (Türkiye). — Distribution in ecoregions: 423-Thrace, 430-Northern Anatolia. — Habitat: This species inhabits a wide range of habitats, from fast-running mountain streams and the shores of large rivers to muddy lakes with dense vegetation. Only moderately rheophilic, avoiding very fast currents. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### Oxynoemacheilus araxensis (Bănărescu & Nalbant, 1978) [E] — Erzurum loach/Çöpçü balığı

Taxonomy. Orthrias angorae araxensis Bănărescu & Nalbant, 1978: 259, fig. 2; Pl. 20 (figs. 1-4) [Kandili Karassu, upper Karassu drainage, Euphrates-Tigris basin, eastern Türkiye; holotype: ZMH 4827]. — Synonyms: Orthrias araxensis Bănărescu & Nalbant, 1978; Barbatula araxensis (Bănărescu & Nalbant, 1978). — Revisions: None. — Illustration: Bănărescu and Nalbant (1978: 259, fig. 2; Pl. 20 (figs. 1-4)).

**Status in Türkiye.** Recorded from Türkiye in the original description by Bănărescu and Nalbant (1978). Listed in previous checklists from Türkiye by Kuru (2004) as *Orthrias angorae araxensis*; Geldiay and Balık (2007); Fricke et al. (2007) as *Orthrias araxensis*; Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Karasu River, Euphrates River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: upper Euphrates (Fırat Nehri) (Persian Gulf tributary), Erzurum Province (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits gravel-bottomed streams with moderately flowing currents. Freshwater.

Economic importance. No commercial importance.
Conservation. Conservation status in Türkiye:
Unknown. — IUCN: DD (IUCN, 2023). — Threats:
Current threats to the species are unknown. — Moderate sensitivity to human activities. — Keystone species.
— Decline status: Unknown. — Moderate priority for conservation action.

#### Oxynoemacheilus argyrogramma (Heckel, 1847) [N] — Two spot loach/Çöpçü balığı

Taxonomy. Original description: Cobitis argyrogramma Heckel, 1847: 239, Pl. 18 (fig. 3) [Aleppo, Syria; syntypes: NMW 48541 (8), 59913 (4)]. — Synonyms: Barbatula argyrogrammus (Heckel, 1847); Noemacheilus tschaiyssuensis Bănărescu & Nalbant, 1964; Nemacheilus tschaiyssuensis Bănărescu & Nalbant, 1964; Orthrias tschaiyssuensis (Bănărescu & Nalbant, 1964); Oxynoemacheilus tschaiyssuensis (Bănărescu & Nalbant, 1964). — Revisions: Prokofiev (2009: 888 as O. argyrogrammus). — Illustration: Heckel (1847: 239, Pl. 18 (fig. 3)) as Cobitis argyrogramma.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Noemacheilus argyrogramma*; Geldiay and Balık (2007) as *Orthrias (Noemacheilus) argyrogramma*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris River basins. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates and Tigris river basins (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a wide range of habitats with moderately fast-flowing waters, from small hill streams to the shores of large rivers. Also in stagnant water bodies and reservoirs. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, CLI. — High sensitivity to human activities. — No keystone species. — Decline status: Significant decline, locally extinct. — Moderate priority for conservation action.

### *Oxynoemacheilus arsaniasus* Freyhof, Kaya, Turan & Geiger, 2019 [E] — Loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus arsaniasus* Freyhof, Kaya, Turan & Geiger, 2019: 44, figs. 12-14 [Stream Kaynarca at Tepe, Muş Province, Türkiye; holotype: FFR 15530]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2019: 44, figs. 12-14).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2019). — Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Murat River and upper Karasu River, Euphrates River basin. — Distribution in River basins: 21-F1rat-Dicle. — General distribution: Asia Minor: Murat and upper Karasu (Bitlis) River drainages, upper Euphrates basin (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits gravel-bottomed streams with moderately flowing currents. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Oxynoemacheilus atili => Oxynoemacheilus eregliensis

*Oxynoemacheilus axylos* Yoğurtçuoğlu, Kaya & Freyhof, 2022 [E] — Loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus axylos* Yoğurtçuoğlu, Kaya & Freyhof, 2022: 472, figs. 14-16 [Spring at Baltali, 30 km east of Haymana, Konya Province, Türkiye, 39.2393°N, 32.7501°E; holotype: FFR 15616]. — Synonyms: None. — Revisions: None. — Illustration: Yoğurtçuoğlu et al. (2022: 472, figs. 14-16).

**Status in Türkiye.** Recorded from Türkiye in the original description by Yoğurtçuoğlu et al. (2022). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Melendiz River. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: springs, streams and rivers in the endorheic Lake Tuz basin, Central Anatolia, Türkiye. — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits gravel-bottomed streams with moderately flowing currents. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

#### *Oxynoemacheilus banarescui* (Delmastro, 1982) [E] — Paphlagonian sportive loach/Çöpçü balığı

**Taxonomy.** Original description: Orthrias brandti araxensis banarescui Delmastro, 1982: 53, fig. 1 [Devrekani creek near Devrekani, Anatolia, Türkiye; holotype: MCSNC]. — Synonyms: None. — Revisions: None. — Illustration: Delmastro (1982: 53, fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Delmastro (1982). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: MCSNC.

**Distribution and habitat.** Distribution in Türkiye: Central Black Sea watersheds. — Distribution in river basins: 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak. — General distribution: Asia Minor: Black Sea tributaries, Kastamonu Province (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits fast-flowing streams and rivers with gravel or rocky substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NT (IUCN, 2023). — Threats: ABS, CON, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

Oxynoemacheilus bergamensis => Oxynoemacheilus theophilii

#### Oxynoemacheilus bergi (Gratzianov, 1907) [N] — Loach/ Çöpçü balığı

**Taxonomy.** Original description: Nemacheilus bergi Gratzianov, 1907: 163, 167 [Akstapha (Akstafa) River, right tributary of Kura River, Azerbaijan; syntypes: (2) ZMMU (not found in 2002)]. — Synonyms: Nemacheilus angorae lenkoranensis Abdurakhmanov 1962; Oxynoemacheilus lenkoranensis (Abdurakhmanov 1962); Nemacheilus angorae alasanicus Elanidze 1983. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Caspian Sea basin, Azerbaijan, Türkiye, and possibly Iran. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits gravel-bottomed streams with moderate to fast-flowing currents. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Oxynoemacheilus bergianus (Derjavin, 1934) [N] — Loach/Çöpçü balığı

Taxonomy. Original description: Nemachilus bergianus Derjavin, 1934: 109, fig. 8 [Kisum village, Shah-rud River, Safid Rud basin, Iran; holotype (unique): ZIN 25433]. — Synonyms: Nemacheilus bergianus Derjavin, 1934; Orthrias bergianus (Derjavin, 1934); Barbatula erdali Erk'akan, Nalbant & Özeren, 2007; Oxynoemacheilus erdali (Erk'akan, Nalbant & Özeren, 2007). — Revisions: None. — Illustration: None. **Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris and Aras river basins. — Distribution in river basins: 21-Fırat-Dicle, 24-Aras. — General distribution: Eurasia: Caspian Sea, Urmia, and Namak Lake basins. — Distribution in ecoregions: 434-Kura - South Caspian Drainages, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits fast-flowing streams and rivers with gravel or rocky substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### Oxynoemacheilus brandtii (Kessler, 1877) [N] — Kura loach/Çöpçü balığı

Taxonomy. Original description: *Nemachilus brandtii* Kessler, 1877: 174, Pl. 6 (fig. 23) [Upper Kura River at Tbilis, Georgia, Eurasia; syntypes: (5) BMNH 1897.7.5.39 (ex ZIN) (1) Tiflis, ZIN 2923 (4, lost in 1924)]. — Synonyms: *Nemacheilus brandti* Kessler, 1877; *Nemacheilus brandtii* Kessler, 1877; *Barbatula brandtii* (Kessler, 1877); *Orthrias brandtii* (Kessler, 1877); *Nemacheilus brandtii gibbusnazus* Elanidze 1983. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007) as *Orthrias brandtii*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kura and Aras River drainages, Caspian Sea basin (Georgia, Türkiye, and Iran). — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits fastto very fast-flowing streams and rivers with gravel or rocky substrates. Usually, they are most common in riffles and rapids in the middle of the river. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### *Oxynoemacheilus bureschi* (Drensky, 1928) [N] — Bulgarian stone loach/Çöpçü balığı

**Taxonomy.** Original description: *Nemachilus bureschi* Drensky, 1928: 160, fig. 1 [Bezirk Radomir and a tributary of the Struma River in Bezirk Küstendil and Dupniza, Bulgaria; syntypes: NMNHS (2)]. — Synonyms: Nemacheilus bureschi Drensky, 1928; Barbatula bureschi (Drensky, 1928); Orthrias bureschi (Drensky, 1928); Orthrias brandti bureschi (Drensky, 1928); Orthrias brandti macedonicus Sorić 1999. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Orthrias brandti bureschi*; Geldiay and Balık (2007); Fricke et al. (2007) as *Barbatula bureschi*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Trachea region. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Eurasia: Aegean Sea watershed (Macedonia, Greece, Bulgaria, and Türkiye). — Distribution in ecoregions: 418-Dniester -Lower Danube, 423-Thrace. — Habitat: This species is a small riverine that prefers the larger streams and is not found in the smaller creeks. It is absent in channelized habitats and prefers the fast-flowing water in midstream. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, COM, EUT, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

**Remarks.** This species was originally described from the Struma River basin (Bulgaria) and listed in a previous checklist in Türkiye. However, live specimens have not been caught to date in any faunal studies. Therefore, species found in the basin connected to Türkiye need to be confirmed by field specimens.

### *Oxynoemacheilus cemali* Turan, Kaya, Kalayci, Bayçelebi & Aksu, 2019 [N] — Loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus cemali* Turan, Kaya, Kalayci, Bayçelebi & Aksu, 2019: (2), figs.1-4 [Stream Yaglı, about 2 km southeast of İncesu, Erzurum Province, Türkiye, 40°18'30.49"N, 41°00'24.36"E; holotype: FFR 15504]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2019: (2), figs. 1-4).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2021). — Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Choruck River basin. — Distribution in river basins: 14-Yeşilırmak, 23-Çoruh. — General distribution: Eurasia: Çoruh and upper Yesilırmak River drainages, Black Sea basin (Türkiye and Georgia). — Distribution in ecoregions: 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This is a small riverine species that prefers the larger streams but is also found in the smaller creeks. Freshwater. Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Oxynoemacheilus ceyhanensis* (Erk'akan, Nalbant & Özeren, 2007) [E] — Elbistan loach/Çöpçü balığı

**Taxonomy.** Original description: *Schistura ceyhanensis* Erk'akan, Nalbant & Özeren, 2007: 80, fig. 10 [Yalak Village, Elbistan, Kahramanmaraş Province, 38°39'N, 36°37'E, Türkiye; holotype: HUIC CEY-1]. — Synonyms: None. — Revisions: None. — Erk'akan et al. (2007: 80, fig. 10).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2007). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Ceyhan River basin. — Distribution in river basins: 20-Ceyhan. — General distribution: Asia Minor: Ceyhan River basin (Mediterranean tributary), Kahramanmaraş Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species prefers moderately fast-flowing streams and rivers with gravel or rocky substrates. It is found in the larger streams but is also found in the smaller creeks. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: DD (IUCN, 2023). — Threats: ABS, CON, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### Oxynoemacheilus chomanicus Kamangar, Prokofiev, Ghaderi & Nalbant, 2014 [N] — Choman loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus chomanicus* Kamangar, Prokofiev, Ghaderi & Nalbant, 2014: 46, fig. 5 [Baneh River, Baneh, Kurdistan, Iran, 36°01′03″N, 45°55′20″E; holotype: FCFUK 176]. — Synonyms: None. — Revisions: None. — Illustrations: Kamangar et al. (2014: 46, fig. 5).

**Status in Türkiye.** First report from Türkiye by Kaya et al. (2016); listed in previous checklist by Çiçek et al. (2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris River drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Tigris River basin (Türkiye, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species occurs in streams with moderately to rapidly flowing freshwater in both mountainous and desert landscapes. Freshwater. Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: ABS, CON, EUT. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### *Oxynoemacheilus ciceki* Sungur, Eagderi & Jalili, 2017 [E] — Sultan Loach/Sultan Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus ciceki* Sungur, Eagderi & Jalili, 2017: 376, figs. 1-5 [Sultan Marsh, Kayseri Province, Türkiye, 38°23'23.53"N, 35°21'54.52"E; holotype: NHVUIC 2017-03-15-h]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Sungur et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: NHVUIC.

**Distribution and habitat.** Distribution in Türkiye: Sultan Marsh. — Distribution in river basins: 15-Kızılırmak. — General distribution: Asia Minor: Sultan Marsh, eastern Central Anatolia, Kayseri Province (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species occurs in springs and small lakes with clear water and muddy and sandy bottoms. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

*Oxynoemacheilus cilicicus* Kaya, Turan, Bayçelebi, Kalaycı & Freyhof, 2020 [E] — Göksu loach

**Taxonomy.** Original description: *Oxynoemacheilus cilicicus* Kaya, Turan, Bayçelebi, Kalaycı & Freyhof, 2020: 289, figs. 2-5 [Irrigation canal 6 km southeast of Silifke, Mersin Province, Türkiye, 36.3465°N, 33.9806°E. holotype: FFR 15579]. — Synonyms: None. — Revisions: None. — Illustration: Kaya et al. (2020: 289, figs. 2-5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Kaya et al. (2020). — Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Eastern Mediterranean, Seyhan and Ceyhan basins. — Distribution in river basins: 17-Doğu Akdeniz, 18-Seyhan, 20-Ceyhan. — General distribution: Asia Minor: Lower Göksu, Seyhan and Ceyhan River basins, southern Anatolia (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits high mountain streams with moderately fast-flowing waters. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: This species inhabits moderately fast-flowing streams and rivers with gravel or rocky substrates. Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

 $Oxy no emache ilus\, cinicus => Oxy no emache ilus\, germencicus$ 

#### Oxynoemacheilus cyri (Berg, 1910) [E] — Göle loach/ Çöpçü balığı

Taxonomy. Original description: *Nemacheilus tigris cyri* Berg, 1910: 170 [Upper reaches of the Kura River (Göle depression), near Okam village, Ardahan Province, Türkiye; syntypes: (several) ZIN 13291 (6+), 16885 (2)]. — Synonyms: *Barbatula cyri* (Berg, 1910); *Orthrias cyri* (Berg, 1910); *Nemacheilus cyri* Berg, 1910. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Berg (1910). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007) as *Orthrias cyri*; Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZIN.

**Distribution and habitat.** Distribution in Türkiye: Upper Kura River basin. — Distribution in river basins: 24-Aras. — General distribution: Asia Minor: Kura Nehri basin (Caspian Sea tributary), Ardahan Province (Türkiye). — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits high mountain streams with moderately fast-flowing waters. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: There are no obvious threats for this species in the area. The area is grazed during summer months but this is not a threat to the species. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Oxynoemacheilus eliasi* Yoğurtçuoğlu, Kaya & Freyhof, 2022 [E] — Loach/Çöpçü balığı

Taxonomy. Original description: *Oxynoemacheilus eliasi* Yoğurtçuoğlu, Kaya & Freyhof, 2022: 478, figs. 18-20 [Inlet of Tahtalı Reservoir, under Şaşal bridge, İzmir Province, Türkiye, 38.1990°N, 27.1705°E; holotype: FFR 15619]. — Synonyms: None. — Revisions: None. — Illustration: Yoğurtçuoğlu et al. (2022: 478, figs. 18-20).

**Status in Türkiye.** Recorded from Türkiye in the original description by Yoğurtçuoğlu et al. (2022). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Küçük Menderes and Gediz River drainages. — Distribution in river basins: 5-Gediz, 6-Küçük Menderes. — General distribution: Asia Minor: Gediz, Küçük Menderes and Tahtalı River drainages, western Anatolia, Türkiye. — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits moderately fastflowing streams and rivers with gravel or rocky substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### Oxynoemacheilus elsae Eagderi, Jalili & Çiçek, 2018 [N] — Elsa's loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus elsae* Eagderi, Jalili & Çiçek, 2018: 454, figs. 1-4 [Zarineh River, near Shahin-Dej city, Lake Urmia basin, west Azerbaijan Province, Iran, 36°37′40″N, 46°43′30″E; holotype: IMNRF-UT-1404-H]. — Synonyms: None. — Revisions: None. — Illustration: Eagderi et al. (2018: 454, figs. 1-4).

**Status in Türkiye.** Recorded from Türkiye by (Kaya, 2020b). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Aras River basin. — Distribution in river basins: 25-Van Lake. — General distribution: Middle East: Lake Urmia basin (Iran; Türkiye). — Distribution in ecoregions: 445-Orumiyeh. — Habitat: This species inhabits moderately fast-flowing streams and rivers with gravel or rocky substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### *Oxynoemacheilus ercisianus* (Erk'akan & Kuru, 1986) [E] — Van loach/Çöpçü balığı

**Taxonomy.** Original description: Orthrias angorae ercisianus Erk'akan & Kuru, 1986: 161, fig. 1a [Ercis stream, Lake Van basin, Türkiye. holotype: HUIC]. — Synonyms: Orthrias ercisianus Erk'akan & Kuru, 1986; Nemacheilus pulsiz Krupp, 1992; Paracobitis pulsiz (Krupp, 1992). — Revisions: None. — Illustration: Erk'akan and Kuru (1986: 161, fig. 1a).

**Status in Türkiye.** Recorded from Türkiye in the original description Erk'akan and Kuru (1986). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Van Lake basin. — Distribution in river basins: 25-Van Lake. — General distribution: Asia Minor: Lake Van basin endemic, Van Province (Türkiye). — Distribution in ecoregions: 444-Lake Van. — Habitat: This species inhabits moderately fast-flowing streams and rivers with gravel or rocky substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CON, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

*Oxynoemacheilus erdali => Oxynoemacheilus bergianus* 

Oxynoemacheilus eregliensis (Bănărescu & Nalbant, 1978) [E] — Central Anatolian loach/Çöpçü balığı

**Taxonomy.** Original description: Orthrias angorae eregliensis Bănărescu & Nalbant, 1978: 258, fig. 1 [Eregli, southwestern central Türkiye; holotype: ZMH 1921]. — Synonyms: Orthrias eregliensis Bănărescu & Nalbant, 1978; Barbatula eregliensis (Bănărescu & Nalbant, 1978); Oxynoemacheilus atili Erk'akan 2012. — Revisions: None. — Illustration: Bănărescu and Nalbant (1978: 258, fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Bănărescu and Nalbant (1978). Listed in previous checklists from Türkiye by Kuru (2004) as *Orthrias angorae eregliensis*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Konya endorheic basin. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Central Anatolian (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits small streams and springs with gravel, sand, or mud substrates and slowly flowing water. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### Oxynoemacheilus euphraticus (Bănărescu & Nalbant, 1964) [N] — Euphrates Ioach/Çöpçü balığı

**Taxonomy.** Original description: Nemacheilus insignis euphraticus Bănărescu & Nalbant, 1964: 175, Pl. 7 (figs. 11-12) [Euphrates (Fırat Nehri) Basin, Malatya, eastern Anatolia, Türkiye; holotype: ZMH 1889. Type catalog: Wilkens 1977: 158]. — Synonyms: Nemacheilus euphraticus Bănărescu & Nalbant, 1964; Barbatula euphratica (Bănărescu & Nalbant, 1964); Orthrias euphratica (Bănărescu & Nalbant, 1964); Orthrias euphraticus Bănărescu & Nalbant, 1964); Orthrias euphraticus (Bănărescu & Nalbant, 1964); Orthrias euphraticus (Bănărescu & Nalbant, 1964); Oxynoemacheilus freyhofi Jouladeh-Roudbar, Eagderi & Hosseinpour 2016. — Revisions: Kottelat (2012: 95). — Illustration: Bănărescu & Nalbant (1964: 175, Pl. 7 (figs. 11-12)) as Nemacheilus insignis euphraticus.

**Status in Türkiye.** Recorded from Türkiye in the original description by Bănărescu and Nalbant (1964). Listed in

previous checklists from Türkiye by Kuru (2004) as *Orthrias insignis euphratica*; Geldiay and Balık (2007); Fricke et al. (2007) *Orthrias euphraticus*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris River basins. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates River and Tigris River drainages (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species occurs in streams with moderate flow. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Oxynoemacheilus evreni* (Erk'akan, Nalbant & Özeren, 2007) [E] — Ceyhan sportive loach/Çöpçü balığı

**Taxonomy.** Original description: *Schistura evreni* Erk'akan, Nalbant & Özeren, 2007: 82, fig. 12 [Tekir Stream, Göksu Basin, 38°39'N, 36°37'E, Türkiye; holotype: SEY-3]. — Synonyms: None. — Revisions: None. — Erk'akan et al. (2007: 82, fig. 12).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2007). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Upper Ceyhan River basin. — Distribution in river basins: 20-Ceyhan. — General distribution: Asia Minor: Ceyhan River basin (Mediterranean tributary), Kayseri Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species is found in streams and rivers with gravel substrates and moderately to very fastflowing water. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Oxynoemacheilus fatsaensis* Saygun, Ağdamar & Özuluğ, 2021 [E] — Loach/Çöpçü balığı

Taxonomy. Original description: Oxynoemacheilus fatsaensis Saygun, Ağdamar & Özuluğ, 2021: 40, figs. 2-6 [Elekçi Stream, Ordu Province, northern Anatolia, Türkiye, 40.53200°N, 37.23390°E; holotype: IUSHM 2021-1449]. — Synonyms: None. — Revisions: None. — Illustration: Saygun et al. (2021: 40, figs. 2-6). **Status in Türkiye.** Recorded from Türkiye in the original description by Saygun et al. (2021). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Elekçi Stream drainage. — Distribution in river basins: 22-Doğu Karadeniz. — General distribution: Asia Minor: Elekçi stream drainage, northern Anatolia, Türkiye. — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species is found in moderately fast-flowing to almost-standing waters of springs, streams, and rivers with mud, sand, or gravel substrates. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### *Oxynoemacheilus frenatus* (Heckel, 1843) [N] — Banded Tigris loach/Çöpçü balığı

Taxonomy. Original description: *Cobitis frenata* Heckel, 1843: 1086 (96) [Tigris River, Mosul, Iraq; syntypes: NMW 48552 (5), NRM 15477 (1)]. — Synonyms: *Nemacheilus frenatus* (Heckel, 1843); *Orthrias frenatus* (Heckel, 1843); *Barbatula frenata* (Heckel, 1843); *Nemacheilus frenatus* (Heckel, 1847); *Orthrias frenatus* (Heckel, 1843). — Revisions: Prokofiev (2009: 880). — Illustration: Heckel (1843: Pl. 12 (fig. 1)) as *Cobitis frenatus*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Noemacheilus frenatus*; Fricke et al. (2007) as *Orthrias frenatus*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris River basins. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris River basin and Lesser Zab drainage (Türkiye, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species occurs in moderately fast-flowing to almost-standing waters of springs, streams, and rivers with mud or gravel substrates. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Stable. — High priority for conservation action.

### *Oxynoemacheilus germencicus* (Erk'akan, Nalbant & Özeren, 2007) [E] — Carian loach/Çöpçü balığı

**Taxonomy.** Original description: *Barbatula germencica* Erk'akan, Nalbant & Özeren, 2007: 70, fig. 2 [Aydın, Germencik, 15th kilometer, 37°38'N, 27°18'E (not correct, probably north of Germencik), Türkiye; holotype: HUIC BM-1]. — Synonyms: *Oxynoemacheilus cinicus* (Erk'akan, Nalbant & Özeren, 2007); *Oxynoemacheilus mesudae* Erk'akan 2012; *Barbatula cinica* Erk'akan, Nalbant & Özeren, 2007. — Revisions: None. — Erk'akan et al. (2007: 79, fig. 9).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2007). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Aegean Sea region basins. — Distribution in river basins: 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes — General distribution: Asia Minor: Büyük Menderes River basin (Aegean Sea tributary), Aydın Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species occurs in moderately fast-flowing to almost-standing waters of springs, streams, and rivers with mud, sand, or gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS; CLI, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

#### Oxynoemacheilus hamwii (Krupp & Schneider, 1991) [N] — Orontes sportive loach/Çöpçü balığı

**Taxonomy.** Original description: *Nemacheilus hamwii* Krupp & Schneider, 1991: 24, figs. 1-5 [Nahr Afrin in Afrin, Syria, 36°31'N, 36°52'E; holotype: SMF 17398]. — Synonyms: None. — Revisions: None. — Illustration: Krupp and Schneider (1991: 24, figs. 1-5).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2016, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Afrin Stream, Orontes River basin. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor and Middle East: Orontes River basin (Syria and Türkiye). — Distribution in ecoregions: 437-Orontes. — Habitat: This species lives in moderately fast-flowing streams and rivers with a mud or gravel substrate and low pollution levels. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: EN (IUCN, 2023). — Threats: ABS, CON, HAB, EUT. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

#### *Oxynoemacheilus hazarensis* Freyhof & Özuluğ, 2017 [E] — Hazar loach/Hazar çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus hazarensis* Freyhof & Özuluğ, 2017: 379, figs. 1-6 [North-

eastern shore of Lake Hazar, Elazığ Province, Türkiye, 38°28.398'N, 39°18.093'E; holotype: IUSHM 2017-1171]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2017: 379, figs. 1-6).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof and Özuluğ (2017). — Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Lake Hazar drainage. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Lake Hazar basin endemic, upper Tigris basin (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species lives in moderately fastflowing streams and rivers with a mud or gravel substrate and a lake ecosystem. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Oxynoemacheilus insignis (Heckel, 1843) [N] — Syrian loach/Çöpçü balığı

Taxonomy. Original description: *Cobitis insignis* Heckel, 1843a: 1087 (97) [Damascus, Syria; syntypes: NMW (4, not found), SMF 166 (2, poor condition)]. — Synonyms: *Nemacheilus insignis* (Heckel, 1843). — Revisions: Prokofiev (2009: 880) with subspecies. — Illustration: Heckel (1843b: pl. 12, fig. 3).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Geldiay and Balık (2007) as *Orthrias* (*Noemacheilus*) *insignis*; Fricke et al. (2007) as *Nemacheilus insignis*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Sünnep Creek, Kilis. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor and Middle East: Türkiye, Syria, Israel, and Jordan. — Distribution in ecoregions: 437-Orontes. — Habitat: This species lives in moderately fast-flowing streams and rivers with a mud or gravel substrate and low pollution levels. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NT (IUCN, 2023). — Threats: ABS, CON, HAB, CLI, EUT. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

#### *Oxynoemacheilus isauricus* Yoğurtçuoğlu, Kaya, Özuluğ & Freyhof, 2021 [E] — Loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus isauricus* Yoğurtçuoğlu, Kaya, Özuluğ & Freyhof, 2021: 372, figs. 2-4, 6 [Stream Çeltek at Çeltek, south of Şarkikaraağaç,

Isparta Province, Türkiye, 38.0124°N, 31.3152°E. holotype: IUSHM 2021-1425]. — Synonyms: None. — Revisions: None. — Illustration: Yoğurtcuoğlu et al. (2021: 372, figs. 2-4, 6).

**Status in Türkiye.** Recorded from Türkiye in the original description by Yoğurtçuoğlu et al. (2021). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Lake Beyşehir, Ilgın, and Suğla basins. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Beyşehir and Suğla basins, Central Anatolia, Türkiye. — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species lives in moderately fast-flowing waters of small streams with gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### *Oxynoemacheilus kaynaki* Erk'akan, Özeren & Nalbant, 2008 [E] — Melid loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus kaynaki* Erk'akan, Özeren & Nalbant, 2008: 115, figs. 1-3 [Göksu River, Nurhak, Elbistan, Fırat basın, 37°53'22.82"N, 37°22'19.99"E, Türkiye; holotype: HUIC-F-20]. — Synonyms: None. — Revisions: None. — Erk'akan et al. (2008: 115, figs. 1-3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2008). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Göksu River and Euphrates River Basin drainages. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor: upper Göksu River drainage, upper Euphrates River (Firat Nehri) basin, Kahramanmaraş Province (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species lives in fast- to moderately fast-flowing streams with gravel substrates. Usually inhabits stream margins with little flow and muddy substrate. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, EUT, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Oxynoemacheilus kentritensis* Freyhof, Kaya & Turan, 2017 [N] — Loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus kentritensis* Freyhof, Kaya & Turan, 2017: 552, figs. 1-4 [Stream Kesan about 1 km south of Güntepe, Bitlis Province, Türkiye, 38°21′24″N, 42°37′39″E; holotype:

FFR 01566]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2017: figs. 1-4).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Botan River, Tigris River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: upper Tigris River basin (Türkiye, Iraq, and Syria). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species lives in moderately fast-flowing to almost-standing waters of springs, reservoirs, streams, and rivers with mud or gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: ABS, CON, EUT. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Oxynoemacheilus kosswigi => Oxynoemacheilus seyhanensis

### *Oxynoemacheilus kurdistanicus* Kamangar, Prokofiev, Ghaderi & Nalbant, 2014 [N] — Loach

**Taxonomy.** Original description: *Oxynoemacheilus kurdistanicus* Kamangar, Prokofiev, Ghaderi & Nalbant, 2014: 38, fig. 3 [Choman River (Tajaban, sta. 6) Baneh, Kurdistan, 35°56′53″N, 45°41′40″E, Iran; holotype: FCFUK 146]. — Synonyms: None. — Revisions: None. — Illustrations: Kamangar et al. (2014: 38, fig. 3).

**Status in Türkiye.** First report from Türkiye by Kaya et al. (2016); listed in previous checklist by Çiçek et al. (2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris River drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris River drainage (Türkiye and Iran). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species occurs in moderately fast-flowing to almoststanding waters of clean springs, streams, and rivers with mud or gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Oxynoemacheilus marmaraensis Turan, Bayçelebi & Kalayci, 2023 [E] — Susurluk loach/Susurluk çöpçü balığı Taxonomy. Original description: Oxynoemacheilus marmaraensis Turan, Bayçelebi & Kalayci, 2023: 74, fig. 5 [Stream Dursunbey 10 km east of Dursunbey, 39°36'32.4"N 28°45'01.9"E, Balıkesir Province, Türkiye. holotype: FFR 15631]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2023: figs. 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2023). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Susurluk River drainage. — Distribution in river basins: 3-Susurluk. — General distribution: Asia Minor: Dursunbey Stream, Susurluk River drainage, Marmara Sea basin (Türkiye). — Distribution in ecoregions: 423-Thrace. — Habitat: This species occurs in moderate-flowing to almost-standing waters of streams and rivers with gravel or mud substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### *Oxynoemacheilus mediterraneus* (Erk'akan, Nalbant & Özeren, 2007) [E] — Pamphylian loach/Çöpçü balığı

**Taxonomy.** Original description: *Barbatula mediterraneus* Erk'akan, Nalbant & Özeren, 2007: 74, fig. 5 [Eğirdir, Çandir, Aksu Stream, 37°38'N, 30°31'E, Türkiye. holotype: HUIC AAKD-2a. HUIC AKD-2a (7), AKD-3 (27)]. — Synonyms: None. — Revisions: None. — Illustration: Erk'akan et al. (2007: 74, fig. 5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2007). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Madenli-Aksu Stream, Eğirdir, Isparta. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Aksu and Köprüçay drainages, Gulf of Antalya, Burdur Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species occurs in fast-flowing to almost-standing waters of streams and rivers with gravel or mud substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Oxynoemacheilus melenicus* Turan, Aksu & Kalayci, 2023 [E] & Melen loach/Melen çöpçü balığı

**Taxonomy.** Original description: Oxynoemacheilus melenicus Turan, Aksu & Kalayci, 2023: 448, fig. 11 [Eskişehir prov.: stream Yarılgan at Gemiç Village, 39.343°N, 30.463°E, Türkiye. holotype: FFR 15627]. —

Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2023c: figs. 11, 12).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2023c). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Büyük Melen River drainage. — Distribution in River Basin: 12-Sakarya. — General distribution: Asia Minor: Büyükmelen Stream and Sakarya River drainage in western Anatolia (Türkiye). — Distribution in ecoregion: 430-Northern Anatolia. — Habitat: This species occurs in moderate-flowing to almost standing waters of streams and rivers with gravel or mud substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation**. Conservation Status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

Oxynoemacheilus mesudae => Oxynoemacheilus germencicus

### *Oxynoemacheilus muefiti* Freyhof, Kaya, Turan & Geiger, 2019 [E] — Loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus muefiti* Freyhof, Kaya, Turan & Geiger, 2019: 48, figs. 15-17 [Murat River at Ballıbostan, Ağrı Province, Türkiye; holotype: FFR 15532]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2019: 48, figs. 15-17).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2019). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Upper Murat River and tributaries of Atatürk reservoir. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: upper Murat River drainage and the Eğri, a tributary to Atatürk reservoir (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species occurs in moderately fast-flowing waters of small streams with gravel substrates. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### Oxynoemacheilus namiri (Krupp & Schneider, 1991) [N] — Levantine loach/Çöpçü balığı

Taxonomy. Original description: *Nemacheilus namiri* Krupp & Schneider, 1991: 28, figs. 7-13 [Orontes at Jisr ash-Shughur, Syria, 35°48'N, 36°19'E; holotype: SMF 17387]. — Synonyms: *Schistura namiri* (Krupp & Schneider, 1991). — Revisions: None. — Illustration: Krupp & Schneider (1991: 28, figs. 7-13) as *Nemacheilus namiri*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Orontes River basin. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor and Middle East: Orontes River basin (Syria and Türkiye). — Distribution in ecoregions: 437-Orontes. — Habitat: This species lives in moderately fast-flowing to almost-standing waters of springs, reservoirs, streams, and rivers with mud or gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB, CLI, EUT. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

*Oxynoemacheilus nasreddini* Yoğurtçuoğlu, Kaya & Freyhof, 2021 [E] — Loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus nasreddini* Yoğurtçuoğlu, Kaya & Freyhof, 2021: 138, figs. 2-5 [Stream Aksu at Ayvali, 6 km north of Sincanli, Afyon Province, Türkiye, 38.8101, 30.2560; holotype: FFR 15588]. — Synonyms: None. — Revisions: None. — Illustration: Yoğurtçuoğlu et al. (2021: 138, figs. 2-5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Yoğurtçuoğlu et al. (2021). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Lakes Akşehir, Eber and Eğirdir, and Ilgın basins. — Distribution in river basins: 11-Akarçay, 12-Sakarya. — General distribution: Asia Minor: Lakes Akşehir, Eber, and Eğirdir, and Ilgın basins, Central Anatolia, Türkiye. — Distribution in ecoregions: 430-Northern Anatolia, 431-Central Anatolia. — Habitat: This species lives in moderately fast-flowing to almost-standing waters of springs, reservoirs, streams, and rivers with mud or gravel substrate. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

*Oxynoemacheilus panthera* (Heckel, 1843) => not occurring in Türkiye (see Çiçek et al., 2020)

Oxynoemacheilus paucilepis (Erk'akan, Nalbant & Özeren, 2007) [E] — Mancilik dwarf loach/Çöpçü balığı Taxonomy. Original description: Barbatula paucilepis Erk'akan, Nalbant & Özeren, 2007: 79, fig. 9 [Sivas, Mancilik Stream, Gürün, 38°39'N, 37°38'E, Türkiye; holotype: HUIC F2]. — Synonyms: *Paracobitis paucilepis* (Erk'akan, Nalbant & Özeren, 2007). — Revisions: None. — Illustration: Erk'akan et al. (2007: 79, fig. 9).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2007). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Mancilik Stream, tributaries of Euphrates River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: tributaries in Kangal and Gürün, Sivas Province (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species lives in moderately fast-flowing waters of small streams with gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### Oxynoemacheilus sakaryaensis Turan, Aksu & Kalayci, 2023 [E] — Melen loach/Melen çöpçü balığı

**Taxonomy.** Original description: Oxynoemacheilus sakaryaensis Turan, Aksu & Kalayci, 2023: 443, fig. 1, 2 [Eskişehir prov.: Stream Kirmir 3 km north of Güdül, a tributary of Sakarya River, 40.236°N, 32.606°E, Ankara province, Türkiye. holotype: FFR 15629]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2023c: figs. 1, 2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2023c). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Sakarya River drainage. — Distribution in River Basin: 12-Sakarya. — General distribution: Asia Minor: Sakarya River drainage in western Anatolia (Türkiye). — Distribution in ecoregion: 430-Northern Anatolia. — Habitat: This species occurs in moderate-flowing to almost standing waters of streams and rivers with gravel or mud substrates. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation Status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown.— High priority for conservation action.

Oxynoemacheilus phoxinoides => Oxynoemacheilus angorae

#### Oxynoemacheilus samanticus (Bănărescu & Nalbant, 1978) [E] — Samantı sportive loach/Çöpçü balığı

Taxonomy. Original description: Orthrias brandti samantica Bănărescu & Nalbant in Bănărescu, Nalbant

& Balik 1978: 263, fig. 4 [Tributary to Samanti, between Pınarbaşı and Sariz, Seyhan basin, southern Türkiye; holotype: ZMH 3633]. — Synonyms: Orthrias samantica Bănărescu & Nalbant, 1978; Orthrias brandti samanticus Bănărescu & Nalbant, 1978; Schistura samantica (Bănărescu & Nalbant, 1978). — Revisions: None. — Illustration: Bănărescu and Nalbant (1978: 263, fig. 4).

**Status in Türkiye.** Recorded from Türkiye in the original description by Bănărescu and Nalbant (1978). Listed in previous checklists from Türkiye by Kuru (2004) as *Orthrias brandti samantica*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Zamanti River, Upper Seyhan River basin and Kızılırmak basin. — Distribution in river basins: 15-Kızılırmak, 18-Seyhan. — General distribution: Asia Minor: Seyhan River basin, Mediterranean Sea tributaries (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia, 432-Southern Anatolia. — Habitat: This species lives in fast-flowing streams and rivers with gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### *Oxynoemacheilus sarus* Freyhof, Yoğurtçuoğlu & Kaya, 2021 [E] — Loach/Çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus sarus* Freyhof, Yoğurtçuoğlu & Kaya, 2021: 128, figs. 2-5 [Lower stream Çakıt, south of Salbaş, Adana Province, Türkiye, 37.1031°N, 35.1094°E; holotype: FFR 15585]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2021: 128, figs. 2-5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2021). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Lower parts of Ceyhan and Seyhan rivers. — Distribution in river basins: 18-Seyhan, 20-Ceyhan. — General distribution: Asia Minor: lower Ceyhan and Seyhan drainages, Türkiye. — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species lives in moderately fast-flowing rivers with gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Oxynoemacheilus seyhanensis (Bănărescu, 1968) [E] — Seyhan loach/Çöpçü balığı

**Taxonomy.** Original description: *Noemacheilus* (*Paracobitis*) *tigris seyhanensis* Bănărescu, 1968: 355, Pl. 3 (figs. 2-3) [Between Viranşehir and Kazancık, Türkiye; holotype: ZMH H4014]. — Synonyms: *Nemacheilus seyhanensis* Bănărescu, 1968; *Orthrias angorae kosswigi* Erk'akan & Kuru, 1986; *Oxynoemacheilus kosswigi* (Erk'akan & Kuru, 1986). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Bănărescu (1968). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Ciçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Seyhan, Kızılırmak, and Yeşilırmak River basins. — Distribution in river basins: 14-Yeşilırmak, 15-Kızılırmak, 18-Seyhan. — General distribution: Asia Minor: Seyhan, Kızılırmak, and Yeşilırmak River River basins. — Distribution in ecoregions: 430-Northern Anatolia, 432-Southern Anatolia. — Habitat: This species lives in moderately fast-flowing streams with gravel or muddy substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### *Oxynoemacheilus seyhanicola* (Erk'akan, Nalbant & Özeren, 2007) [E] — Cilician loach/Çöpçü balığı

**Taxonomy.** Original description: *Schistura seyhanicola* Erk'akan, Nalbant & Özeren, 2007: 81, fig. 11 [Dam Bridge, near Adana, Seyhan River basin, 38°39'N, 36°37'E, Türkiye; holotype (unique): HUIC SEY-1]. — Synonyms: None. — Revisions: None. — Illustration: Erk'akan et al. (2007: 81, fig. 11).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2007). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Seyhan River basin. — Distribution in river basins: 18-Seyhan. — General distribution: Asia Minor: Seyhan River basin (Mediterranean tributary), Adana Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species lives in moderately fastflowing rivers with gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

#### Oxynoemacheilus simavicus (Balik & Bănărescu, 1978) [E] — Simav loach/Çöpçü balığı

**Taxonomy.** Original description: Orthrias brandti simavica Balik & Bănărescu in Bănărescu, Nalbant & Balik 1978: 261, fig. 3 [Simav Stream, Balıkesir. Türkiye; holotype: ISBB 2976]. — Synonyms: Oxynoemacheilus brandtii simavicus Balik & Bănărescu, 1978; Barbatula simavica (Balik & Bănărescu, 1978). — Revisions: None. — Illustration: Bănărescu et al. (1978: 261, fig. 3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Balik and Bănărescu (1978). Listed in previous checklists from Türkiye by Kuru (2004) as *Orthrias brandti simavica*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ISBB.

**Distribution and habitat.** Distribution in Türkiye: Susurluk Basin. — Distribution in river basins: 3-Susurluk. — General distribution: Asia Minor: Marmara Sea tributary, Balıkesir Province (Türkiye). — Distribution in ecoregions: 423-Thrace. — Habitat: This species lives in moderately fast-flowing to standing waters of streams with gravel or mud substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CON, EUT, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

*Oxynoemacheilus theophilii* Stoumboudi, Kottelat & Barbieri, 2006 [N] — Lesbos stone loach/Çöpçü balığı Taxonomy. Original description: *Oxynoemacheilus theophilii* Stoumboudi, Kottelat & Barbieri, 2006: 140, figs. 8-9 [Lesbos Island, Tsingou springs, in Evergetoulas drainage, Greece; holotype: MHNG 2679.009]. — Synonyms: *Oxynoemacheilus theophili* Stoumboudi, Kottelat & Barbieri, 2006; *Barbatula bergamensis* Erk'akan, Nalbant & Özeren, 2007; *Oxynoemacheilus bergamensis* (Erk'akan, Nalbant & Özeren, 2007). — Revisions: None. — Illustration: Stoumboudi et al. (2006: 140, figs. 8-9).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Fricke et al. (2007); Kuru et al. (2014) as *Barbatula bergamensis*; Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Western Anatolian basins flow to Eagean Sea. — Distribution in river basins: 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Eurasia: Lesbos Island, Greece and Bakır River drainage, western Anatolia, Türkiye. — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species lives in the upper part of a stream with a current. Freshwater. Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Oxynoemacheilus tigris (Heckel, 1843) [N] — Halap loach/Çöpçü balığı

Taxonomy. Original description: *Cobitis tigris* Heckel, 1843a: 1088 (98) [Kuiek River near Aleppo, Syria; syntypes: NMW 48441 (2), 49444-46 (2, 4, 2); SMF 405 (3)]. — Synonyms: *Noemacheilus tigris* (Heckel, 1843); *Nemacheilus tigris* (Heckel, 1843); *Nemachilus tigris* (Heckel, 1843); *Orthrias tigris* (Heckel, 1843); *Paracobitis tigris* (Heckel, 1843); *Barbatula tigris* (Heckel, 1843). — Revisions: Berg (1949: 876) as synonym of *Nemacheilus sargadensis* Nikolskii, 1900; Freyhof et al. (2015: 17). — Illustration: Heckel (1843b: pl. 12, fig. 4) as *Cobitis tigris*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Noemacheilus tigris*; Geldiay and Balık (2007) as *Orthrias (Noemacheilus) tigris*; Fricke et al. (2007) as *Orthrias tigris*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: upper Euphrates River basin (Syria and Türkiye). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species lives in moderately fast-flowing to standing waters of streams with gravel or mud substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

Oxynoemacheilus veyseli => Oxynoemacheilus veyselorum

### *Oxynoemacheilus veyselorum* Çiçek, Eagderi & Sungur, 2018 [N] — Great loach/Baba çöpçü balığı

**Taxonomy.** Original description: *Oxynoemacheilus veyseli* Çiçek, Eagderi & Sungur, 2018 2018: 233, figs. 1A, 2-6 [Bozkuş River, a tributary of the Aras River at Kars, Kars Province, Türkiye, 40°37′03.7″N, 42°47′04.9″E; holotype: NHVUIC 14005-H]. — Synonyms: None. — Revisions: None. — Illustration: Çiçek et al. (2018: 233, figs. 1A, 2-6).

**Status in Türkiye.** Recorded from Türkiye in the original description by Çiçek et al. (2018). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: NHVUIC.

**Distribution and habitat.** Distribution in Türkiye: Aras River basin. — Distribution in river basins: 24-Aras.

— General distribution: Asia Minor and Middle East: upper Aras River drainage, Kars Province (Türkiye and northwest Iran). — Distribution in ecoregions: 434-Kura -South Caspian Drainages. — Habitat: This species lives in moderately fast-flowing to standing waters of streams with gravel or mud substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Paracobitis malapterurus* (Valenciennes, 1846) => not occurring in Türkiye (see Çiçek et al., 2020) *Paracobitis paucilepis* => *Oxynoemacheilus paucilepis* 

*Paracobitis pulsiz => Oxynoemacheilus ercisianus* 

*Paracobitis salihae* Kaya, Turan, Kalaycı, Bayçelebi & Freyhof, 2020 [E] — Western crested loach/Çöpçü balığı Taxonomy. Original description: *Paracobitis salihae* Kaya, Turan, Kalaycı, Bayçelebi & Freyhof, 2020: 527, figs. 2-4 [Göksu River at 2 km east of Aktoprak, Adıyaman Province, Türkiye, 37.8443°N, 37.6703°E; holotype: FFR 3657]. — Synonyms: None. — Revisions: None. — Illustration: Kaya et al. (2020: 527, figs. 2-4).

**Status in Türkiye.** Recorded from Türkiye in the original description by Kaya et al. (2020). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Göksu River, Euphrates River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Göksu River drainage, upper Euphrates basin, Türkiye. — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits streams with gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Paracobitis tigris => Oxynoemacheilus tigris

#### Paracobitis zabgawraensis Freyhof, Esmaeili, Sayyadzadeh & Geiger, 2014 [N] — Zagros stone loach/ Çöpçü balığı

Taxonomy. Original description: *Paracobitis zabgawraensis* Freyhof, Esmaeili, Sayyadzadeh & Geiger, 2014: 33, figs. 23-26 [Erbil Province, Chami Rean River near Ziraran, Iraq, 36°56.60'N, 44°11.72'E; holotype: ZFMK 56827]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2014: 33, figs. 23-26).

**Status in Türkiye.** Listed in previous checklists from Türkiye as *P. malapterura* by Kuru (2004); Geldiay and

Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris river basins. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Iraq and Türkiye. — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species lives in moderately fast-flowing streams with gravel or mud substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: ABS, CON, EUT. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Paraschistura chrysicristinae Nalbant, 1998 [E] — Batman crested loach/Çöpçü balığı

**Taxonomy.** Original description: *Paraschistura chrysicristinae* Nalbant, 1998: 372, fig. 1 [Batman River, a tributary of upper Tigris at Catalköprü, about 18 km east from Silvan, Türkiye; holotype: ISBB uncat]. — Synonyms: None. — Revisions: None. — Illustration: Nalbant (1998: 372, fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Nalbant (1998). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ISBB.

**Distribution and habitat.** Distribution in Türkiye: Batman River, Tigris River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: upper Tigris River (Dicle Nehri) basin (Persian Gulf tributary), Diyarbakır Province (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits streams with gravel substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: The threats to the species are unknown. Recent field work in the area (2008–2012) found no obvious threats, and the habitats seemed to be in good condition. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action. Schistura ceyhanensis => Oxynoemacheilus ceyhanensis Schistura namiri => Oxynoemacheilus namiri Schistura samantica => Oxynoemacheilus samanticus

Schistura seyhanicola => Oxynoemacheilus seyhanicola

Seminemacheilus ahmeti Sungur, Jalili, Eagderi & Çiçek, 2018 [E] — Ahmet's motley loach/Ahmet alaca çöpçüsü Taxonomy. Original description: Seminemacheilus ahmeti Sungur, Jalili, Eagderi & Çiçek, 2018: 467, figs. 1-4, 5b, 6b, 7b [Sultan Marshes near Yeşilova Village, Kızılırmak Basin, Kayseri Province, Türkiye, 38°12′05.26″N, 35°13′19.76″E; holotype: NHVUIC 2017-06-17]. — Synonyms: None. — Revisions: None. — Illustration: Sungur et al. (2018: 491, figs. 12-14, 18).

**Status in Türkiye.** Recorded from Türkiye in the original description by Sungur et al. (2018). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: NHVUIC.

**Distribution and habitat.** Distribution in Türkiye: Sultan Marches. — Distribution in river basins: 15-Kızılırmak. — General distribution: Asia Minor: Sultan Marsh, eastern Central Anatolia, Kayseri Province (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits springs, streams, and marshes. Usually in habitats with standing water and dense submerged vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Suggested as CR by Sungur et al. (2023b). — IUCN: NE (2023). — Threats: ABS, CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Seminemacheilus attalicus* Yoğurtçuoğlu, Kaya, Geiger & Freyhof, 2020 [E] — Crested loach/Çöpçü balığı

**Taxonomy.** Original description: *Seminemacheilus attalicus* Yoğurtçuoğlu, Kaya, Geiger & Freyhof, 2020: 488, figs. 9-11, 18 [Spring Kırkgöz, Antalya Province, Türkiye, 37.1097, 30.5807; holotype: FFR 15566]. — Synonyms: None. — Revisions: None. — Illustration: Yoğurtçuoğlu et al. (2020a: 488, figs. 9-11, 18). — Turkish material: FFR.

**Status in Türkiye.** Recorded from Türkiye in the original description by Yoğurtçuoğlu et al. (2020a).

**Distribution and habitat.** Distribution in Türkiye: Kırkgöz drainage, Antalya. — Distribution in river basins: 9-Antalya. — General distribution: Kırkgöz drainage, Antalya Province, southern Anatolia, Türkiye. — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits springs, streams, and marshes. Usually in habitats with standing water and

dense submerged vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Seminemacheilus dursunavsari Çiçek, 2020 [E] — Avsar crested loach/Çöpçü balığı

**Taxonomy.** Original description: *Seminemacheilus dursunavsari* Çiçek, 2020: 69, figs. 2-6 [Input of Alanözü Dam Lake, Göksu River drainage, Eastern Mediterranean basin, Konya Province, Türkiye, 37°07′48.8″N, 32°42′19.3″E;

holotype: NUIC-1811]. — Synonyms: *Seminemacheilus tubae* Yoğurtçuoğlu, Kaya, Geiger & Freyhof, 2020. — Revisions: None. — Illustration: Çiçek (2020: 69, figs. 2-6).

**Status in Türkiye.** Recorded from Türkiye in the original description by Çiçek (2020). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: NUIC.

**Distribution and habitat.** Distribution in Türkiye: Eastern Mediterranean basin. — Distribution in river basins: 16-Konya, 17-Doğu Akdeniz. — General distribution: Asia Minor: Göksu River drainage and Lake Beyşehir watersheds (Türkiye). — Distribution in ecoregions: 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species inhabits springs, streams, and marshes. Usually in habitats with standing water and dense submerged vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

Seminemacheilus ekmekciae Yoğurtçuoğlu, Kaya, Geiger & Freyhof, 2020 [E] — Crested loach/Çöpçü balığı

**Taxonomy.** Original description: *Seminemacheilus ekmekciae* Yoğurtçuoğlu, Kaya, Geiger & Freyhof, 2020: 491, figs. 12-14, 18 [Stream Insuyu in Pınarbaşı village at Cihanbeyli, Konya Province, Türkiye, 38.7336°N, 32.7054°E; holotype: FFR 15567]. — Synonyms: None. — Revisions: None. — Illustration: Yoğurtçuoğlu et al. (2020a: 491, figs. 12-14, 18).

**Status in Türkiye.** Recorded from Türkiye in the original description by Yoğurtçuoğlu et al. (2020a). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Lake Tuz Basin. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Tuz basin (Konya, Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits springs, streams, and marshes. Usually in habitats with standing water and dense submerged vegetation. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

Seminemacheilus ispartensis Erk'akan, Nalbant & Özeren, 2007 [E] — Southern pond loach/Çöpçü balığı Taxonomy. Original description: Seminemacheilus ispartensis Erk'akan, Nalbant & Özeren, 2007: 76, fig. 7 [Isparta Creek, Eğirdir-Isparta Road, 1st railway pass, 37°38'N, 30°31'E (not correct), Türkiye; holotype: HUIC AD-1]. — Synonyms: None. — Revisions: None. — Illustration: Erk'akan et al. (2007: 76, fig. 7).

**Status in Türkiye.** Recorded from Türkiye in the original description by Erk'akan et al. (2007). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: HUIC.

**Distribution and habitat.** Distribution in Türkiye: Isparta Creek, Isparta. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Lakes Eğirdir and Salda basins, Isparta Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits springs, streams, and marshes. Usually in habitats with standing water and dense submerged vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

**Remarks.** There are also no appropriate differences between morphological characters between S. *ispartensis* and S. *lendlii*. Additionally, genetic differences are low (K2P, 0.1%–0.2%) between them (Çiçek, 2020; Yoğurtcuoğlu et al., 2020). Most probably, S. *ispartensis* is the synonym of *Seminemacheilus lendlii* (Şahin et al., 2022).

Seminemacheilus lendli => Seminemacheilus lendlii

Seminemacheilus lendlii (Hankó, 1925) [E] — Anatolian loach/Çöpçü balığı

**Taxonomy.** Original description: *Nemachilus lendlii* Hankó, 1925: 155, Pl. 3 (fig. 9) [Eski-Chehir (= Eskişehir), western Anatolia, Türkiye; syntypes: (10, lost)]. — Synonyms: *Nemacheilus lendlii* Hankó, 1925; *Nemachilus lendli* Hankó, 1925; *Seminemacheilus lendli* (Hankó, 1925). — Revisions: None. — Illustration: Hankó (1925: 155, Pl. 3 (fig. 9)).

**Status in Türkiye.** Recorded from Türkiye in the original description by Hankó (1925). Listed in previous checklists from Türkiye by Kuru (2004) as *Noemacheilus lendli*; Geldiay and Balık (2007) as *Orthrias (Noemacheilus) lendlii*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Sakarya River basin. — Distribution in river basins: 11-Akarçay, 12-Sakarya. — General distribution: Asia Minor: upper Sakarya River basin and endorheic Lakes Akşehir and Eber basins, western Anatolia (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia, 431-Central Anatolia. — Habitat: This species inhabits marshes, lakes, springs, and streams with standing waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

Seminemacheilus tubae => Seminemacheilus dursunavsari Turcinoemacheilus ekmekciae Kaya, Yoğurtçuoğlu, Aksu, Bayçelebi & Turan, 2023 [E] — Ekmekci's dwarf loach/Çöpçü balığı

**Taxonomy.** Original description: *Turcinoemacheilus ekmekciae* Kaya, Yoğurtçuoğlu, Aksu, Bayçelebi & Turan, 2023: figs. 1-4 [Muş prov.: stream Kaynarca at Kalecik, Murat drainage, 39.1519N 41.3534E, Türkiye; holotype: FFR 3608]. — Synonyms: None. — Revisions: None. — Illustration: Kaya et al. (2023: figs. 1-4).

**Status in Türkiye.** Recorded from Türkiye in the original description by Kaya et al. (2023). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Upper Euphrates and Tigris drainages. — Distribution in River Basin: 21-Fırat-Dicle. — General distribution: Asia Minor: upper Euphrates and Tigris drainages (Türkiye) — Distribution in ecoregion: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits fast-flowing sections of rivers and even very small streams, usually in rapids and riffles with coarse gravel or rocks. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation Status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Turcinoemacheilus kosswigi* Banarescu & Nalbant, 1964 [N] — Kosswig's dwarf loach/Çöpçü balığı

**Taxonomy.** Original description: *Turcinoemacheilus kosswigi* Bănărescu & Nalbant, 1964: 178, Pl. 8 (fig. 14) [Kapozik Kadun, Tigris basin, 37°34'40"N, 43°44'10"E, Hakkari, Türkiye; holotype: ZMH H1884]. — Synonyms: *Turcinemacheilus kosswigi* Bănărescu & Nalbant, 1964. — Revisions: None. — Illustration: Banarescu and Nalbant (1964: 178, Pl. 8 (fig. 14)).

**Status in Türkiye.** Recorded from Türkiye in the original description by Bănărescu and Nalbant (1964). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Tigris River drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: upper Euphrates and Tigris watersheds (Türkiye, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits fast-flowing sections of rivers and even very small streams, usually in rapids and riffles with coarse gravel or rocks. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

#### *Turcinoemacheilus minimus* Esmaeili, Sayyadzadeh, Özuluğ, Geiger & Freyhof, 2014 [E] — Göksu dwarf loach/Çöpçü balığı

**Taxonomy.** Original description: *Turcinoemacheilus minimus* Esmaeili, Sayyadzadeh, Özuluğ, Geiger & Freyhof, 2014: 265, figs. 7b, 9-11 [Adıyaman Province: Upper Göksu, 5 km northeast of Gölbası, 37°50.22'N, 37°41.09'E, Türkiye; holotype: IUSHM 2013-1050]. — Synonyms: None. — Revisions: None. — Illustration: Esmaeili et al. (2014: 265, figs. 7b, 9-11).

**Status in Türkiye.** Recorded from Türkiye in the original description by Esmaeili et al. (2014). Listed in previous checklists from Türkiye by Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Upper Euphrates River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: upper Euphrates River (Fırat Nehri) basin (Persian Gulf tributary), Adıyaman Province (Türkiye) — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits fast-flowing sections of rivers and even very small streams, usually in rapids and riffles with coarse gravel or rocks. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

#### Cyprinoidei

#### Cyprinidae Rafinesque, 1815

#### Labeoninae Bleeker, 1859 (labeonines)

Crossocheilus caudomaculatus => Garra caudomaculata Crossocheilus klatti => Garra klatti Discognathus rufus => Garra rufa Discognathus variabilis => Variable garra

### Garra caudomaculata (Battalgil, 1942) [N] — Antakya minnow/Lekelisaz balığı

**Taxonomy.** Original description: *Hemigrammocapoeta caudomaculata* Battalgil, 1942: 296, fig. 7 [Amik Lake, Antakya, Hatay Province, southern Türkiye; no types known]. — Synonyms: *Discognathus lamta* (non-Hamilton, 1822); *Crossocheilus caudomaculatus* (Battalgil, 1942). — Revisions: None. — Illustration: Battalgil (1942: fig. 7).

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1942). Listed in previous checklists from Türkiye by Fricke et al. (2007); Çiçek et al. (2015). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Orontes River basin. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor: Amik Lake basin, Orontes River basin, Türkiye, and Syria. — Distribution in ecoregions: 437-Orontes. — Habitat: This species lives in slowly running rivers and streams, densely vegetated springs, and wetlands. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — No keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Garra culiciphaga* (Pellegrin, 1927) [N] — Red stripe barb/Saz balığı

**Taxonomy.** Original description: *Hemigrammocapoeta culiciphaga* Pellegrin, 1927: 34 [Adana, Asia Minor (Türkiye); syntypes: BMNH 1927.5.7.7 (1), MNHN 1926-0396 (6), MSNM 27 (ex MSNM 4411 and ex MNHN) (1)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Pellegrin (1927). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: BMNH, MSNM.

**Distribution and habitat.** Distribution in Türkiye: Seyhan, Ceyhan and Duğu Akdeniz river basins. — Distribution in river basins: 17-Doğu Akdeniz, 18-Seyhan, 20-Ceyhan. — General distribution: Asia Minor: Türkiye. — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits slowly moving rivers and streams, densely vegetated springs, and wetlands. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### *Garra kemali* (Hankó, 1925) [E] — Tuz golden barb/Saz balığı

**Taxonomy.** Original description: *Varicorhinus kemali* Hankó, 1925: 149, Pl. 3 (fig. 4) [Ereğli, Türkiye; syntypes: (5) MNHN 1928-0219 (1)]. — Synonyms: *Hemigrammocapoeta kemali* (Hankó, 1925). — Revisions: None. — Illustration: None.
**Status in Türkiye.** Recorded from Türkiye in the original description by Hankó (1925). Listed in previous checklists from Türkiye by Kuru (2004) as *Hemigrammocapoeta kemali*; Geldiay and Balık (2007) as *Hemigrammocapoeta kemali*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: MNHN.

**Distribution and habitat.** Distribution in Türkiye: Konya endorheic basin. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: central Anatolian lake tributaries, Isparta and Konya provinces (Türkiye); possibly introduced in Hirfanli reservoir. — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits densely vegetated marshes, streams, and lakes. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## *Garra klatti* (Kosswig, 1950) [E] — Anatolian golden barb /Saz balığı

**Taxonomy.** Original description: *Tylognathus* (*Neotylognathus*) klatti Kosswig, 1950: 409, fig. 4 [Egridir (sic, Eğirdir), Türkiye; holotype: ZMUI]. — Synonyms: *Chrossocheilus klatti* (Kosswig, 1950); *Hemigrammocapoeta menderesensis* Küçük, Bayçelebi, Güçlü & Gülle 2015; *Garra menderesensis* (Küçük, Bayçelebi, Güçlü & Gülle 2015). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Kosswig (1950). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007) as *Crossocheilus klatti*; Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMUI.

**Distribution and habitat.** Distribution in Türkiye: Konya Endorheic and Büyük Menderes River basins. — Distribution in river basins: 7-Büyük Menderes, 16-Konya. — General distribution: Asia Minor: Lakes Eğirdir and Işıklı and Büyük Menderes River basin (Aegean Sea tributary), Anatolia (Türkiye). — Distribution in ecoregions: 429-Western Anatolia, 431-Central Anatolia. — Habitat: This species inhabits densely vegetated shores of streams, springs, and lakes. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, COM, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action. *Garra nana* (Heckel, 1843) => not occurring in Türkiye (see Çiçek et al., 2020)

*Garra orontesi* Bayçelebi, Kaya, Turan & Freyhof, 2021 [N] — Orontes garra/Vantuzlu balık

**Taxonomy.** Original description: *Garra orontesi* Bayçelebi, Kaya, Turan & Freyhof, 2021: 171, figs. 1-5 [Stream Karasu below Tahtaköprü dam, Gaziantep Province, Türkiye, 36.8520°N, 36.6861°E; holotype: FFR 4034]. — Synonyms: None. — Revisions: None. — Illustration: Bayçelebi et al. (2021: figs. 1-5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Bayçelebi et al. (2021a). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Orontes River drainage. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor: Orontes River drainage, eastern Mediterranean Sea basin, Türkiye and Syria (and possibly Lebanon). — Distribution in ecoregions: 437-Orontes. — Habitat: This species lives in slowly running rivers and streams, densely vegetated springs, and wetlands. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — No keystone species. — Decline status: Unknown. — Low priority for conservation action.

### *Garra rezai* Mousavi-Sabet, Eagderi, Saemi-Komsari, Kaya & Freyhof, 2022 [N] — Garra/Vantuzlu balık

**Taxonomy.** Original description: *Garra rezai* Mousavi-Sabet, Eagderi, Saemi-Komsari, Kaya & Freyhof, 2022: 423, figs. 2-9 [Stream Bouein-Sofla near Bahia, Kurdistan Province, Iran, 35.9378°N, 45.9363°E; holotype: GUIC 7979]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Mousavi-Sabet et al. (2022). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Yanarsu, Tigris rivers drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Middle East: upper Tigris River drainage, Iran and Türkiye and possibly Iraq. — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a very wide range of flowing water habitats, from fast-flowing headwaters to moderately flowing ones. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Garra rufa* (Heckel, 1843) [N] — Red garra/Vantuzlu balık-Doktor balık

**Taxonomy.** Original description: *Discognathus rufus* Heckel, 1843: 1071 (81) [Aleppo, Syria; lectotype: NMW 53240 (108 mm SL)]. — Synonyms: *Discognathus obtusus* Heckel, 1843; *Discognathus crenulatus* Heckel, 1847. — Revisions: None. — Illustration: Heckel (1843: Pl. 8 (fig. 2)) as *Discognathus rufus*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Garra rufa obtusa*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris river basins. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Euphrates and Tigris river basins (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a very wide range of habitats with flowing water, from fast-flowing headwaters and reservoirs to polluted canals and large lowland rivers. Usually absent from standing waters. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but none is serious enough to seriously impact this species. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

*Garra turcica* Karaman, 1971 [E] — Ceyhan garra/ Yapışkan balık

**Taxonomy.** Original description: *Garra rufa turcica* Karaman, 1971: 234, Pl. 2 (fig. 3) [Ceyhan, Türkiye; holotype (unique): ZMH H1687]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Karaman (1971). Listed in previous checklists from Türkiye by Bayçelebi (2020) and Çiçek et al. (2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Seyhan and Ceyhan River basins. — Distribution in river basins: 17-Doğu Akdeniz, 18-Seyhan, 20-Ceyhan. — General distribution: Asia Minor: rivers Kızıl (Mersin), Seyhan, Ceyhan and the small coastal streams south of the Ceyhan until Arsuz (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits a wide range of standing and slowly flowing waters, such as rivers, springs, and streams. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

## Garra variabilis (Heckel, 1843) [N] — Small-mouth garra/Yapışkan balık

**Taxonomy.** Original description: *Discognathus variabilis* Heckel, 1843: 1069 (79) [Aleppo, Syria; Mosul, Iraq; syntypes: NMW 53238-40 (3, 8, ca. 10), 53260-69 (1, 2, 2, 2, 3, 2, 2, 2, 2, 2), 53272 (4); SMF 403 (ex NMW in 1844) (4); ZMB 3301 (4) (ex NMW)]. — Synonyms: None. — Revisions: None. — Illustrations: Heckel (1843: Pl. 8 (fig. 1)) as *Discognathus variabilis*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris River basin (Türkiye, Syria, and Iraq). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a wide range of standing and slowly flowing waters, such as rivers, springs, marshes, and streams. It seems to be quite tolerant of pollution and also inhabits reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but none seem to be serious enough to really impact this species. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

*Hemigrammocapoeta caudomaculata => Garra caudomaculata* 

Hemigrammocapoeta culiciphaga => Garra culiciphaga Hemigrammocapoeta kemali => Garra kemali Tylognathus (Neotylognathus) klatti => Garra klatti Tylognathus klatti => Garra klatti Varicorhinus kemali => Garra kemali

Torinae Karaman, 1971 (large barbs)

### Arabibarbus grypus (Heckel, 1843) [N] — Shabout/ Şaput-Şabot

**Taxonomy.** Original description: *Barbus grypus* Heckel, 1843a: 1048 (58) [Tigris River, Mosul, Iraq; syntypes: NMW 54160-61 (1, 2), 91023 (1); SMF 2613 (1, dry), ZMB 8788 (1)]. — Synonyms: *Tor grypus* (Heckel, 1843); *Labeobarbus kotschyi* Heckel, 1843. — Revisions: Borkenhagen (2014: 1179, 1189). — Illustration: Borkenhagen (2014: 1184, fig. 1C).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Tor grypus*; Geldiay and Balık

(2007) as *Tor grypus*; Fricke et al. (2007) as *Barbus grypus*; Kuru et al. (2014) as *Barbus grypus*; Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris river basins. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates and Tigris river systems and rivers (Türkiye, Iraq, Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits big rivers as well as large reservoirs. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: ABS, CON, CLI, EUT, FIT, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. Barbus chantrei => Carasobarbus chantrei Barbus grypus => Arabibarbus grypus Barbus kosswigi => Carasobarbus kosswigi Barbus luteus => Carasobarbus luteus Barbus parieschanica => Carasobarbus luteus

*Barynotus verhoeffi => Carasobarbus chantrei Carasobarbus canis* (Valenciennes, 1842) => not

occurring in Türkiye (see Çiçek et al., 2020)

## *Carasobarbus chantrei* (Sauvage, 1882) [N] — Orontes himri/Bıyıklı balık

Taxonomy. Original description: Labeobarbus chantrei Sauvage, 1882: 165 [Antakya Lake (=Lake Amik) (36°12'14"N, 36°09'26"E), Hatay Province, Türkiye; lectotype: MNHN A-3866; lectotype selected by Krupp (1985a: 19) and again later (same specimen) by Ekmekçi & Bănărescu (1998: 92)]. — Synonyms: Barbus chantrei (Sauvage, 1882); Barbus canis (non-Valenciennes, 1842); Tor canis (non-Valenciennes, 1842); Barynotus verhoeffi Battalgil, 1942. — Revisions: Ekmekçi and Bănărescu (1998: 92); Borkenhagen et al. (2011: 328); Borkenhagen and Krupp (2013: 17). — Illustration: Borkenhagen and Krupp (2013: 19, figs. 10-11).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: MNHN.

**Distribution and habitat.** Distribution in Türkiye: Orontes River system. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor and Middle East: Türkiye and Syria. — Distribution in ecoregions: 437-Orontes. — Habitat: This species inhabits lowland rivers, backwaters, lakes, reservoirs, springs, and ponds, rarely in fast-flowing waters. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NT (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## *Carasobarbus kosswigi* (Ladiges, 1960) [N] — Kosswig's barb/Bıyıklı balık

**Taxonomy.** Original description: *Cyclocheilichthys kosswigi* Ladiges, 1960: 135, fig. 7 [Batman suyu (Batman Çayi), Türkiye; holotype: ZMH H 1148]. — Synonyms: *Barbus kosswigi* (Ladiges, 1960); *Kosswigobarbus kosswigi* (Ladiges, 1960). — Revisions: Borkenhagen et al. (2011: 328); Borkenhagen and Krupp (2013: 32). — Illustration: Ladiges (1960: fig. 7).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Kosswigobarbus kosswigi*; Geldiay and Balık (2007) as *Kosswigobarbus kosswigi*; Fricke et al. (2007) as *Kosswigobarbus kosswigi*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Tigris-Euphrates system. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris-Euphrates system (Iraq, Syria, Türkiye, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits lowland rivers, backwaters, lakes, reservoirs, springs, and ponds, rarely in fast-flowing waters. It seems to inhabit summer-warm mountain river stretches with fast-flowing water and gravel bottoms. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

*Carasobarbus luteus* (Heckel, 1843) [N] — Mesopotamian himri/Bizir

Taxonomy. Original description: *Systomus luteus* Heckel, 1843a: 1061 (71) [Mosul, Iraq; lectotype: NMW 54253: 2; lectotype selected by Borkenhagen and Krupp (2013: 37)]. — Synonyms: *Barbus luteus* (Heckel, 1843); *Systomus albus* Heckel, 1843; *Systomus albus alpina* Heckel, 1847; *Barbus parieschanica* Wossughi, Khoshzahmat & Etemadfar 1983. — Revisions: Ekmekçi and Bănărescu (1998: 90); Borkenhagen et al. (2011: 328); Borkenhagen and Krupp (2013: 34). — Illustrations: Heckel (1843: Pl. 6 (fig. 1)); Borkenhagen and Krupp (2013: 38, figs. 23-24).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None. **Distribution and habitat.** Distribution in Türkiye: Tigris and Euphrates river basins. — Distribution in river basins: 21-Fırat-Dicle. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris and Euphrates and adjacent basins (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a very wide range of habitats, from small lowland streams and springs to marshes, lakes, and reservoirs to large and brackish lowland rivers. Freshwater.

Economic importance. Locally commercially important.

Conservation. Conservation status in Türkiye: Unknown. - IUCN: LC (IUCN, 2023). - Threats: While there are many threats in the area, none is strong enough to threaten this ubiquitous species. - Low sensitivity to human activities. - Not considered a keystone species. - Decline status: Stable. — Low priority for conservation action. Carasobarbus sublimus (Coad & Najafpour, 1997) => not occurring in Türkiye (see Çiçek et al., 2020) *Cyclocheilichthys kosswigi => Carasobarbus kosswigi* Kosswigobarbus kosswigi => Carasobarbus kosswigi *Labeobarbus chantrei => Carasobarbus chantrei Labeobarbus kotschyi* => *Arabibarbus grypus Systomus alpina => Carasobarbus luteus* Systomus luteus => Carasobarbus luteus *Systomus albus => Carasobarbus luteus Tor grypus => Arabibarbus grypus* 

#### Cyprininae Rafinesque, 1815 (carps)

*Carassius auratus* (Linnaeus, 1758) [I] — Goldfish/ Kırmızı havuz balığı

**Taxonomy.** Original description: *Cyprinus auratus* Linnaeus, 1758: 322 [China; Japanese rivers; no types known]. — Synonyms: None. — Revisions: None. — Illustration: Guo (2021: 472, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2022a). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: Introduced to many basins of Türkiye. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan. - General distribution: East Asia: China and Japan; introduced widely elsewhere; many cultivated goldfish varieties. -Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 437-Orontes. - Habitat: This species inhabits rivers, lakes, reservoirs, ponds, and ditches with stagnant or slow-flowing water. It occurs in eutrophic fresh and brackish waters, well-vegetated ponds, and canals. Freshwater.

**Economic importance.** Valuable for the aquarium trade.

**Reasons of introduction.** Ornamental fish industry. **Conservation.** Not relevant (introduced species).

## *Carassius carassius* (Linnaeus, 1758) [I] — Crucian carp/Kahverengi havuz balığı

**Taxonomy.** Original description: *Cyprinus carassius* Linnaeus, 1758: 321 [European ponds; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2022a). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Trace region. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Europe; widely introduced elsewhere. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace. — Habitat: This species inhabits rivers, lakes, reservoirs, ponds, and ditches with stagnant or slow-flowing water. It occurs in eutrophic fresh and brackish waters, wellvegetated ponds, and canals. Freshwater, brackish.

**Economic importance.** Locally commercially important.

**Reasons of introduction.** Unknown: Inadvertently introduced by transboundary waterways for no known reason or method.

Conservation. Not relevant (introduced species).

**Remarks.** *Carassius gibelio* was previously misidentified in Türkiye as *C. carassius*. Therefore, distribution records in the previous studies in Anatolia are wrong. It is probable that this species will be found in Türkiye; an introduction from Trace region in Bulgaria and/or Greece may be expected.

## *Carassius gibelio* (Bloch, 1782) [I] — Gibel carp/Çin sazanı-İsrail sazanı

**Taxonomy.** Original description: *Cyprinus gibelio* Bloch, 1782: 71, Pl. 12 [Olsche River pond, Odra River system, near Czech Teschen, 49°47'11"N, 18°35'24"E, Czech Republic; neotype: ZMB 33979]. — Synonyms: None. — Revisions: None. — Illustration: Jawad et al. (2012).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2022a). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Introduced to nearly all basins of Türkiye. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh, 24-Aras, 25-Van Lake. — General distribution: Eurasia: Eastern Europe, Russia to northeastern China; introduced elsewhere. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 434-Kura - South Caspian Drainages, 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates, 444-Lake Van. — Habitat: This species inhabits rivers, lakes, reservoirs, ponds, and ditches with stagnant or slowflowing water. It occurs in eutrophic fresh and brackish waters, well-vegetated ponds, and canals. Freshwater, brackish.

**Economic importance.** Locally commercially important.

**Reasons of introduction.** Unknown: Inadvertently introduced by transboundary waterways for no known reason or method.

Conservation. Not relevant (introduced species).

Remarks. May be conspecific with Carassius auratus.

## *Cyprinion kais* Heckel, 1843 [N] — Kais kingfish/Beni balığı

Taxonomy. Original description: *Cyprinion kais* Heckel, 1843a: 1066 (76) [Aleppo, Syria and Mosul, Iraq; lectotype: NMW 52803 (148.1 mm); lectotype selected by Banarescu and Herzig-Straschil (1995: 416)]. — Synonyms: *Cyprinion cypris* Heckel, 1843. — Revisions: Bănărescu and Herzig-Straschil (1995: 416). — Illustration: Heckel (1843b: pl. 7, fig. 2).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris river basins. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates and Tigris River systems (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits medium-sized and large rivers and streams. Known to inhabit canals but seem to be absent from reservoirs. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB, EUT. — Low sensitivity to human activities. — No keystone species. — Decline status: Decreasing. — Low priority for conservation action.

## *Cyprinion macrostomus* Heckel, 1843 [N] — Tigris kingfish/Beni balığı

**Taxonomy.** Original description: *Cyprinion macrostomus* Heckel, 1843a: 1065 (75) [Aleppo, Syria or Mosul, Iraq; lectotype: NMW 52805-1; lectotype selected by Banarescu and Herzig-Straschil (1995: 414)]. — Synonyms: *Cyprinion macrostomum* Heckel, 1843; Cyprinion neglectus Heckel, 1847. — Revisions: Bănărescu and Herzig-Straschil (1995: 414). — Illustration: Heckel (1843b: pl. 7, fig. 1).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris river basins. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates and Tigris River systems (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits medium-sized and large rivers and streams. Known to inhabit canals but seem to be absent from reservoirs. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023) as *C. macrostomum.* — Threats: There are many threats in the area none strong enough to impact this species seriously. — Low sensitivity to human activities. — No keystone species. — Decline status: Decreasing. — Low priority for conservation action.

*Cyprinus auratus => Carassius auratus* 

*Cyprinus carassius => Carassius carassius* 

### *Cyprinus carpio* Linnaeus, 1758 [N] — Common carp/ Sazan

**Taxonomy.** Original description: *Cyprinus carpio* Linnaeus, 1758: 320 [Europe; syntypes: BMNH 1853.11.12.139 (1, skin)]. — Synonyms: None. — Revisions: Berg (1949: 831). — Illustration: Berg (1949: 833, fig. 572).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: Widespread in all basins of Türkiye and translocated to newly constructed dams for fish enchantment. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh, 24-Aras, 25-Van Lake. — General distribution: Western Europe (native to Black Sea basin, possibly also Caspian and Aral seas basins), widely introduced worldwide, also many multicolor varieties. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 434-Kura - South Caspian Drainages, 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates, 444-Lake Van. — Habitat: This species inhabits warm, deep, slow-flowing, and still waters, such as lowland rivers and large, well-vegetated lakes. Introduced in all types of water bodies. Spawns along shorelines or in backwaters. Successful survival of larvae is only possible in warm water among shallow submerged vegetation. Freshwater, brackish.

### Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

Cyprinus gibelio => Carassius gibelio Barbinae Bleeker, 1859 (barbels)

#### *Barbus anatolicus* Turan, Kaya, Geiger & Freyhof, 2018 [E] — Barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus anatolicus* Turan, Kaya, Geiger & Freyhof, 2018: 542, figs. 2-4, 5a, 6a, 7 [Kızılırmak River at Kesikköprü, Kırşehir Province, Türkiye, 38°57'39"N, 34°11'57"E; holotype: FFR 08811]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2018: 542, figs. 2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2018). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Kızılırmak and Yeşilırmak River drainages. — Distribution in river basins: 14-Yeşilırmak, 15-Kızılırmak. — General distribution: Asia Minor: southern Black Sea basin: Kızılırmak and Yeşilırmak River drainages (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits streams and small rivers with fast, clear, and well-oxygenated water and gravel substrates. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

*Barbus barbulus* => *Luciobarbus barbulus* 

*Barbus barbus* (Linnaeus, 1758) => not occurring in Türkiye (see Çiçek et al., 2020)

### Barbus bergi Chichkoff, 1935 [N] — Barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus barbus bergi* Chichkoff, 1935: 305 [Riesova Rieca, Bulgaria; syntypes: whereabouts unknown]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007) as *Barbus barbus*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Trachea region. — Distribution in river basins: 2-Marmara. — General distribution: Southeastern Europe: Bulgaria and Türkiye. — Distribution in ecoregions: 418-Dniester - Lower Danube. — Habitat: This species inhabits fast- to moderate-flowing rivers and streams. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Barbus capito* => *Luciobarbus capito* 

## *Barbus cyclolepis* Heckel, 1837 [N] — Round-scaled barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus cyclolepis* Heckel, 1837: 155 [Maritza River, eastern Rumelia, Balkan region of Bulgaria; lectotype: NMW 54734]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Western basins of Türkiye. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Eastern Europe: Aegean Sea and Black Sea basins. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace. — Habitat: This species inhabits streams and small rivers with fast, clear, and well-oxygenated water and gravel substrates. It is usually common in small streams and absent from large rivers. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Stable. — Moderate priority for conservation action.

## *Barbus cyri* De Filippi, 1865 [N] — Kura barbel/Bıyıklı balık

**Taxonomy.** Original description: Barbus cyri De Filippi, 1865: 358 [Kura River near Tiflis, Georgia, Eurasia; holotype (unique): MZUT 690]. — Synonyms: Barbus angustatus Kamensky, 1899; Barbus armenicus Kamensky, 1899; Barbus bortschalinicus Kamensky, 1899; Barbus caucasicus Kessler, 1877; Barbus cyri var. chaldanica Kamensky, 1899; Barbus goktschaicus Kessler, 1877; Barbus sursunicus Kamensky, 1899; Barbus cyri var. tiflissica Kamensky, 1899; Capoeta fundulus var. toporovanica Kamensky, 1897; Barbus toporovanicus (Kamensky, 1897). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: southern Caspian Sea basin: Kura and Aras (Araks) River systems, Lake Urmia and Transcaspian Atrek basins (Türkiye, Azerbaijan, and Iran). — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits streams and small rivers with fast, clear, and well-oxygenated water and gravel substrates. It is usually common in small streams and absent from large rivers. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Barbus ercisianus* Karaman, 1971 [E] — Ercis barbel/ Bıyıklı balık

**Taxonomy.** Original description: *Barbus plebejus ercisianus* Karaman, 1971: 204 [Ercis, Lake Van and road from Ercis to Patnos, Türkiye; syntypes: ZMH H4208 and 3566 (5), H3567 (13)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Karaman (1971). Listed in previous checklists from Türkiye by Kuru (2004) as *Barbus plebejus ercisianus*; Geldiay and Balık (2007) as *Barbus plebejus ercisianus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Van Lake Basin. — Distribution in river basins: 25-Van Lake. — General distribution: Asia Minor: Lake Van tributaries, Van and Bitlis provinces (Türkiye). — Distribution in ecoregions: 444-Lake Van. — Habitat: This species inhabits streams and small rivers with fast, clear, and well-oxygenated water and gravel substrates. It is usually common in small streams and absent from large rivers. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

**Remarks:** According to Khaefi et al. (2017), *B. ercisianus* is a synonym of *Barbus lacerta* but a valid species according to the CofF (Fricke et al., 2023). This situation needs to be clarified with a detailed study. Most probably, *B. ercisianus* is the synonym of *Barbus lacerta* Heckel, 1843.

### *Barbus escherichii* Steindachner, 1897 [E] — Ankara barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus lacerta* var. *escherichii* Steindachner, 1897: 688 (4), Pl. 2 (figs. 1-1a) [Ankara (Angora), Türkiye; syntypes: (several) NMW 54086-87 (4, 4), 54158 (7), 54232-33 (1, 3), 78221 (1)]. — Synonyms: *Luciobarbus escherichii* (Steindachner, 1897). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Steindachner (1897). Listed in previous checklists from Türkiye by Kuru (2004) as *Barbus plebejus escherichi*; Geldiay and Balık (2007) as *Barbus plebejus escherichi*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: NMW.

**Distribution and habitat.** Distribution in Türkiye: Northern basins of Anatolia. — Distribution in river basins: 12-Sakarya, 13-Batı Karadeniz. — General distribution: Asia Minor: northern Anatolian Black Sea watersheds (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits large rivers and medium-sized streams with gravel bottoms. Spawns in riffles and rapids. Inhabits reservoirs from which it migrates to inflowing streams or rivers to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. Barbus esocinus => Luciobarbus esocinus *Barbus ida* Güçlü, Kalayci, Özuluğ, Küçük & Turan, 2021 [E] — Ida barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus ida* Güçlü, Kalayci, Özuluğ, Küçük & Turan, 2021: 1, figs. 1-5 [Gönen and Biga streams, western Anatolia; holotype IFC-ESUF 03-0518]. — Synonyms: None. — Revisions: None. — Illustration: Güçlü et al. (2021: 1, figs. 1-5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Güçlü et al. (2021). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Gönen and Biga streams (southern Marmara drainages. — Distribution in river basins: 2-Marmara, 3-Susurluk. — General distribution: Eastern Europe: Aegean Sea and Black Sea basins. — Distribution in ecoregions: 423-Thrace. — Habitat: This species inhabits large rivers and mediumsized streams with gravel bottoms. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Barbus kersin => Luciobarbus kersin Barbus kessleri => Luciobarbus mursa Barbus kosswigi => Barbus lacerta

### Barbus lacerta Heckel, 1843 [N] — Lizard barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus lacerta* Heckel, 1843a: 1044 (54) [Kueik (Qwaik) River near Aleppo, Syria; lectotype: NMW 54227-1; lectotype selected by Bogutskaya in Banarescu and Bogutskaya (2003: 251) but not at this time (Jan. 2004) acceptable according to the 1999 code]. — Synonyms: *Barbus scincus* Heckel, 1843; *Barbus kosswigi* Karaman, 1971. — Revisions: Berg (1949: 695). — Illustration: Heckel (1843b: pl. 2, fig. 1).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Barbus plebejus lacerta*; Geldiay and Balık (2007) as *Barbus plebejus lacerta*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris river basins. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates and Tigris River basins (Türkiye, Syria, Iran, and Iraq). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits mountain and piedmont zones in streams and small rivers with fast, clear, and well-oxygenated water and gravel substrates. It is usually common in small streams and absent from large rivers. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Barbus lorteti* => Luciobarbus lorteti

Barbus lydianus => Luciobarbus lydianus

Barbus mursa => Luciobarbus mursa

Barbus niluferensis Turan, Kottelat & Ekmekçi, 2009 [E] — Simav Barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus niluferensis* Turan, Kottelat & Ekmekçi, 2009: 21, figs. 2b, 3b, 5 [Karaköprü Stream, entering Doganci Reservoir, Nilüfer River drainage, 40°04'N, 29°00'E, Orhangazi County, Bursa Province, Türkiye; holotype: FFR 381]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2009). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Nilufer River, Susurluk basin. — Distribution in river basins: 2-Marmara, 3-Susurluk. — General distribution: Asia Minor: Nilüfer River basin (Marmara Sea tributary), Bursa Province (Türkiye). — Distribution in ecoregions: 423-Thrace. — Habitat: This species inhabits headwater streams with fast- to moderately running water and gravel bottoms. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: NT. — IUCN: NT (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### *Barbus oligolepis* Battalgil, 1941 [E] — Marmara barbel/ Bıyıklı balık

**Taxonomy.** Original description: *Barbus tauricus oligolepis* Battalgil, 1941: 178 [Simav River at Bursa, Asia Minor; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1941). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Susurluk and Marmara basins. — Distribution in river basins: 2-Marmara, 3-Susurluk. — General distribution: Asia Minor: Marmara Sea tributaries, Bursa Province (Türkiye). — Distribution in ecoregions: 423-Thrace. — Habitat: This species inhabits the lower part of rivers and streams with fast- to moderately fast-flowing water, riffles, and pool structures. It also inhabits reservoirs and lakes, from where it migrates to inflowing rivers to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but none seem to be strong enough to really threaten this species. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Barbus pectoralis* => *Luciobarbus pectoralis* 

### Barbus pergamonensis Karaman, 1971 [N] — Bergama barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus plebejus pergamonensis* Karaman, 1971: 203 [Bergama, Türkiye; syntypes: ZMH H4209 and 3898 (not 3889) (5 or 6), J3602 (7 or 8)]. — Synonyms: *Luciobarbus pergamonensis* (Karaman, 1971). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Karaman (1971). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Bakir and Büyük Menderes rivers. — Distribution in river basins: 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Eurasia: Greece and Türkiye. — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits streams and the upper parts of rivers. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Barbus plebejus* Bonaparte, 1839 => not occurring in Türkiye (see Çiçek et al., 2020)

Barbus plebejus kosswigi => Barbus lacerta

*Barbus rajanorum* Heckel, 1843 => not occurring in Türkiye (see Çiçek et al., 2020)

## *Barbus rionicus* Kamensky, 1899 [N] — Barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus tauricus* var. *rionica* Kamensky, 1899: 30 [Rioni River, Georgia, Eurasia; syntypes: (6) not at ZIN]. — Synonyms: *Barbus rionica* Kamensky, 1899; *Barbus tauricus* var. *artvinica* Kamensky, 1899; *Barbus tauricus* var. *artvinicus* Kamensky, 1899; *Barbus tauricus* var. *artvinicus* Kamensky, 1899; *Barbus tauricus* var. *artvinicus* Kamensky, 1899. — Revisions: None. — Illustration: None. **Status in Türkiye.** Listed in previous checklists from Türkiye by Çiçek et al. (2016, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Choruck River drainage. — Distribution in river basins: 23-Çoruh. — General distribution: Eurasia: western Caucasus: Black Sea tributaries (Choruh to Bzyb River drainages) of southern Russia, Georgia, and Türkiye. — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species inhabits headwater streams with fast- to moderately running water and gravel bottoms. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Barbus subquincunciatus => Luciobarbus

subquincunciatus

*Barbus tauricus* Kessler, 1877 => not occurring in Türkiye (see Çiçek et al., 2020)

Barbus tauricus polylepis => Barbus cyclolepis Barbus xanthopterus => Luciobarbus xanthopterus

### *Barbus xanthos* Güçlü, Kalayci, Küçük & Turan, 2020 [E] — Barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus xanthos* Güçlü, Kalayci, Küçük & Turan, 2020: 1310, figs. 1-4a, 5 upper [Eşen Stream at Ören-Seydikemer, Muğla Province, Türkiye, 36°44′51″N, 29°23′15″E; holotype: IFC-ESUF 03-0512]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Güçlü et al. (2020). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: IFC-ESUF.

**Distribution and habitat.** Distribution in Türkiye: Southeastern Eagean drainage. — Distribution in river basins: 7-Büyük Menderes, 8-Batı Akdeniz. — General distribution: Asia Minor: eastern Mediterranean river tributaries (southwestern Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits streams and small rivers with fast, clear, and welloxygenated water and gravel substrates. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Capoeta angorae => Capoeta damascina

Capoeta antalyensis (Battalgil, 1944) [E] — Antalya barb/Siraz balığı

**Taxonomy.** Original description: *Varicorhinus antalyensis* Battalgil, 1944: 132, fig. 4 [Antalya, southwestern Türkiye; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1944). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: South-western Anatolia. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Mediterranean tributaries around Antalya. — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits fast-flowing stretches of rivers and larger streams with gravel or rocky substrates, also known as reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

*Capoeta aydinensis* Turan, Küçük, Kaya, Güçlü & Bektaş, 2017 [E] — Aydin barb/Siraz balığı

**Taxonomy.** Original description: *Capoeta aydinensis* Turan, Küçük, Kaya, Güçlü & Bektaş, 2017: 437, figs. 1ab, 2a-d, 3 [Aydin Province, Çine Stream, Büyük Menderes drainage, 37°25'N, 28°08'E, Türkiye; holotype: FFR 01926]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Western basins of Türkiye. Distribution in river basins: 7-Büyük Menderes, 8-Batı Akdeniz. — General distribution: Asia Minor: Büyük Menderes basin, western Anatolia (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits a very wide range of all kinds of permanent waterbodies, at least seasonally, with gravel or running water. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Capoeta baliki => Capoeta tinca* 

# *Capoeta banarescui* Turan, Kottelat, Ekmekçi & Imamoglu, 2006 [N] — Colchic scraper/Siraz balığı

**Taxonomy.** Original description: *Capoeta banarescui* Turan, Kottelat, Ekmekçi & Imamoglu, 2006: 427, fig. 5 [Çoruh drainage, stream Tortum, 100 km north of Erzurum 40°34'N, 41°36'E, Tortum District, Artvin, Türkiye; holotype: ESFM-PISI/2004-072]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2006). Listed in previous checklists from Türkiye by Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: ESFM-PISI.

**Distribution and habitat.** Distribution in Türkiye: Choruck River basin. — Distribution in river basins: 23-Çoruh. — General distribution: Eurasia: Çoruh River drainage (Türkiye and Georgia). — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species inhabits a wide range of habitats, mostly rivers and streams, but might also inhabit reservoirs from which it migrates to inflowing streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### *Capoeta bergamae* Karaman, 1969 [E] — Bergama barb/ Siraz balığı

**Taxonomy.** Original description: *Capoeta capoeta bergamae* Karaman, 1969: 29, Pl. 1 (fig. 5), Pl. 4 (fig. 3) [Southwestern Anatolia, Türkiye; syntypes: ZMH H4146 and 3897 (7), 3597 (5), 3603 (2)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Karaman (1969). Listed in previous checklists from Türkiye by Kuru (2004) as *Capoeta capoeta bergamae*; Geldiay and Balık (2007) as *Capoeta capoeta bergamae*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Western basins of Türkiye. — Distribution in river basins: 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes. — General distribution: Asia Minor: Aegean Sea watersheds (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits a wide range of rivers and streams with clean, at least seasonally running water. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: NT. — IUCN: NT (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## *Capoeta caelestis* Schöter, Özuluğ & Freyhof, 2009 [E] — Taurus scraper/Siraz balığı

**Taxonomy.** Original description: *Capoeta caelestis* Schöter, Özuluğ & Freyhof, 2009: 230, figs. 1-4 [Göksu River at Göksu, below Göksu power station, approximately 80 kilometers northwest of Silifki, 37°02.74'N, 32°44.56'E, Karaman Province, Türkiye; holotype: IUSHM 37930-252]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Schöter (2009). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Göksu River drainages. — Distribution in river basins: 17-Doğu Akdeniz. — General distribution: Asia Minor: coastal streams between Dim Stream in the west to Göksu River in the east (Mediterranean drainages, Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits a wide variety of stream and river habitats, from coastal streams up to mountain rivers with gravel substrates, often being the only fish species. Spawns in fast-flowing waters of rapids and riffles. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

**Remarks.** Genetic differences between *C. caelestis* and *C. damascina* is 1.2% (K2P) (Zareian and Esmaeili, 2017). This value is even lower than the variation between different regional populations within the distribution range of *C. damascina*. Furthermore, there is no clear isolation between the distribution areas of these species. Most probably, *C. caelestis* is the synonym of *Capoeta damascina* (Valenciennes, 1842).

### Capoeta capoeta (Güldenstädt, 1773) [N] — Transcaucasian barb/Siraz balığı, aptalca

Taxonomy. Original description: *Cyprinus capoeta* Güldenstädt, 1773: 508, Pl. 8 [Tiflis, Caspian Sea; no types known]. — Synonyms: *Varicorhinus capoeta* (Güldenstädt, 1773); *Cyprinus fundulus* Güldenstädt, 1787; *Capoeta hohenackeri* Kessler, 1877; *Capoeta* (*Scaphiodon*) *steindachneri* Kessler, 1872; *Capoeta gibbosa* Nikolskii, 1897; *Capoeta ekmekciae* Turan, Kottelat, Kirankaya & Engin, 2006. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Güldenstädt (1773). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras and Choruk River basin. — Distribution in river basins: 23-Çoruh, 24-Aras. — General distribution: Eurasia: eastern Türkiye and southern Caspian Sea watersheds of Georgia, Azerbaijan, Armenia, and Iran. — Distribution in ecoregions: 433-Western Transcaucasia, 434-Kura - South Caspian Drainages. — Habitat: This species inhabits a very wide range of rivers, streams, and lakes, including reservoirs. From lakes and reservoirs, they migrate to rivers to spawn. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

Capoeta damascina (Valenciennes, 1842) [N] — Mesopotamian barb/Kara balık-Siraz

Taxonomy. Original description: *Gobio damascinus* Valenciennes in Cuvier & Valenciennes, 1842: 314, pl. 482 [Damascus, Syria; lectotype: MNHN 0000-4494; lectotype selected by Krupp and Schneider (1989: 365)]. — Synonyms: *Scaphiodon fratercula* Heckel, 1843; *Scaphiodon socialis* Heckel, 1843; *Scaphiodon peregrinorum* Heckel, 1843; *Scaphiodon fratercula* Heckel, 1843; *Capoeta syriaca* (Valenciennes, 1844); *Varicorhinus capoeta angorae* Hankó, 1925; *Capoeta angorae* (Hankó, 1925); *Barbus belayewi* Menon 1960; *Capoeta capoeta kosswigi* Karaman, 1969; *Capoeta kosswigi* Karaman, 1969. — Revisions: Alwan et al. (2016: 17). — Illustration: Valenciennes in Cuvier and Valenciennes (1842: pl. 482).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Seyhan, Ceyhan, Orontes, and Euphrates basins. — Distribution in river basins: 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 25-Van Lake. — General distribution: Asia Minor and Middle East: Levant, Mesopotamia, and southeastern Anatolia (Türkiye, Syria, Iraq, Iran, Israel, Lebanon, and Jordan). — Distribution in ecoregions: 432-Southern Anatolia, 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates, 444-Lake Van. — Habitat: This species inhabits a very wide range of all kinds of permanent waterbodies, at least seasonally, with gravel or running water. Freshwater. Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action. *Capoeta ekmekciae => Capoeta capoeta* 

#### *Capoeta kaput* Levin, Prokofiev & Roubenyan, 2019 [N] — Transcaucasian barb/Siraz balığı, aptalca

**Taxonomy.** Original description: *Capoeta kaput* Levin, Prokofiev & Roubenyan, 2019: 35, figs. 1a-c, 2, 3a, 3e-f [Khoda Afarin Reservoir, Armenia, 39°08'34"N, 46°50'21"E; holotype: ZMMU P-23837]. — Synonyms: None. — Revisions: None. — Illustration: ZMMU.

**Status in Türkiye.** First report from Türkiye by Kaya et al. (2020a). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Aras (Araxes) River basin (Türkiye, Armenia, and Iran). — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits a very wide range of rivers, streams, and lakes, including reservoirs. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

Capoeta kosswigi => Capoeta damascina Capoeta mauricii => Capoeta pestai

### *Capoeta oguzelii* Elp, Osmanoğlu, Kadak & Turan, 2018 [E] — Oghuzs barb/Siraz balığı

**Taxonomy.** Original description: *Capoeta oguzelii* Elp, Osmanoğlu, Kadak & Turan, 2018: 104, figs. 1-5 [Ezine Stream at Devrekani, Black Sea drainage, Kastamonu Province, Türkiye, 41°44′02″N, 33°52′58″E; holotype: FCME 2017-05a]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Elp et al. (2018). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FCME.

**Distribution and habitat.** Distribution in Türkiye: Ezine Stream drainage. — Distribution in river basins: 13-Batı Karadeniz. — General distribution: Asia Minor: Ezine Stream drainage, southern Black Sea basin (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits streams and small rivers with fast, clear, and gravel substrates. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

Conservation. Conservation status in Türkiye:

Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Capoeta pestai* (Pietschmann, 1933) [E] — Egirdir barb/ Siraz balığı

Taxonomy. Original description: Varicorhinus pestai Pietschmann, 1933: 21 (1) [Egridir Lake (sic, Lake Eğirdir), Türkiye, Asia Minor; syntypes: (2) MSNM 34 (ex MSNM 4661 and ex NMW) (1) Egirdir Lake; RMNH 24395 (2)]. — Synonyms: Schizothorax prophylax Pietschmann, 1933; Capoeta mauricii Küçük, Turan, Şahin & Gülle, 2009. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Pietschmann (1933). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: MSNM, RMNH.

**Distribution and habitat.** Distribution in Türkiye: Eğirdir and Beyşehir lakes. — Distribution in river basins: 9-Antalya, 16-Konya. — General distribution: Asia Minor: Lake Eğirdir and Lake Eğirdir tributaries, Isparta Province, and İbrala Stream, Karaman Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species inhabits a very wide range of rivers, streams, and lakes, including reservoirs. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

*Capoeta sieboldii* (Steindachner, 1864) [N] — Colchic khramulya/Siraz balığı

**Taxonomy.** Original description: *Scaphiodon sieboldii* Steindachner, 1864: 224 [Amasya (Amasia), Kizil-Irsen River system, Türkiye; holotype (unique): NMW 55903]. — Synonyms: *Varicorhinus sieboldii* (Steindachner, 1864).

- Revisions: None. - Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Steindachner (1864). Listed in previous checklists from Türkiye by Kuru (2004) as *Capoeta capoeta sieboldi*; Geldiay and Balık (2007) as *Capoeta capoeta sieboldi*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: NMW.

**Distribution and habitat.** Distribution in Türkiye: Northern basins of Türkiye. — Distribution in river basins: 12-Sakarya, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eurasia: Black Sea watersheds (Türkiye and Transcaucasia). — Distribution in ecoregions: 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species inhabits a wide range of rivers and larger streams. It also inhabits reservoirs, from which it migrates to rivers and streams to spawn. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

*Capoeta tinca* (Heckel, 1843) [E] — Anatolian khramulya/Karabalık, Siraz balığı

**Taxonomy.** Original description: *Scaphiodon tinca* Heckel, 1843: 1021 [Bursa, Nilüfer River basin, Türkiye; lectotype: NMW 55931: 1]. — Synonyms: *Varicorhinus tinca* (Heckel, 1843); *Capoeta baliki* Turan, Kottelat, Ekmekçi & Imamoğlu, 2006. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Heckel (1843). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: NMW.

**Distribution and habitat.** Distribution in Türkiye: Northern basins of Türkiye. — Distribution in river basins: 2-Marmara, 3-Susurluk, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak. — General distribution: Asia Minor: Marmara Sea tributaries, Bursa Province (Türkiye). — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 430-Northern Anatolia. — Habitat: This species inhabits a wide range of habitats, ranging from large lakes, rivers, and streams to reservoirs. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

#### Capoeta umbla (Heckel, 1843) [N] — Tigris scraper/ Siraz balığı

**Taxonomy.** Original description: *Scaphiodon umbla* Heckel, 1843a: 1060 (70) [Tigris River, Mosul, Iraq; syntypes: NMW 55932-33 (1, 1), 79373-74 (1, 1, both dry); SMF 6777 (1, dry)]. — Synonyms: None. — Revisions: Esmaeili et al. (2016: 36). — Illustration: Heckel (1843b: pl. 5, fig. 3).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Capoeta capoeta umbla*; Geldiay and Balık (2007) as *Capoeta capoeta umbla*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: ?Euphrates and Tigris river basins. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates and Tigris river basins (Iran, Iraq, and Türkiye). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a very wide range of all kinds of permanent waterbodies, at least seasonally, with gravel or running water. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, EUT, FIT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

**Remarks.** *Capoeta umbla* is cooccurring with *C. damascina.* Recent molecular findings suggest their possible synonymization between them (Bektas et al., 2017, 2019). This situation needs to be clarified with a detailed study. *Capoeta umbla* is not distributed in the Euphrates River part of Türkiye, if valid, it distributes in the Tigris River in Türkiye. Future detailed studies need to clarify this hypothesis.

Cyclocheilichthys kosswigi => Barbus lacerta

*Cyprinion tenuiradius* Heckel, 1846 => not occurring in Türkiye (see Çiçek et al., 2020)

*Cyprinus capito => Luciobarbus capito* 

*Cyprinus capoeta => Capoeta capoeta* 

*Cyprinus mursa* => *Luciobarbus mursa* 

Gobio damascinus => Capoeta damascina

*Labeobarbus euphrati* => *Luciobarbus esocinus* 

*Labeobarbus orontis => Luciobarbus pectoralis* 

### *Luciobarbus barbulus* Heckel, 1847 [N] — Barbel/ Bıyıklı balık

**Taxonomy.** Original description: *Barbus barbulus* Heckel, 1847: 256 [Kara Agatsch River (Qarah Aqaj River) near Geré (Jereh), Iran, 29°15'N, 51°58'E; Qweik River at Aleppo, Syria; syntypes: NMW 6596 (1)]. — Synonyms: None. — Revisions: Valiallahi (2020: 59). — Illustration: Valiallahi (2020: 60, figs. 1-2).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Fricke et al. (2007) as *Barbus barbulus*; Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Qweik River system, Euphrates and Tigris river basins. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Qweik River system (Syria); Euphrates and Tigris river basins (Türkiye, Syria, Iraq, and Iran); Zoreh, Mond and Kol river basins (Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a very wide range of all kinds of permanent waterbodies, at least seasonally, with gravel or running water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

*Luciobarbus brachycephalus* (Kessler, 1872) => not occurring in Türkiye (see Çiçek et al., 2020)

## *Luciobarbus capito* (Güldenstädt, 1773) [N] — Bulatamai barbel/Bıyıklı balık

**Taxonomy.** Original description: *Cyprinus capito* Güldenstädt, 1773: 519, 520 [Kura River, Transcaucasia; no types known]. — Turkish synonyms: *Barbus capito* (Güldenstädt, 1773); *Cyprinus chalybeus* Walbaum (ex Hablizl) 1792; *Barbus bilkewitschi* Bulgakov 1923; *Cyprinus bulatmai* Hablizl 1783; *Cyprinus chalybatus* Pallas, 1814; *Barbus lacertoides* Kessler, 1872; *Barbus capito serratus* Sokolinskii 1927; *Barbus capito capito platycephalus* Abdurakhmanov, 1960. — Revisions: Berg (1949: 698) as *Barbus capito*; Karaman (1971: 211) as *Barbus capito capito*. — Illustration: Berg (1949: 699, fig. 455) as *Barbus capito*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Barbus capito capito*; Geldiay and Balık (2007) as *Barbus capito capito*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Aral Sea and western and southern Caspian Sea basins. Anadromous and non-anadromous, freshwater, brackish, marine. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species spawns in lowland streams and rivers on a sand-gravel bottom, usually in a strong current. Semianadromous but rarely landlocked in reservoirs. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: FIT, CON, ABS. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

*Luciobarbus caspius* (Berg, 1914) => not occurring in Türkiye (see Çiçek et al., 2020)

Luciobarbus escherichii => Barbus escherichii

### *Luciobarbus esocinus* Heckel, 1843 [N] — Pike barbel/ Cero-Fırat turnası

**Taxonomy.** Original description: *Luciobarbus esocinus* Heckel, 1843: 1054 (64) [Tigris River, Mosul, Iraq; syntypes: NMW 54088 (2), 54091-92 (1, 1); SMF 454 (ex NMW) (1), 6785 (ex NMW) (1)]. — Synonyms: *Barbus esocinus* (Heckel, 1843); *Labeobarbus euphrati* Sauvage, 1882. — Revisions: None. — Illustration: Heckel (1843: Pl. 4, fig. 2).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris River basins. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates and Tigris River systems (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species occurs in large rivers and reservoirs; from which they migrate to inflowing rivers to spawn. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: FIT. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

#### *Luciobarbus kersin* (Heckel, 1843) [N] — Kersin barbel/ Kersin balığı

**Taxonomy.** Original description: *Barbus kersin* Heckel, 1843a: 1049 (59) [Syria; syntypes: NMW 54212-13 (1, 4), 54215 (1); SMF 610 (1), ZMB 3237 (1)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Fricke et al. (2007) as *Barbus kersin*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris River basins. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates and Tigris River basins (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits large- to medium-sized rivers, but its habitats are poorly known. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: DD (IUCN, 2023). — Threats: There are many threats in the area, but it is unknown how and if the species is affected. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Luciobarbus kosswigi* => *Barbus lacerta* 

## *Luciobarbus kottelati* Turan, Ekmekçi, Ilhan & Engin, 2008 [E] — Menderes barbel/Bıyıklı balık

**Taxonomy.** Original description: *Luciobarbus kottelati* Turan, Ekmekçi, Ilhan & Engin, 2008: 40, fig.3b, 5 [River Büyük Menderes, Dandalas Stream, Karacasu, 90 kilometers south of Aydin, Aydin Province, Türkiye; holotype: IUSHM 27300-879]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2008: figs.3b, 5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2008). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Büyük Menderes River basin. — Distribution in river basins: 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Asia Minor: Büyük Menderes River (Aegean Sea tributary), Aydın Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits large- to medium-sized warm streams and rivers with moderate currents. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

**Remarks:** According to Khaefi et al. (2017) there are no genetic differences (K2P, 0.00%) between *Luciobarbus kottelati* and *L. graecus*. Most probably, *L. kottelati* is the synonym of *Luciobarbus graecus* (Steindachner, 1895). Therefore, these situations should be clarified with detailed comparative studies.

### Luciobarbus lorteti (Sauvage, 1882) [N] — Lortet's barbel/ Maya balığı

Taxonomy. Original description: *Barbus lorteti* Sauvage, 1882: 165 [Orontes River at Antakya (= Antiochia), 36°12'N, 36°13'E, Türkiye; lectotype: MNHN A-3935. Type catalog: Bertin & Estève 1948: 43]. — Synonyms: None. — Revisions: Krupp (1985b: 64) as *Barbus lorteti*. — Illustration: Krupp (1985b: 65, fig. 1) as *Barbus lorteti*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Fricke et al. (2007) as *Barbus lorteti*; Kuru et al. (2014) as *Barbus lorteti*; Çiçek et al. (2015, 2020). — Turkish material: MNHN.

**Distribution and habitat.** Distribution in Türkiye: Orontes River basin. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor: Asi Nehri basin (Orontes) (Mediterranean tributary), (Syria and Türkiye). — Distribution in ecoregions: 437-Orontes. — Habitat: This species spawns in lowland streams and rivers on sandgravel bottoms, usually in strong currents. Semianadromous but rarely landlocked in reservoirs. Freshwater, brackish, marine. **Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: DD (IUCN, 2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

**Remarks:** According to Geiger et al. (2014) there are low genetic differences between *Luciobarbus lorteti* and *L. graecus*. Most probably, *L. lorteti* is the synonym of *Luciobarbus pectoralis* (Heckel, 1843). Therefore, these situations should be clarified with detailed comparative studies.

### *Luciobarbus lydianus* (Boulenger, 1896) [E] — Lydian barbel/Bıyıklı balık

**Taxonomy.** Original description: *Barbus lydianus* Boulenger, 1896: 153 [Gediz River, Izmir Province, between north coast of Smyrna and Troy, Türkiye; syntypes: (several) BMNH 1893.1.14.9-12 (4), 1895.12.28.18 (1)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Boulenger (1896). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: BMNH.

**Distribution and habitat.** Distribution in Türkiye: Western basins of Türkiye. — Distribution in river basins: 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Asia Minor: Aegean and Marmara Sea tributaries (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits large- to medium-sized streams and rivers with moderate currents. It also inhabits reservoirs, from which it is believed to migrate to inflowing streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

**Remarks:** According to Khaefi et al. (2017) there are no genetic differences (K2P, 0.00%) between *Luciobarbus lydianus* and *L. graecus*. Most probably, *L. lydianus* is the synonym of *Luciobarbus graecus* (Steindachner, 1895). Therefore, these situations should be clarified with detailed comparative studies.

### *Luciobarbus mursa* (Güldenstädt, 1773) [N] — Mursa/ Murzu

**Taxonomy.** Original description: *Cyprinus mursa* Güldenstädt, 1773: 513, Pl. 9 [Kura River at Tiflis [= Tbilisi), Transcaucasia; syntypes: whereabouts unknown].

— Synonyms: *Barbus mursa* (Güldenstädt, 1773); *Barbus microphthalmus* Bonaparte, 1846; *Barbus mursoides* Kessler, 1877; *Barbus microphthalmus* Sauvage, 1882; *Barbus kessleri* Derjavin, 1929; *Barbus dageti* Fowler, 1958. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Güldenstädt (1773). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007) as *Barbus mursa*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kura-Aras River basin, Caspian Sea and Lake Urmia basins. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits a wide range of streams and rivers with fast- to moderately fast-running water. It also inhabits lakes and reservoirs, from which it migrates to rivers and streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Luciobarbus mystaceus* (Pallas, 1814) => not occurring in Türkiye (see Çiçek et al., 2020)

## Luciobarbus pectoralis (Heckel, 1843) [N] — Heckel's Orontes barbel/Bıyıklı balık

Taxonomy. Original description: *Barbus pectoralis* Heckel, 1843a: 1045 (55) [Orontes River, Syria; holotype: ?NMW 54474]. — Synonyms: *Barbus perniciosus* Heckel, 1843; *Barbus schejch* (Heckel, 1843); *Labeobarbus orontis* Sauvage, 1882; *Barbus orontis* (Sauvage, 1882). — Revisions: None. — Illustration: Heckel (1843: Pl. 2 (fig. 2)) as *Barbus pectoralis*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Barbus capito pectoralis*; Geldiay and Balık (2007) as *Barbus capito pectoralis*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Orontes River basin. — Distribution in river basins: 18-Seyhan, 19-Asi, 20-Ceyhan. — General distribution: Orontes River system in Türkiye and Syria; Mediterranean watersheds of Türkiye; Iraq. — Distribution in ecoregions: 432-Southern Anatolia, 437-Orontes. — Habitat: This species inhabits a wide range of rivers and larger streams and occurs in reservoirs, from which it migrates to inflowing streams and rivers for spawning. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, especially in Asi drainage where this species has lost major part of its range due to massive pollution and water abstraction. However, these threats are not strong enough all over the range to really affect this species. — Low sensitivity to human activities. — Keystone species. — Decline status: Stable. — Low priority for conservation action. *Luciobarbus pergamonensis* => *Barbus pergamonensis* 

Luciobarbus subquincunciatus (Günther, 1868) [N] — Mesopotamian-Leopard barbel/Komando-Leopar

**Taxonomy.** Original description: *Barbus subquincunciatus* Günther, 1868: 86 [Mesopotamia?; holotype: BMNH 1869.3.19.1469 (skin)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007) as *Barbus subquincunciatus*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates River system. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris and Euphrates River systems (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits large, freeflowing lowland rivers and migrates short distances to breed. Rarely recorded from lakes and reservoirs, which seem to represent largely unsuitable habitats. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: ABS, CON, EUT, FIT, HAB. — High sensitivity to human activities. — No keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Luciobarbus xanthopterus* Heckel, 1843 [N] — Yellowfin barbel/Maya balığı

**Taxonomy.** Original description: *Luciobarbus xanthopterus* Heckel, 1843a: 1053 (63) [Tigris River, Mosul, Iraq; syntypes: NMW 54786 (1), 54841 (10), 91215 (1, dry)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: ?Orontes, Euphrates and Tigris River systems. — Distribution in river basins: 19-Asi, 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Orontes, Euphrates and Tigris River systems (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits large lowland rivers, lakes, and marshes, and also in reservoirs, from which it migrates to inflowing rivers to spawn. Spawns on gravel substrate in the shallows of large rivers in water depths of 30–150 cm. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: HAB, CON, ABS, EUT. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

### Paracapoeta barroisi (Lortet, 1894) [N] — Orontes Scraper/Siraz balığı

**Taxonomy.** Original description: *Capoeta barroisi* Lortet in Barrois 1894: 308 [Lake Homs, at Schoummarieh Village, Orontes drainage, Hims District, Syria; Antioche (Antakya, Türkiye); syntypes: FMUL uncat. (several, probably lost), MHNL uncat. (1)]. — Synonyms: None. — Revisions: Turan et al. (2022b). — Illustration: Turan et al. (2008: 267, fig. 5).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020); Turan et al. (2022b). — Turkish material: FMUL, MHNL.

**Distribution and habitat.** Distribution in Türkiye: Seyhan, Ceyhan, Orontes, Euphrates and Tigris River basins. — Distribution in river basins: 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: eastern Mediterranean watersheds, Tigris River and Gulf basins (Türkiye, Iraq, and Iran). — Distribution in ecoregions: 432-Southern Anatolia, 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits mostly lakes, reservoirs, and larger lowland rivers. Most likely, they migrate to rivers or streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: EN (IUCN, 2023). — Threats: ABS, CON, CLI, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

## Paracapoeta erhani (Turan, Kottelat & Ekmekçi, 2008) [E] — Ceyhan scraper/Siraz balığı

**Taxonomy.** Original description: *Capoeta erhani* Turan, Kottelat & Ekmekçi, 2008: 264, figs. 1-2a [Ceyhan drainage, Menzelet Reservoir, Geçit stream on road from Kahramanmaraş to Adana, 37°37′N, 36°39′E, Kahramanmaraş Province, Türkiye; holotype: FFR 776]. — Synonyms: None. — Revisions: Turan et al. (2022b). — Illustration: Turan et al. (2008).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2008: 264, fig. 1). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020); Turan et al. (2022b). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Ceyhan and Seyhan River basins. — Distribution in river basins: 18-Seyhan, 20-Ceyhan. — General distribution: Asia Minor: Ceyhan and Seyhan River drainages (Mediterranean Sea tributary) (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits many different lowland habitats, such as rivers and even small lowland streams, it also inhabits reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, CLI, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

### Paracapoeta trutta (Heckel, 1843) [N] — Longspine scraper/Lekeli siraz balığı

**Taxonomy.** Original description: *Scaphiodon trutta* Heckel, 1843a: 1056 (66) [Aleppo, Syria; Tigris River, Mosul, Iraq; syntypes: NMW 55926 (1), 55928 (2), 55935-37 (2, 2, 1), 55939-42 (4, 1, 3, 1); ?RMNH 3164 (1) Aleppo; SMF 923 (1), 2567 (1); ZMB 8789 (1, dry)]. — Synonyms: *Capoeta trutta* (Heckel, 1843); *Varicorhinus capoetoides* Pellegrin, 1938; *Capoeta barroisi persica* Karaman, 1969. — Revisions: Turan et al. (2022: 205). — Illustrations: Heckel (1843b: pl. 4, fig. 3); Turan et al. (2008: 267, fig. 5).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020); Turan et al. (2022b). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris and Euphrates River basins. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor and Middle East: Tigris and Euphrates River basins (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a very wide range of habitats, at least some of which are seasonally connected to the running waters in which it spawns. Most abundant in lowland rivers but also very common in reservoirs and marshes, and commonly found in streams in slow-current sections. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: While there are many threats in the area, none is so serious to threaten this species. — Low sensitivity to human activities. — No keystone species. — Decline status: Stable. — Low priority for conservation action.

Puntius kessleri => Luciobarbus mursa

Scaphiodon sieboldii => Capoeta sieboldii

Scaphiodon tinca => Capoeta tinca

Scaphiodon trutta => Capoeta trutta

Scaphiodon umbla => Capoeta umbla

Schizothorax prophylax => Capoeta pestai

*Varicorhinus antalyensis* => *Capoeta antalyensis* 

Varicorhinus capoeta => Capoeta capoeta

Varicorhinus capoetoides => Capoeta trutta Varicorhinus sieboldii => Capoeta sieboldii

Varicontinus sieboluli => Capoela sieb

*Varicorhinus tinca => Capoeta tinca* 

Danionidae Bleeker, 1863 (danionids) Chedrinae Bleeker, 1863 (troutbarbs)

Barilius mesopotamicus Berg, 1932 [N] — Mesopotamian minnow/none

**Taxonomy.** Original description: *Barilius mesopotamicus* Berg, 1932: 333, fig. 1 [Gawi River, Tigris River basin, 33°20'N, 46°20'E, Iraq; holotype: ZIN 23955]. — Synonyms: None. — Revisions: Bianco and Bănărescu (1982: 76). — Illustration: Berg (1932: fig. 1).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris and Persis River basins (Türkiye, Iraq, Iran, and Syria). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits the upper water column close to the surface of small to large rivers with slow to moderate currents. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

Xenocyprididae Günther, 1868 (East Asian minnows or sharpbellies)

### Ctenopharyngodon idella (Valenciennes, 1844) [I] — Grass carp/Ot sazanı

**Taxonomy.** Original description: *Leuciscus idella* Valenciennes in Cuvier & Valenciennes, 1844: 362 (China; no types known). — Synonyms: None. — Revisions: Berg (1949: 597). — Illustration: Berg (1949: 598, fig. 353).

Status in Türkiye. Listed in previous checklists from

Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2022a). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Introduced some reservoirs in southeastern Anatolia for aquatic vegetation control. — Distribution in river basins: 5-Gediz, 7-Büyük Menderes, 18-Seyhan, 20-Ceyhan. — General distribution: East Asia: China and Russia; widely introduced elsewhere. — Distribution in ecoregions: 429-Western Anatolia, 432-Southern Anatolia. — Habitat: This species conducts its spawning and overwintering in the middle and lower stretches of large floodplain rivers (below 1000 m altitude) within lakes, reservoirs, and backwaters during the feeding season, preferring warm, clear water with a high oxygen concentration. It is tolerant of a wide range of environmental variables. Freshwater.

Economic importance. Commercially important.

**Reasons of introduction.** Biocontrol: to prevent eutrophication, aquatic plants, and pest control.

**Conservation.** Not relevant (introduced species).

**Remarks.** This species does not reproduce naturally in the wild. It is locally present due to specimens release to some reservoirs for aquatic vegetation control. *Hypophthalmichthys molitrix* (Valenciennes, 1844) => not occurring in Türkiye (see Çiçek et al., 2022)

*Hypophthalmichthys nobilis* (Richardson, 1845) [I] — Asian carp, big head carp/Asya sazanı, kocabaş sazan

**Taxonomy.** Original description: *Leuciscus nobilis* Richardson, 1845: 140, pl. 63, fig. 3 [Canton, China; holotype: BMNH 1968.3.11.4]. — Synonyms: None. — Revisions: None. — Illustration: Richardson (1845: pl. 63, fig. 3) as *Leuciscus nobilis*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2020; 2022a). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Sistan River drainage. — Distribution in river basins: 1-Meriç-Ergene. — General distribution: East Asia: Yangtze River basin (China); widely introduced elsewhere. — Distribution in ecoregions: 423-Thrace. — Habitat: This species occurs in both fast-running and standing streams in mainly shallow but also deep areas. It is an omnivore and is thought to have a moderate tolerance for habitat degradation. Freshwater.

Economic importance. Commercially important.

**Reasons of introduction.** Fisheries: enhancement of wild stocks and sports fishing.

Conservation. Not relevant (introduced species).

**Remarks**. This species that has been produced in hatcheries for stocking inland waters recently appear in Mazitza River (Çiçek et al., 2022a).

Tincidae Jordan, 1878 (tenches)

*Cyprinus tinca* => *Tinca tinca* 

*Tinca tinca* (Linnaeus, 1758) [N] — Tench/Kadife balığı Taxonomy. Original description: *Cyprinus tinca* Linnaeus, 1758: 321 [European lakes; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: European Black Sea watersheds and translocated some reservoirs in Anatolia. - Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 13-Batı 16-Konya. - General distribution: Most of Europe and Caspian Sea basin; introduced elsewhere. -Distribution in ecoregions: 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia. - Habitat: This species inhabits typically shallow, densely vegetated lakes and backwaters. Often, overwinters are buried in mud. Spawns among dense vegetation in still water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

Acheilognathidae Bleeker, 1863 (bitterlings) Cyprinus amarus => Rhodeus amarus

*Rhodeus amarus* (Bloch, 1782) [N] — European bitterling/Acıbalık

**Taxonomy.** Original description: *Cyprinus amarus* Bloch, 1782: 52, Pl. 8 (fig. 3) [Müggelsee (lake) near Köpenick, Berlin, Germany; syntypes: ZMB 3393 (3)]. — Synonyms: *Rhodeus genitalis* Walecki 1863; *Rhodeus lucinae* Walecki 1863. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Rhodeus sericeus amarus*; Geldiay and Balık (2007) as *Rhodeus sericeus amarus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Northwestern Anatolia. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 13-Batı Karadeniz. — General distribution: Northern and eastern Europe, Türkiye. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia. — Habitat: This species is mostly abundant in still or slow-flowing water with dense aquatic vegetation and a sand-silt bottom, such as lowland ponds, canals, slow-flowing rivers, backwaters, and oxbows, where mussels are present. Freshwater, brackish.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: COM. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

*Rhodeus sericeus* (Pallas, 1776) => not occurring in Türkiye (see Çiçek et al., 2020)

### Gobionidae Bleeker, 1863 (freshwater gudgeons)

#### Gobio artvinicus Turan, Japoshvili, Aksu & Bektaş, 2016 [N] — Gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio artvinicus* Turan, Japoshvili, Aksu & Bektaş, 2016: 6, figs. 3b, 5 [Artvin Prov., Aralık Stream, a drainage of Çoruh River, Black Sea basin, Türkiye; holotype: FFR 2507]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2016). Listed in previous checklists from Türkiye by Çiçek et al. (2016, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Choruck River and Kura-Aras basins. — Distribution in river basins: 23-Çoruh, 24-Aras. — General distribution: Asia Minor: Çoruh River basin (Black Sea tributary) and Aras River basin (Türkiye). — Distribution in ecoregions: 433-Western Transcaucasia, 434-Kura - South Caspian Drainages. — Habitat: This species inhabits fast- to slowflowing streams and rivers with sandy or gravel substrates. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

## Gobio baliki Turan, Kaya, Bayçelebi, Aksu & Bektaş, 2017 [E] — Gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio baliki* Turan, Kaya, Bayçelebi, Aksu & Bektaş, 2017: 285, figs. 1-2 [Stream Asar at Kaynaşlı, Düzce Province, Türkiye, 40°46'52"N, 31°16'37"E; holotype: FFR 05966]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Büyük Melen Stream, northwestern Anatolian Black Sea basin. — Distribution in river basins: 13-Batı Karadeniz. — General distribution: Asia Minor: Büyük Melen drainage, southern Black Sea basin (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits fast- to slow-flowing streams and rivers with sandy or gravel substrates. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Gobio battalgilae* => *Gobio microlepidotus* 

## Gobio bulgaricus Drensky, 1926 [N] — Gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio gobio bulgarica* Drensky, 1926: 131, fig. 2 [Maritsa, Bulgaria; syntypes: NMNHS]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: European Aegean Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 4-Kuzey Ege. — General distribution: Eurasia: Aegean basin (Türkiye, Bulgaria, Greece, and Macedonia). — Distribution in ecoregions: 423-Thrace, 429-Western Anatolia. — Habitat: This species inhabits stretches of streams and rivers with moderate flow, usually sand bottoms. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Gobio caucasicus* Kamensky, 1901 => not occurring in Türkiye (see Çiçek et al., 2020)

## *Gobio fahrettini* Turan, Kaya, Bayçelebi, Aksu & Bektaş, 2018 [E] — Gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio fahrettini* Turan, Kaya, Bayçelebi, Aksu & Bektaş, 2018: 366, figs. 1-3 [Stream Cebisli at Ilgin County, Konya Province, Türkiye, 38°16'10"N, 31°42'13"E; holotype: FFR 05971]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2018). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Lake Ilgin basin. — Distribution in river basins: 12-Sakarya. — General distribution: Asia Minor: Lake Ilgin basin (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits stretches of streams and rivers with moderate flow, usually sand bottoms. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status:

Unknown. — Moderate priority for conservation action. *Gobio gobio* (Linnaeus, 1758) => not occurring in Türkiye (see Çiçek et al., 2020)

*Gobio gobio bulgarica => Gobio bulgaricus* 

*Gobio gobio gymnostethus => Gobio gymnostethus* 

Gobio gobio insuyanus => Gobio insuyanus

Gobio gobio intermedius => Gobio intermedius Gobio gobio kovatschevi => Gobio kovatschevi Gobio gobio microlepidotus => Gobio microlepidotus

## *Gobio gymnostethus* Ladiges, 1960 [E] — Cappadocian gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio gobio gymnostethus* Ladiges, 1960: 137, fig. 9 [Kizilcak creek, Nigde, Türkiye; holotype: ZMH H1131]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Ladiges (1960). Listed in previous checklists from Türkiye by Kuru (2004) as *Gobio gobio gymnostethus*; Geldiay and Balık (2007) as *Gobio gobio gymnostethus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Eastern parts of Lake Tuz basin. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: eastern Lake Tuz basin (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species occurs in streams with slow- to moderately fast-flowing waters on sand and gravel bottoms. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

## Gobio hettitorum Ladiges, 1960 [E] — Anatolian gudgeon/Dere kayası

Taxonomy. Original description: Gobio hettitorum Ladiges,

1960: 137, fig. 10 [Gökdere Karaman, Türkiye; holotype: ZMH H1129]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Ladiges (1960). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Gökdere watersheds, around Karaman, Southern Lake Tuz basin. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: southern Lake Tuz basin (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits a small stream with a gravel and sand bottom. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

**Remarks.** *Gobio hettitorum* is cooccurring with *G. microlepidotus*, *G. gymnostethus*, and *G. insuyanus* in Konya endorheic basin. Recent molecular findings represent low level differences among them (Aksu and Bektas, 2019). It is probable that *G. hettitorum* is a synonym of *Gobio microlepidotus* Battalgil, 1942. A manuscript prepared and submitted to a journal by the authors.

## Gobio insuyanus Ladiges, 1960 [E] — Cihanbeyli gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio gobio insuyanus* Ladiges, 1960: 136, fig. 8 [Insuyu Creek, Cihanbeyli, Türkiye; holotype: ZMH H1133 (missing)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Ladiges (1960). Listed in previous checklists from Türkiye by Kuru (2004) as *Gobio gobio insuyanus*; Geldiay and Balık (2007) as *Gobio gobio insuyanus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Western Lake Tuz basin. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: western Lake Tuz basin (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits streams with slow- to moderately fast-flowing waters on sand and gravel bottoms, often in very dense aquatic vegetation. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

Conservation. Conservation status in Türkiye: CR.

— IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

### Gobio intermedius Battalgil, 1944 [E] — Eber gudgeon/ Dere kayası

**Taxonomy.** Original description: *Gobio gobio intermedius* Battalgil, 1944: 130, fig. 3 [Eber Lake, Vilâyet Afyon Karahisar, western central Türkiye. lectotype: ZMH H1135]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1944). Listed in previous checklists from Türkiye by Kuru (2004) as *Gobio gobio intermedius*; Geldiay and Balık (2007) as *Gobio gobio intermedius*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Aksehir and Eber lakes. — Distribution in river basins: 11-Akarçay. — General distribution: Lake Eber and Lake Akşehir basins, Afyonkarahisar and Konya provinces (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits streams with moderate currents on gravel or sand bottoms and also occurs in lakes. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Gobio kizilirmakensis* Turan, Japoshvili, Aksu & Bektaş, 2016 [E] — Gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio Kızılırmakensis* Turan, Japoshvili, Aksu & Bektaş, 2016: 3, figs. 1-2, 3a [Çankırı Prov., Ulusu Stream, Kızılırmak River drainage, Türkiye, 40°48'N, 32°53'E; holotype: FFR 05930]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2016). Listed in previous checklists from Türkiye by Çiçek et al. (2016, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Kızılırmak River basin. — Distribution in river basins: 15-Kızılırmak. — General distribution: Asia Minor: Filyos River basin, southern Black Sea basin (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits fast- to slow-flowing streams and rivers with sandy or gravel substrates. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

## *Gobio kovatschevi* Chichkoff, 1937 [N] — Varna gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio gobio kovatschevi* Chichkoff, 1937: 257 [Provadiïska River, entering the Black Sea, eastern Bulgaria; syntypes: whereabouts unknown]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: European Black Sea watersheds. — Distribution in river basins: 2-Marmara, — General distribution: Southeastern Europe: Black Sea watersheds (Bulgaria and Türkiye). — Distribution in ecoregions: 418-Dniester - Lower Danube. — Habitat: This species is restricted to the upper and middle sections of a small, slowly flowing stream. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: EUT. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Gobio macropterus => Romanogobio macropterus* 

#### *Gobio maeandricus* Naseka, Erk'akan & Küçük, 2006 [E] — Işıklı gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio maeandricus* Naseka, Erk'akan & Küçük, 2006: 188, fig. 8 [Great Menderes (Büyük Menderes) River at Isikli (Işıklı), Denizli Province, Türkiye; holotype: ZMH 1132]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Naseka et al. (2006). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Büyük Menderes River basin. — Distribution in river basins: 7-Büyük Menderes. — General distribution: Büyük Menderes River basin (Aegean Sea tributary), Denizli Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits streams and springs with slow- to moderately fast-flowing waters on sand and gravel bottoms, often in very dense aquatic vegetation. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

Gobio microlepidotus Battalgil, 1942 [E] — Beysehir gudgeon/Yağlıca, Dere kayası

**Taxonomy.** Original description: *Gobio gobio microlepidotus* Battalgil, 1942: 294, fig. 5 [Beysehir Lake, southern Anatolia, Türkiye; lectotype: ZMH H1127 (74.9 mm)]. — Synonyms: *Gobio battalgilae* Naseka, Erk'akan & Küçük, 2006. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1942). Listed in previous checklists from Türkiye by Kuru (2004) as *Gobio gobio microlepidotus*; Geldiay and Balık (2007) as *Gobio gobio microlepidotus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Beyşehir Lake basin. — Distribution in river basins: 16-Konya, 17-Doğu Akdeniz. — General distribution: Asia Minor: Lake Beyşehir and Lake Beyşehir tributaries (Isparta and Konya provinces); Göksu River (Mediterranean Sea tributary, Mersin Province) (Türkiye). — Distribution in ecoregions: 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species inhabits streams with slow- to moderately fast-flowing waters on sand and gravel bottoms, often in very dense aquatic vegetation. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Gobio sakaryaensis* Turan, Ekmekçi, Luskova & Mendel,

### 2012 [E] — Sakarya gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio sakaryaensis* Turan, Ekmekçi, Luskova & Mendel, 2012: 57, figs. 1-2 [Tozman Stream, 40°04'N, 30°30'E, Bilecik Province, Türkiye; holotype: FFR 2504]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2012). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Tozman Stream, drainage of Sakarya River. — Distribution in river basins: 12-Sakarya. — General distribution: Asia Minor: Sakarya River basin and Tozman Stream (Black Sea tributaries) and Lake Sapanca region (Marmara Sea tributary) (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits small- to mediumsized lowland and hill streams with moderately fast-flowing water, a sand and gravel bottom, and a pool riffle structure. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but none seem to be so strong to impact the species enough. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

*Romanogobio macropterus* (Kamensky, 1901) [N] — South Caucasian gudgeon/Dere kayası

**Taxonomy.** Original description: *Gobio macropterus* Kamensky, 1901: 10 [Caucasus; syntypes: (14) ZMT and Kharkov Univ]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Naseka & Freyhof, 2004; Kuru (2004) as *Gobio persus*; Geldiay and Balık (2007) as *Gobio persus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Black Sea and Caspian Sea basins. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits fastflowing stretches of rivers and streams with gravel and rocky substrates. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

*Romanogobio persus* (Günther, 1899) => not occurring in Türkiye (see Çiçek et al., 2020)

Sarcocheilichthyinae Kryzanowsky, 1947

#### Pseudorasbora parva (Temminck & Schlegel, 1846) [I] — Topmouth gudgeon/Çakıl balığı

**Taxonomy.** Original description: *Leuciscus parvus* Temminck & Schlegel, 1846: 215, pl. 102, figs. 3, 3a-b [Nagasaki, Kyushu, Japan; lectotype: RMNH 2634; lectotype selected by Boeseman (1947: 164)]. — Turkish synonyms: None. — Revisions: Berg (1949: 636). — Illustration: Berg (1949: 636, fig. 388).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2022a). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Widespread in many reservoirs of Türkiye. — Distribution

in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 24-Aras. - General distribution: East Asia: Japan and China; widely introduced in Europe and Asia. - Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 430-Northern 429-Western Anatolia, Anatolia. 431-Central Anatolia, 432-Southern Anatolia, 434-Kura -South Caspian Drainages, 442-Upper Tigris and Euphrates. - Habitat: This species occurs in a wide variety of habitats, most abundantly in well-vegetated small river channels, ponds, and small lakes. This species feeds on small insects, fish and fish eggs, and plant material. It usually breeds in habitats with still or very slow-flowing water. It is regarded as a pest that competes with the larvae of other species due to its high reproductive rate. Freshwater, brackish.

Economic importance. No commercial importance.

**Reasons of introduction.** Unknown: Inadvertently introduced by transboundary waterways for no known reason or method.

**Conservation.** Not relevant (introduced species).

Leuciscidae Bonaparte, 1835 (minnows)

Leuciscinae Bonaparte, 1835 (leuciscines)

*Abramis argyreus => Abramis brama* 

Abramis bjoerkna => Blicca bjoerkna

Abramis brama (Linnaeus, 1758) [N] — Freshwater bream/Çapak balığı-Tahta balığı

Taxonomy. Original description: *Cyprinus brama* Linnaeus, 1758: 326 [European lakes. syntypes: BMNH 1853.11.12.147 (1, skin)]. — Turkish synonyms: *Abramis melaenus* Agassiz, 1835; *Abramis vetula* Heckel, 1836; *Abramis media* Koch 1840; *Abramis argyreus* Valenciennes, 1844; *Abramis microlepidotus* Valenciennes, 1844; *Abramis vulgaris* Mauduyt 1849; *Abramis gehini* Blanchard 1866; *Abramis brama var. sinegorensis* Lukasch 1933; *Abramis brama bergi* Grib & Vernidub 1935; *Abramis brama orientalis* Berg, 1949; *Abramis brama danubii* Pavlov 1956. — Revisions: Berg (1949: 768). — Illustration: Berg (1949: 770, fig. 531).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Higher reach of Amu Darya basin. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak. — General distribution: Eurasia: central and eastern Europe and Caspian Sea basin. Introduced elsewhere. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia. — Habitat: This species occurs in a wide variety of lakes and large- to medium-sized rivers. Most abundant are backwaters, the lower reaches of slow-flowing rivers, brackish estuaries, and warm, shallow lakes. Semianadromous individuals enter freshened parts of the sea to forage. Usually spawns in densely vegetated backwaters, floodplains, or lake shores. Nearly all surfaces can be used for spawning. Freshwater, brackish.

Economic importance. Commercially important.

Conservation. Conservation status in Türkiye: Unknown. - IUCN: LC (IUCN, 2023). - Threats: No major threats known. - Low sensitivity to human activities. - Not considered a keystone species. - Decline status: Unknown. - Low priority for conservation action. Abramis brama bergi => Abramis brama Abramis brama danubii => Abramis brama *Abramis brama orientalis => Abramis brama* Abramis brama sinegorensis => Abramis brama Abramis elongates asianus => Vimba vimba Abramis gehini => Abramis brama Abramis media => Abramis brama Abramis melaenus => Abramis brama *Abramis melanops => Vimba melanops* Abramis microlepidotus => Abramis brama *Abramis microlepis => Acanthobrama microlepis* Abramis vetula => Abramis brama Abramis vimba => Vimba vimba Abramis vulgaris => Abramis brama *Acanthalburnus microlepis => Acanthobrama microlepis* Acanthalburnus punctulatus => Acanthobrama microlepis Acanthobrama arrhada => Acanthobrama marmid

## Acanthobrama centisquama Heckel, 1843 [N] — Orontes bream/Tahta balığı

**Taxonomy.** Original description: *Acanthobrama centisquama* Heckel, 1843a: 1074 (84) [Damascus, Syria (in error, was Asi River and Amik Lake); holotype: NMW 55339]. — Synonyms: *Trachibrama centisquama* (Heckel, 1843). — Revisions: Goren et al. (1973: 296); Coad (1984: 275). — Illustration: Heckel (1843b: pl. 9, fig. 1).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Orontes River basin. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor and Middle East: Orontes River basin (Türkiye and Syria). — Distribution in ecoregions: 437-Orontes. — Habitat: This species is a lacustrine species restricted to shallow and marshy lakes. Freshwater, brackish.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, HAB, EUT. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Acanthobrama cupida => Acanthobrama marmid Acanthobrama marmid elata => Acanthobrama marmid

Acanthobrama marmid Heckel, 1843 [N] — Mesopotamian bream/Akçapak balığı

Taxonomy. Original description: *Acanthobrama marmid* Heckel, 1843a: 1075 (85) [Kueik River at Aleppo, Syria; syntypes: NMW 55345-48 (2, 2, 2, 2), 79068 (2); RMNH 2537 (4) Aleppo, 2539 (2) Aleppo; SMF 543 (4) Aleppo]. — Synonyms: *Acanthobrama marmid marmid* Heckel, 1843; *Acanthobrama arrhada* Heckel, 1843; *Acanthobrama cupida* Heckel, 1843; *Acanthobrama marmid morpha elata* Berg, 1949. — Revisions: Goren et al. (1973: 296). — Illustration: Heckel (1843b: pl. 9, fig. 2).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates, Tigris, and Orontes river basins. — Distribution in river basins: 19-Asi, 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates, Tigris, and Orontes River basins (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species is very ubiquitous, inhabiting all kinds of lowland water bodies with standing or slowly flowing waters, such as larger streams, rivers, springs, marshes, reservoirs, and lakes, as well as moderately polluted water bodies. Usually absent from fast-flowing and cold mountain streams. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats throughout the large distribution area of this species, but none is serious enough to impact major parts of the populations. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

Acanthobrama marmid marmid => Acanthobrama marmid Acanthobrama marmid orontis => Acanthobrama orontis

Acanthobrama microlepis (De Filippi, 1863) [N] — Blackbrow bleak/Inci balığı

**Taxonomy.** Original description: *Abramis microlepis* DeFilippi 1863: 393 [Kura River near Tiflis (T'bilisi), Georgia, Eurasia; holotype (unique): MZUT 673]. —

Synonyms: Acanthalburnus microlepis (DeFilippi 1863); Alburnus microlepis (De Filippi, 1863; Alburnus brandtii (non-Dybowski 1872); Alburnus punctulatus Kessler, 1877; Acanthalburnus punctulatus (Kessler, 1877). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007) as *Acanthalburnus microlepis*; Fricke et al. (2007) as *Acanthalburnus microlepis*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kura-Aras River basin, Caspian Sea basin (Georgia, Iran, and Türkiye). — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This ubiquitous species inhabits all kinds of water bodies with standing or slowly flowing waters, such as larger streams, rivers, reservoirs, and lakes, as well as moderately polluted water bodies. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Acanthobrama mirabilis* => Vimba mirabilis

### Acanthobrama orontis Berg, 1949 [E] — Orontes bream/Akçapak

**Taxonomy.** Original description: *Acanthobrama marmid orontis* Berg, 1949: 839 [Lake Antioch (Anthioche), Türkiye. syntypes: ZIN 6720 (1)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Berg (1949). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZIN.

**Distribution and habitat.** Distribution in Türkiye: Asi, Seyhan, and Ceyhan River basins. — Distribution in river basins: 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan. — General distribution: Asia Minor: Asi Nehri basin (Orontes) (Mediterranean Sea tributary), Hatay Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia, 437-Orontes. — Habitat: This species inhabits all kinds of water bodies with standing or slowly flowing waters, such as larger streams, rivers, lakes, and channels, as well as moderately polluted water bodies. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

**Remarks.** The type locality of the species is Lake Antioch, Orontes River basin. However, in recent field trips, it has not been found in the Orontes River. Therefore, it is probably extinct in the Orontes River basin because of the dried up of Amic Lake. Future detailed studies are needed to clarify this hypothesis.

## Acanthobrama thisbeae Freyhof & Özuluğ, 2014 [E] — Bream/Tahta balığı

Taxonomy. Original description: *Acanthobrama thisbeae* Freyhof & Özuluğ, 2014: 2, figs. 1-3 [Adana Province, Ceyhan River north of Sakarcalik, 37°11'36"N, 36°04'58", Türkiye; holotype: IUSHM 2010-992]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof and Özuluğ (2014). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Ceyhan River basin. — Distribution in river basins: 20-Ceyhan. — General distribution: Asia Minor: Ceyhan River basin (Mediterranean tributary), Adana Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits all kinds of water bodies with standing or slowly flowing waters, such as larger streams, rivers, lakes, and channels, as well as moderately polluted water bodies. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

Acanthorutilus anatolicus => Pseudophoxinus anatolicus Acanthorutilus caralis => Pseudophoxinus caralis

Acanthorutilus crassus => Pseudophoxinus crassus

Acanthorutilus handlirschi => Pseudophoxinus handlirschi Acanthorutilus maeandricus => Pseudophoxinus maeandricus

*Acanthobrama tricolor* (Lortet, 1883) => not occurring in Türkiye (see Çiçek et al., 2020)

*Alburnoides bipunctatus* (Bloch, 1782) => not occurring in Türkiye (see Çiçek et al., 2020)

## *Alburnoides coskuncelebii* Turan, Kaya, Aksu, Bayçelebi & Bektaş, 2019 [E] — Sprilin/Noktalı inci balığı

**Taxonomy.** Original description: *Alburnoides coskuncelebii* Turan, Kaya, Aksu, Bayçelebi & Bektaş, 2019: 204 (4), figs. 2-3 [Stream Aksu at Gölköy, Düzce Province, Türkiye, 40°45′49″N, 30°57′43″E; holotype: FFR 07007]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2019). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Büyük Melen River in the Southern Black Sea basin. — Distribution in river basins: 13-Batı Karadeniz. — General distribution: Asia Minor: Büyük Melen River basin and coastal streams Çayağzı in Düzce Province and Alaplı in Zonguldak Province, southwestern Black Sea watershed (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits streams and rivers in the foothills with well-oxygenated, fast-flowing water. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — High priority for conservation action.

**Remarks.** Alburnoides coskuncelebii distributed with *A. tzanevi* in the same basin (Kaya, 2020a; Çiçek et al., 2020). Recent molecular finding suggests possible synonymisation; therefore, it is probable that *Alburnoides coskuncelebii* is a synonym of *A. tzanevi* (Bektas et al., 2019).

### Alburnoides diclensis Turan, Bektaş, Kaya & Bayçelebi, 2016 [E] — Tigris chub/Noktalı inci balığı

**Taxonomy.** Original description: *Alburnoides diclensis* Turan, Bektaş, Kaya & Bayçelebi, 2016: 81, fig. 2 [Eziki Stream, Tigris River drainage, Hakkari Province, Türkiye, 37°40′38″N, 43°51′84″E; holotype: FFR01118]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2016). Listed in previous checklists from Türkiye by Çiçek et al. (2016, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Eziki Stream, Tigris River Drainage. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: upper Tigris River (Dicle Nehri) basin (Persian Gulf tributary) (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits streams and rivers in the foothills with welloxygenated, fast-flowing water. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Alburnoides eichwaldii (De Filippi, 1863) [N] — Kura chub/Noktalı inci balığı

**Taxonomy.** Original description: *Alburnus eichwaldii* DeFilippi 1863: 392 [Kura River near Tiflis (T'bilisi), Georgia, Eurasia; syntypes: MZUT 677 (4), NMW 55516 (2)]. — Synonyms: *Alburnoides bipunctatus eichwaldii* (DeFilippi 1863); *Alburnoides bipunctatus armeniensis* Dadikyan 1972. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kura-Aras River drainage, Caspian Sea basin (Georgia, Iran, and Türkiye). — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits streams and rivers in the foothills with well-oxygenated, fast-flowing water. Spawns on gravel in swift current. Freshwater.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

## Alburnoides emineae Turan, Kaya, Ekmekçi & Doğan, 2014 [N] — Beyazsu chub/Noktalı inci balığı

Taxonomy. Original description: *Alburnoides emineae* Turan, Kaya, Ekmekçi & Doğan, 2014: 103, fig. 2 [Mardin Province, Beyazsu Stream, Euphrates River drainage, Türkiye, 37°10'30"N, 41°16'13"E; holotype: FFR 01026]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2014: fig. 2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2014a). Listed in previous checklist by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Euphrates River drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Euphrates River (Fırat Nehri) basin (Persian Gulf tributary), Mardin Province (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species is frequently found in slow-moving water. This species prefers the middle and foothill zones of rivers. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown.

Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status:
 Unknown. — Moderate priority for conservation action.

### Alburnoides fasciatus (Nordmann, 1840) [N] — Transcaucasian spirlin/Noktalı inci balığı

**Taxonomy.** Original description: *Aspius fasciatus* Nordmann, 1840: 497, Pl. 23 (fig. 2) [Rivières de la côte orientale du Pont-Euxin et habités par les Tcherkesses, Chapsoughes Abases, and Mingréliens (Rivers of west Transcaucasia); syntypes: MNHN 0000-3897 (4, poor condition), NMW 10407-19 (13)]. — Synonyms: *Alburnoides bipunctatus fasciatus* (Nordmann, 1840). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Rivers in the northeastern Black Sea coast of Anatolia. — Distribution in river basins: 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eurasia: western Transcaucasia (Russia, Georgia) and rivers of the southern Black Sea basin from Aksu (Giresun, Türkiye) westward to Dagomys (Krasnodar, Russia). — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species inhabits rivers and streams with fast running shallow water, often over gravel, pebbles, or rocks. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### Alburnoides freyhofi Turan, Kaya, Bayçelebi, Bektaş & Ekmekçi, 2017 [E] — Spirlin/Noktalı inci balığı

**Taxonomy.** Original description: *Alburnoides freyhofi* Turan, Kaya, Bayçelebi, Bektaş & Ekmekçi, 2017: 569, figs. 2e, 4 [Stream Delice southeast of Yerköy, Yozgat Province, southern Black Sea basin, Türkiye, 39°37'19"N, 34°29'23"E; holotype: FFR 01065]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Kızılırmak drainages. — Distribution in river basins: 15-Kızılırmak. — General distribution: Asia Minor: Kızılırmak River drainage, southern Black Sea basin (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits rivers and streams with fast-running shallow water, often over gravel, pebbles, or rocks. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

## Alburnoides kosswigi Turan, Kaya, Bayçelebi, Bektaş & Ekmekçi, 2017 [E] — Spirlin/Noktalı inci balığı

**Taxonomy.** Original description: *Alburnoides kosswigi* Turan, Kaya, Bayçelebi, Bektaş & Ekmekçi, 2017: 573, figs. 2f, 5 [Stream Porsuk about 3 km south of Hacıazizler, Kütahya Province, southern Black Sea basin, Türkiye, 39°20'59"N, 30°02'17"E; holotype: FFR 01064]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2017: 573, figs. 2f, 5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Sakarya drainages. — Distribution in river basins: 12-Sakarya. — General distribution: Asia Minor: Sakarya River drainage, southern Black Sea basin and Ilgin Lake basin (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits rivers and streams with fast running shallow water, often over gravel, pebbles, or rocks. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

## *Alburnoides kurui* Turan, Kaya, Bayçelebi, Bektaş & Ekmekçi, 2017 [E] — Spirlin/Noktalı inci balığı

**Taxonomy.** Original description: *Alburnoides kurui* Turan, Kaya, Bayçelebi, Bektaş & Ekmekçi, 2017: 567, figs. 2a, 3 [Stream Tifi at Gökçebayır, Ordu Province, southern Black Sea basin, Türkiye, 40°47′57″N, 36°43′50″E; holotype: FFR 01041]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Yesilirmak drainages. — Distribution in river basins: 14-Yeşilırmak. — General distribution: Asia Minor: Yeşilırmak River drainage, southern Black Sea basin (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits rivers and streams with fast-running shallow water, often over gravel, pebbles, or rocks. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Alburnoides manyasensis* Turan, Ekmekçi, Kaya & Güçlü, 2013 [E] — Manyas spirlin/Noktalı inci balığı

**Taxonomy.** Original description: *Alburnoides manyasensis* Turan, Ekmekçi, Kaya & Güçlü, 2013: 88, figs. 2-3 [Lake Manyas drainage, Koca Stream at outlet of Manyas Dam Lake, Balikesir Province, Türkiye, 39°59'26"N, 27°47'58"E; holotype: FFR 01069]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2013). Listed in previous checklists from Türkiye by Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Koca Stream, drainage of Lake Manyas. — Distribution in river basins: 2-Marmara, 3-Susurluk. — General distribution: Asia Minor: Marmara Sea tributaries, Balıkesir Province (Türkiye). — Distribution in ecoregions: 423-Thrace. — Habitat: This species inhabits rivers and streams with fast running shallow water, often over gravel, pebbles, or rocks. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI; CON; EUT; HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

### Alburnoides petrubanarescui Bogutskaya & Coad, 2009 [N] — Spirlin/Noktalı inci balığı

Taxonomy. Original description: *Alburnoides petrubanarescui* Bogutskaya & Coad, 2009: 154, fig. 10 [Qasemlou Chay, Orumiyeh (Urmia) Lake basin, ca. 37°21'N, 45°09'E, Azarbaijan-e Bakhtari, Iran; holotype: CMNFI 1970-0558]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kaya (2020b). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: A small part of Urmia basin. — Distribution in river basins: 25-Van Lake. — General distribution: Middle East: Urmia Lake basin (Iran, Türkiye). — Distribution in ecoregions: 445-Orumiyeh. — Habitat: This species inhabits streams and small rivers with clean waters. Freshwater.

**Economic importance.** No commercial importance. **Conservation.** Conservation status in Türkiye:

Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Alburnoides recepi* => *Alburnus caeruleus* 

### Alburnoides smyrnae Pellegrin, 1927 [E] — Izmir spirlin/ Noktalı inci balığı

**Taxonomy.** Original description: *Alburnoides bipunctatus* var. *smyrnae* Pellegrin, 1927: 37 [Mélès stream near Smyrna (İzmir), Türkiye; syntypes: BMNH 1927.5.7.6 (1) [ex MNHN]; MNHN 1927-0064 (16); MSNM 6 (ex MSNM 4412 and ex MNHN) (1)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Pellegrin (1927). Listed in previous checklists from Türkiye by Çiçek et al. (2016, 2018a, 2020). — Turkish material: MSNM.

**Distribution and habitat.** Distribution in Türkiye: Büyük Menderes basin. — Distribution in river basins: 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Asia Minor: Büyük Menderes basin, Aegean Sea tributary (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits streams and small rivers with clean waters. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

## Alburnoides turani Kaya, 2020 [E] — Spirlin/Noktalı inci balığı

**Taxonomy.** Original description: *Alburnoides turani* Kaya, 2020: 421, figs. 2-4 [Stream Bolu at Akçabey, Zonguldak Province, Türkiye; holotype: FFR 07033]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Kaya (2020a). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Filyos River, Black Sea drainages. — Distribution in river basins: 13-Batı Karadeniz. — General distribution: Asia Minor: Filyos River drainage, southwestern Black Sea basin (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits streams and rivers in the foothills with well-oxygenated, fast-flowing water. Freshwater.

Economic importance. No commercial importance.

Conservation. Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Alburnoides tzanevi Chichkoff, 1933 [N] — Western Black Sea spirlin/Noktalı inci balığı

**Taxonomy.** Original description: Alburnoides bipunctatus tzanevi Chichkoff, 1933: 376, fig. 1 [Riesova River, entering Black Sea at 42°N, Bulgaria; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Çiçek et al. (2016, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Western Black Sea drainages. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Eurasia: Bulgaria, Thrace and Anatolia, Türkiye, southwestern Black Sea basin. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace. — Habitat: This species inhabits streams and rivers in the foothills with welloxygenated, fast-flowing water. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Alburnoides velioglui* Turan, Kaya, Ekmekçi & Doğan, 2014 [N] — Velioglu's chub/Noktalı inci balığı

**Taxonomy.** Original description: *Alburnoides velioglui* Turan, Kaya, Ekmekçi & Doğan, 2014: 106, fig. 3 [Erzurum Province, Sirli Stream, Euphrates River drainage, 40°12'34"N, 41°4'30"E, Türkiye; holotype: FFR 01094]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2014: 106, fig. 3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2014a). Listed in previous checklist by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish materials: FFR.

**Distribution and habitat.** Distribution in Türkiye: Euphrates River drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Euphrates River (Fırat Nehri) basin (Persian Gulf tributary), Mardin Province (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits streams and rivers in the foothills with welloxygenated, fast-flowing water. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — High priority for conservation action.

Remarks. Alburnoides velioglui is cooccurring with A.

*eminae* and *A. diclensis* in the same basin (Kaya, 2020a; Çiçek et al., 2020). Recent molecular findings suggest possible synonymisation; therefore, it is probable that *Alburnoides velioglui* is a synonym of *A. eminae* (Bektas et al., 2019). Future detailed studies are needed to clarify this hypothesis.

Alburnus adanensis Battalgazi [Battalgil], 1944 [E] — Adana bleak/Inci balığı

**Taxonomy.** Original description: *Alburnus sellal adanensis* Battalgazi 1944: 302 [Lower Seyhan River, near Adana, southern Türkiye; syntype: IUSHM 2017-1368. Author also seen as Battalgazi]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1944). Listed in previous checklists from Türkiye by Kuru (2004); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Seyhan River basin. — Distribution in river basins: 18-Seyhan. — General distribution: Asia Minor: Seyhan River basin (Mediterranean tributary) (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species is found in streams, rivers, and lakes with moderate to slow currents. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

**Remarks.** Alburnus adanensis is described from Adana Province and is sympatric with Alburnus kotschyi. However, Battalgil did not compare it with A. kotschyi in the original description. He is probably not aware of A. kotschyi. Therefore, A. adanensis is the synonym of A. kotschyi. According to Freyhof et al. (2018) A. adanensis is extinct. However, there has been no environmental change in the area where this species is distributed that would cause the extinction of any fish species, especially a species belonging to genus Alburnus with high environmental tolerance.

#### *Alburnus akili* Battalgil, 1942 [E] — Beysehir bleak/ Gövce

**Taxonomy.** Original description: *Alburnus akili* Battalgil, 1942: 288, fig. 2 [Beyşehir Lake, Central Anatolia, Türkiye; holotype: ZMH H1107]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1942). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Beyşehir Lake. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Beyşehir, Isparta and Konya provinces (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species was a lacustrine open water species. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EX. — IUCN: EX (IUCN, 2023). — Threats: COM, FIT. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Unspecified. — High priority for conservation action.

*Alburnus albidus* (Costa 1838) => not occurring in Türkiye (see Çiçek et al., 2020)

### *Alburnus alburnus* (Linnaeus, 1758) [N] — Bleak/Inci balığı

**Taxonomy.** Original description: *Cyprinus alburnus* Linnaeus, 1758: 325 [Europe; no types known]. — Synonyms: *Leuciscus alburnus* (Linnaeus, 1758). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Trachea and Sea of Marmara watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Eurasia, east to the Black Sea region. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace. — Habitat: This species is found in the open waters of large lakes and medium to large rivers. Forages close to the surface. In winter, large aggregations form in backwaters and other still waters. Spawns in shallow riffles or along stony shores of lakes, occasionally above submerged vegetation. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

Alburnus alburnus hohenackeri => Alburnus hohenackeri Alburnus atropatenae => Petroleuciscus atropatenae

## *Alburnus attalus* Özuluğ & Freyhof, 2007 [E] — Bakir shemaya/Inci balığı

Taxonomy. Original description: *Alburnus attalus* Özuluğ & Freyhof, 2007: 235, figs. 1-3 [River Bakir at Karadere, 39°06.033'N, 27°24.027'E, Türkiye; holotype: ZMB 33733]. — Synonyms: *Alburnus battalgilae* Özuluğ & Freyhof, 2007. — Revisions: None. — Illustration: None.

Status in Türkiye. Recorded from Türkiye in the

original description by Özuluğ and Freyhof (2007). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMB.

**Distribution and habitat.** Distribution in Türkiye: Drainages of Bakir River. — Distribution in river basins: 4-Kuzey Ege. — General distribution: Asia Minor: Bakır, Gediz, and Koca River systems (Aegean Sea tributary), İzmir and Manisa Provinces (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits moderately fast-flowing and warm streams and rivers with some gravel sections. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## Alburnus baliki Bogutskaya, Küçük & Ünlü, 2000 [E] — Antalya bleak/Inci balığı

**Taxonomy.** Original description: *Alburnus baliki* Bogutskaya, Küçük & Ünlü, 2000: 57, fig. 1 [Manavgat Reservoir, Manavgat River, Antalya, Türkiye; holotype: DUM 63]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Bogutskaya et al. (2000). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: DUM.

**Distribution and habitat.** Distribution in Türkiye: Manavgat River, Antalya. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Manavgat River (Mediterranean tributary), Antalya Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits slowly flowing sections of streams and rivers, often with submerged vegetation. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Alburnus battalgilae* => *Alburnus attalus* 

## Alburnus caeruleus Heckel, 1843 [N] — Black spotted bleak/Inci balığı

**Taxonomy.** Original description: *Alburnus caeruleus* Heckel, 1843a: 1084 (94) [Aleppo, Syria; syntypes: NMW 16688 (4), 55511-13 (2, 2, 2), 57161 (3); ?RMNH 2656 (4); SMF 100 (4)]. — Synonyms: *Alburnoides recepi* Turan, Kaya, Ekmekçi & Doğan, 2014. — Revisions: None. — Illustration: Heckel (1843b: pl. 11, fig. 3).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris and Euphrates River drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris, Euphrates and Qweik River drainages (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species is found in streams, rivers, and lakes with moderate to slow currents. Also inhabits reservoirs. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area inhabited by this species, but none is so strong to considerably impact the global population of this fish. — Low sensitivity to human activities. — Keystone species. — Decline status: Stable. — Low priority for conservation action.

Alburnus capito => Alburnus sellal

## *Alburnus carianorum* Freyhof, Kaya, Bayçelebi, Geiger & Turan, 2019 [E] — Antalya bleak/Inci balığı

**Taxonomy.** Original description: *Alburnus carianorum* Freyhof, Kaya, Bayçelebi, Geiger & Turan, 2019: 595, fig. 1 [Dalaman River north of Dalaman, Muğla Province, Türkiye, 36.815°N, 28.802°E; holotype: FFR 04677]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof et al. (2019). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Dalaman and Büyük Menderes river drainages. — Distribution in river basins: 7-Büyük Menderes, 8-Batı Akdeniz. — General distribution: Asia Minor: lower Dalaman and Büyük Menderes River drainages, Aegean Sea basin (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species is found in streams, rivers, and lakes with moderate to slow currents. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

## *Alburnus carinatus* Battalgil, 1941 [E] — Manyas shemaya/Inci baliği

**Taxonomy.** Original description: *Alburnus (Chalcalburnus) chalcoides carinatus* Battalgil, 1941: 179 [Lake Manyas, Türkiye; syntypes: whereabouts unknown]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1941). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Manyas and Apolyont (Uluabat) lakes. — Distribution in river basins: 2-Marmara, 3-Susurluk. — General distribution: Asia Minor: Lake Manyas and Lake Uluabat (Marmara Sea tributaries), Balıkesir and Bursa provinces (Türkiye). — Distribution in ecoregions: 423-Thrace. — Habitat: This is a lacustrine species that migrates to inflowing rivers and streams to spawn in fast-flowing water. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

**Remarks.** Both Mangit and Yerli (2018) and Bektaş et al. (2020) suggested that *A. carinatus* is a synonym of *A. derjugini*. However, Parin et al. (2014) suggested that the species of *A. derjugini* is a synonym of *A. mento*. Therefore, these situations should be clarified with detailed comparative studies.

*Alburnus chalcoides* (Güldenstadt, 1772) => not occurring in Türkiye (see Çiçek et al., 2020)

Alburnus charusini hohenackeri => Alburnus hohenackeri

## Alburnus demiri Özuluğ & Freyhof, 2008 [E] — Eastern Aegean bleak/Inci balığı

**Taxonomy.** Original description: *Alburnus demiri* Özuluğ & Freyhof, 2008: 308, figs. 1-2 [Stream Tahtah at Saşal village, 38°11.948'N, 27°08.148'E, İzmir Province, Türkiye; holotype: ZMB 33768)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Özuluğ and Freyhof (2008). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMB.

**Distribution and habitat.** Distribution in Türkiye: Western Anatolia. — Distribution in river basins: 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Asia Minor: Tahtahçay (Aegean Sea tributary), İzmir Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits rivers and streams, including reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Alburnus eichwaldii* => *Alburnoides eichwaldii* 

### Alburnus derjugini Berg, 1923 [N] — Georgian shemaya/ Inci balığı

**Taxonomy.** Original description: *Alburnus chalcoides* var. *derjugini* Berg, 1923: 272, 507 [River Çoruh basin, south Caucasus, Georgia; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Harsit River, Giresun. — Distribution in river basins: 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eurasia: streams of eastern Black Sea basin, from Ashe drainage (Russia) to River Harsit (northeastern Türkiye). — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species inhabits a wide range of streams and rivers, including those with reservoirs. Most populations are resident or forage in the lower parts of rivers and streams and migrate upriver to spawn. Populations in reservoirs migrate to inflowing streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

**Remarks.** Parin et al. (2014) suggested that the species of *A. derjugini* is a synonym of *A. mento*. However, Bektaş et al. (2020) claimed that *A. derjugini* is distributed along the entire Black Sea coast of Türkiye. Therefore, these situations should be clarified with detailed comparative studies.

## Alburnus escherichii Steindachner, 1897 [E] — Sakarya bleak/Inci balığı

Taxonomy. Original description: *Alburnus escherichii* Steindachner, 1897: 692 (8), Pl. 4 (fig. 3) [Tabakane-Su and Tschibuk-Tschai, Türkiye; syntypes: (several) NMW 55517-18 (3, 8), 55520-21 (3, 3)]. — Synonyms: *Alburnus kosswigi* Battalgil, 1941; *Alburnus nasreddini* Battalgil, 1944. — Revisions: None. — Illustration: None. **Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Sakarya River basin. — Distribution in river basins: 9-Antalya, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 16-Konya. — General distribution: Asia Minor: Sakarya basin (Black Sea tributaries), Anatolia; Eskişehir Province (Türkiye); introduced in Manavgat River and Beyşehir Lake basin (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species inhabits a wide range of stream and river habitats, including lakes and reservoirs. Lacustrine populations migrate to inflowing rivers or streams to spawn. Freshwater, brackish.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but none impact the species to a degree that it really threatens it. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

## Alburnus filippii Kessler, 1877 [N] — Kura bleak/Inci balığı

**Taxonomy.** Original description: *Alburnus filippii* Kessler, 1877: 153 [Upper Kura River near Tbilisi, Georgia, Eurasia; lectotype: ZIN 2926]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kura-Aras River drainage, Caspian Sea Basin (Georgia, Türkiye, and Iran). — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits a wide range of stream and river habitats, including lakes and reservoirs. Lacustrine populations migrate to inflowing rivers or streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

### Alburnus goekhani Özuluğ, Geiger & Freyhof, 2018 [E] — Bleak/Inci balığı

Taxonomy. Original description: Alburnus goekhani

Özuluğ, Geiger & Freyhof, 2018: 34, figs. 3-5 [Kızılırmak River at Ortatopaç northwest of Şarkışla, Sivas Province, Türkiye, 39.381°N, 36.250°E; holotype: IUSHM 2017-1375]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Özuluğ et al. (2018). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Kızılırmak River basin. — Distribution in river basins: 15-Kızılırmak. — General distribution: Asia Minor: Kızılırmak and Yeşilırmak basins, southern Black Sea tributaries (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits a wide range of streams, rivers, and lakes, including reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Alburnus hebes* => *Alburnus sellal Alburnus heckeli* => *Alburnus sellal* 

*Alburnus hohenackeri* Kessler, 1877 [N] — Transcaucasian bleak/Inci balığı

**Taxonomy.** Original description: Alburnus hohenackeri Kessler, 1877: 156 [Karabakh, Azerbaijan; holotype (unique): ZIN 2339 (not 2839)]. — Synonyms: Alburnus charusini hohenackeri (Kessler, 1877); Alburnus alburnus hohenackeri (Kessler, 1877); Alburnus charusini Herzenstein 1889; Alburnus lucidus var. macropterus Kamensky, 1901. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Alburnus alburnus hohenacheri;* Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kura-Aras River drainage, Caspian Sea Basin (Türkiye, Russia, Azerbaijan, Kazakhstan, Georgia, and Iran). Introduced elsewhere. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits water bodies with slow to fast current and prefers places where the current is slowed down, commonly in shallows near the bottom. Abundant in the middle and lower reaches of large rivers and their tributaries, reservoirs, and swampy creeks; also in brackish water at river mouths, in estuaries, and in coastal lakes. Freshwater. **Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Alburnus iblis* => *Alburnus sellal* 

## Alburnus istanbulensis Battalgil, 1941 [E] — Marmara shemaya/Inci balığı

**Taxonomy.** Original description: *Alburnus (Chalcalburnus) chalcoides istanbulensis* Battalgil, 1941: 180 [Kâathane (Kagithane) stream, draining to Bosphorus River, near Istanbul, Türkiye; syntypes: whereabouts unknown]. — Synonyms: *Alburnus (Chalcalburnus) chalcoides sapancae* Battalgil, 1941. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1941). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Northwestern Anatolia. — Distribution in river basins: 2-Marmara, — General distribution: Asia Minor: Marmara Sea and Black Sea tributaries, coastal streams of eastern Thrace (Türkiye). — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace. — Habitat: This species inhabits riverine and lacustrine habitats. Migrates to the upper reaches of tributaries to spawn. Spawns in riffles with heavy current on gravel bottom. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Moderate priority for conservation action.

**Remarks.** Both Mangit and Yerli (2018) and Bektaş et al. (2020) suggested that *A. istanbulensis* is a synonym of *A. derjugini*. However, Parin et al. (2014) suggested that *A. derjugini* is a synonym of *A. mento*. Therefore, these situations should be clarified with detailed comparative studies.

Alburnus kosswigi => Alburnus escherichii

## *Alburnus kotschyi* Steindachner, 1863 [E] — Arsuz bleak/Inci balığı

**Taxonomy.** Original description: *Alburnus kotschyi* Steindachner, 1863: 193 [Arsuz (Arsus), Hatay Province, Türkiye, Mediterranean watershed; neotype: IUSHM 37900-253]. — Synonyms: None. — Revisions: None. — Illustration: None. **Status in Türkiye.** Recorded from Türkiye in the original description by Steindachner (1863). Listed in previous checklists from Türkiye by Fricke et al. (2007); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Seyhan and Ceyhan river basins. — Distribution in river basins: 18-Seyhan, 20-Ceyhan. — General distribution: Asia Minor: Mediterranean Sea tributaries, Hatay Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species is a ubiquitous inhabitant of all kinds of streams, springs, and rivers. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

*Alburnus kurui* (Bogutskaya, 1995) [E] — Yüksekova chub/Inci balığı

**Taxonomy.** Original description: *Leuciscus kurui* Bogutskaya, 1995: 150, fig. 1 [Yüksekova suyu in Upper Tigris River (Dicle Nehri) basin, east of Hakkâri, Hakkâri Province, southeastern Türkiye; holotype: ZMH 7361]. — Synonyms: *Squalius kurui* (Bogutskaya, 1995); *Petroleuciscus kurui* (Bogutskaya, 1995). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Bogutskaya (1995). Listed in previous checklists from Türkiye by Kuru (2004) as *Leuciscus kurui*; Geldiay and Balık (2007) as *Leuciscus kurui*; Fricke et al. (2007) as *Petroleuciscus kurui*; Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Tigris River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Yüksekova wetland, upper Tigris River basin (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species has only been recorded from an endorheic basin, a close drainage basin with no outflowing tributaries. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: DD (IUCN, 2023). — Threats: Threats to this species are unknown, but it is endemic to a little uninhabited high altitude endorheic basin where impacts from human activities are unlikely. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Alburnus magnificus Freyhof & Turan, 2019 [N] — Bleak/ Inci balığı

**Taxonomy.** Original description: *Alburnus magnificus* Freyhof & Turan, 2019: 374, figs. 2-4 [Stream Afrin about 5 km east of Kocabeyli, Kilis Province, Türkiye, 36.806°N 36.982°E; holotype: FFR 998]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof and Turan (2019: figs. 2-4).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof and Turan (2019). Listed in previous checklist by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Orontes River drainage. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor and Middle East: Lower Orontes River drainage (Türkiye and Syria). — Distribution in ecoregions: 437-Orontes. — Habitat: This species inhabits all kinds of lowland water bodies with standing or slowly flowing waters, such as larger streams, rivers, springs, marshes, reservoirs, and lakes. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

**Remarks.** The previous record of *Alburnus qalilus* (non-Krupp, 1992) from Türkiye refers to *Alburnus magnificus*, which was identified by Freyhof and Turan (2019) as the new species. Actually, there were no big genetic differences between *A. magnificus* and *A. qalilus*. Therefore, *A. magnificus* may be a synonym of *A. qalilus*. When serial genetic analysis of populations has been done, they are expected to be closely related, and only minor differences are envisaged.

*Alburnus maxillaris => Alburnus sellal* 

*Alburnus megacephalus => Alburnus sellal* 

*Alburnus microlepis => Acanthobrama microlepis* 

*Alburnus mossulensis => Alburnus sellal* 

Alburnus nasreddini => Alburnus escherichii

Alburnus nicaeensis Battalgil, 1941 [E] — Iznik shemaya/ Inci balığı

**Taxonomy.** Original description: *Alburnus (Chalcalburnus) chalcoides nicaeensis* Battalgil, 1941: 179 [Lake Iznik, Anatolia, Türkiye; syntypes: whereabouts unknown]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1941). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Lake İznik. — Distribution in river basins: 2-Marmara.

— General distribution: Asia Minor: Marmara Sea region, Lake İznik, Bursa Province (Türkiye). — Distribution in ecoregions: 423-Thrace. — Habitat: This species is a pelagic, lacustrine species that most likely spawned in lake tributaries. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EX. — IUCN: EX (IUCN, 2023). — Threats: COM. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

### Alburnus orontis Sauvage, 1882 [N] — Orontes bleak/ İnci balığı

**Taxonomy.** Original description: *Alburnus orontis* Sauvage, 1882: 168 [Hammah (Hamáh), Syria; syntypes: MNHN A-3907 (2)]. — Synonyms: None. — Revisions: Freyhof and Turan (2019: 380). — Illustration: Freyhof and Turan (2019: 379, fig. 6).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Orontes River basin. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor and Middle East: Orontes River basin (Syria and Türkiye). — Distribution in ecoregions: 437-Orontes. — Habitat: This species inhabits a wide range of rivers, canals, and reservoirs. Usually, most abundantly in large springs that bring clean, freshwater to the river. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, HAB, EUT. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

*Alburnus qalilus* Krupp, 1992 => not occurring in Türkiye (see Table 1)

*Alburnus pallidus => Alburnus sellal* 

*Alburnus punctulatus => Acanthobrama microlepis Alburnus sapancae => Alburnus istanbulensis* 

*Alburnus schejtan => Alburnus sellal* 

## Alburnus schischkovi (Drensky, 1943) [N] — Black Sea bleak/Tatlı su kolyoz balığı

**Taxonomy.** Original description: *Chalcalburnus chalcoides schischkovi* Drensky, 1943: 353, figs. 1 [Mouth of rivers Resowska (Rezovska) and Weleka (Veleka), Bulgaria. syntypes: whereabouts unknown]. — Synonyms: None. — Revisions: None. — Illustration: None.

Status in Türkiye. Listed in previous checklists from

Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Trachea region. — Distribution in river basins: 2-Marmara. — General distribution: Eurasia: Black Sea basin (Türkiye and Bulgaria). — Distribution in ecoregions: 418-Dniester - Lower Danube. — Habitat: This species is riverine. Migrates to the upper reaches of tributaries to spawn. Spawns in riffles with heavy current on gravel bottom. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: EN (IUCN, 2023). — Threats: CLI, FIT. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

**Remarks.** Both Mangit and Yerli (2018) and Bektaş et al. (2020) suggested that *A. schischkovi* is a synonym of *A. derjugini*. By the way, Parin et al. (2014) suggested that both *A. derjugini* and *A. schischkovi* are a synonym of *A. mento*. Therefore, these situations should be clarified with detailed comparative studies.

Alburnus selcuklui => Alburnus sellal

## Alburnus sellal Heckel, 1843 [N] — Sellal bleak/Gümüş balığı

Taxonomy. Original description: Alburnus sellal Heckel, 1843a: 1082 (92) [Kueik (Qweik River), Aleppo, Syria; syntypes: NMW 55664-67 (1, 2, 4, 2); RMNH 2666 (2)]. ---Synonyms: Chalcalburnus sellal (Heckel, 1843); Alburnus capito Heckel, 1843; Alburnus hebes Heckel, 1843; Alburnus microlepis Heckel, 1843; Alburnus mossulensis Heckel, 1843; Chalcalburnus mossulensis (Heckel, 1843); Alburnus pallidus Heckel, 1843; Leuciscus maxillaris Valenciennes, 1844; Alburnus maxillaris (Valenciennes, 1844); Alburnus caudimacula Heckel, 1847; Alburnus iblis Heckel, 1847; Alburnus megacephalus Heckel, 1847; Alburnus schejtan Heckel, 1847; Alburnus mossulensis delineatus Battalgil, 1942; Alburnus zagrosensis Coad, 2009; Alburnus selcuklui Elp, Şen & Özuluğ, 2015. — Revisions: Bogutskaya (1997: 167); Birecikligil et al. (2016: 47). — Illustration: Heckel (1843b: pl. 11, fig. 1).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007) as *Chalcarburnus sellal*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris river drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates, Tigris, Zoreh, Persis, and Hormuz River basins (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits lakes, reservoirs, and all kinds of streams and rivers from the cold Anatolian highlands down to the subtropical Shatt al Arab and Iranian Gulf rivers. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but this species is very resistant and can cope with most of them. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

### Alburnus tarichi (Güldenstädt, 1814) [E] — Van bleak/ Inci kefali

**Taxonomy.** Original description: *Cyprinus tarichi* Güldenstädt in Pallas, 1814: 335 [Lake Gotscha, Armenia (erroneous, is Lake Van, Türkiye); no types known]. — Synonyms: *Chalcalburnus tarichi* (Güldenstädt, 1814); *Leuciscus vanensis* Günther, 1868. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Pallas (1814). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007) *Chalcarburnus tarichi*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Van Lake Basin. — Distribution in river basins: 25-Van Lake. — General distribution: Asia Minor: Lake Van endemic, Van and Bitlis provinces (Türkiye). — Distribution in ecoregions: 444-Lake Van. — Habitat: This species is a lacustrine pelagic species that migrates about 15 km up in flowing rivers to spawn. The lake is a saline lake, so invasive species have not been introduced. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: NT. — IUCN: NT (IUCN, 2023). — Threats: EUT, FIT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

*Alburnus timarensis* Kuru, 1980 [E] — Karasu sha kuli/ Inci kefali

**Taxonomy.** Original description: *Alburnus timarensis* Kuru, 1980: 97, fig. 1 [Karasu River, Yumrutepe-Timar, Van Lake tributary, Türkiye; holotype: Zoology Museum Hacettepe Univ. no. 1]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Kuru (1980b). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Karasu Stream, Van Lake Basin. — Distribution in river basins: 25-Van Lake. — General distribution: Asia Minor: Lake Van tributary endemic, Karasu, Van Province (Türkiye). — Distribution in ecoregions: 444-Lake Van. — Habitat: This species is a resident species that inhabits moderately fast-flowing streams. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: CON, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action. *Alburnus zagrosensis => Alburnus sellal Alburnus caudimacula => Alburnus sellal* 

Alburnus delineatus => Alburnus sellal Alburnus microlepis => Alburnus sellal Aspius aspius => Leuciscus aspius

Aspius fasciatus => Alburnoides fasciatus

Aspius vorax => Leuciscus vorax

### Blicca bjoerkna (Linnaeus, 1758) [N] — White bream/ Tahta balığı

**Taxonomy.** Original description: *Cyprinus bjoerkna* Linnaeus, 1758: 326 [Greifswald, Mecklenburg-Vorpommern, 54°05'N, 13°23'E, Germany; neotype: SMNS 12668]. — Synonyms: *Abramis bjoerkna* (Linnaeus, 1758). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007) as *Abramis bjoerkna*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Marmara, Aegean and Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 12-Sakarya, 13-Batı Karadeniz, 24-Aras. — General distribution: Eurasia: Europe and Caspian Sea basin. — Distribution in ecoregions: 418-Dniester -Lower Danube, 423-Thrace, 430-Northern Anatolia, 434-Kura - South Caspian Drainages. — Habitat: This species inhabits a wide variety of shallow, warm lowland lakes and the slow-flowing lower reaches of large rivers and canals. Often, they are abundant on the bottom of large sandy rivers. Spawns along shores on submerged vegetation, roots, or even shallow gravel bottoms. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Blicca bjoerkna transcaucasica* Berg, 1916 => not
occurring in Türkiye (see Çiçek et al., 2020)

Capoeta holmwoodii => Chondrostoma holmwoodii Chalcalburnus chalcoides schischkovi => Alburnus schischkovi

Chalcalburnus mossulensis => Alburnus sellal Chalcalburnus schischkovi => Alburnus schischkovi Chalcalburnus sellal => Alburnus sellal Chalcalburnus tarichi => Alburnus tarichi Chondochilus regius => Chondrostoma regium

## Chondrostoma angorense Elvira, 1987 [E] — Ankara nase/Kababurun

**Taxonomy.** Original description: *Chondrostoma nasus angorensis* Elvira, 1987: 117 [Eskishir, Türkiye; holotype: NMW 52234: 1]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Elvira (1987). Listed in previous checklists from Türkiye by Kuru (2004) as *Chondrostoma nasus angorense*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: NMW.

**Distribution and habitat.** Distribution in Türkiye: Sakarya and Kızılırmak river basins. — Distribution in river basins: 12-Sakarya, 15-Kızılırmak. — General distribution: Asia Minor: Sakarya and Kızılırmak basin (Black Sea tributaries), Anatolia (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits moderately to fast-flowing largeto medium-sized rivers with rock or gravel bottoms. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, EUT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

## *Chondrostoma beysehirense* Bogutskaya, 1997 [E] — Beysehir nase/Kababurun

**Taxonomy.** Original description: *Chondrostoma beysehirense* Bogutskaya, 1997: 153, fig. 1 [Beysehir Lake, central Anatolia, Türkiye; holotype: ZMH 8812]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Bogutskaya (1997). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Beyşehir Lake. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Beyşehir and Lake Beyşehir tributaries, Isparta and Konya provinces (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits streams with moderately fast-flowing water, clear water, and often submerged vegetation. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CON, COM, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

*Chondrostoma ceyhanense* Küçük, Turan, Güçlü, Mutlu & Çiftçi, 2017 [E] — Ceyhan Nase/Kababurun balığı

**Taxonomy.** Original description: *Chondrostoma ceyhanensis* Küçük, Turan, Güçlü, Mutlu & Çiftçi, 2017: 798, figs. 4b, 5c, 6b, 7, 8 [Sır Dam Lake, Ceyhan River, Kahramanmaraş Province, Türkiye, 38°32.239'N, 33°10.887'E; holotype: IFC-ESUF 03-1555]. — Synonyms: None. — Revisions: None. — Illustration: Küçük et al. (2017: 798, figs. 4b, 5c, 6b, 7, 8).

**Status in Türkiye.** Recorded from Türkiye in the original description by Küçük et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: IFC-ESUF.

**Distribution and habitat.** Distribution in Türkiye: Ceyhan, Seyhan and Berdan drainages. — Distribution in river basins: 17-Doğu Akdeniz, 18-Seyhan, 20-Ceyhan. — General distribution: Asia Minor: Ceyhan, Seyhan and Berdan River basins (Mediterranean tributaries) (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits moderately to fast-flowing large- to medium-sized rivers with rock or gravel bottoms. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

*Chondrostoma ceyhanensis => Chondrostoma ceyhanense* 

Chondrostoma colchicum Derjugin, 1899 [N] — Transcaucasian nase/Kababurun balığı

Taxonomy. Original description: *Chondrostoma colchicum* Derjugin (ex Kessler) 1899: 164 (17), Pl. 9 (figs. 2-3) [Rion River and Tchoroch River and tributary near Batumi, Georgia, Eurasia; syntypes: ZIN 5298-99 (2, 3), 11505 (1), 11517 (1)]. — Synonyms: *Chondrostoma awhasicum* Kamensky, 1901; *Chondrostoma colchicum* var. *tschorochica* Kamensky, 1901. — Revisions: None. — Illustration: Derjugin (1899: 164 (17), Pl. 9 (figs. 2-3)). **Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea watersheds. — Distribution in river basins: 14-Yeşilırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eurasia: Black Sea watersheds (Türkiye, Armenia, Azerbaijan and Georgia). — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species inhabits a wide range of slowly to fast-flowing rivers and streams with gravel or rocky substrates. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

#### *Chondrostoma cyri* Kessler, 1877 [N] — Kura nase/ Kababurun

**Taxonomy.** Original description: *Chondrostoma cyri* Kessler, 1877: 137, Pl. 5 (fig. 21) [Kura River, Tbilisi, Georgia, Eurasia; syntypes: (8) BMNH 1897.7.5.27 (ex St. Petersberg Univ.) (1), ZIN 10919 (2)]. — Synonyms: *Chondrostoma leptosoma* (non-Berg, 1914). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Chondrostoma oxyrhynchum cyri*; Geldiay and Balık (2007) as *Chondrostoma oxyrhynchum*; Fricke et al. (2007); Kuru et al. (2014) as *Chondrostoma oxyrhynchum*; Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kura-Aras River basin, Caspian Sea basin. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits piedmont and mountain rivers with strong currents and rock to gravel bottoms. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

Chondrostoma fahirae => Turcichondrostoma fahirae

## *Chondrostoma holmwoodii* (Boulenger, 1896) [E] — Izmir nase/Kababurun

**Taxonomy.** Original description: *Capoeta holmwoodii* Boulenger, 1896: 153 [Between north coast of Smyrna (İzmir) and Troy, Türkiye. syntypes: BMNH 1893.1.14.7-8 (2)]. — Synonyms: None. — Revisions: None. — Illustration: None. **Status in Türkiye.** Recorded from Türkiye in the original description by Boulenger (1896). Listed in previous checklists from Türkiye by Kuru (2004) as *Chondrostoma holmwoodii meandrense*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: BMNH.

**Distribution and habitat.** Distribution in Türkiye: Western basins of Türkiye. — Distribution in river basins: 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Asia Minor: Aegean Sea tributaries, western Anatolia (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits medium-sized streams to large rivers with rocky or gravel substrates and swift to moderately fast currents. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Chondrostoma holmwoodii meandrensis => Chondrostoma meandrense* 

## *Chondrostoma kinzelbachi* Krupp, 1985 [N] — Orontes nase/Kababurun

**Taxonomy.** Original description: *Chondrostoma kinzelbachi* Krupp, 1985: 27, fig. 1 [Tributary of Karasu Çayi near Tahtaköprü dam, Türkiye, 36°52'N, 36°40'E; holotype: SMF 17127]. — Synonyms: None. — Revisions: Bogutskaya (1997: 170); Robalo et al. (2007: 370). — Illustration: Krupp (1985c: fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Krupp (1985c). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: SMF.

**Distribution and habitat.** Distribution in Türkiye: Orontes River basin. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor, Middle East: Orontes River basin (Türkiye and Syria). — Distribution in ecoregions: 437-Orontes. — Habitat: This species inhabits medium-sized streams and large rivers with a rocky or gravel substrate and swift to moderately fast currents. It actually inhabits a large reservoir from which it is believed to migrate to inflowing streams to spawn. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, COM, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

Chondrostoma leptosoma => Chondrostoma cyri

# *Chondrostoma meandrense* Elvira, 1987 [E] — Menderes nase/Kababurun

**Taxonomy.** Original description: *Chondrostoma holmwoodii meandrensis* Elvira, 1987: 120 [Isikli, Türkiye; holotype: ZMH 6720 (ex 2487: 1)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Elvira (1987). Listed in previous checklists from Türkiye by Kuru (2004); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Büyük Menderes River basin. — Distribution in river basins: 7-Büyük Menderes. — General distribution: Asia Minor: Aegean Sea tributary, Büyük Menderes River, Denizli and Afyonkarahisar provinces (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits medium-sized streams and springs to large rivers with rocky or gravel substrates and swift to moderately fast currents. Freshwater.

Economic importance. Locally commercially important.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Chondrostoma nasus* (Linnaeus, 1758) [N] — Sneep/ Kababurun balığı, çime, kizilkanat

**Taxonomy.** Original description: *Cyprinus nasus* Linnaeus, 1758: 325 [Rhine River; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Northwestern Anatolia. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Europe; Asia Minor: western Anatolia (Türkiye). — Distribution in ecoregions: 423-Thrace. — Habitat: This species inhabits moderate to fast-flowing large- to medium-sized rivers with a rock or gravel bottom. Spawns in fast-flowing water on shallow gravel beds, often in small tributaries. May show a strong size-related longitudinal distribution in smaller rivers, with adults inhabiting more upper river stretches. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

*Chondrostoma nasus angorensis => Chondrostoma angorense* 

### Chondrostoma regium (Heckel, 1843) [N] — King nase/ Kababurun balığı

**Taxonomy.** Original description: *Chondochilus regius* Heckel, 1843a: 1077 )87) [Orontes and Tigris rivers; syntypes: NMW 52532-35 (2, 2, 2, 1) Kueik (Qweik River) near Aleppo, 52536-38 (2, 1, 2) Tigris near Mosul]. — Synonyms: None. — Revisions: Çiftci et al. (2020: 214). — Illustration: Heckel (1843b: pl. 9, fig. 3) as *Chondochilus regius*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris River drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor, Middle East: Euphrates and Tigris River systems (Türkiye, Syria, Iraq and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a wide range of habitats, from medium-sized streams to large lowland rivers. Inhabits marshes and reservoirs, from which it migrates to rivers and streams to spawn. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but none serious enough to threaten this species. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

### *Chondrostoma smyrnae* Küçük, Çiftçi, Güçlü & Turan, 2021 [E] — Nase/Kababurun balığı

**Taxonomy.** Original description: *Chondrostoma smyrnae* Küçük, Çiftçi, Güçlü & Turan, 2021: 240, figs. 3a-c, 4a, 5a, 6a, 7a-b [Tahtalı reservoir about 2 km north of Değirmendere, İzmir Province, Türkiye, 38°08'19"N, 27°07'10"E; holotype: IFC-ESUF 03-1566]. — Synonyms: None. — Revisions: None. — Illustration: Küçük et al. (2021: 240, figs. 3a-c, 4a, 5a, 6a, 7a-b).

**Status in Türkiye.** Recorded from Türkiye in the original description by Küçük et al. (2021). — Turkish material: IFC-ESUF.

**Distribution and habitat.** Distribution in Türkiye: Tahtalı reservoir, Küçük Menderes River drainage. — Distribution in river basins: 6-Küçük Menderes. — General distribution: Asia Minor: Tahtalı reservoir and possibly the Küçük Menderes River drainage (İzmir Province, Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits a wide range of habitats, from medium-sized streams to large lowland rivers also found in marshes and reservoirs, from which it migrates to rivers and streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Chondrostoma toros* Küçük, Turan, Güçlü, Mutlu & Çiftçi, 2017 [E] — Nase/Kababurun balığı

**Taxonomy.** Original description: *Chondrostoma toros* Küçük, Turan, Güçlü, Mutlu & Çiftçi, 2017: 796, figs. 2-3, 4a, 5a, 6a [Göksu River, Hamamköy Village, Mut County, Mersin (İçel) Province, Türkiye, 38°32.239'N, 33°10.887'E; holotype: IFC-ESUF 03-1555]. — Synonyms: None. — Revisions: None. — Illustration: Küçük et al. (2017: 796, figs. 2-3, 4a, 5a, 6a).

**Status in Türkiye.** Recorded from Türkiye in the original description by Küçük et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: IFC-ESUF.

**Distribution and habitat.** Distribution in Türkiye: Göksu River basin. — Distribution in river basins: 17-Doğu Akdeniz. — General distribution: Asia Minor: Göksu River drainage (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits moderately to fast-flowing large- to medium-sized rivers with rock or gravel bottoms. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Chondrostoma turnai* Güçlü, Çiftçi, Küçük, Turan & Mutlu, 2018 [E] — Nase/Kababurun balığı

**Taxonomy.** Original description: *Chondrostoma turnai* Güçlü, Çiftçi, Küçük, Turan & Mutlu, 2018: (2] 316, fig. 1 [Çine Stream, Büyük Menderes River, 37°45′47″N, 27°50′03″E, Aydın Province, Türkiye; holotype: IFC-ESUF 03-1557]. — Synonyms: None. — Revisions: None. — Illustration: Güçlü et al. (2018: (2] 316, fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Güçlü et al. (2018). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: IFC-ESUF.

**Distribution and habitat.** Distribution in Türkiye: Büyük Menderes River basin. — Distribution in river basins: 7-Büyük Menderes. — General distribution: Asia Minor: Büyük Menderes River basin, Aydın and Denizli provinces (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits moderately to fast-flowing large- to medium-sized rivers with rock or gravel bottoms. Freshwater. **Economic importance.** Locally consumed but of no commercial importance.

Conservation. Conservation status in Türkiye: Unknown. - IUCN: NE (2023). - Threats: Unknown. - Moderate sensitivity to human activities. - Not considered a keystone species. - Decline status: Unknown. — Moderate priority for conservation action. Chondrostoma vardarense Karaman, 1928 => not occurring in Türkiye (see Cicek et al., 2020) *Cyprinus aspius => Leuciscus aspius Cyprinus bjoerkna* => *Blicca bjoerkna Cyprinus brama => Abramis brama Cyprinus cephalus => Squalius cephalus Cyprinus erythrophthalmus => Scardinius* erythrophthalmus *Cyprinus rutilus => Rutilus rutilus Cyprinus tarichi => Alburnus tarichi* Cyprinus vimba => Vimba vimba

*Egirdira nigra* (Kosswig & Geldiay, 1952) [E] — Eğirdir minnow/Eğirdir yağbalığı

**Taxonomy.** Original description: *Pararhodeus niger* Kosswig & Geldiay, 1952: 12, fig. 5 [Lake Eğirdir, Türkiye; syntypes: ESFM PISI/1950-007 (1), PISI/1951-003 (28)]. — Synonyms: *Phoxinellus egridiri* Karaman, 1972; *Pseudophoxinus egridiri* (Karaman, 1972). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Kosswig and Geldiay (1952). Listed in previous checklists from Türkiye by Kuru (2004) as *Pseudophoxinus egridiri*; Geldiay and Balık (2007) as *Phoxinellus egridiri*; Fricke et al. (2007) as *Pseudophoxinus egridiri*; Kuru et al. (2014) as *Pseudophoxinus egridiri*; Çiçek et al. (2015, 2018a, 2020) as *Pseudophoxinus egridiri*. — Turkish material: ESFM.

**Distribution and habitat.** Distribution in Türkiye: Eğirdir Lake and tributaries. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Lake Eğirdir and Lake Eğirdir tributaries, Isparta Province, Central Anatolia (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits lakes and streams with dense vegetation and standing or slowly flowing water. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023 as *Pseudophoxinus egridiri*). — Threats: ABS, CLI, CON, COM, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

*Ladigesocypris ghigii* (Gianferrari 1927) => not occurring in Türkiye (see Ciçek et al., 2020)

*Ladigesocypris irideus => Squalius irideus* 

Ladigesocypris mermere (Ladiges, 1960) [E] — Izmir minnow/none

**Taxonomy.** Original description: *Leucaspius irideus mermere* Ladiges, 1960: 139, fig. 12 [Gediz (Hermos), Türkiye; holotype: ZMH H1087]. — Synonyms: *Pseudophoxinus mermere* (Ladiges, 1960). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Ladiges (1960). Listed in previous checklists from Türkiye by Kuru (2004) as *Ladigeocypris ghigii mermere*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Gediz River basin. — Distribution in river basins: 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Asia Minor: Gediz River (Aegean Sea tributary), İzmir Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits streams with dense vegetation and standing or slowly flowing water. Freshwater.

Economic importance. No commercial importance.
Conservation. Conservation status in Türkiye:
Unknown. — IUCN: DD (IUCN, 2023). — Threats:
ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species.
— Decline status: Unknown Decreasing. — Moderate priority for conservation action.

**Remarks.** *Ladigesocypris mermere* is probably a synonym of *Petroleuciscus smyrnaeus* (Geiger et al., 2014). Therefore, these situations should be clarified with detailed comparative studies (Barbieri et al., 2015).

*Leucalburnus satunini* (Berg, 1910) [N] — Mountain dace/none

**Taxonomy.** Original description: *Phoxinus satunini* Berg, 1910: 127 [Upper Kura River, Türkiye. On p. 1 of separate; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura River drainages. — Distribution in river basins: 24-Aras. — General distribution: Asia Minor: Upper Kura River system (Türkiye). — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits high mountain streams with moderately fast-flowing waters. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats:

There are no obvious threats for this species in the area. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## *Leucaspius delineatus* (Heckel, 1843) [N] — Sunbleak/ none

**Taxonomy.** Original description: *Squalius delineatus* Heckel, 1843: 1041 [Marchfelds near Vienna and Mähren, Austria; syntypes: NMW 49783 (7), 50794 (6), 50796 (1)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: European Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Europe and western Asia; also introduced. — Distribution in ecoregions: 423-Thrace. — Habitat: This species inhabits lowland riverine habitats, especially oxbows and other water bodies only connected to rivers during floods. Often found in ponds, steppe lakes, and small water bodies not connected to rivers, may occur in any habitat with few or no predators. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Leucaspius irideus => Squalius irideus* 

*Leucaspius irideus mermere => Ladigesocypris mermere* 

Leuciscus agdamicus => Squalius agdamicus

*Leuciscus alburnus => Alburnus alburnus* 

*Leuciscus anatolicus => Squalius anatolicus* 

*Leuciscus apollonitis => Scardinius erythrophthalmus* 

### *Leuciscus aspius* (Linnaeus, 1758) [N]— Asp/Kurt balığı-Kocaagız balığı

**Taxonomy.** Original description: *Cyprinus aspius* Linnaeus, 1758: 325 [Swedish lakes; no types known] — Turkish synonyms: *Aspius aspius* (Linnaeus, 1758). — Revisions: Berg (1949: 603) as *Aspius aspius*. — Illustration: Berg (1949: 604, figs. 357-359) as *Aspius aspius*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Aspius aspius*; Geldiay and Balık (2007) as *Aspius aspius*; Fricke et al. (2007) as *Aspius aspius*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: European Black Sea watersheds. — Distribution in river

basins: 1-Meriç-Ergene, 2-Marmara, 24-Aras. — General distribution: Asia: Distribution: Europe to western Asia. — Distribution in ecoregions: 423-Thrace, 434-Kura -South Caspian Drainages. — Habitat: This species is found in open water in large and mid-sized lowland rivers and large lakes. Spawns on gravel or submerged vegetation in fast-flowing water. Lake populations migrate to tributaries. Freshwater, brackish.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB. — Low sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Low priority for conservation action.

*Leuciscus borysthenicus => Petroleuciscus borysthenicus* 

Leuciscus cephalus => Squalius cephalus

Leuciscus cii => Squalius cii

Leuciscus frisii => Rutilus frisii

*Leuciscus idus* (Linnaeus, 1758) => not occurring in

Türkiye (see Çiçek et al., 2020)

Leuciscus kosswigi => Squalius kosswigi

Leuciscus kurui => Alburnus kurui

Leuciscus maxillaris => Alburnus sellal

*Leuciscus pursakensis => Squalius pursakensis* 

*Leuciscus smyrnaeus => Petroleuciscus smyrnaeus* 

*Leuciscus spurius => Squalius spurius* 

*Leuciscus turcicus => Squalius turcicus* 

*Leuciscus vanensis* => *Alburnus tarichi* 

## *Leuciscus vorax* (Heckel, 1843) [N] — Mesopotamian asp/Sis balığı

Taxonomy. Original description: *Aspius vorax* Heckel, 1843a: 21 (24), pl. 9 [Heri Rud River near Herat, Syria; syntypes: NMW 16527 (1, dry), 76776 (1)]. — Synonyms: None. — Revisions: Lelek (1987: 150) as *Aspius vorax*; Perea et al. (2011: 15). — Illustration: Heckel (1843b: pl. 10, fig. 3) as *Aspius vorax*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Aspius vorax*; Geldiay and Balık (2007) as *Aspius vorax*; Fricke et al. (2007) as *Aspius vorax*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Orontes, Euphrates, and Tigris River basins. — Distribution in river basins: 19-Asi, 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Orontes, Euphrates, and Tigris River basins (Türkiye, Iraq, Iran). — Distribution in ecoregions: 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits large rivers, lakes, and reservoirs. Migrates from lakes and reservoirs into inflowing rivers or streams to spawn. Sensitive to pollution. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: EUT, FIT. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Low priority for conservation action.

*Leuciscus cephaloides => Squalius cephaloides* 

*Leuciscus fellowesii => Squalius fellowesii* 

Pararhodeus maeandri => Pseudophoxinus maeandri Pararhodeus meandri => Pseudophoxinus maeandri

Petroleuciscus atropatenae (Berg, 1925) [N] — none/

**Taxonomy.** Original description: *Alburnus atropatenae* Berg, 1925:213 [Rivers of Lake Urmia, Iran; syntypes: (46) BMNH 1899.9.30.127 (1), 1899.9.30.128-130 (3); not at ZIN]. — Synonyms: *Chalcalburnus atropatenae* (Berg, 1925). — Revisions: Mouludi-Saleh et al. (2022). — Illustration: Mouludi-Saleh et al. (2022: 292).

**Status in Türkiye.** First report from Türkiye by Kaya (2020b) as *Alburnus atropatenae*. — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Turkish part of Lake Urmia basin. — Distribution in river basins: 25-Van Lake. — General distribution: Middle East: Lake Urmia basin (Azarbayjan Province, Iran; Türkiye). — Distribution in ecoregions: 445-Orumiyeh. — Habitat: This species is a resident species that inhabits moderately fast-flowing streams. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

## Petroleuciscus borysthenicus (Kessler, 1859) [N] — Dnjepr chub/Tatlı su kefali

**Taxonomy.** Original description: *Squalius borysthenicus* Kessler, 1859: 545 [An arm of the Dnieper River at Aleschki, Ukraine; syntypes: none found at ZIN]. — Synonyms: *Leuciscus borysthenicus* (Kessler, 1859); *Leuciscus heterandrius* Battalgil, 1940; *Telestes leucoides* De Filippi, 1863. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Leuciscus borystenicus*; Geldiay and Balık (2007) as *Leuciscus borystenicus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea and Sea of Marmara watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 12-Sakarya, 13-Batı Karadeniz, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eurasia: Black Sea, Sea of Azov and Sea of Marmara watersheds. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species inhabits lowland rivers, the lower reaches of montane rivers, lakes, deltas, and backwaters with moderate to no current. Quite resistant to low oxygen concentrations, sometimes in marshes and water bodies with dense vegetation. A freshwater species, but tolerant of brackish waters. Prefers sand, sand-mud, or mud bottoms. Prefers shallow places with slow current along banks, in backwaters, in small lakes, and similar calmwater sites. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Petroleuciscus kurui* => *Alburnus kurui* 

*Petroleuciscus ninae* Turan, Kalayci, Kaya, Bektaş & Küçük, 2018 [E] — Chub/none

**Taxonomy.** Original description: *Petroleuciscus ninae* Turan, Kalayci, Kaya, Bektaş & Küçük, 2018: (3) 877, fig. 2 [Akçay stream, 3 km west of Beğerli, Aydın Province, Türkiye, 37°45′34″N, 28°20′07″E. holotype: FFR 03856]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2018). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Büyük Menderes River. — Distribution in river basins: 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Asia Minor: Büyük Menderes River drainage, southwestern Anatolia (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits a wide range of lowland rivers, canals, streams, reservoirs, and lakes. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Petroleuciscus smyrnaeus (Boulenger, 1896) [N] — Izmir chub/none

**Taxonomy.** Original description: *Leuciscus smyrnaeus* Boulenger, 1896: 154 [İzmir (Smyrna), Türkiye; syntypes: (several) BMNH 1895.12.28.19-28 (10)]. — Synonyms: *Squalius smyrnaeus* (Boulenger, 1896). — Revisions: None. — Illustration: None. **Status in Türkiye.** Recorded from Türkiye in the original description by Boulenger (1896). Listed in previous checklists from Türkiye by Kuru (2004) as *Leuciscus smyrnaeus*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: BMNH.

**Distribution and habitat.** Distribution in Türkiye: Aegean Sea watersheds. — Distribution in river basins: 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Eurasia: Aegean Sea watersheds (Greece and Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits a wide range of lowland rivers, canals, streams, reservoirs, and lakes. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CLI, EUT. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

**Remarks.** Based on genetical findings (Geiger et al., 2014) *Petroleuciscus smyrnaeus* could be placed to genus *Squalius*.

Phoxinellus egridiri => Egirdira nigra

*Phoxinellus fahirae => Turcichondrostoma fahirae* 

*Phoxinellus kervillei* => *Pseudophoxinus kervillei* 

*Phoxinellus libani => Pseudophoxinus libani* 

*Phoxinellus zeregi* => *Pseudophoxinus zeregi* 

*Pseudophoxinus alii* Küçük, 2007 [E] — Pamphylian spring minnow/Yağ balığı

**Taxonomy.** Original description: *Pseudophoxinus alii* Küçük, 2007: 2, figs. 1, 3 [Ilica Stream, Manavgat, Antalya, Türkiye; holotype: ESFM-PISI/2005-015]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Küçük (2007). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ESFM-PISI.

**Distribution and habitat.** Distribution in Türkiye: Antalya basin. — Distribution in river basins: 8-Batı Akdeniz, 9-Antalya. — General distribution: Asia Minor: Manavgat River basin (Mediterranean tributary), Antalya Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits lowland streams with riparian vegetation and sand and gravel bottoms. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

# Pseudophoxinus anatolicus (Hankó, 1925) [E] — Anatolian minnow/Yağ balığı

**Taxonomy.** Original description: *Acanthorutilus anatolicus* Hankó, 1925: 141, Pl. 3 (fig. 2) [Eregli, probably Lake Ak [Akgöl), Türkiye. syntypes: (21) MNHN 1928-0221 [ex MNSB [Mus. Nat. Hongrois]] (1)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Hankó (1925). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007) as *Phoxinellus anatolicus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: MNHN.

**Distribution and habitat.** Distribution in Türkiye: Beyşehir Lake. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Akgöl, Karaman Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits lakes and streams with dense vegetation and standing or slowly flowing water. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, COM, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## Pseudophoxinus antalyae Bogutskaya, 1992 [E] — Antalya minnow/Yağ balığı

**Taxonomy.** Original description: *Pseudophoxinus antalyae* Bogutskaya, 1992: 274, fig. 2b [Stream Kırkgöz near Antalya, Türkiye; holotype: ZMH 1114]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Bogutskaya (1992). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Kırkgöz Stream and Köprü Çayi, Antalya. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Mediterranean Sea tributaries, Antalya Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits springs and spring-fed streams with clear waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, HAB, TOU. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

# Pseudophoxinus battalgilae Bogutskaya, 1997 [E] — Beysehir minnow/Yağ balığı

**Taxonomy.** Original description: *Pseudophoxinus battalgili* Boguitskaya 1997: 175 [Central Anatolia, Beysehir Lake basin, Konya endorheic basin, Türkiye; holotype: AMH 8861]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Bogutskaya (1997). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: AMH.

**Distribution and habitat.** Distribution in Türkiye: Beyşehir Lake watersheds. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Beyşehir and Lake Beyşehir tributaries, Isparta and Konya provinces (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits springs and spring-fed streams with clear waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — High priority for conservation action.

*Pseudophoxinus battalgili => Pseudophoxinus battalgilae* 

*Pseudophoxinus burduricus* Küçük, Gülle, Güçlü, Çiftçi & Erdoğan, 2013 [E] — Burdur spring minnow/Yağ balığı

**Taxonomy.** Original description: *Pseudophoxinus burduricus* Küçük, Gülle, Güçlü, Çiftçi & Erdoğan, 2013: 32, figs. 2-3 [Burdur Province, Değirmendere Creek, Karamanlı, Lake Burdur drainage; 37°24'18"N, 29°49'06"E, Türkiye. holotype: IFC-ESUF 0427]. — Synonyms: None. — Revisions: None. — Illustration: Küçük et al. (2013: 32, figs. 2-3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Küçük et al. (2013). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IFC-ESUF.

**Distribution and habitat.** Distribution in Türkiye: Burdur Lake watersheds. — Distribution in river basins: 10-Burdur. — General distribution: Asia Minor: Lake Burdur tributaries, Burdur Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits lakes, springs, and small streams. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

# Pseudophoxinus caralis (Battalgil, 1942) [E] — Beysehir minnow/Yağ balığı

**Taxonomy.** Original description: *Acanthorutilus anatolicus caralis* Battalgil 942: 288, fig. 1 [Beysehir Lake, Türkiye; holotype: ZMH H1082]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Battalgil (1942). Listed in previous checklists from Türkiye by Bogustkaya et al. (2006), Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Beyşehir Lake. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Beyşehir and Lake Beyşehir tributaries, Isparta and Konya provinces (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits lakes, springs, and small streams. Freshwater.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — High priority for conservation action.

**Economic importance.** Locally consumed but of no commercial importance.

**Remarks.** *Pseudophoxinus anatolicus* and *P. caralis* are not distinguished by both moleculer and morphological properties (Geiger et al., 2014, Bayçelebi et al., 2020). *Pseudophoxinus caralis* is most likely a synonym of *P. anatolicus*.

## Pseudophoxinus cilicicus Saç, Özuluğ, Geiger & Freyhof, 2019 [E] — Arsuz minnow/Yağ balığı

**Taxonomy.** Original description: *Pseudophoxinus cilicicus* Saç, Özuluğ, Geiger & Freyhof, 2019: 111, figs. 3-7 [River Seyhan below water regulation doors at Yüreyir, south of Adana, Adana Province, Türkiye, 36.9757°N, 35.3354°E; holotype: IUSHM 2018-1405]. — Synonyms: None. — Revisions: None. — Illustration: Saç et al. (2019: 111, figs. 3-7).

**Status in Türkiye.** Recorded from Türkiye in the original description by Saç et al. (2019). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Arsuz, Ceyhan basin. — Distribution in river basins: 18-Seyhan, 20-Ceyhan. — General distribution: Asia Minor: lower Seyhan and Ceyhan River drainages and Arsuz stream, Mediterranean coast (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits lakes, springs, and small streams. Freshwater, brackish.

#### Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

Pseudophoxinus crassus (Ladiges, 1960) [E] — Fat spring minnow/Yağ balığı

**Taxonomy.** Original description: *Acanthorutilus crassus* Ladiges, 1960: 134, fig. 6 [Insuyu stream, near Cihanbeyli, Lake Tuz basin, Türkiye; holotype: ZMH H1149]. — Synonyms: None. — Revisions: None. — Illustration: Ladiges (1960: 134, fig. 6).

**Status in Türkiye.** Recorded from Türkiye in the original description by Ladiges (1960). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007) as *Phoxinellus crassus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Melendiz Stream drainage. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Tuz tributary, Konya Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits springs and spring-fed streams with clear waters and dense vegetation. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

**Remarks.** *Pseudophoxinus crassus* a closely related species, *P. anatolicus*, is found in Lake Tuz basin is subbasin of Konya Endorheic basin (Geiger et al., 2014).

Pseudophoxinus egridiri => Egirdira nigra

### *Pseudophoxinus elizavetae* Bogutskaya, Küçük & Atalay, 2006 [E] — Sultan Sazlığı minnow/Ak balık

**Taxonomy.** Original description: *Pseudophoxinus elizavetae* Bogutskaya, Küçük & Atalay, 2006: 336, figs. 1, 4a [Kayseri Province, Sultansazligi (Sultan Swamps, 38.2°-36.6°N, 35.2°-35.5°E), Türkiye; holotype: SCFK-SDU 174]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Bogutskaya et al. (2006). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: SCFK-SDU.

**Distribution and habitat.** Distribution in Türkiye: Sultan Marshes endorhaic basin. — Distribution in river basins: 15-Kızılırmak. — General distribution: Middle Asia: Sultan Marshes, Kayseri (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits spring-fed streams with clear waters and dense vegetation but is also found in turbid field canals. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

Pseudophoxinus evliyae Freyhof & Özuluğ, 2010 [E] — Lycian spring minnow/Yağ balığı

Taxonomy. Original description: *Pseudophoxinus evliyae* Freyhof & Özuluğ, 2010: 310, figs. 1-3 [Small canal south of Kırkpınar, north of Kızılcadağ, 37°08.356'N, 29°55.083'E, Antalya Province, Türkiye; holotype: IUSHM 37960-315]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof and Özuluğ (2010). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Western Anatolia. — Distribution in river basins: 9-Antalya, 10-Burdur. — General distribution: Asia Minor: Lake Yazır tributary, Antalya and Burdur provinces (Türkiye). — Distribution in ecoregions: 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species inhabits lakes, springs, and spring-fed streams with clear waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

Pseudophoxinus fahrettini Freyhof & Özuluğ, 2010 [E] — Pisidian spring minnow/Yağ balığı

**Taxonomy.** Original description: *Pseudophoxinus fahrettini* Freyhof & Özuluğ, 2010: 326, figs. 1-3 [Stream at Bağilli, 37°45.82'N, 31°02.01'E, upper Köprü River drainage, Isparta Province, Türkiye. holotype: IUSHM 37970-324]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof and Özuluğ (2010: 326, figs. 1-3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof and Özuluğ (2010). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Köprü River drainage. — Distribution in river basins: 9-Antalya. — General distribution: sia Minor: Upper Köprüçay basin (Mediterranean tributaries), Isparta Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits lakes, springs, and spring-fed streams with clear waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Pseudophoxinus firati* Bogutskaya, Küçük & Atalay, 2006 [E] — Euphrates spring minnow/Yağ balığı

**Taxonomy.** Original description: *Pseudophoxinus Fırati* Bogutskaya, Küçük & Atalay, 2006: 340, figs. 3, 4c [Euphrates River drainage, Tohma Çayi at Yazyurdu (38.80°N, 36.93°E), Türkiye; holotype: SCFK-SDU 187]. — Synonyms: None. — Revisions: None. — Illustration: Bogutskaya et al. (2006: 340, figs. 3, 4c).

**Status in Türkiye.** Recorded from Türkiye in the original description by Bogutskaya et al. (2006). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: SCFK-SDU.

**Distribution and habitat.** Distribution in Türkiye: Euphrates River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Euphrates River (Fırat Nehri) drainage (Persian Gulf tributary) (Türkiye). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits lakes, springs, and spring-fed streams with clear waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: AQU. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## *Pseudophoxinus handlirschi* (Pietschmann, 1933) [E] — Handlirsch's minnow/Kavinne

**Taxonomy.** Original description: *Acanthorutilus handlirschi* Pietschmann, 1933: 21 (1) [Lake Egridir, Türkiye; syntypes: (4) MSNM 5 (ex MSNM 4662 and ex NMW) (1)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Pietschmann (1933). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: MSNM.

**Distribution and habitat.** Distribution in Türkiye: Eğirdir Lake drainage. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Lake Eğirdir and Lake Eğirdir tributaries, Isparta Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species is a pelagic lacustrine species restricted to the lake itself. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EX. — IUCN: EX (IUCN, 2023). — Threats: COM. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Pseudophoxinus hittitorum* Freyhof & Özuluğ, 2010 [E] — Hittitic spring minnow/Yağ balığı

**Taxonomy.** Original description: *Pseudophoxinus hittitorum* Freyhof & Özuluğ, 2010: 240, figs. 1-3 [Spring Eflatunpinar Sadikhaci, 37°49/51'N, 31°40,46'E, Lake Beyşehir basin, Konya Province, Central Anatolia, Türkiye; holotype: IUSHM 37970-608]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof and Özuluğ (2010: 240, figs. 1-3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof and Özuluğ (2010). Listed in previous checklists from Türkiye Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Beyşehir Lake. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Beyşehir tributary, Konya Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits lakes, springs, and spring-fed streams with clear waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Pseudophoxinus iconii* Küçük, Gülle & Güçlü, 2016 [E] — Minnow/Yağ balığı

**Taxonomy.** Original description: *Pseudophoxinus iconii* Küçük, Gülle & Güçlü, 2016: 284, figs. 2, 3 [rainage ditches and canals near Gölyazi Village, Cihanbeyli District, Konya Province, Türkiye, 38°32.24'N, 33°10.89'E, elevation 919 meters; holotype: IFC-ESUF 03-1022]. — Synonyms: None. — Revisions: None. — Illustration: Küçük et al. (2016: 284, figs. 2, 3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Küçük et al. (2016). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: IFC-ESUF.

**Distribution and habitat.** Distribution in Türkiye: Cihanbeyli, Lake Tuz Basin. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Tuz basin, central Anatolia (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits lakes, springs, and spring-fed streams with clear waters and dense vegetation. Freshwater.

### Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — High priority for conservation action.

Pseudophoxinus irideus => Squalius irideus

### Pseudophoxinus kervillei (Pellegrin, 1911) [N] — Orontes minnow/Ot balığı

**Taxonomy.** Original description: *Phoxinellus kervillei* Pellegrin, 1911: 109 [Orontes River near its outlet from Lake Homs (Lake Qattinah), Syria, elevation 490 m, approximately 34°39'47.7"N 36°37'12.4"E; lectotype: MNHN 1910-0018 (36 mm SL, poor condition); lectotype selected by Krupp and Schneider (1989: 377)]. — Synonyms: None. — Revisions: Krupp and Schneider (1989: 377). — Illustration: Krupp and Schneider (1989: 377, fig. 24).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007) as *Phoxinellus zeregi kervillei*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Orontes River basin. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor and Middle East: Orontes River basin (Syria and Türkiye). — Distribution in ecoregions: 437-Orontes. — Habitat: This species is found in springs, streams, and rivers, usually with clear waters and dense vegetation. It is also found in the littoral zone of lakes. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — High priority for conservation action.

**Remarks.** Both *Pseudophoxinus kervillei* and *Pseudophoxinus libani* are distributed in the Orontes basin in Türkiye. It is probable that *kervillei* is a synonym of *P. libani* based on the molecular findings given by Geiger et al. (2014). Indeed, Bariche and Freyhof (2016) threated *P. kervillei* synonym of *Pseudophoxinus libani*. Therefore, these situations should be clarified with detailed comparative studies.

# *Pseudophoxinus libani* (Lortet, 1883) [N] — Levantine minnow/Ot balığı

**Taxonomy.** Original description: *Phoxinellus libani* Lortet, 1883: 164, pl. 11, fig. 4) [Lake Yammouni (Yamuni or Lammouni or Yammouneh), elevation 1650 metres, Lebanon; syntypes: MCZ 25546 (28), MHNG 611.24 (10), SMF 804 (19), SMNS 3214 (several, not found), USNM

48012 (2)]. — Synonyms: None. — Revisions: Bariche and Freyhof (2016: 204). — Illustration: Lortet (1883: 164, pl. 11, fig. 4) as *Phoxinellus libani*.

**Status in Türkiye.** First report from Türkiye by Bayçelebi (2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Orontes River drainages. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor and Middle East: Orontes and Litani river drainages (Türkiye, Lebanon, Syria and Israel). — Distribution in ecoregions: 437-Orontes. — Habitat: This species is found in springs, streams, and rivers, usually with clear waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

*Pseudophoxinus maeandri* (Ladiges, 1960) [E] — Apamean spring minnow/Yağ balığı

**Taxonomy.** Original description: *Pararhodeus maeandri* Ladiges, 1960: 140, fig. 13 [Headwaters of Menderes River near Isikli, Türkiye; holotype: ZMH H1093]. — Synonyms: None. — Revisions: None. — Illustration: Ladiges (1960: 140, fig. 13).

**Status in Türkiye.** Recorded from Türkiye in the original description by Ladiges (1960). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007) as *Phoxinellus zeregi meandri*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Upper Büyük Menderes drainage. — Distribution in river basins: 7-Büyük Menderes. — General distribution: Asia Minor: Büyük Menderes River (Aegean Sea tributary), Denizli Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species is found in springs, streams, and rivers, usually with clear waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## *Pseudophoxinus maeandricus* (Ladiges, 1960) [E] — Menderes brook minnow/Yağ balığı

**Taxonomy.** Original description: *Acanthorutilus maeandricus* Ladiges, 1960: 133, fig. 5 [Menderes River near Isikli, Türkiye; holotype: ZMH H1077]. — Synonyms: *Acanthorutilus maeandricus* Ladiges, 1960; misspelled *meandricus* by authors. — Revisions: None. — Illustration: Ladiges (1960: 133, fig. 5).

**Status in Türkiye.** Recorded from Türkiye in the original description Ladiges (1960). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Upper Büyük Menderes drainage. — Distribution in river basins: 7-Büyük Menderes. — General distribution: Asia Minor: Büyük Menderes River (Aegean Sea tributary), Denizli Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species is found in springs, streams, and rivers, usually with clear waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Pseudophoxinus meandri* => *Apamean spring minnow Pseudophoxinus meandricus* => *Pseudophoxinus maeandricus* 

### *Pseudophoxinus mehmeti* Ekmekçi, Atalay, Yogurtçuoglu, Turan & Küçük, 2015 [E] — Minnow/Yağ balığı

**Taxonomy.** Original description: *Pseudophoxinus mehmeti* Ekmekçi, Atalay, Yogurtçuoglu, Turan & Küçük, 2015: 119, figs. 2-3, 4a, 5a, 6a [Burdur Province, Yeşilova District: Alanköy reservoir, 54 km southwest from Burdur, Türkiye, 37°40′58″N, 29°50′46″E; holotype: FFR 03274]. — Synonyms: None. — Revisions: None. — Illustration: Ekmekçi et al. (2015: 119, figs. 2-3, 4a, 5a, 6a).

**Status in Türkiye.** Recorded from Türkiye in the original description by Ekmekçi et al. (2015). Listed in previous checklists from Türkiye by Çiçek et al. (2016, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Alanköy basin in southwestern Türkiye. — Distribution in river basins: 10-Burdur. — General distribution: Asia Minor: Akgöl tributary, Burdur Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species is found in springs, streams, and rivers, usually with clear waters and dense vegetation. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Pseudophoxinus mermere => Ladigesocypris mermere* 

Pseudophoxinus ninae Freyhof & Özuluğ, 2006 [E] — Onaç spring minnow/Yağ balığı

Taxonomy. Original description: *Pseudophoxinus ninae* Freyhof & Özuluğ, 2006: 257, figs. 1-2 [Stream Onaç north of Bucak on main road to Burdur, 37°30.757'N, 30°32.456'E, Burdur Province, Türkiye; holotype: ZMB 33740]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof and Özuluğ (2006: 257, figs. 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Freyhof and Özuluğ (2006). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMB.

**Distribution and habitat.** Distribution in Türkiye: Onaç drainage. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: upper Aksu Çayı basin (Mediterranean tributary), Burdur Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits pools, slowflowing streams, and springs. It is usually found among vegetation or under shore cover. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

# *Pseudophoxinus turani* Küçük & Güçlü, 2014 [E] — Turan's minnow/Ot balığı

**Taxonomy.** Original description: *Pseudophoxinus turani* Küçük & Güçlü, 2014: 60, figs. 2-3 [Hatay Province, Hassa Country, İncesu Spring, Asi River drainage, 36°47.36'N, 36°30.48'E, Türkiye; holotype: IFC-ESUF 03-1002]. — Synonyms: None. — Revisions: None. — Illustration: Küçük and Güçlü (2014: 60, figs. 2-3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Küçük and Güçlü (2014). Listed in previous checklists from Türkiye by Çiçek et al. (2015, 2018a, 2020). — Turkish material: IFC-ESUF.

**Distribution and habitat.** Distribution in Türkiye: Orontes River drainage. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor: Asi Nehri basin (Orontes) (Mediterranean tributary), Hatay Province (Türkiye). — Distribution in ecoregions: 437-Orontes. — Habitat: This species inhabits pools, slow-flowing streams, and springs. It is usually found among vegetation or under shore cover. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

# *Pseudophoxinus zekayi* Bogutskaya, Küçük & Atalay, 2006 [E] — Ceyhan spring minnow/Ot balığı

**Taxonomy.** Original description: *Pseudophoxinus zekayi* Bogutskaya, Küçük & Atalay, 2006: 339, figs. 2, 4b [Ceyhan

River drainage, Aksu River system east of Kahramanmaraş, Kahramanmaraş Province at Çöçelli, Türkiye; holotype: SCFK-SDU 181]. — Synonyms: None. — Revisions: None. — Illustration: Bogutskaya et al. (2006: 339, figs. 2, 4b).

**Status in Türkiye.** Recorded from Türkiye in the original description by Bogutskaya et al. (2006). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: SCFK-SDU.

**Distribution and habitat.** Distribution in Türkiye: Ceyhan River basin. — Distribution in river basins: 20-Ceyhan. — General distribution: Asia Minor: Ceyhan River basin (Mediterranean tributary), Kahramanmaraş Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits lakes, slow-flowing streams, and springs. It is usually found among vegetation or under shore cover. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Pseudophoxinus zeregi* (Heckel, 1843) [N] — Levantine spring minnow/Inci levrek balığı

**Taxonomy.** Original description: *Phoxinellus zeregi* Heckel, 1843a: 1063 (73) [Aleppo, Syria and Türkiye; syntypes: NMW 51068-69 (1, 3)]. — Synonyms: *Squalius transcaspiensis* Berg, 1898; *Leuciscus latus* (Keyserling, 1861). — Revisions: Goren (1972: 145) as *Phoxinellus zeregi zeregi*; Perea et al. (2010: 4). — Illustration: Heckel (1843b: pl. 6, fig. 3) as *Phoxinellus zeregi*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Geldiay and Balık (2007); Fricke et al. (2007) as *Phoxinellus zeregi*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Orontes and Kueik river systems. — Distribution in river basins: 19-Asi, 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Orontes and Quwayq river systems (Syria and Türkiye). — Distribution in ecoregions: 437-Orontes, 441-Lower Tigris and Euphrates. — Habitat: This species inhabits pools, slow-flowing streams, and springs. It is usually found among vegetation or under shore cover. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action. *Rutilus caspicus* (Yakovlev 1870) => not occurring in Türkiye (see Çiçek et al., 2020)

### *Rutilus frisii* (Nordmann, 1840) [N] — Black Sea roach/ Levkit balığı

**Taxonomy.** Original description: Leuciscus frisii Nordmann, 1840: 487 [Market in Odessa, Danube, Bug, Dniester, and Dnieper rivers; syntypes: ?NMW 50456]. — Synonyms: Leuciscus frisii caspius LönnBerg, 1900; Rutilus frisii velecensis Chichkoff, 1932; Gardonus wyrozub Walecki 1863. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea and Sea of Marmara watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Eurasia: Black, Azov and Caspian Sea basins. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace. — Habitat: This species inhabits large brackish estuaries and their large, freshened plume waters, coastal lakes connected to rivers, and lowland stretches of large rivers. Landlocked populations inhabit lakes or reservoirs. Spawns in small rivers or streams with heavy current on gravel bottoms. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON, FIT. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

Rutilus kutum (Kamensky, 1901) => not occurring in

Türkiye (see Çiçek et al., 2020)

*Rutilus lacustris* (Pallas, 1814) => not occurring in Türkiye (see Çiçek et al., 2020)

## Rutilus rutilus (Linnaeus, 1758) [N] — Roach/Kızılgöz balığı

**Taxonomy.** Original description: *Cyprinus rutilus* Linnaeus, 1758: 324 [European lakes; possible syntypes: LS 44 (1, right half-skin)]. — Turkish synonyms: *Leuciscus rutilus* (Linnaeus, 1758). — Revisions: Berg (1949: 493). — Illustration: Berg (1949: 494, fig. 291).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: European Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 12-Sakarya, 13-Batı Karadeniz. — General distribution: Europe and western Asia; widely introduced elsewhere. — Distribution in ecoregions: 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia. — Habitat: This species occurs in a wide variety of habitats, mainly in lowland areas. Most are abundant in nutrient-rich lakes, largeto medium-sized rivers, and backwaters. Known also from small lowland streams and brackish coastal lagoons. Spawns among dense submerged vegetation in backwaters or lakes, flooded meadows, or shallow, fast-flowing river habitats on a plant or gravel bottom. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

*Rutilus sojuchbulagi* Abdurakhmanov 1950 => not occurring in Türkiye (see Çiçek et al., 2020)

*Sarmarutilus rubilio* (Bonaparte, 1837) => not occurring in Türkiye (see Çiçek et al., 2020)

*Scardinius elmaliensis* Bogutskaya, 1997 [E] — Antalya rudd/Kızılkanat

**Taxonomy.** Original description: *Scardinius erythrophthalmus elmaliensis* Bogutskaya, 1997: 180 [Elmali, in Vilayet Antalya, southern Türkiye; holotype: ZMH 8863]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Bogutskaya (1997). Listed in previous checklists from Türkiye by Kuru (2004) as *Scardinius erytrophthalmus elmaliensis*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Doğu Akdeniz Basin. — Distribution in river basins: 8-Bati Akdeniz, 9-Antalya. — General distribution: Asia Minor: Karagöl tributary (Mediterranean tributary), Antalya Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species is a lacustrine species, inhabiting also canals and springs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## Scardinius erythrophthalmus (Linnaeus, 1758) [N] — Rudd/Kızılkanat

**Taxonomy.** Original description: *Cyprinus erythrophthalmus* Linnaeus, 1758: 324 [northern Europe; no types known)] — Turkish synonyms: *Leuciscus apollonitis* Richardson, 1857. — Revisions: Berg (1949: 593). — Illustration: Berg (1949: 593, fig. 350).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et

al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: European Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 12-Sakarya, 13-Batı Karadeniz. — General distribution: Europe. Introduced elsewhere. — Distribution in ecoregions: 418-Dniester -Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia. — Habitat: This species inhabits mainly nutrient-rich, well-vegetated lowland rivers, backwaters, oxbows, ponds, and lakes. It spawns on roots or submerged plants. Freshwater, brackish.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

*Scardinius scardafa* (Bonaparte, 1837) => not occurring in Türkiye (see Çiçek et al., 2020)

### Squalius adanaensis Turan, Kottelat & Doğan, 2013 [E] — Adana chub/Tatlı su kefali

**Taxonomy.** Original description: *Squalius adanaensis* Turan, Kottelat & Doğan, 2013: 310, figs. 2, 3 [Üçürge Stream at Karaisalı, Seyhan River drainage, Adana Province, Türkiye; holotype: FFR 1994]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2013: 310, figs. 2, 3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2013). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Seyhan River basin. — Distribution in river basins: 18-Seyhan. — General distribution: Asia Minor: Seyhan River basin (Mediterranean tributary), Adana Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits lowland rivers and lower parts of streams. This species also inhabits the reservoir, a large dam lake, but it is expected to migrate from there into in-flowing rivers to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: NT. — IUCN: NT (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

### *Squalius agdamicus* Kamensky, 1901 [N] — Agdam Chub/Akdam Tatlı su kefali

**Taxonomy.** Original description: *Squalius agdamicus* Kamensky, 1901: 49 [Near Agdam, Kuyra River basin, Azerbaijan; holotype (unique): ?ZMT (not at ZIN)]. — Synonyms: *Leuciscus agdamicus* (Kamensky, 1901). — Revisions: None. — Illustration: None.

**Status in Türkiye.** First report from Türkiye by Kaya et al. (2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kura basin (Türkiye and Azerbaijan). — Distribution in ecoregions: 434-Kura -South Caspian Drainages. — Habitat: This species inhabits rivers and the lower parts of streams. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

### *Squalius anatolicus* (Bogutskaya, 1997) [E] — Beysehir dace/Tatlı su kefali

**Taxonomy.** Original description: *Leuciscus lepidus anatolicus* Bogutskaya, 1997: 173 [Lake Beyşehir, central Türkiye; holotype: ZMH 8864]. — Synonyms: *Leuciscus anatolicus* Bogutskaya, 1997. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Bogutskaya (1997). Listed in previous checklists from Türkiye by Kuru (2004) as *Leuciscus lepidus anatolicus*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Beyşehir Lake. — Distribution in river basins: 9-Antalya, 16-Konya. — General distribution: Asia Minor: Lake Beyşehir and its tributaries, Isparta and Konya provinces (Türkiye). — Distribution in ecoregions: 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species inhabits lakes and rivers, as well as reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: COM. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## *Squalius aristotelis* Özuluğ & Freyhof, 2011 [E] — Tuzla chub/Tatlı su kefali

**Taxonomy.** Original description: *Squalius aristotelis* Özuluğ & Freyhof, 2011: 118, figs. 8-10 [Stream Behramkale

north of Assos, Biga Peninsula, 39°29.91'N, 26°19.99'E, Çanakkale Province, Türkiye. holotype: IUSHM 2009-944]. — Synonyms: None. — Revisions: None. — Illustration: Özuluğ and Freyhof (2011: 118, figs. 8-10).

**Status in Türkiye.** Recorded from Türkiye in the original description by Özuluğ and Freyhof (2011). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Western Anatolia. — Distribution in river basins: 4-Kuzey Ege. — General distribution: Asia Minor: Çanakkale Province, Aegean Sea tributary (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits lakes and rivers, as well as reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

**Remarks.** *Squalius aristotelis* is distributed in the Marmara basin together with *S. cii.* It is probable *S. aristotelis*, a synonym of *S. cii.* Therefore, these situations should be clarified with detailed comparative studies. A manuscript prepared and submitted to a journal by the authors.

# *Squalius berak* Heckel, 1843 [N] — Mesopotamian chub/Tatlı su kefali

**Taxonomy.** Original description: *Squalius berak* Heckel, 1843a: 1078 (88) [Aleppo, Syria; syntypes: NMW 48915 (6), SMF 469 (ex NMW) (3)]. — Synonyms: *Squalius orientalis* Heckel, 1847. — Revisions: Esmaeili et al. (2016: 119). — Illustration: Heckel (1843b: pl. 10, fig. 1).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Turan et al. (2013a); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates and Tigris River basin (Türkiye, Syria, Iraq and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits small- to medium-sized streams, mostly in mountains and hilly areas. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but none is serious enough to really impact this species. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Squalius borysthenicus => Petroleuciscus borysthenicus* 

### *Squalius cappadocicus* Özuluğ & Freyhof, 2011 [E] Cappadocian chub/Tatlı su kefali

**Taxonomy.** Original description: *Squalius cappadocicus* Özuluğ & Freyhof, 2011: 119, figs. 11-13 [Stream Melendiz at Ihlara, 38°14.15′N, 34°18.71′E, Aksaray Province, Türkiye; holotype: IUSHM 2011-1035]. — Synonyms: None. — Revisions: None. — Illustration: Özuluğ and Freyhof (2011: 119, figs. 11-13).

**Status in Türkiye.** Recorded from Türkiye in the original description by Özuluğ and Freyhof (2011). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Melendiz River in Lake Tuz Basin. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Tuz tributary, Aksaray Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species inhabits streams with slow- to moderately fast-flowing waters on sand and gravel bottoms. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

## *Squalius carinus* Özuluğ & Freyhof, 2011 [E] — Chocolate chub/Tatlı su kefali

**Taxonomy.** Original description: *Squalius carinus* Özuluğ & Freyhof, 2011: 123, figs. 14-16 [Spring Işikli, 38°19.29'N, 29°51.07'E, Denizli Province, Türkiye; holotype: IUSHM 2009-947]. — Synonyms: None. — Revisions: None. — Illustration: Özuluğ and Freyhof (2011: 123, figs. 14-16).

**Status in Türkiye.** Recorded from Türkiye in the original description by Özuluğ and Freyhof (2011). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Isikli Lake watersheds. — Distribution in river basins: 1-Meriç-Ergene. — General distribution: Asia Minor: Büyük Menderes River system (Aegean Sea tributary), Denizli Province (Türkiye). — Distribution in ecoregions: 423-Thrace. — Habitat: This species inhabits streams, springs, and lakes, from which it migrates to streams for spawning. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, COM, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. Squalius cephaloides => Squalius cii

## *Squalius cephalus* (Linnaeus, 1758) [N] — European chub/Tatlı su kefali

**Taxonomy.** Original description: *Cyprinus cephalus* Linnaeus, 1758: 322 [Northern Europe; syntypes: NRM 51 (1), ZMUU Linn. coll. 213 (1)]. — Synonyms: *Leuciscus cephalus* (Linnaeus, 1758). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Trachea region. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Europe and Middle East. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace. — Habitat: This species is most abundant in small rivers and large streams in barbel zones with riffles and pools. Also along shores of slow-flowing lowland rivers, even in very small mountain streams. Also in large lakes, undertaking spawning migrations to inflowing streams. Spawns in fast-flowing water above gravel bottom, rarely among submerged vegetation. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: FIT. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

### *Squalius cii* (Richardson, 1857) [N] — Marmara chub/ Tatlı su kefali

Taxonomy. Original description: *Leuciscus cii* Richardson, 1857: 375 [Gemlek (Gemelik) River, north of Bursa, northwestern Türkiye. lectotype: BMNH 1865.5.2.8-9 (99.5 mm SL specimen)]. — Synonyms: *Leuciscus cephaloides* Battalgil, 1942; *Squalius cephaloides* (Battalgil, 1942). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Richardson (1857). Listed in previous checklists from Türkiye Stoumboudi et al. (2006); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: BMNH.

**Distribution and habitat.** Distribution in Türkiye: Susurluk, Kuzey Ege, and Marmara basins. — Distribution in river basins: 2-Marmara, 3-Susurluk, 4-Kuzey Ege. — General distribution: Eurasia: southern Marmara Sea basin and (Kara) Menderes River (northwestern Anatolia, Türkiye). — Distribution in ecoregions: 423-Thrace, 429-Western Anatolia. — Habitat: This species inhabits a wide range of streams and rivers and also colonises lakes and reservoirs, from which it migrates to inflowing streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action. Squalius delineatus => Leucaspius delineatus

### *Squalius fellowesii* (Günther, 1868) [E] — Aegean chub/ Tatlı su kefali

**Taxonomy.** Original description: *Leuciscus fellowesii* Günther, 1868: 224, fig. [Xanthos, Türkiye; syntypes: BMNH 1845.7.9.58-59 (2)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Günther (1868). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: BMNH.

**Distribution and habitat.** Distribution in Türkiye: Southwestern Anatolia. — Distribution in river basins: 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya. — General distribution: Asia Minor: Eşen Çayı (Mediterranean tributary), Antalya Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia, 432-Southern Anatolia. — Habitat: This species inhabits a wide range of streams and rivers, including lakes and reservoirs, from which it migrates to inflowing streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, EUT. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### *Squalius irideus* (Ladiges, 1960) [E] — Anatolian ghizani/ Tatlı su kefali

**Taxonomy.** Original description: *Leucaspius irideus* Ladiges, 1960: 138, fig. 11 [Marmaris Mugla-arasi, Türkiye; holotype: ZMH H1085]. — Synonyms: None. — Revisions: None. — Illustration: Ladiges (1960: 138, fig. 11).

**Status in Türkiye.** Recorded from Türkiye in the original description by Ladiges (1960). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2016, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Mugla, Southwestern Anatolia. — Distribution in river basins: 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes,
8-Batı Akdeniz. — General distribution: Asia Minor:
Mediterranean Sea tributary, Muğla Province (Türkiye).
— Distribution in ecoregions: 429-Western Anatolia.
— Habitat: This species inhabits springs and small, slow-flowing streams. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: NT. — IUCN: NT (IUCN, 2023 as *Ladigesocypris irideus*). — Threats: ABS, CLI, CON, COM, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

**Remarks.** *Squalius irideus* is probably a synonym of *Squalius ghigii* (Geiger et al., 2014). Therefore, these situations should be clarified with detailed comparative studies (Barbieri et al., 2015).

### *Squalius kosswigi* (Karaman, 1972) [E] — Striped chub/ Tatlı su kefali

**Taxonomy.** Original description: *Leuciscus kosswigi* Karaman, 1972: 146, fig. 12 [Gumuldur (Gümüldür), south from İzmir, Türkiye; holotype: ZMH H4555]. — Synonyms: None. — Revisions: None. — Illustration: Karaman (1972: 146, fig. 12).

**Status in Türkiye.** Recorded from Türkiye in the original description by Karaman (1972). Listed in previous checklists from Türkiye by Geldiay and Balık (2007) as *Leucalburnus kosswigi*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Tahtalı River drainage. — Distribution in river basins: 6-Küçük Menderes. — General distribution: Asia Minor: Mediterranean Sea tributary, İzmir Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits streams and rivers and is believed to also inhabit reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

# *Squalius kottelati* Turan, Yilmaz & Kaya, 2009 [E] — Cilician pike chub/Tatlı su kefali

**Taxonomy.** Original description: *Squalius kottelati* Turan, Yilmaz & Kaya, 2009: 54, figs. 1, 2b [Tahtaköprü Reservoir, Orontes River drainage, Gaziantep Province, Türkiye; holotype: FFR 1991]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2009: 54, figs. 1, 2b).

Status in Türkiye. Recorded from Türkiye in the original description by Turan et al. (2009). Listed in

previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Ceyhan and Orontes River basins. — Distribution in river basins: 19-Asi, 20-Ceyhan. — General distribution: Asia Minor: Asi Nehri tributary (Orontes) (Mediterranean tributary), Gaziantep Province. — Distribution in ecoregions: 432-Southern Anatolia, 437-Orontes. — Habitat: This species inhabits a wide range of streams, rivers, lakes, and reservoirs. It is a migratory species. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: NT. — IUCN: NT (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Squalius kurui* => *Alburnus kurui* 

# *Squalius lepidus* Heckel, 1843 [N] — Mesopotamian pike chub/Akbalık

**Taxonomy.** Original description: *Squalius lepidus* Heckel, 1843a: 21 (24), pl. 9 [Tigris River, Mosul, Iraq; lectotype: NMW 49342 (spec. 1); lectotype selected by Bogutskaya (1994: 603)]. — Synonyms: *Leuciscus lepidus* (Heckel, 1843). — Revisions: None. — Illustration: Heckel (1843b: pl. 10, fig. 2).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris River basins. — Distribution in river basins: 19-Asi, 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Asi Nehri (Orontes), Quwayq, Euphrates and Tigris River basins (Türkiye, Syria, Iraq. and Iran). — Distribution in ecoregions: 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species lives in large- to medium-sized rivers, lakes, and reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but none seem to be serious enough to strongly impact this species. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

Squalius orientalis (Nordmann, 1840) [N] — Dace/ Tatlı su kefali Taxonomy. Original description: *Leuciscus orientalis* Nordmann, 1840: 484 [Abkhazia [Abasie), Georgia (Asia); no types known]. — Synonyms: None. — Revisions: None. — Illustration: None. **Status in Türkiye.** Listed in previous checklists from Türkiye by Geldiay and Balık (2007); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Choruck River basin. — Distribution in river basins: 23-Çoruh. — General distribution: Eurasia: Caspian Sea region. — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species lives in large- to medium-sized rivers, lakes, and reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

## *Squalius orpheus* Kottelat & Economidis, 2006 [N] — Orpheus dace/Tatlı su kefali

**Taxonomy.** Original description: *Squalius orpheus* Kottelat & Economidis, 2006: 182, fig. 1 [Evros drainage, stream Ardas at ford between Kastanies and Marasia, 41°39′05″N, 26°28′23″E, Thrace, Greece; holotype: MHNG 2659.021]. — Synonyms: None. — Revisions: None. — Illustration: Kottelat and Economidis (2006: 182, fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Kottelat and Economidis (2006). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Trachea region. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — Distribution in river basins: 2-Marmara, 3-Susurluk. — General distribution: Southeastern Europe: Black Sea watersheds (Greece, Bulgaria and Türkiye). — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace. — Habitat: This species lives in streams and rivers with moderate currents. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown Decreasing. — Moderate priority for conservation action.

### *Squalius pursakensis* (Hankó, 1925) [E] — Sakarya chub/ Tatlı su kefali

**Taxonomy.** Original description: *Leuciscus orientalis* var. *pursakensis* Hankó, 1925: 140, Pl. 3 (fig. 1) [Kara-Chehir, Kötschke-Kissik and Eski-Chehir, Türkiye; syntypes: (2) lost]. — Synonyms: *Leuciscus pursakensis* Hankó, 1925. — Revisions: None. — Illustration: Hankó (1925: 140, Pl. 3, fig. 1). **Status in Türkiye.** Recorded from Türkiye in the original description by Hankó (1925). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Sakarya and Kızılırmak river basins. — Distribution in river basins: 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak. — General distribution: Asia Minor: Sakarya River drainage, Black Sea tributaries (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits a very wide range of habitats, from small streams to large rivers, lakes, and reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area (dams, pollution), but none seem to be strong enough to seriously impact this species. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

# *Squalius recurvirostris* Özuluğ & Freyhof, 2011 [E] — Aksehir chub/Tatlı su kefali

**Taxonomy.** Original description: *Squalius recurvirostris* Özuluğ & Freyhof, 2011: 143, figs. 35-37 [Stream at Ortaköy, north of Akşehir, 38°26.84'N, 31°31.05'E, Konya Province, Türkiye; holotype: IUSHM 2011-1012]. — Synonyms: None. — Revisions: None. — Illustration: Özuluğ and Freyhof (2011: 143, figs. 35-37).

**Status in Türkiye.** Recorded from Türkiye in the original description by Özuluğ and Freyhof (2011). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Eber, Aksehir, and Ilgın lakes watersheds. — Distribution in river basins: 11-Akarçay, 12-Sakarya. — General distribution: Asia Minor: Lake Akhisar tributary, Konya Province (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia, 431-Central Anatolia. — Habitat: This species inhabits streams and lakes. Lake populations migrate to inflowing streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action. *Squalius semae* Turan, Kottelat & Bayçelebi, 2017 [E] — Chub/Tatlı su kefali

**Taxonomy.** Original description: *Squalius semae* Turan, Kottelat & Bayçelebi, 2017: 3, fig. 1a-b [Serçeme Stream (tributary of Karasu Stream), Erzurum Province, Türkiye, 39°56.85'N, 40°48.24'E; holotype: FFR 724]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2017: 3, fig. 1a-b).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2017). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Karasu Stream, upper Euphrates River Basin. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor: Karasu Stream, Upper Euphrates (Firat Nehri), Persian Gulf tributary, Erzurum Province (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits streams and lakes. Lake populations migrate to inflowing streams to spawn. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

### Squalius seyhanensis Turan, Kottelat & Doğan, 2013 [E] — Seyhan dace/Tatlı su kefali

**Taxonomy.** Original description: *Squalius seyhanensis* Turan, Kottelat & Doğan, 2013: 313, figs. 1, 3b, 5-6 [Satiz Stream, Seyhan River drainage, Kayseri Province, Türkiye. holotype: FFR 1992]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2013: 313, figs. 1, 3b, 5-6).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2013). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Zamanti Stream, upper Seyhan River Basin. — Distribution in river basins: 18-Seyhan. — General distribution: Asia Minor: Seyhan River basin (Mediterranean tributary), Kayseri Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits headwater streams and small rivers. It is unknown if it also might inhabit reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: DD (IUCN, 2023). — Threats:

ABS, CLI, CON, EUT, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Squalius smyrnaeus* => *Petroleuciscus smyrnaeus* 

## *Squalius spurius* Heckel, 1843 [N] — Orontes dace/Tatlı su kefali

**Taxonomy.** Original description: *Squalius spurius* Heckel, 1843a: 1081 (91) [Aleppo, Syria; syntypes: NMW 49572 (2)]. — Synonyms: *Leuciscus spurius* (Heckel, 1843). — Revisions: Bogutskaya (1997: 174) as *Leuciscus spurius*. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Leuciscus spurius*; Fricke et al. (2007) as *Leuciscus spurius*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Qweik River basin. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor and Middle East: Qweik River basin (Türkiye and Syria). — Distribution in ecoregions: 437-Orontes. — Habitat: This species lives in large- to medium-sized rivers, lakes, and reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: DD (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

## *Squalius turcicus* De Filippi, 1865 [N] — Transcaucasian chub/Tatlı su kefali

**Taxonomy.** Original description: *Squalius turcicus* De Filippi, 1865: 359 [River Arax (Aras Nehri) near Erzurum, Türkiye; ?MZUT]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by De Filippi (1865). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ?MZUT.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Asia Minor and Middle East: Kura-Aras River and southern Caspian Sea basins (Türkiye, Iran). — Distribution in ecoregions: 434-Kura -South Caspian Drainages. — Habitat: This species inhabits a very wide range of habitats, from streams to rivers, lakes, and reservoirs. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but none are believed to be so strong to affect this species. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

**Remarks.** It has been suggested that *Squalius turcicus* may be a synonym of *S. orientalis* due to the low genetic difference and morphological similarity (Özuluğ and Freyhof, 2011; Turan et al., 2013). Therefore, these situations should be clarified with detailed comparative studies. Indeed, recent field and laboratory studies clearly show that they are synonyms. A manuscript prepared and submitted to a journal by the authors.

### Squalius verepi Turan, 2022 [E] — Dace/Akbalık

**Taxonomy.** Original description: *Squalius verepi* Turan, 2022: 337, figs. 1-3, 5d [Stream Behremas at Lake Hazar, Elazığ Province, Türkiye, 38.501°N, 39.508°E; holotype: FFR 06296]. — Synonyms: None. — Revisions: None. — Illustration: Turan (2022: 337, figs. 1-3, 5d).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan (2022). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Lake Hazar and the upper Tigris drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Lake Hazar and upper Tigris River basins, southeast Türkiye. — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a very wide range of habitats, from streams to rivers. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action. *Telestes fahirae => Turcichondrostoma fahirae* 

Trachibrama centisquama => Acanthobrama centisquama

*Turcichondrostoma fahirae* (Ladiges, 1960) [E] — Tefenni minnow/Inci levrek balığı

**Taxonomy.** Original description: *Phoxinellus fahirae* Ladiges, 1960: 141, fig. 14 [Kırkpınar, near Tefenni, southwestern Burdur Province, Türkiye; holotype: ZMH H1104]. — Synonyms: *Chondrostoma fahirae* (Ladiges, 1960); *Pseudophoxinus fahirae* (Ladiges, 1960); *Telestes fahirae* (Ladiges, 1960). — Revisions: Turan et al. (2021). — Illustration: Ladiges (1960: 141, fig. 14).

**Status in Türkiye.** Recorded from Türkiye in the original description by Ladiges (1960). Listed in previous checklists from Türkiye by Kuru (2004) as *Pseudophoxinus fahirae*; Geldiay and Balık (2007) as *Phoxinellus zeregi fahirae*; Fricke et al. (2007) as *Pseudophoxinus fahirae*; Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020) as *Pseudophoxinus fahirae*. — Turkish material: ZMH.

Distribution and habitat. Distribution in Türkiye:

Western basins of Türkiye. — Distribution in river basins: 8-Batı Akdeniz, 10-Burdur. — General distribution: Asia Minor: springs near Karamusa and Karamali, Lake Burdur tributary, Kırkpınar, Burdur Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species inhabits springs and streams. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

Vimba melanops (Heckel, 1837) [N] — Macedonian vimba/none

**Taxonomy.** Original description: *Abramis melanops* Heckel, 1837: 154, Pl. 8 (fig. 3) [Maritza [Marizza] River, eastern Rumelia, Balkan region of Bulgaria; syntypes: NMW 55270 (1)]. — Synonyms: None. — Revisions: None. — Illustration: Heckel, 1837: 154, Pl. 8 (fig. 3).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Trachea region. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Eurasia: Aegean Sea basin (Türkiye, Greece, Bulgaria and Macedonia). — Distribution in ecoregions: 423-Thrace. — Habitat: This species inhabits predominantly riverine species that are also present in reservoirs. Freshwater, brackish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: DD (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

**Economic importance.** Locally consumed but of no commercial importance.

**Remarks.** *Vimba melanops* is cooccurring with *Vimba vimba* and *Vimba mirabilis*. Recent molecular findings suggest possible synonymisation of *Vimba vimba* because of low level differences (Parea et al., 2010; Geiger et al., 2014). The status of this species should be clarified by field specimens.

### *Vimba mirabilis* (Ladiges, 1960) [E] — Menderes bream/ Ulubat balığı

**Taxonomy.** Original description: *Acanthobrama mirabilis* Ladiges, 1960: 132, fig. 4 [Menderes River at Sarayköyn [Saraköy), Denizli Province, Türkiye; holotype: ZMH H1085]. — Synonyms: None. — Revisions: None. — Illustration: Ladiges (1960: 132, fig. 4). **Status in Türkiye.** Recorded from Türkiye in the original description by Ladiges (1960). Listed in previous checklists from Türkiye by Kuru (2004) as *Acanthobrama mirabilis*; Geldiay and Balık (2007) as *Acanthobrama mirabilis*; Fricke et al. (2007) as *Acanthobrama mirabilis*; Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Büyük Menderes River basin. — Distribution in river basins: 7-Büyük Menderes, 8-Batı Akdeniz. — General distribution: Asia Minor: Büyük Menderes River (Aegean Sea tributary), Denizli Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits large- and medium-sized lowland rivers and lakes. It is quite resistant to habitat modifications and also occurs in reservoirs, where it might build up large populations. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

**Remarks.** *Vimba mirabilis* is cooccurring with *Vimba vimba* and *Vimba melanops*. Recent molecular findings represent their possible synonymisation of *Vimba vimba* because of low level differences (Parea et al., 2010; Geiger et al., 2014). The status of this species should be clarified by field specimens.

### *Vimba vimba* (Linnaeus, 1758) [N] — Baltic vimba/ Eğrez, karaburun balığı

**Taxonomy.** Original description: *Cyprinus vimba* Linnaeus, 1758: 325 [Lakes of Sweden; no types known]. — Synonyms: *Abramis vimba* (Linnaeus, 1758); *Abramis asianus* var. *elongatus* Steindachner, 1897. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Vimba vimba tenella*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Trachea and northwestern region. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 24-Aras. — General distribution: Northern, central and eastern Europe and Asia Minor: basins of North Sea, Baltic Sea; Sea of Marmara, Black Sea, Sea of Azov. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 434-Kura - South Caspian Drainages. — Habitat: This species inhabits brackish estuaries, large to medium rivers, and some large subalpine lakes. Sedentary populations occur even in small rivers in the barbel zone. Spawns on gravel in riffles in shallow, fast-flowing streams and rivers. Freshwater.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CON, HAB. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

Phoxininae Bleeker, 1863 (phoxinines)

## *Phoxinus abanticus* Turan, Bayçelebi, Özuluğ, Gaygusuz & Aksu, 2023 [E] — Minnow/Ot balığı

**Taxonomy.** Original description: *Phoxinus abanticus* Turan, Bayçelebi, Özuluğ, Gaygusuz & Aksu, 2023: Figs. 4 and 8-10 [Outlet of Abant Lake, Bolu Province, Türkiye, 40.664722 N, 31.425000 E; holotype: FFR 2322]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2023a: Figs. 4 and 8-10).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2023). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Lake Abant basin. — Distribution in river basins: 12-Sakarya. — General distribution: Asia Minor: Lake Abant basin, Türkiye. — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits a wide range of cold and well-oxygenated habitats, from small, fast-flowing streams to large rivers. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Phoxinus colchicus* Berg, 1910 [N] — Minnow/Ot balığı Taxonomy. Original description: *Phoxinus colchicus* Berg, 1910: 169 [Bachvis Tzchali (Bachwis-tzchali) River in Ozurgety District, Georgia, Eurasia; holotype (unique): ZMT 141a]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Berg (1910). Listed in previous checklists from Türkiye by Bayçelebi et al. (2015); Çiçek et al. (2016, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Aralik Stream, Choruck River drainage. — Distribution in river basins: 23-Çoruh. — General distribution: Eurasia: Caucasian Black Sea basin (Georgia, Russia, and Türkiye). — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species inhabits a wide range of cold and well-oxygenated habitats, from small, fast-flowing streams to large rivers. Associated with salmonid fishes or cyprinids of barbel zone. Spawns over clean gravel areas in flowing water. Freshwater. Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Phoxinus phoxinus* (Linnaeus, 1758) => not occurring in Türkiye (see Çiçek et al., 2020)

Phoxinus satunini => Leucalburnus satunini

# *Phoxinus strandjae* Drensky, 1926 [N] — Bulgarian minnow/Ot balığı

**Taxonomy.** Original description: *Phoxinus phoxinus strandjae* Drensky, 1926: 137 [Strandscha [Istrandzhha] range, Bulgaria. syntypes: NMNHS]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: European Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Southeastern Europe: Black Sea watersheds (Bulgaria and Türkiye). — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace. — Habitat: This species inhabits small streams with clear, well-oxygenated water over gravel or stone bottoms. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. **Characiformes** 

### Serrasalmidae Bleeker, 1859 (piranhas and allies)

*Pygocentrus nattereri* Kner, 1858 => not established in Türkiye (see Çiçek et al., 2020)

### Siluriformes

### Loricarioidei

Loricariidae Rafinesque, 1815 (suckermouth armored catfishes)

Hypostominae Kner, 1853 (suckermouth catfishes)

### *Pterygoplichthys disjunctivus* (Weber, 1991) [I] — Vermiculated sailfin catfish/none

**Taxonomy.** Original description: *Liposarcus disjunctivus* Weber, 1991: 638 [Rio Madeira, Amazon River system, Restauracao, Amazonas, Brazil; holotype: MZUSP 28360]. — Synonyms: None. — Revisions: None. — Illustration: Weber (1855: 42, Pl. 20 (fig. 3)).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Çiçek et al. (2015, 2020, 2022a). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye:

Reported from Orontes River and Pınarbaşı Stream, Eskisehir and Asi River.— Distribution in river basins: 12-Sakarya, 19-Asi. — General distribution: South America: Madeira River basin (Bolivia and Brazil). Introduced in Türkiye, southeast Asia, Mexico, and Guatemala; established in Florida (U.S.A.). — Distribution in ecoregions: 430-Northern Anatolia, 437-Orontes. — Habitat: This species is frequent and abundant in lentic environments, including anthropized ones. Freshwater.

**Economic importance.** Valuable for the aquarium trade. **Reasons of introduction.** Ornamental fish industry. **Conservation.** Not relevant (introduced species).

### *Pterygoplichthys pardalis* (Castelnau, 1855) [I] — Amazon sailfin catfish/none

Taxonomy. Original description: *Hypostomus pardalis* Castelnau, 1855: 42, Pl. 20 (fig. 3) [Amazon River, Brazil; holotype (unique): MNHN A-9574]. — Synonyms: None. — Revisions: Isbrücker (1980: 42). — Illustration: Castelnau (1855: 42, Pl. 20 (fig. 3)).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Çiçek et al. (2015, 2020, 2022a). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Pınarbaşı Stream, Eskisehir. — Distribution in river basins: 12-Sakarya. — General distribution: South America: Amazon River basin (Brazil, Ecuador, Colombia, Bolivia, and Peru). Introduced in Italy, Türkiye, and Asia; established in Florida and Puerto Rico (U.S.A.), Central America (Guatemala, Costa Rica), Colombia and Sri Lanka. — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species is frequent and abundant in lentic environments, including anthropized ones. Freshwater.

**Economic importance.** Valuable for the aquarium trade. **Reasons of introduction.** Ornamental fish industry.

Conservation. Not relevant (introduced species).

**Remarks:** Probably both of these reports are based on hybrids of *Pterygoplichthys disjunctivus* X *Pterygoplichthys pardalis* (see Emiroglu et al., 2016; Godwin et al., 2016). **Siluroidei** 

### Bagridae Bleeker, 1858 (bagrid catfishes)

*Mystus halepensis* => *Mystus pelusius* 

## *Mystus misrai* Anuradha, 1986 [N] — Zigzag catfish/Kedi balığı

**Taxonomy.** Original description: *Mystus misrai* Anuradha, 1986: 292, figs. 1-2 [Lake Antioche, Syria; holotype: MHNG 603.95]. — Synonyms: None. — Revisions: Freyhof and Yoğurtçuoğlu (2023). — Illustration: Freyhof and Yoğurtçuoğlu (2023: 449).

**Status in Türkiye..** Recorded from Lake Antioche in the original description by Anuradha, 1986 (1794); subsequently reported by Freyhof and Yoğurtçuoğlu (2023). — Turkish material: MHNG.

Distribution and habitat. Distribution in Türkiye:

Orontes River basin. — Distribution in river basins: 19-Asi. — General distribution: Orontes River basin (Türkiye and Syria). — Distribution in ecoregions: 437-Orontes. — Habitat: This species lives in large rivers and reservoirs. It feeds on invertebrates and small fish. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye:: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Low priority for conservation action.

### *Mystus pelusius* (Solander, 1794) [N] — Zigzag catfish/ Mezopotamya kedi balığı

**Taxonomy.** Original description: *Silurus pelusius* Solander in Russell, 1794: 210, pl. 7, fig. 1 [Qweik River, Aleppo, Syria; syntype: BMNH 1955.6.25.1 (1)]. — Synonyms: *Bagrus halepensis* Valenciennes, 1840; *Macrones colvillii* Günther, 1874; *Mystus colvillii* (Günther, 1874); *Mystus halepensis* (Valenciennes, 1840); *Macrones aleppensis* (Valenciennes, 1840). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Mystus colvillii*; Geldiay and Balık (2007) as *Mystus colvillii*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris River basins. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor and Middle East: Euphrates and Tigris River basins (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits large rivers and reservoirs. It feeds on invertebrates and small fish. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Low sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Low priority for conservation action.

Silurus pelusius => Mystus pelusius

Sisoridae Bleeker, 1858 (sisorid catfishes)

#### Glyptosterninae Gill, 1861 (Asian sucker catfishes)

*Glyptosternum armeniacum => Glyptothorax armeniacus* 

### *Glyptothorax armeniacus* (Linnaeus, 1766) [N] — Tigris cat/Igneli küçük yayın balığı

**Taxonomy.** Original description: *Glyptosternum armeniacum* Berg, 1918: 146 [Mukhlassi-darasi River, Upper Euphrates River system, Türkiye (possibly stream Habib at Oyuklu Mahallesi, Çat district, 39.6050, 40.9764); syntypes: (5) ZMT (?4, lost), ZSI [ex ZIN 20806] F11319/1 (1), ZIN 20806 (5, now 4)]. — Synonyms: None. — Revisions: Freyhof et al. (2021: 461). — Illustration: Freyhof et al. (2021: 461, fig. 5).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Glyptothorax* sp.; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris basins. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris-Euphrates River basin, Türkiye, Iran, Iraq, and Syria. — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This is a freshwater species that occurs in slowrunning and standing streams. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

#### *Glyptothorax cous* (Linnaeus, 1766) [N] — Catfish/ Igneli yayın balığı

**Taxonomy.** Original description: *Silurus cous* Linnaeus, 1766: 504 [Qweik River, at Aleppo, Syria; holotype: BMNH 1955.6.25.2]. — Synonyms: None. — Revisions: Freyhof et al. (2021: 465), Sayyadzadeh et al. (2022). — Illustration: Freyhof et al. (2021: figs. 10-17), Sayyadzadeh et al. (2022: 22, fig. 9).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Fricke et al. (2007). — Turkish material: FFR, ZMH.

**Distribution and habitat.** Distribution in Türkiye: Euphrates and Tigris basins. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris-Euphrates River basin. — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species occurs in slow running and standing streams. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

Glyptothorax daemon Freyhof, Kaya, Abdullah & Geiger, 2021 [N] — Spined catfish/Vantuzlu yayın balığı Taxonomy. Original description: *Glyptothorax daemon* Freyhof, Kaya, Abdullah & Geiger, 2021: 482, figs. 31-36 [Stream Dilektaşı, 16 km northeast of Yüksekova, Hakkari Province, 37.6664, 44.1393, Türkiye; holotype: FFR 3928]. — Synonyms: None. — Revisions: None. — Illustration: Freyhof et al. (2021b: 482, figs. 31-36).

**Status in Türkiye.** First record from Türkiye in the original description by Freyhof et al. (2021b). — Turkish materials: FFR.

**Distribution and habitat.** Distribution in Türkiye: Tigris and Great Zab River basins. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: upper Tigris and Great Zab River basins, Türkiye and Iraq. — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: All species of this genus in the Middle East inhabit fast-running sections of streams and rivers. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### *Glyptothorax kurdistanicus* (Berg, 1931) [N] — Mesopotamian sucking catfish/Vantuzlu yayin balığı

**Taxonomy.** Original description: *Glyptosternum kurdistanicum* Berg, 1931: 384 [Serdesht, at Little Zab (36°N), River Bané basin, Iran, elevation 1500 metres; holotype: ZIN 20780]. — Synonyms: None. — Revisions: Freyhof et al. (2021: 472). — Illustration: Freyhof et al. (2021: 473, figs. 18).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Glyptothorax* sp.; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris River basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris River basin (Türkiye, Iraq, and Iran). — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: All species of this genus in the Middle East inhabit fast running sections of streams and rivers. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: DD (IUCN, 2023). — Threats: ABS, CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

# *Glyptothorax steindachneri* (Pietschmann, 1913) [N] — Steindachner's cat/Vantuzlu yayın balığı

**Taxonomy.** Original description: *Glyptosternum steindachneri* Pietschmann, 1913: 93 [Tigris River, Mosul, Iraq; syntypes: (2, NMW?)]. — Synonyms: None. — Revisions: Freyhof et al. (2021: 479). — Illustration: Freyhof et al. (2021: 480, fig. 28).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Fricke et al. (2007); Coad (2015); Ünlü (2021). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris and Euphrates River basins. — Distribution in

river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris and Euphrates River basins, Iraq, Syria, and Türkiye. — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: All species of this genus in the Middle East inhabit fast-running sections of streams and rivers. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Pangasiidae

*Pangasius sanitwongsei* Smith, 1931 => not established in Türkiye (see Çiçek et al., 2020)

Siluridae Rafinesque, 1815 (sheatfishes)

# Silurus glanis Linnaeus, 1758 [N] — Wels catfish/Yayın balığı

Taxonomy. Original description: *Silurus glanis* Linnaeus, 1758: 304 [Orient, less frequently in European lakes; syntypes: BMNH 1853.11.12.168 (1, skin), NRM 59 (1)]. — Synonyms: None. — Revisions: Berg (1949: 904). — Illustration: Berg (1949: 904-905, figs. 656-657); Jawad et al. (2021a).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None

Distribution and habitat. Distribution in Türkiye: Found in all parts of Türkiye, except Euprates-Tigris and Orontes basins. - Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, Karadeniz, 14-Yeşilırmak, 13-Batı 15-Kızılırmak, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 20-Ceyhan, 22-Doğu Karadeniz, 23-Çoruh, 24-Aras, 25-Van Lake. - General distribution: North America; Eastern Europe to central Asia. Widely introduced elsewhere. -Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 434-Kura - South Caspian Drainages, 444-Lake Van. - Habitat: This species inhabits large- and medium-sized lowland rivers, backwaters, and well-vegetated lakes. Spawns in shallow, warm, and wellvegetated riverine habitats without current. Freshwater.

### Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: HAB. — Low sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Low priority for conservation action.

# Silurus triostegus Heckel, 1843 [N] — Mesopotamian catfish/Fırat yayını

**Taxonomy.** Original description: *Silurus triostegus* Heckel, 1843a: 1090 (100) [Tigris River, near Mosul, Iraq; syntypes: (4) NMW, SMF 2623 (1, dry)]. — Synonyms: Coad and Holčík (2000: 139). — Illustration: Heckel (1843: pl. 13, fig. 1).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris and Euphrates River basins. — Distribution in river basins: 21-Firat-Dicle. — General distribution: Asia Minor and Middle East: Iraq, Iran, and Türkiye. — Distribution in ecoregions: 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits large rivers, marshes, lakes, and reservoirs. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area affecting this species, but none seem to be strong enough to let the species decline so fast that it qualifies for a threat category. — Low sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Low priority for conservation action.

Clariidae Bonaparte, 1845 (airbreathing or labyrinth catfishes)

## *Clarias batrachus* (Linnaeus, 1758) [I] — Philippine catfish/Kedi balığı

**Taxonomy.** Original description: *Silurus batrachus* Linnaeus, 1758: 305 [Java, vicinity of Bandung, Indonesia; neotype: NRM 54718]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Çiçek et al. (2022a). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Pınarbaşı Stream, Eskişehir. — Distribution in river basins: 12-Sakarya. — General distribution: Southeast Asia. Known definitely only from river drainages in Java; introduced elsewhere. — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species inhabits primarily lowland freshwaters, including rivers, lakes, ponds, and reservoirs. Freshwater.

**Economic importance.** Valuable for the aquarium trade.

**Reasons of introduction.** Ornamental fish industry. **Conservation.** Not relevant (introduced species).

*Clarias gariepinus* (Burchell, 1822) [N] — North African catfish/Karabalık, sekiz bıyık

Taxonomy. Original description: Silurus (Heterobranchus)

gariepinus Burchell, 1822: 425, fig. on p. 445 [Vaal River, at Smidtsdrift, above confluence with Riet River, Cape Province, South Africa (28°42'10"S, 24°04'29"E); neotype: SAIAB 520; neotype evidently selected by Bruton and Teugels (1982) but first published in Skelton and Teugels (1992) (see Seegers (1996: 206)]. — Synonyms: *Clarias lazera* Valenciennes, 1840; *Clarias orontis* Günther, 1864. — Revisions: Teugels (1982: 442). — Illustration: Skelton and Teugels (1992: figs. 1-2).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Southern Anatolia and Orontes river basin. — Distribution in river basins: 9-Antalya, 12-Sakarya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan. — General distribution: North America; Eastern Europe to central Asia. Widely introduced elsewhere. — Distribution in ecoregions: 430-Northern Anatolia, 432-Southern Anatolia, 437-Orontes. — Habitat: This species is a benthopelagic (living and feeding near the bottom as well as in midwaters or near the surface), potamodromous (migratory), and freshwater fish species. Freshwater, brackish.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: This species is of major economic importance all over its range and it is even an important aquaculture species. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

*Clarias lazera => Clarias gariepinus* 

*Silurus gariepinus => Clarias gariepinus* 

### Heteropneustidae Hora, 1936 (airsac catfishes)

*Heteropneustes fossilis* (Bloch, 1794) => not established in Türkiye (see Çiçek et al., 2022)

# Icraluridae Gill, 1861 (North American freshwater catfishes)

*Ictalurus punctatus* (Rafinesque, 1818) => not occurring in Türkiye (see Çiçek et al., 2022)

*Ameiurus nebulosus* (Lesueur, 1819) => not occurring in Türkiye (see Çiçek et al., 2022)

### Esociformes

### Esocidae Rafinesque, 1815 (pikes)

*Esox lucius* Linnaeus, 1758 [N] — Northern pike/Turna Taxonomy. Original description: *Esox lucius* Linnaeus, 1758: 314 [Europe; possible syntypes: BMNH 1853.11.12.114 (1, skin)]. Type catalog: Wheeler 1958: 209]. — Synonyms: None. — Revisions: Berg (1948: 458). — Illustration: Berg (1948: 459, fig. 274).

Status in Türkiye. Listed in previous checklists from

Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

Distribution and habitat. Distribution in Türkiye: Thrace, Black Sea and central Anatolian lakes and translocated to some reservoirs in Anatolia. Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 20-Ceyhan, 22-Doğu Karadeniz, 23-Çoruh, 24-Aras, 25-Van Lake. — General distribution: Circumpolar in Northern Hemisphere: North America, Europe, and northern Asia; widely introduced elsewhere. -Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 434-Kura - South Caspian Drainages, 444-Lake Van. - Habitat: This species usually occurs in clear small lakes, shallow vegetated areas of larger lakes, marshes, creeks, and small to large rivers. It moves to deeper, cooler water in the summer. Spawning occurs in shallow flooded marshes associated with lakes, inlet streams to those lakes, or rivers; spawning habitat is basically a flooded area with emergent vegetation. Freshwater, brackish.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats are known. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Stable. — Moderate priority for conservation action. **Salmoniformes** 

### Salmonidae Jarocki/Schinz, 1822 (salmonids) Coregoninae Bonaparte, 1845 (whitefishes)

*Coregonus albula* (Linnaeus, 1758) [I] — Vendace/none Taxonomy. Original description: *Salmo albula* Linnaeus, 1758: 310 [Europe; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Çiçek et al. (2022a). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Lake Aktaş. — Distribution in river basins: 24-Aras. — General distribution: Central Europe east to North Asia (Siberia, Russia), including Baltic Sea; introduced in Türkiye. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species is lacustrine and marine in open water. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Reasons of introduction.** Fisheries: enhancement of wild stocks and sports fishing.

**Conservation.** Not relevant (introduced species).

*Coregonus lavaretus* Linnaeus, 1758 => not established in Türkiye (see Çiçek et al., 2020)

*Coregonus macrophthalmus* Nüsslin 1882 => not established in Türkiye (see Çiçek et al., 2020)

*Coregonus wartmani* (Bloch, 1784) => not occurring in Türkiye (see Çiçek et al., 2020)

Salmoninae Jarocki/Schinz, 1822 (salmons, trouts, chars and allies)

# Oncorhynchus mykiss (Walbaum, 1792) [I] — Rainbow trout/Gökkuşağı alabalığı

**Taxonomy.** Original description: *Salmo mykiss* Walbaum, 1792: 59 [Kamchatka, Russia; no types known]. — Synonyms: *Salmo gairdnerii* Richardson, 1836. — Revisions: Berg (1948: 267) as *Salmo mykiss*; Stearley and Smith (1993: 21) as *Oncorhynchus mykiss mykiss*. — Illustration: Berg (1948: 268, fig. 155) as *Salmo mykiss*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2022a). — Turkish materials: None.

Distribution and habitat. Distribution in Türkiye: This species is the main cultured fish in freshwater, in both cold spring waters and reservoirs. It cannot breed in wild water. Therefore, it can find itself around a fish farming facility because escapement is established in suitable habitats. - Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh, 24-Aras, 25-Van Lake. — General distribution: North Pacific and adjacent basins; widely introduced elsewhere. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 434-Kura - South Caspian Drainages, 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates, 444-Lake Van. - Habitat: This species usually occurs in cold streams, rivers, and lakes, but it is also lives in saline water habitats. Freshwater, brackish, marine.

**Economic importance.** Commercially important. **Reasons of introduction.** Aquaculture/research.

**Conservation.** Not relevant (introduced species).

**Remarks**. This species does not reproduce naturally in the wild. It may be locally present due to specimens escaping from fish farms.

## Salmo abanticus Tortonese, 1954 [E] — Abant trout / Abant alasi

**Taxonomy.** Original description: *Salmo abanticus* Tortonese, 1954: 19, Pl. 1 (fig. 3); figs. 2, 3a-b [Lake Abant,

northern Anatolia, Asiatic Türkiye. holotype (unique): MSNM 1 (ex MSNM 5031)]. — Synonyms: None. — Revisions: None. — Illustration: Tortonese (1954: 19, Pl. 1 (fig. 3); figs. 2, 3a-b).

**Status in Türkiye.** Recorded from Türkiye in the original description by Tortonese (1954). Listed in previous checklists from Türkiye by Kuru (2004) as *Salmo trutta abanticus*; Geldiay and Balık (2007) as *Salmo trutta abanticus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: MSNM.

**Distribution and habitat.** Distribution in Türkiye: Abant Lake, introduced to Black Sea watersheds. — Distribution in river basins: 12-Sakarya. — General distribution: Asia Minor: Lake Abant, Bolu Province, northwestern Anatolia (Türkiye); introduced in Black Sea watersheds. — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species is a lacustrine species that seems to spawn in intralacustrine springs. It may also spawn in tributaries, as juveniles are regularly found there. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: COM. — High sensitivity to human activities. — Keystone species. — Decline status: Stable. — High priority for conservation action.

### Salmo araxensis Turan, Kottelat & Kaya, 2022 [E] — Trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo araxensis* Turan, Kottelat & Kaya, 2022: 51, figs. 5-6 [Kırkpınar Stream, Kars Stream drainage, Aras River basin, Susuz district, Kars Province, Türkiye, 40°51'N, 43°01'E; holotype: FFR 3224]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2022: 51, figs. 5-6).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2022). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kars Stream drainage, Aras River basin, Kars Province, eastern Anatolia. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Salmo ardahanensis Turan, Kottelat & Kaya, 2022 [E] — Trout/Kırmızı benekli alabalık

Taxonomy. Original description: Salmo ardahanensis

Turan, Kottelat & Kaya, 2022: 48, fig. 4 [Stream Toros, Kura River drainage, Ardahan Province, Türkiye, 41°06'N, 42°26'E; holotype: FFR 3239]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2022: 48, fig. 4).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2022). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Kura River drainage. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: upper Kura River drainage, Ardahan Province, eastern Anatolia. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Salmo baliki Turan, Aksu, Oral, Kaya & Bayçelebi, 2021 [E] — Trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo baliki* Turan, Aksu, Oral, Kaya & Bayçelebi, 2021: 474, figs. 2-4 [Stream Sinek, tributary of Murat River at Taşlıçay, Ağrı Province, Türkiye, 39.758749°N, 43.464480°E; holotype: FFR 3242]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2021: 474, figs. 2-4).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2021). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Northeastern tributaries of Euphrates River. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Murat River drainage, upper Euphrates River basin, Ağrı Province, Türkiye. — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Salmo caspius Kessler, 1877 [N] — Caspian trout/Hazar alası

**Taxonomy.** Original description: *Salmo caspius* Kessler, 1877: 62, Pl. 2 (fig. 15) [Kura River near Bozhii Promysel fishing grounds, Azerbaijan; syntypes: (3) not at ZIN]. — Synonyms: None. — Revisions: None. — Illustration: Kessler (1877: 62, Pl. 2, fig. 15).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Salmo trutta caspius*; Geldiay and Balık (2007) as *Salmo trutta caspius*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kura River drainage and southern and southwestern Caspian Sea watersheds. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

## Salmo chilo Turan, Kottelat & Engin, 2012 [E] — Chilo trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *almo chilo* Turan, Kottelat & Engin, 2012: 224, fig. 2b, 5 [Akdere Stream at Gürün county, Euphrates River drainage (Fırat Nehri), Sivas Province, Türkiye; holotype: FFR 3054]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2012: 224, fig. 2b, 5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2012). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Upper Ceyhan River basin. — Distribution in river basins: 20-Ceyhan. — General distribution: Asia Minor: upper Euphrates River (Fırat Nehri] basin (Persian Gulf tributary), Sivas Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits hilly streams that are usually fed by springs. Freshwater.

### Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: CLI, CON, COM, EUT, FIT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

## Salmo ciscaucasicus Dorofeeva, 1967 [N] — Caspian salmon/Hazar somonu

**Taxonomy.** Original description: *Salmo trutta ciscaucasicus* Dorofeeva, 1967: 15 [Keyranchay River, Samur delta, eastern Ciscaucasia, Russia; holotype: ZIN 26244]. — Synonyms: None. — Revisions: None. — Illustration: None. **Status in Türkiye.** Listed in previous checklists from Türkiye by Kaya (2020b). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Terek River and rivers flowing into the Caspian Sea from the north and northwest. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater, brackish, marine.

**Economic importance.** Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

#### Salmo coruhensis Turan, Kottelat & Engin, 2010 [N] — Choruck trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo coruhensis* Turan, Kottelat & Engin, 2010: 345, figs. 4b, 5b, 7, 8, 14b [Çoruh River drainage, Pehlivanli Stream at Pehlivanli village, 40°30.42'N, 41°29.17'E, Erzurum Province, Türkiye; holotype: FFR 3036]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2010: 345, figs. 4b, 5b, 7, 8, 14b).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2010). — Turkish material: FFR.

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2010). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Choruck River basin. — Distribution in river basins: 23-Çoruh. — General distribution: Asia Minor: Çoruh Nehri and Marmara Sea basins (Black Sea tributaries), Türkiye. — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species inhabits the lower parts of rivers and also migrates to the sea to forage. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NT (IUCN, 2023). — Threats: CON, EUT. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### *Salmo duhani* Turan & Aksu, 2021 [E] — Trout/Kırmızı benekli alabalık

Taxonomy. Original description: *Salmo duhani* Turan & Aksu, 2021: 232, fig. 1 [Stream Zeytinli about 9 km east of Kazdağı National Park, Çanakkale Province, Türkiye, 39.750N 27.017E, 28.11.2006; holotype: FFR 3183]. — Synonyms: None. — Revisions: None. — Illustration: Turan and Aksu (2021: 232, fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan and Aksu (2021). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Marmara and Susurluk basins. — Distribution in river basins: 2-Marmara, 3-Susurluk. — General distribution: Asia Minor: southern Marmara Sea drainages, Türkiye. — Distribution in ecoregions: 423-Thrace. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

# *Salmo euphrataeus* Turan, Kottelat & Engin, 2014 [E] — Euphrates trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo euphrataeus* Turan, Kottelat & Engin, 2014: 281, fig. 4 [Erzurum Province, Kuzgun Stram, Euphrates River drainage, 40°13'11.1"N, 41°0618.3"E, Türkiye; holotype: FFR 1219]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2014: 281, fig. 4).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2014). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Northeastern tributaries of Euphrates River. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: upper Euphrates River (Fırat Nehri] basin (Persian Gulf tributary), Erzurum Province (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

Salmo fahrettini Turan, Kalayci, Bektaş, Kaya & Baycelebi, 2020 [E] — Euphrates trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo fahrettini* Turan, Kalayci, Bektaş, Kaya & Baycelebi, 2020: 1456, figs. 1-2 [Stream Ömertepesuyu at Palandöken, Erzurum Province, Türkiye, 39°47′44.88″N, 40°56′39.84″E; holotype: FFR 03231]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2020: 1456, figs. 1-2).

Status in Türkiye. Recorded from Türkiye in the original description by Turan et al. (2020). Listed in

previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Northeastern drainages of Euphrates River. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: upper Euphrates River basin, Türkiye. — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Salmo kottelati Turan, Doğan, Kaya & Kanyılmaz, 2014 [E] — Antalya trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo kottelati* Turan, Doğan, Kaya & Kanyılmaz, 2014: 138, fig. 1 [Antalya Province: Altınyaka village; Alakır Stream (36°35'14.57"N, 30°18'54.87"E), Türkiye; holotype: FFR 03180]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2014: 138, fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2014). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Alakir Stream, Antalya. — Distribution in river basins: 8-Batı Akdeniz. — General distribution: Asia Minor: Alakır Stream (Mediterranean tributary), Antalya Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

# Salmo labecula Turan, Kottelat & Engin, 2012 [E] — Seyhan trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo labecula* Turan, Kottelat & Engin, 2012: 226, fig. 2c, 6 [Niğde Province, Ecemis Stream at Çamardı county, Seyhan River drainage, Türkiye. holotype: FFR 3056]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2012: 226, fig. 2c, 6).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2012). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Seyhan River drainage. — Distribution in river basins: 18-Seyhan. — General distribution: Asia Minor: Seyhan River basin (Mediterranean tributary), Niğde Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits hilly streams that are usually fed by springs. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: CLI, CON, COM, EUT, FIT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Salmo labrax Pallas, 1814 [N] — Black Sea salmon/ Denizalası

**Taxonomy.** Original description: *Salmo labrax* Pallas, 1814: 346 [Sivastopol and Biyuk-ozen River; Chersones; and Ochakov, Crimea, Ukraine; syntypes: whereabouts unknown]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Salmo trutta labrax* Geldiay and Balık (2007) as *Salmo trutta labrax*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: Black Sea watersheds. - Distribution in river basins: 12-Sakarya, 13-Batı Karadeniz, 14-Yesilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. General distribution: Eurasia: Black Sea and adjacent watersheds; introduced in Tigris-Euphrates watersheds. - Distribution in ecoregions: 430-Northern Anatolia, 433-Western Transcaucasia. - Habitat: This species inhabits coasts at depths of up to 50 m at sea. Migrates to hill streams. Resident part of populations in streams and uppermost reaches with fast current, cold clear water and stone or gravel bottom. Spawns in upper reaches with fast current. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CON. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

*Salmo macrostigma* (Dumeril 1858) => not occurring in Türkiye (see Çiçek et al., 2020)

## Salmo munzuricus Turan, Kottelat & Kaya, 2017 [E] — Munzur trout/Munzur alası

**Taxonomy.** Original description: *Salmo munzuricus* Turan, Kottelat & Kaya, 2017: 56, figs. 1-2 [Munzur Stream, Ovacik village, Tunceli Province, Türkiye, 39°20′50″N, 39°08′03″E; holotype: FFR 03161]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2017: 56, figs. 1-2). **Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2017). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Munzur River, Euphrates River drainage. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Munzur and Murat Rivers, upper Euphrates River (Fırat Nehri) drainage (Persian Gulf tributary), Tunceli Province (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

**Economic importance.** Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Salmo murathani Turan, Kottelat & Kaya, 2022 [E] — Trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo murathani* Turan, Kottelat & Kaya, 2022: 44, figs. 1-2 [Keklik Stream, Kars Stream drainage, Sarıkamış District, Aras River basin, Kars Province, Türkiye, 40°17'N, 42°39'E; holotype: FFR 3240]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2022: 44, figs. 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2022). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Aras River. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Kars Stream drainage, upper Aras River basin, Kars Province, eastern Anatolia. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

Salmo mykiss => Oncorhynchus mykiss

## Salmo okumusi Turan, Kottelat & Engin, 2014 [E] — Okumus trout/Kırmızı benekli alabalık

Taxonomy. Original description: *Salmo okumusi* Turan, Kottelat & Engin, 2014: 277, fig. 1 [Malatya Province, Sürgü Stream, Euphrates River drainage, 37°59′51.1″N, 37°57′29.9″E, Türkiye. holotype: FFR 1251]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2014: 277, fig. 1). **Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2014). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Western tributaries of Euphrates River. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: upper Euphrates River (Fırat Nehri) basin (Persian Gulf tributary), Malatya and Sivas provinces (Türkiye). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Salmo opimus Turan, Kottelat & Engin, 2012 [E] — Opimus trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo opimus* Turan, Kottelat & Engin, 2012: 230, fig. 2d, 7 [Antalya Province: Alara Stream at Gündogmus, Türkiye; holotype: FFR 3047]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2012: 230, fig. 2d, 7).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2012). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Ceyhan River tributaries. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Alara Stream (Mediterranean tributary), Antalya Province (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, COM, FIT. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

## Salmo pelagonicus Karaman, 1938 [N] — Trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: Salmo pelagonicus Karaman, 1938: 133, fig. 1 [Mountain brooks, former Yugoslavian Republic of Macedonia; syntypes: (3) whereabouts unknown]. — Synonyms: None. — Revisions: None. — Illustration: Karaman (1938: 133, fig. 1).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Turan and Bayçelebi (2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Karamenderes Irmağında, Çanakkale. — Distribution in river basins: 4-Kuzey Ege. — General distribution: Southeastern Europe: Macedonia and Greece east to Çanakkale Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits mountain streams. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: VU (IUCN, 2023). — Threats: COM, FIT. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Salmo platycephalus Behnke, 1968 [E] — Flathead trout/ Zamantı alası

**Taxonomy.** Original description: *Salmo platycephalus* Behnke, 1968: 2, figs. 1-2 [Tributary of Seyhan River basin, about 30 kilometers south of Pinarbasi, Türkiye; holotype: ZMH H4089]. — Synonyms: None. — Revisions: None. — Illustration: (1968: 2, figs. 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Behnke (1968). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Upper Seyhan River basin. — Distribution in river basins: 18-Seyhan. — General distribution: Asia Minor: Seyhan River basin, Mediterranean tributary (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits hilly streams that are usually fed by springs. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, CON, COM, FIT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Stable. — High priority for conservation action.

## Salmo rizeensis Turan, Kottelat & Engin, 2010 [E] — Rize trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo rizeensis* Turan, Kottelat & Engin, 2010: 338, figs. 2, 3, 4a, 5a, 14a [Stream at Ovit Mountain, Çoruh River drainage, 40°35.32'N, 40°51.50'E, Erzurum Province, Türkiye; holotype: FFR 3000]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2010: 338, figs. 2, 3, 4a, 5a, 14a).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2010). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Eastern Black Sea waterheds. — Distribution in river basins: 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Asia Minor: Çoruh basin, Black Sea tributary (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species inhabits mountain streams. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: CON. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

*Salmo salar* Linnaeus, 1758 => not established in Türkiye (see Çiçek et al., 2020)

### Salmo tigridis Turan, Kottelat & Bektaş, 2011 [E] — Tigris trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo tigridis* Turan, Kottelat & Bektaş, 2011: 24, fig. 1 [Çatak Stream, Tigris River drainage, Van Province, Türkiye; holotype: FFR 1250]. — Synonyms: None. — Revisions: None. — Illustration: Turan et al. (2011: 24, fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Turan et al. (2011). Listed in previous checklists from Türkiye by Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Upper tributaries of Tigris River Basin. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: upper Tigris River (Dicle Nehri) basin (Persian Gulf tributary), Van Province (Türkiye); possibly Iran. — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits streams and small rivers. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: DD (IUCN, 2023). — Threats: Threats to the species or the only known site where it is known to occur are unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Salmo trutta Linnaeus, 1758 [N] — Brown trout/Kırmızı benekli alabalık

**Taxonomy.** Original description: *Salmo trutta* Linnaeus, 1758: 308 [European rivers; no types known]. — Turkish synonyms: None. — Revisions: Berg (1948: 235); Schöffmann (2021: 35); Segherloo et al. (2021: 10). — Illustration: Berg (1948: 238, figs. 143-144).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Nearly all basins. — Distribution in river basins: 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 14-Yesilırmak, 15-Kızılırmak, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Coruh, 24-Aras, 25-Van Lake. - General distribution: Northeastern Atlantic: Norway south to Iberian Peninsula; Baltic Sea; North Sea; Mediterranean Sea; Europe: northeastern Atlantic watersheds and upper Danube basin, south to Sicily; introduced widely elsewhere. - Distribution in ecoregions: 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 434-Kura - South Caspian Drainages, 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates, 444-Lake Van. — Habitat: This species lives in cold streams, rivers, and lakes. Spawns in rivers and streams with swift water. Lacustrine populations migrate to tributaries and lake outlets, rarely spawning on stone or wave-washed lake shores. Spawning sites are usually characterised by the downward movement of water into gravel. Freshwater.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: EUT. — High sensitivity to human activities. — Keystone species. — Decline status: Stable. — High priority for conservation action.

**Remarks.** There are no genetic differences among the trout species identified in Türkiye. In addition, there is no difference in terms of morphometric and meristic characters to create a determination key. Therefore, the validity of many trout species is in great doubt. Therefore, it should be assumed that *S. trutta* is distributed in all river basins until the situation is clarified by future detailed studies.

*Salvelinus alpinus* (Linnaeus, 1758) => not established in Türkiye (see Çiçek et al., 2020)

*Salvelinus fontinalis* (Mitchill 1814) => not established in Türkiye (see Çiçek et al., 2020)

Stenodus leucichthys (Güldenstädt, 1772) => not

occurring in Türkiye (see Çiçek et al., 2020)

### Syngnathiformes

### Syngnathoidei

Syngnathidae Bonaparte, 1831 (pipefishes and seahorses)

### Syngnathinae Bonaparte, 1831 (tail-brooding pipefishes) Nerophis ophidion (Linnaeus, 1758) [N] — Straightnose pipefish/Deniz iğnesi

**Taxonomy.** Original description: *Syngnathus ophidion* Linnaeus, 1758: 337 [Europe; syntypes: BMNH 1853.11.12.185 (Gronovius coll.) (1, skin)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: All coasts of Anatolian brackish waters, entering freshwater habitats. - Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Sevhan, 19-Asi, 20-Ceyhan, 23-Çoruh. - General distribution: Baltic Sea; North Sea; Mediterranean Sea; Sea of Marmara; Black Sea; Sea of Azov; northeastern Atlantic: Norway south to Morocco, including Madeira. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 437-Orontes. - Habitat: This species inhabits marine neritic areas with seagrasses to depths of about 15 metres. Freshwater.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: AQU, CLI, EUT, TOU. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

Syngnathus abaster Risso, 1827 [N] — Blackstripe pipefish/Iğne balığı-deniz iğnesi

**Taxonomy.** Original description: *Syngnathus abaster* Risso, 1827: 182 [probably Nice, France, northwest Mediterranean Sea; no types known]. — Synonyms: None. — Revisions: None. — Illustration: Dawson in Whitehead et al. (1986: 635, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: In all coastal watersheds in Türkiye. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 23-Çoruh. -General distribution: Mediterranean Sea; Sea of Marmara; Black Sea; eastern Atlantic: Bay of Biscay south to Portugal, including Azores. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 437-Orontes. - Habitat: This species inhabits a wide range of marine, brackish, and freshwater habitats and is mostly associated with dense submerged vegetation but is also found on open mud bottom substrates. Freshwater, brackish, marine.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There

are no major threats known to be impacting this species. — Low sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Low priority for conservation action.

*Syngnathus acus* Linnaeus, 1758 => not occurring in freshwater (see Çiçek et al., 2020)

*Syngnathus nigrolineatus* Eichwald, 1831 => *Syngnathus acus* Linnaeus, 1758

*Syngnathus typhle* Linnaeus, 1758 => not occurring in freshwater (see Çiçek et al., 2020)

### Gobiiformes

Gobiidae Cuvier, 1816 (gobies)

Gobiinae Cuvier, 1816 (gobies)

Apollonia melanostomus => Neogobius melanostomus Babka gymnotrachelus (Kessler, 1857) [N] — Racer goby/Küçük kaya balığı

Taxonomy. Original description: Gobius gymnotrachelus Kessler, 1857: 464 [Dniester River and tributaries, especially Slutsch River, Ukraine; syntypes: ZIN 2105 (1, not present in 1996)]. — Synonyms: Mesogobius gymnotrachelus (Kessler, 1857); Neogobius gymnotrachelus (Kessler, 1857); Ponticola gymnotrachelus (Kessler, 1857). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Gobius (Babka) gymnotrachelus*; Geldiay and Balık (2007) as *Gobius (Babka) gymnotrachelus*; Fricke et al. (2007) as *Neogobius gymnotrachelus*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

Distribution and habitat. Distribution in Türkiye: Black Sea watersheds. - Distribution in river basins: 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 12-Sakarya, 13-Batı Karadeniz, 22-Doğu Karadeniz, 23-Çoruh. - General distribution: Eurasia: Black Sea, Sea of Azov, and Caspian Sea basins; invasive in Germany, Bosnia and Hercegovina, and Greece; introduced elsewhere in eastern Europe. -Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 430-Northern Anatolia, 433-Western Transcaucasia. - Habitat: This species inhabits mainly freshwater and brackish water with low salinity (<2‰). Estuaries, brackish- and fresh-water lagoons and lakes, large rivers up to small, fast-flowing streams on sand or mud bottoms mostly found in well vegetated or highcomplexity habitats. Freshwater, brackish.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

# Benthophilus nudus Berg, 1898 [N] — Black Sea tadpolegoby/Iribaş kaya balığı

Taxonomy. Original description: Benthophilus

*macrocephalus* var. *nudus* Berg, 1898: 334 [Dniester River at Bendery (Benderi), Moldova; lectotype: ZMMU P-1431]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Eurasia: north-western Black Sea watersheds. — Distribution in ecoregions: 423-Thrace. — Habitat: This species inhabits fresh and slightly brackish waters. Prefers lowland rivers, deltas, and coastal lakes. In rivers, usually abundant in main stream. Usually on silty sand with mollusc shells. Freshwater, brackish.

Economic importance. No commercial importance.

Conservation. Conservation status in Türkiye: Unknown. - IUCN: LC (IUCN, 2023). - Threats: No major threats known. - Low sensitivity to human activities. - Not considered a keystone species. - Decline status: Unknown. - Low priority for conservation action. Bubyr caucasicus kosswigii => Knipowitschia caucasica *Gobius batrachocephalus => Mesogobius batrachocephalus* Gobius caucasicus => Knipowitschia caucasica *Gobius constructor => Ponticola constructor Gobius cyrius => Ponticola cyrius Gobius eurycephalus => Ponticola eurycephalus* Gobius fluviatilis => Neogobius fluviatilis *Gobius gymnotrachelus => Babka gymnotrachelus* Gobius longecaudatus => Knipowitschia longecaudata *Gobius melanostomus => Neogobius melanostomus Gobius niger* Linnaeus, 1758 => not occurring in freshwater (see Cicek et al., 2020) Gobius ophiocephalus Pallas, 1814 => not occurring in freshwater (see Cicek et al., 2020) *Gobius ratan => Ponticola ratan* Gobius ricasolii => Knipowitschia ricasolii *Gobius semilunaris* => *Proterorhinus semilunaris* Gobius sordidus => Neogobius fluviatilis

### *Knipowitschia byblisia* Ahnelt, 2011 [E] — Byblis goby/ Kaya balığı

**Taxonomy.** Original description: *Knipowitschia byblisia* Ahnelt, 2011: 23, figs. 1-2 [Lake Köycegiz, 36°55'N, 28°40'E, southwest Türkiye; holotype: ZMH 2175]. — Synonyms: None. — Revisions: None. — Illustration: Ahnelt (2011: 23, figs. 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Ahnelt (2011). Listed in previous checklists from Türkiye by Çiçek et al. (2016, 2018, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Lake Köyceğiz. — Distribution in river basins: 8-Batı Akdeniz. — General distribution: Asia Minor: Lake Köyceğiz (Mediterranean tributary), Muğla Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits fresh and slightly brackish waters. Prefers lowland rivers, deltas, and coastal lakes. In rivers, usually abundant in main stream. Usually on silty sand with mollusc shells. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: Situated mostly in a protected area, there seem to be no or very few threats in Lake Köyceğiz affecting this species. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Moderate priority for conservation action.

## *Knipowitschia caucasica* (Berg, 1916) [N] — Caucasian dwarf goby/Kaya balığı

**Taxonomy.** Original description: *Pomatoschistus caucasicus* Berg, 1916: 409 [Swamp near Batum and Inkit Lake near Pitzunda, Lake Temirgorje, Georgia, Eurasia; syntypes: BMNH 1896.3.28.26-28 (ex Tiflis Mus.) (3)]. — Synonyms: *Gobius caucasicus* Kavraiskii in Radde 1899; *Bubyr caucasicus kosswigii* Sözer, 1941. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Marmara, Aegean and Black seas watersheds, introduced into Eğirdir Lake. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 8-Batı Akdeniz, 9-Antalya, 11-Akarçay, 16-Konya. — General distribution: Mediterranean Sea; Sea of Marmara; Black Sea; Sea of Azov; Caspian Sea; Aral Sea. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species inhabits fresh to hypersaline waters (salinity up to 5.5‰) of lakes, estuaries, and lagoons. Most abundant in shallow, well-vegetated habitats. Freshwater, brackish, marine.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

### *Knipowitschia caunosi* Ahnelt, 2011 [E] — Caunos goby/ Kaya balığı

**Taxonomy.** Original description: *Knipowitschia caunosi* Ahnelt, 2011: 25, figs. 1, 3 [Lake Köycegiz, 36°55'N, 28°40'E, southwest Türkiye; holotype: ZMH 25904]. —

Synonyms: None. — Revisions: None. — Illustration: Ahnelt (2011: 25, figs. 1, 3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Ahnelt (2011). Listed in previous checklists from Türkiye by Çiçek et al. (2016, 2018, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: / Lake Köyceğiz. — Distribution in river basins: 8-Batı Akdeniz. — General distribution: Asia Minor: Lake Köyceğiz (Mediterranean tributary), Muğla Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits fresh and slightly brackish waters. Prefers lowland rivers, deltas, and coastal lakes. In rivers, usually abundant in mainstream. Usually on silty sand with mollusc shells. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: Situated mostly in a protected area, there seem to be no or very few threats in Lake Köyceğiz affecting this species. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

**Remarks.** *Knipowitschia caunosi* is cooccurring with *Knipowitschia byblisia* in the same lake, Köyceğiz Lake. It is probable that *K. byblisia* is a synonym of *K. caunosi*. The status of the species should be clarified by field specimens. *Knipowitschia ephesi* => *Knipowitschia ricasolii* 

# *Knipowitschia longecaudata* (Kessler, 1877) [N] — Long-tailed dwarf goby/Kaya balığı

**Taxonomy.** Original description: *Gobius longecaudatus* Kessler, 1877: 35, Pl. 3 (fig. 8) [Southern and middle Caspian Sea; syntypes: BMNH 1897.7.5.10 (ex ZIN, var. C] (1), ZIN (lost)]. — Synonyms: *Gobius longicaudatus* Kessler, 1877; *Knipowitschia longicaudata* (Kessler, 1877); *Knipowitschia georghievi* Pinchuk 1978. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Pomatoschistus longecaudatus*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea watersheds. — Distribution in river basins: 2-Marmara, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eurasia: Black Sea, Sea of Azov, and Caspian Sea basins. — Distribution in ecoregions: 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species inhabits fresh to hypersaline waters (salinity up to 5.5‰) of lakes, estuaries, and lagoons. Most abundant in shallow, well-vegetated habitats. Freshwater, brackish. Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

# *Knipowitschia mermere* Ahnelt, 1995 [E] — Marmara goby/Mermer kaya balığı

**Taxonomy.** Original description: *Knipowitschia mermere* Ahnelt, 1995: 160, fig. 3 [Mermere (Lake Marmara), western Anatolia, Türkiye, 38°41'N, 28°00'E (is 38°37'N, 28°00'E); holotype: ZMH 2176.1]. — Synonyms: None. — Revisions: None. — Illustration: Ahnelt (1995: 160, fig. 3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Ahnelt (1995). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Göl Marmara Lake. — Distribution in river basins: 5-Gediz. — General distribution: Asia Minor: Marmara Sea tributary, northwestern Anatolia (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits fresh to hypersaline waters (salinity up to 5.5‰) of lakes, estuaries, and lagoons. Most abundant in shallow, well-vegetated habitats. Freshwater, brackish.

Economic importance. No commercial importance.

Conservation. Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: CLI, EUT, HAB. — Moderate sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Knipowitschia ricasolii* (Di Caporiacco, 1935) [E] — Goby/Kava balığı

### **Taxonomy.** Original description: *Gobius ricasolii* Di Caporiacco, 1935: 258 [Kuyuncu Lake (Aya Selçuk), Küçük Menderes River drainage, İzmir Province, western Anatolia, Türkiye; syntypes: MZUF 5551-55 (5)]. — Synonyms: *Knipowitschia ephesi* Ahnelt, 1995. — Revisions: None. — Illustration: Çiçek et al. (2019: 333, fig. 1).

**Status in Türkiye.** Recorded from Türkiye in the original description by Di Caporiacco (1935). Listed in previous checklists from Türkiye by Çiçek et al. (2020). — Turkish material: MZUF.

**Distribution and habitat.** Distribution in Türkiye: Küçük Menderes River drainage. — Distribution in river basins: 6-Küçük Menderes. — General distribution: Kuyuncu Lake, near Aya Selçuk, Maendri valley (Aegean Sea tributary), İzmir Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species inhabits fresh to hypersaline waters (salinity up to
5.5‰) of lakes, estuaries, and lagoons. Most abundant in shallow, well-vegetated habitats. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023 as *Knipowitschia ephesi*). — Threats: CLI, EUT, HAB. — High sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — High priority for conservation action.

### *Mesogobius batrachocephalus* (Pallas, 1814) [N] — Toad goby/Kurbağa kayası-Yassıkafa kaya balığı

**Taxonomy.** Original description: *Gobius batrachocephalus* Pallas, 1814: 149 [Black Sea near Chersonesus (Kherson) and Balaklava, Crimea, Ukraine; syntypes: whereabouts unknown]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Gobius (Mesogobius) batrachocephalus*; Geldiay and Balık (2007) as *Gobius (Mesogobius) batrachocephalus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea and Sea of Marmara watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eurasia: Black Sea and Sea of Azov basins. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species inhabits inshore habitats, estuaries, and brackishand fresh-water lagoons on sand or rock bottoms. Often very deep in summer (down to 100 m). Rarely in pure freshwater. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Mesogobius gymnotrachelus* => *Babka gymnotrachelus Neogobius cyrius* => *Ponticola cyrius Neogobius eurycephalus* => *Ponticola eurycephalus* 

#### *Neogobius fluviatilis* (Pallas, 1814) [N] — Monkey goby/ Tatlı su kayası

**Taxonomy.** Original description: *Gobius fluviatilis* Pallas, 1814: 162 [Mouths of rivers entering Black Sea; Caspian Sea; no types known]. — Synonyms: *Gobius sordidus* Bennett, 1835. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Geldiay and Balık (2007) as *Gobius (Neogobius) fluviatilis*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: Black Sea watersheds. - Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk. 4-Kuzev Ege, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eurasia: Black Sea and Caspian Sea basins; introduced elsewhere in central and eastern Europe. -Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 430-Northern Anatolia, 433-Western Transcaucasia. - Habitat: This species inhabits inshore habitats, estuaries, brackish- and fresh-water lagoons and lakes, large- to medium-sized rivers and streams, and sand or mud bottoms. Mostly found on open sand or mud bottoms. One of the most abundant fish species in lowland rivers. Freshwater, brackish, marine.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Neogobius gymnotrachelus => Babka gymnotrachelus* 

## Neogobius melanostomus (Pallas, 1814) [N] — Round goby/Kocabaş kaya balığı-Kum kaya balığı

**Taxonomy.** Original description: *Gobius melanostomus* Pallas, 1814: 151 [Sebvastopol, Crimea, Ukraine; Balaklava, Ukraine; syntypes: whereabouts unknown]. — Synonyms: *Apollonia melanostoma* (Pallas, 1814). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Gobius (Apollonia) melanostomus*; Geldiay and Balık (2007) as *Gobius melanostomus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

Distribution and habitat. Distribution in Türkiye: Sea of Marmara, Aegean, and Black Sea watersheds. -Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Çoruh. General distribution: Eurasia: basins of the Black, Azov, and Caspian seas; introduced elsewhere (including Baltic Sea, central Europe, Italy, U.S.A. and Canada). -Distribution in ecoregions: 418-Dniester - Lower Danube, 429-Western 423-Thrace. Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. - Habitat: This species inhabits inshore habitats, estuaries, brackish- and fresh-water lagoons and lakes, large rivers, harbours, and sand or rock bottoms. To 50-60 m deep in the Black Sea during the winter. Mostly found on well-vegetated or rock bottom. Freshwater, brackish, marine.

**Economic importance.** No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Neogobius ratan => Ponticola ratan* 

Neogobius rizensis => Ponticola rizensis

*Pomatoschistus caucasicus => Knipowitschia caucasica* 

*Pomatoschistus marmoratus* (Risso, 1810) => not occurring in freshwater (see Çiçek et al., 2020)

*Pomatoschistus minutus* (Pallas, 1770) => not occurring in freshwater (see Çiçek et al., 2020)

*Ponticola cephalargoides* (Pinchuk 1976) => not occurring in freshwater (see Çiçek et al., 2020)

# *Pomatoschistus anatoliae* Engin & Innal, 2017 [E] — Göksu river goby/Kaya balığı

**Taxonomy.** Original description: *Pomatoschistus anatoliae* Engin & Innal, 2017:2, figs. 1-2 [Göksu River estuary, Anatolia, Türkiye; holotype: IKC.PIC.1027]. — Synonyms: None. — Revisions: None. — Illustration: Engin and Innal (2017: figs. 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Engin and Innal (2017); subsequently reported by Innal (2022). — Turkish material: IKC.PIC.

**Distribution and habitat.** Distribution in Türkiye: Mediterranean coasts. — Distribution in river basins: 17-Doğu Akdeniz. — General distribution: Asia Minor: Mediterranean coasts of Anatolia. — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits brackish lagoons, estuaries, and the lower parts of large rivers. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

### Ponticola constructor (Nordmann, 1840) [N] — Blackbelly river goby/Kaya balığı

**Taxonomy.** Original description: *Gobius constructor* Nordmann, 1840: 427, Pl. 9 (fig. 2) [Black Sea, rapid torrents in Abasie, Drandarium, Ghouriel; syntypes: ?MNHN A-1196 (1) from Abasie, ZMB 2096 (1)]. — Synonyms: None. — Revisions: None. — Illustration: Nordmann (1840: 427, Pl. 9 (fig. 2)).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Gobius (Ponticola) cephalarges constructor*; Geldiay and Balık (2007); Fricke et al. (2007) as *Neogobius constructor*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye:

Eastern Black Sea watersheds. — Distribution in river basins: 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eurasia: eastern Black Sea basin. — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species inhabits a wide variety of flowing waters, from cold hill streams to foothill streams. Never found in marine water. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

### *Ponticola cyrius* (Kessler, 1874) [N] — Kura goby/Kaya balığı

**Taxonomy.** Original description: *Gobius cyrius* Kessler, 1874: 273 (83) [Kura River near Borzhomi, Georgia, Eurasia; syntypes: ZIN 2235 (3)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Fricke et al. (2007) as *Neogobius cyrius*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kura-Aras River basin. — Distribution in river basins: 24-Aras. — General distribution: Eurasia: Caspian Sea basin. — Distribution in ecoregions: 434-Kura - South Caspian Drainages. — Habitat: This species inhabits a very wide range of streams, rivers, and lake shores. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: While there are many threats in the area, this species is quite ubiquitous and is not believed to be strongly impacted. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

## Ponticola eurycephalus (Kessler, 1874) [N] — Mushroom goby/Kaya balığı

**Taxonomy.** Original description: *Gobius eurycephalus* Kessler, 1874: 281 (91) [Enikale near Kerch, Crimea, Ukraine; lectotype: ZIN 2234]. — Synonyms: *Neogobius eurycephalus* (Kessler, 1874). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007) as *Neogobius eurycephalus*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea watersheds. — Distribution in river basins: 2-Marmara, 13-Batı Karadeniz. — General distribution: Eurasia: Black Sea basin and Sea of Azov. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 430-Northern Anatolia. — Habitat: This species inhabits brackish lagoons, estuaries, and the lower parts of large rivers, usually associated with rock bottoms. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action. *Ponticola gymnotrachelus => Babka gymnotrachelus* 

*Ponticola kessleri* Günther, 1861 => not occurring in Türkiye (see Çiçek et al., 2020)

*Ponticola platyrostris* (Pallas, 1814) => not occurring in freshwater (see Çiçek et al., 2020)

#### Ponticola ratan (Nordmann, 1840) [N] — Ratan goby/ Kaya balığı

Taxonomy. Original description: *Gobius ratan* Nordmann, 1840: 416, Pl. 11 (fig. 2) [Odessa, Ukraine; syntypes: MNHN A-1125 (2), ZMB 2098 (1?)]. — Synonyms: None. — Revisions: None. — Illustration: Nordmann (1840: 416, Pl. 11, fig. 2).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Gobius (Ponticola) ratan*; Geldiay and Balık (2007) as *Gobius ratan*; Fricke et al. (2007) as *Neogobius ratan*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Black Sea and Sea of Marmara watersheds. — Distribution in river basins: 2-Marmara, 13-Batı Karadeniz. — General distribution: Eurasia: Black Sea, Sea of Azov, and Caspian Sea watersheds. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 430-Northern Anatolia. — Habitat: This species is typically found in inshore waters over coarse sediments. This was commonly considered in pure coastal species in water salinity of 6–16 ppt that did not occur in freshwater habitats. However, it has been recorded from freshwater rivers and reservoirs. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are no known species-specific threats. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

## Ponticola rizensis (Kovacic & Engin, 2008) [E] — Iyidere goby/Kaya balığı

**Taxonomy.** Original description: *Neogobius rizensis* Kovacic & Engin, 2008: 74, figs. 2-3 [Rize, the Iyidere stream, northeastern Türkiye; holotype: FFR 1014]. —

Synonyms: None. — Revisions: None. — Illustration: Kovacic and Engin (2008: 74, figs. 2-3).

**Status in Türkiye.** Recorded from Türkiye in the original description by Kovacic and Engin (2008). Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2014); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: Iyidere Stream drainage. — Distribution in river basins: 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Asia Minor: Black Sea tributary, Rize Province (Türkiye). — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species inhabits the lower sections of streams. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: CON. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

*Ponticola syrman* (Nordmann, 1840) => not occurring in freshwater (see Çiçek et al., 2020)

### Ponticola turani (Kovacic & Engin, 2008) [E] — Aksu goby/Kaya balığı

**Taxonomy.** Original description: *Neogobius turani* Kovacic & Engin, 2008: 77, figs. 4-5 [Giresun, Aksu stream, northeastern Türkiye; holotype: FFR 1017]. — Synonyms: None. — Revisions: None. — Illustration: Kovacic and Engin (2008: 77, figs. 4-5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Kovacic and Engin (2008). Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2014); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: northeastern Black Sea watersheds. — Distribution in river basins: 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Asia Minor: Black Sea tributary, Giresun Province (Türkiye). — Distribution in ecoregions: 433-Western Transcaucasia. — Habitat: This species inhabits streams and small rivers. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: VU. — IUCN: VU (IUCN, 2023). — Threats: CON. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

*Proterorhinus marmoratus* (Pallas, 1814) => not occurring in freshwater (see Çiçek et al., 2020)

*Proterorhinus nasalis* (De Filippi, 1863) => not occurring in Türkiye (see Çiçek et al., 2020)

# Proterorhinus semilunaris (Heckel, 1837) [N] — Western tubenose goby/Kaya balığı

**Taxonomy.** Original description: *Gobius semilunaris* Heckel, 1837: 152, Pl. 8 (figs. 5-6) [Maritza (Marizza) River, near Plovdiv, eastern Rumelia, Balkan region of Bulgaria; syntypes: NMW 58144 (3)]. — Synonyms: None. — Revisions: None. — Illustration: Heckel (1837: 152, Pl. 8, figs. 5-6).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007) as *P. marmoratus*; Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: European Black Sea, northern Aegean Sea and Sea of Marmara watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege. — General distribution: Black Sea basin. Introduced/invaded in elsewhere in Europe, in Minnesota and Michigan (Lake Erie, U.S.A.) and Canada (from ship's ballast). — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia. — Habitat: This species as a variety of slow-flowing or still waters from estuarine to small, slowly flowing premontane streams. Usually associated with dense vegetation or coarse rocks. Often very abundant in backwaters and lakes, proliferates in reservoirs and channels. Freshwater, brackish.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Decreasing. — Low priority for conservation action.

# *Rhinogobius lindbergi* Berg, 1933 [I] — Lindberg's goby/ none

Taxonomy. Original description: *Rhinogobius similis lindbergi* Berg, 1933: 654, fig. 612 [Amur River and Ussuri River, Russia; no types known]. — Synonyms: None. — Revisions: Berg (1949: 1078) as *Rhinogobius similis lindbergi*; *Gobius semilunaris* Heckel, 1837. — Illustration: Berg (1933: fig. 612) as *Rhinogobius similis lindbergi*.

**Status in Türkiye.** First report from Türkiye by Kaya (2022). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Introduced to Aras basin. — Distribution in river basins: 24-Aras. — General distribution: East Asia: Amur River basin (Russia and Heilongjiang, China); introduced elsewhere. — Distribution in ecoregions: 434-Kura -South Caspian Drainages. — Habitat: This species inhabits freshwater lakes and rivers. It lives in shallow areas of rivers with a weak current and rocky or sandy soil, in shallow water with sandy bottoms. This species feeds on small crustaceans, insect larvae, and fish eggs. Larvae of the goby are often found in the summer in planktonic gatherings when they are caught in mouth sections of the rivers. Freshwater, brackish.

Economic importance. No commercial importance.

**Reasons of introduction.** Unknown: Inadvertently introduced by transboundary waterways for no known reason or method.

Conservation. Not relevant (introduced species).

Synbranchiformes

Mastacembeloidei

Mastacembelidae Swainson, 1839 (freshwater spiny-eels)

### Mastacembelus mastacembelus (Banks & Solander in Russell, 1794) [N] — Mesopotamian spiny eel/Dikenli yılan balığı

Taxonomy. Original description: Ophidium mastacembelus Banks & Solander in Russell, 1794: 209, pl. 6 [locality unknown; no types known]. — Synonyms: Rhynchobdella haleppensis Bloch & Schneider, 1801; Macrognathus caudatus McClelland, 1842; Macrognathus hamiltonii McClelland, 1843; Mastacembelus manipurensis Hora, 1921; Mastacembelus marmoratus Cuvier in Cuvier and Valenciennes, 1832; Rhynchobdella polyacantha Bloch & Schneider, 1801; Mastacembelus ponticerianus Cuvier in Cuvier in Cuvier and Valenciennes, 1832; Mastacembelus ponticerianus Cuvier in Cuvier in Cuvier and Valenciennes, 1832; Mastacembelus venosus Valenciennes in Jacquemont 1838. — Revisions: None. — Illustration: Banks and Solander in Russell (1794: 209, pl. 6).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Mastacembelus simack*; Geldiay and Balık (2007) as *Mastacembelus simack*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Tigris and Euphrates River drainages. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris River, Kor River, and Persian Gulf basins (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a wide range of habitats, from reservoirs and large rivers to small mountain streams. Often very abundant in rapids and riffles. Freshwater.

**Economic importance.** Locally commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: EUT. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Stable. — Moderate priority for conservation action.

Ophidium mastacembelus => Mastacembelus mastacembelus

### Carangiformes

Pleuronectoidei

#### Pleuronectidae Rafinesque, 1815 (righteye flounders) Pleuronectinae Rafinesque, 1815 (true flounders)

### *Platichthys flesus* (Linnaeus, 1758) [N] — Mediterranean flounder/Dere pisisi

Taxonomy. Original description: *Pleuronectes flesus* Linnaeus, 1758: 270 [European seas; lectotype: BMNH 1853.11.12.133 (skin)]. — Synonyms: *Pleuronectes flessus* Linnaeus, 1758. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: All coasts of Anatolian brackish waters. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Kücük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 22-Doğu Karadeniz, 23-Coruh. — General distribution: Northeastern Atlantic and adjacent Arctic Ocean: Baltic Sea, North Sea, eastern North Atlantic and western Europe; introduced elsewhere. - Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 433-Western Transcaucasia. - Habitat: This species is typically found resting on the muddy substrate of estuaries. It has been found at a depth range of 1-100 m. It migrates into the open sea to breed from March to June, and the young then return to estuarine waters. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

Remarks. Conservation

Pleuronectes flessus => Platichthys flesus Platichthys luscus (Pallas, 1814) => not occurring in freshwater (see Table 1)

Cichliformes

Cichlidae Bonaparte, 1835 (Cichlids)

Acerina zillii => Coptodon zillii Chromis aureus => Oreochromis aureus Chromis rendalli => Coptodon rendalli

### *Coptodon rendalli* (Boulenger, 1897) [I] — Redbreast tilapia/Tilapya, Israil çipurası, tatlı su çipurası

**Taxonomy.** Original description: *Chromis randalli* Boulenger, 1897: 915, fig. 1 [Upper Shiré River, British Central Africa. lectotype: BMNH 1896.10.5.9]. — Synonyms: *Tilapia rendalli* (Boulenger, 1897). — Revisions: None. — Illustration: None. **Status in Türkiye.** Listed in previous checklists from Türkiye by Geldiay and Balık (2007) as *Tilapia rendalli*; Çiçek et al. (2015, 2020, 2021, 2022a). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Mediterranean coastal plain. — Distribution in river basins: 18-Seyhan. — General distribution: Southerncentral Africa. Introduced elsewhere. — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits a very wide range of habitats with flowing water, from fast-flowing headwaters and reservoirs to polluted canals and large lowland rivers. It is an environmentally tolerant species, tolerating lack of oxygen, pollution, salinity, etc. Freshwater, brackish.

**Economic importance.** Locally commercially important.

**Reasons of introduction.** Aquaculture/research. **Conservation.** Not relevant (introduced species).

*Coptodon zillii* (Gervais, 1848) [I] — Redbelly tilapia/ Tilapya-Israil çipurası-Tatlı su çipurası

**Taxonomy.** Original description: *Acerina zillii* Gervais, 1848: 203 [Artesian well, Tuggurth, Algeria; syntypes: MNHN (lost)]. — Synonyms: *Tilapia zillii* (Gervais, 1848). — Revisions: Dunz and Schliewen (2013: 73). — Illustration: Krupp and Schneider (1989: 400, fig. 52).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Tilapia zillii*; Geldiay and Balık (2007) as *Tilapia zillii*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2021, 2022a). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: Mediterranean coastal plain. — Distribution in river basins: 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan. — General distribution: North Africa: Morocco east to Egypt, south to Nigeria and Central African Republic; Middle East: Syria south to Israel and Jordan. Introduced elsewhere. — Distribution in ecoregions: 432-Southern Anatolia, 437-Orontes. — Habitat: This species inhabits a very wide range of habitats with flowing water, from fast-flowing headwaters and reservoirs to polluted canals and large lowland rivers. It is the most environmentally tolerant of all tilapia species, tolerating lack of oxygen, pollution, salinity, etc. Low water temperatures (below 10–13 °C) limit its occurrence. Freshwater, brackish.

**Economic importance.** Locally commercially important.

Reasons of introduction. Aquaculture/research.

**Conservation.** Not relevant (introduced species). *Hemichromis letourneuxi* Sauvage, 1880 => not established in Türkiye (see Çiçek et al., 2020)

# *Oreochromis aureus* (Steindachner, 1864) [I] — Blue tilapia/Tilapya-Israil çipurası-Tatlı su çipurası

**Taxonomy.** Original description: *Chromis aureus* Steindachner, 1864: 229, pl. 8, fig. 5 [locality unknown; no types known]. — Synonyms: *Tilapia aurea* (Steindachner, 1864). — Revisions: Trewavas (1965: 265) as *Tilapia aurea*; Trewavas (1982: 12). — Illustration: Steindachner (1864: 229, pl. 8, fig. 5).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2021, 2022a). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Mediterranean coastal plain. — Distribution in river basins: 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan. — General distribution: Middle East and Africa. Introduced widely elsewhere. — Distribution in ecoregions: 432-Southern Anatolia, 437-Orontes. — Habitat: This species inhabits a very wide range of flowing water habitats, from fast-flowing headwaters and reservoirs to polluted canals and large lowland rivers. It is the most environmentally tolerant of all tilapia species, tolerating lack of oxygen, pollution, salinity, etc. Low water temperatures (below 10–13 °C) limit its occurrence. Freshwater, brackish.

**Economic importance.** Locally commercially important.

Reasons of introduction. Aquaculture/research.

Conservation. Not relevant (introduced species).

*Oreochromis mossambicus* (Peters, 1852) => not introduced to the wild (see Çiçek et al., 2020)

## *Oreochromis niloticus* (Linnaeus, 1758) [I] — Nile tilapia/Tilapya-Israil çipurası-Tatlı su çipurası

**Taxonomy.** Original description: *Perca niloticus* Linnaeus, 1758: 290 [Nile River; holotype: ?NRM LP 10]. — Synonyms: *Perca nilotica* Linnaeus, 1758; *Tilapia nilotica* (Linnaeus, 1758); *Chromis niloticus* (Linnaeus, 1758). — Revisions: None. — Illustration: Teugels and Thys van den Audenaerde in Lévêque et al. (1992: 760, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2021, 2022a). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Mediterranean coastal plain. — Distribution in river basins: 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan. — General distribution: North Africa and East Africa. Widely introduced elsewhere. — Distribution in ecoregions: 432-Southern Anatolia, 437-Orontes. — Habitat: Habitat: This species inhabits a very wide range of flowing water habitats, from fast-flowing headwaters and reservoirs to polluted canals and large lowland rivers. It is the most environmentally tolerant of all tilapia species, tolerating lack of oxygen, pollution, salinity, etc. Low water temperatures (below 10–13 °C) limit its occurrence. Freshwater, brackish.

**Economic importance.** Locally commercially important.

Reasons of introduction. Aquaculture/research.

**Conservation.** Not relevant (introduced species).

Perca nilotica => Oreochromis niloticus Sarotherodon galilaeus (Linnaeus, 1758) => not introduced to the wild (see Çiçek et al., 2020) Tilapia aurea => Oreochromis aureus Tilapia nilotica => Oreochromis niloticus Tilapia rendalli => Coptodon rendalli Tilapia zillii => Coptodon zillii Tristramella simonis (Günther, 1864) => not occurring in Türkiye (see Çiçek et al., 2020) Atheriniformes

Atherinidae Risso, 1827 (Old World silversides) Atherininae Risso, 1827 (silversides)

### Atherina boyeri Risso, 1810 [N] — Big-scale sand smelt/ Gümüş balığı

Taxonomy. Original description: *Atherina boyeri* Risso, 1810: 338, pl. 10, fig. 38 [Dept. du Var, France, northwestern Mediterranean Sea; lectotype: MNHN A-4342 (70.6 mm SL); lectotype selected by Kottelat and Freyhof (2009: 83)]. — Synonyms: None. — Revisions: None. — Illustration: Risso (1810: 338, pl. 10, fig. 38).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: All coasts of Anatolian brackish waters, translocated to many reservoirs in Anatolia. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Firat-Dicle, 24-Aras. — General distribution: Southern North Sea; Mediterranean Sea; Sea of Marmara; Black Sea; Sea of Azov; eastern Atlantic: English Channel south to Mauritania, including Madeira and Canary Islands. -Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia, 434-Kura - South Caspian Drainages, 437-Orontes, 442-Upper Tigris and Euphrates. - Habitat: This species lives in the lower parts of rivers, estuaries, coastal lakes, and the sea. Freshwater populations prefer still or slowflowing waters. Freshwater, brackish.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

# Atherina caspia Eichwald, 1831 [N] — Caspian silverside/Gümüş balığı

**Taxonomy.** Original description: *Atherina presbyter* var. *caspia* Eichwald, 1831: 72 [Caspian Sea. No types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** First report from Türkiye by Yoğurtçuoğlu et al. (2020b). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Brackish waters of Blacksea. — Distribution in river basins: 13-Batı Karadeniz — General distribution: Eurasia: Caspian Sea basin. — Distribution in ecoregions: 430-Northern Anatolia, 433-Western Transcaucasia. — Habitat: This species inhabits the lower parts of rivers, estuaries, coastal lakes, and the sea. Freshwater, brackish.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

**Remarks.** This species was reported from Türkiye by Yoğurtçuoğlu et al. (2020b) and is probably a misidentification. Need to clarify.

Atherina hepsetus Linnaeus, 1758 => not occurring in freshwater (see Çiçek et al., 2020)

*Atherina pontica* Eichwald, 1831 => not occurring in freshwater (see Çiçek et al., 2020)

### Cyprinodontiformes

Cyprinodontoidei

Poeciliidae Bonaparte, 1831 (poeciliids)

Poeciliinae Bonaparte, 1831 (livebearers)

*Gambusia affinis* Baird & Girard, 1853 => not occurring in Türkiye (see Çiçek et al., 2020)

# *Gambusia holbrooki* Girard, 1859 [I] — Eastern mosquitofish/Sivrisinek balığı

**Taxonomy.** Original description: *Gambusia holbrooki* Girard, 1859: 390 [Palatka, eastern Florida, (Palatka, eastern Florida and Charleston, South Carolina), USA; lectotype: ANSP 6976; lectotype selected by Huber (2019: 64)]. — Synonyms: None. — Revisions: Rauchenberger (1989: 3). — Illustration: McEachran and Fechhelm (1998: 924, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2022a). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: Introduced and widespread in Anatolia to provide biological control of mosquitoes. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 14-Yesilırmak, 15-Kızılırmak, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh, 24-Aras, 25-Van Lake. — General distribution: North America: Atlantic and Gulf Coast drainages, eastern USA; widely introduced elsewhere for mosquito control. - Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 434-Kura - South Caspian Drainages, 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates, 444-Lake Van, 445-Orumiyeh. - Habitat: This species often occurs in shallow, often stagnant ponds and the shallow edges of lakes and streams where predatory fish are largely absent and temperatures are high. Freshwater, brackish.

Economic importance. No commercial importance.

**Reasons of introduction.** Biocontrol: to prevent eutrophication, aquatic plants, and pest control.

**Conservation.** Not relevant (introduced species).

**Remarks:** This species was erroneously misidentified as *Gambusia affinis* in many previous studies. *Lebistes reticulata* => *Poecilia reticulata* 

### Poecilia reticulata Peters, 1859 [I] — Guppy/Lepistes

**Taxonomy.** Original description: *Poecilia reticulata* Peters, 1859: 412 [Guayre River, Caracas, Venezuela; syntypes: BMNH 1866.6.6.3 (ex ZMB) (1); ZMB 3468 (9), 3469 (8, lost)]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye by Türkmen (2019), Kirankaya and Ekmekçi (2021). Listed in previous checklists from Türkiye by Çiçek et al. (2022a). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Introduced to İzmir and Malatya. — Distribution in river basins: 5-Gediz, 21-Fırat-Dicle. — General distribution: Northern South America: coastal drainages between the Orinoco delta (Venezuela) and the Essequibo River delta, Guyana, Venezuelan Islands, the Netherlands Antilles, and Trinidad and Tabago; widely introduced elsewhere. — Distribution in ecoregions: 429-Western Anatolia, 442-Upper Tigris and Euphrates. — Habitat: This species occurs in a broad range of freshwater habitats, from small, fragmented headwater streams to deep lowland pools, and exhibits a marked degree of population differentiation in morphology, life history characteristics, and behaviour subject to environmental variables. Freshwater, brackish.

Economic importance. Valuable for the aquarium trade.

**Reasons of introduction.** Ornamental fish industry. **Conservation.** Not relevant (introduced species).

### *Xiphophorus hellerii* Heckel, 1848 [I] — Green swardtail/ Kılıç kuyruk

**Taxonomy.** Original description: *Xiphophorus hellerii* Heckel, 1848: 291, Pl. 8 (figs. 1-3) [Orizaba, Mexico (Atlantic); syntypes: NMW 60543 (8)]. — Synonyms: None. — Revisions: None. — Illustration: Heckel (1848: 291, Pl. 8, figs. 1-3).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Çiçek et al. (2022a). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Introduced to Malatya Province — Distribution in river basins: 21-Firat-Dicle. — General distribution: Atlantic slope of Central America: Belize, Guatemala, Honduras, Mexico; introduced widely elsewhere. — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species inhabits diverse habitats, including ponds, springs, shaded and sometimes very rocky arroyos, ditches, open lagoons, and rivers with a variety of substrates; the water is clear to murky, muddy, or opaque, sometimes badly polluted. Freshwater, brackish.

**Economic importance.** Valuable for the aquarium trade. **Reasons of introduction.** Ornamental fish industry.

Conservation. Not relevant (introduced species).

### Aphaniidae Hoedeman, 1949 (Oriental killifishes) Anatolichthys anatoliae (Leidenfrost 1912) [E] — Anatolian giant killifish/Dişli sazancık

**Taxonomy.** Original description: *Cyprinodon anatoliae* Leidenfrost 1912: 159, fig. 1, p. 130 [Near the village Jazla Jayla, near the Kradzsa Da mountain, Asia Minor; no types known]. — Synonyms: *Aphanius anatoliae* (Leidenfrost 1912); *Lebias anatoliae* (Leidenfrost 1912); *Cyprinodon lykaoniensis* Leidenfrost 1912; *Aphanius chantrei venustus* Kosswig & Sözer, 1945; *Aphanius chantrei aksaranus* Akşiray, 1948; *Aphanius chantrei flavianalis* Akşiray, 1948; *Aphanius chantrei obrukensis* Akşiray, 1948; *Aphanius obrukensis* Akşiray, 1948. — Revisions: None. — Illustration: Leidenfrost (1912: 159, fig. 1, p. 130).

**Status in Türkiye.** Recorded from Türkiye in the original description by Leidenfrost (1912). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007) as *Aphanius anatolias*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Konya endorheic basin. — Distribution in river basins: 11-Akarçay, 12-Sakarya, 16-Konya. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: central Anatolia (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Distribution in ecoregions: 430-Northern Anatolia, 431-Central Anatolia. — Habitat: This species lives in clear, well-oxygenated, springs, running freshwaters, and pools. Freshwater. **Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: NT. — IUCN: NT (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

## *Anatolichthys chantrei* (Gaillard, 1895) [E] — Sultan killifish/Dişli sazancık

**Taxonomy.** Original description: *Cyprinodon chantrei* Gaillard, 1895: 10, figs. 8-9 [Spring in Sandarémek village, Evérek, Asia Minor. syntypes: BMNH 1896.1.29.1-5 (5)]. — Synonyms: *Aphanius chantrei* (Gaillard, 1895); *Lebias chantrei* (Gaillard, 1895). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Gaillard (1895). Listed in previous checklists from Türkiye by Geldiay and Balık (2007) as *Aphanius chantrei*; Kuru et al. (2014) as *Aphanius chantrei*. — Turkish material: BMNH.

**Distribution and habitat.** Distribution in Türkiye: Sultan Marsh endorheic basin. — Distribution in river basins: 15-Kızılırmak. — General distribution: Asia Minor: central Anatolia (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species lives in spring-fed streams with clear waters and dense vegetation, but it is also found in turbid field canals. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023 as *Anatolichthys danfordii*). — Threats: ABS, CLI, CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

Remarks. Nomenclaturally speaking, a taxon is ICZN-associated with a type species and a type locality. Anatolichthys danfordii was never observed or collected live since its description; therefore, its population status is unknown. Attempts to recollect A. danfordii from the type locality given in Boulenger (1890), "Albistan" (= present Elbistan-Kahramanmaraş), have been unsuccessful by Akşiray (1948), Wildekamp & Valkenburg (1994), and Wildekamp et al. (1999), who visited Elbistan and its vicinity, but only specimens of A. mento were found. Based on the morphological similarities between the types of A. danfordii and A. chantrei, the latter was treated as a junior synonym by Wildekamp et al. (1999). However, using synonymy in a simple sentence as the similarity of type specimens without any discussion and comparison is not correct. Therefore, a conclusion should be reached after a morphometric, meristic, and molecular comparison between the specimens collected from the type locality of A. danfordii and the specimens collected from Sultan

Marsh. Until such a study is carried out, *A. chanteri* should be recognised as a valid species.

### Anatolichthys danfordii (Boulenger, 1890) [E] — Danford's killifish/Dişli sazancık

**Taxonomy.** Original description: *Cyprinodon danfordii* Boulenger, 1890: 169 [Albistan (= Elbistan-Kahramanmaraş), Asia Minor: lectotype: BMNH 1879.6.7.5. Lectotype selected by Wildekamp et al. (1999) from Sultan Marsh]. — Synonyms: *Aphanius danfordii* (Boulenger, 1890); *Lebias danfordi* (Boulenger, 1890). — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Boulenger (1890). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: BMNH.

**Distribution and habitat.** Distribution in Türkiye: Elbistan, upper Ceyhan River basin. — Distribution in river basins: 20-Ceyhan. — General distribution: Upper Ceyhan River. — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species lives in spring-fed streams with clear waters and dense vegetation. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

Remarks. This species was originally described from the type locality given in Boulenger (1890), "Albistan" (= present Elbistan-Kahramanmaraş) from Ceyhan River Basin. Then lectotype (BMNH 1879.6.7.5.) was selected by Wildekamp et al. (1999) from Sultan Marsh (Kızılırmak River Basin) which is the type locality of A. chantrei. Ceyhan and Kızılırmak basins are not even neighbouring basins. Therefore, the appropriateness of determining a lectotype from an ichthyogeographically unsuitable region is questionable since it was not encountered in the type locality. In addition, Sultan Sazlığı is a closed basin and all naturally distributed species (P. elizaveta, C. jörgbohleni, O. ciceki, S. ahmeti, and A. chantrei) are endemic to the basin. Furthermore, if the type specimen of A. danfordii was in good enough condition to be compared with the type specimen of A. chantrei, why was the lectotype designated by Wildekamp? Therefore, the lectotype designed by Wildekamp should be withdrawn.

## *Anatolichthys fontinalis* (Akşiray, 1948) [E] — Burdur killifish/Dişli sazancık

Taxonomy. Original description: *Aphanius chantrei fontinalis* Akşiray, 1948: 128, Pl. 3 (figs. 28-32) [Spring near Lake Yarışlı (37°34'N, 29°53'E), southwest of Lake Burdur, Türkiye; no types known]. — Synonyms: *Aphanius chantrei altus* Akşiray, 1948; *Aphanius chantrei litoralis* Akşiray, 1948. — Revisions: None. — Illustration: Akşiray (1948: 128, Pl. 3 (figs. 28-32)).

**Status in Türkiye.** Recorded from Türkiye in the original description by Akşiray (1948). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Lake Yarışlı basin. — Distribution in river basins: 10-Burdur. — General distribution: Asia Minor: Lake Burdur tributary, Burdur Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species lives in spring-fed streams with clear waters and dense vegetation. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

**Remarks.** *Anatolichthys fontinalis* is cooccurring with *A. sureyanus.* Recent molecular findings suggest their possible synonymisation because of low level differences (K2P 0.57%) (Kuyumcu, 2021); therefore, it is probable that *A. fontinalis* is a synonym of *Anatolichthys sureyanus* (Neu, 1937).

# *Anatolichthys iconii* (Akşiray, 1948) [E] — Konya killifish/Dişli sazancık

Taxonomy. Original description: *Aphanius burduricus iconii* Akşiray, 1948: 134, Pl. 4 (figs. 43-46) [Spring Karaot at shore of Lake Eğirdir, about 4 km north of Yenice, Isparta Province, Türkiye, 38°08.094'N, 30°54.443'E; neotype: IUSHM 2017-1272]. — Synonyms: *Aphanius iconii* Akşiray, 1948. — Revisions: None. — Illustration: Akşiray (1948: 134, Pl. 4, figs. 43-46).

**Status in Türkiye.** Recorded from Türkiye in the original description by Akşiray (1948). Listed in previous checklists from Türkiye by Pfleiderer et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: IUSHM.

**Distribution and habitat.** Distribution in Türkiye: Lake Tuz basin. — Distribution in river basins: 16-Konya. — General distribution: Asia Minor: Lake Eğirdir and Lake Kovada tributaries, Isparta Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species lives in spring-fed streams with clear waters and dense vegetation, but it is also found in turbid field canals. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

Conservation. Conservation status in Türkiye: Unknown.

— IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

### Anatolichthys irregularis (Yogurtcuoglu & Freyhof, 2018) [E] — Killifish/Dişli sazancık

**Taxonomy.** Original description: *Aphanius irregularis* Yogurtcuoglu & Freyhof, 2018: 321, figs. 1-4 [Spring Kaklık, Denizli Province, Türkiye, 37°51.36'N, 29°23.11'E; holotype: FFR 08653]. — Synonyms: None. — Revisions: None. — Illustration: Yogurtcuoglu and Freyhof (2018: 321, figs. 1-4).

**Status in Türkiye.** Recorded from Türkiye in the original description by Yogurtcuoglu & Freyhof (2018). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: FFR.

**Distribution and habitat.** Distribution in Türkiye: The spring Kaklik in the Büyük Menderes River drainage. — Distribution in river basins: 7-Büyük Menderes. — General distribution: Asia Minor: Büyük Menderes River drainage, Aegean Sea tributary, Denizli Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species lives in spring-fed streams with clear waters and dense vegetation, but it is also found in turbid field canals. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

**Remarks.** Anatolichthys irregularis is cooccurring with *A. maeandricus.* Recent molecular findings suggest their possible synonymisation because of low level differences (K2P 0.57%); therefore, it is probable that *A. irregularis* is a synonym of *Anatolichthys maeandricus* (Akşiray, 1948).

### Anatolichthys maeandricus (Akşiray, 1948) [E] — Maeander killifish/Dişli sazancık

**Taxonomy.** Original description: *Aphanius chantrei maeandricus* Akşiray, 1948: 125, Pl. 3 (figs. 35-37); figs. 20-21 [Springs of the Büyük Menderes River, near Isikli (38°19'N, 29°50'E) and Karakuyu (38°11'N, 29°55'E), Dinar, Türkiye. No types known]. — Synonyms: *Aphanius maeandricus* Akşiray, 1948. — Revisions: None. — Illustration: Akşiray (1948: 125, Pl. 3 (figs. 35-37); figs. 20-21).

**Status in Türkiye.** Recorded from Türkiye in the original description by Akşiray (1948). Listed in previous checklists from Türkiye by Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Büyük Menderes River basin. — Distribution in river basins: 7-Büyük Menderes. — General distribution: Asia Minor: Büyük Menderes River basin, Aegean Sea tributary, Denizli Province (Türkiye). — Distribution in ecoregions: 429-Western Anatolia. — Habitat: This species lives in spring-fed streams with clear waters and dense vegetation, but it is also found in turbid field canals. Freshwater, brackish.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Anatolichthys marassantensis (Pfleiderer, Geiger & Herder, 2014) [E] — Kızılırmak killifish/none

**Taxonomy.** Original description: *Aphanius marassantensis* Pfleiderer, Geiger & Herder, 2014: 571, figs. 2-4, 5F, 6G [Ankara Province, Hirfanı Reservoir, 39°11'19"N, 33°34'45'E, Türkiye; holotype: ZFMK 66342 (ex FSJF 3455)]. — Synonyms: None. — Revisions: None. — Illustration: Pfleiderer et al. (2014: 571, figs. 2-4, 5F, 6G).

**Status in Türkiye.** Recorded from Türkiye in the original description by Pfleiderer et al. (2014). Listed in previous checklists from Türkiye by Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZFMK.

**Distribution and habitat.** Distribution in Türkiye: Kızılırmak River basin. — Distribution in river basins: 15-Kızılırmak. — General distribution: Asia Minor: Kızılırmak and Yeşilırmak River basins. — Distribution in ecoregions: 430-Northern Anatolia. — Habitat: This species lives in spring-fed streams with clear waters and dense vegetation, but it is also found in turbid field canals. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Anatolichthys meridionalis* (Akşiray, 1948) [N] — Killifish/Disli sazancık

**Taxonomy.** Original description: *Aphanius chantrei meridionalis* Akşiray, 1948: 131, Pl. 4 (figs. 47-48) (Lake Sögüt (37°04'N, 29°53'E) at border between Burdur District and Antalya District, Türkiye; no types known]. — Synonyms: *Aphanius meridionalis* Akşiray, 1948; *Aphanius chantrei parvus* Akşiray, 1948. — Revisions: None. — Illustration: Akşiray (1948: 131, Pl. 4 (figs. 47-48)).

**Status in Türkiye.** Recorded from Türkiye in the original description by Akşiray (1948). Listed in previous checklists from Türkiye by Çiçek et al. (2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Lake Sögüt, Burdur and Antalya. — Distribution in river basins: 10-Burdur. — General distribution: Asia Minor: Lake Söğüt, Burdur and Antalya provinces (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species lives in spring-fed streams with clear waters and dense vegetation, but it is also found in turbid field canals. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

# Anatolichthys saldae (Akşiray, 1955) [E] — Salda killifish/Dişli sazancık

**Taxonomy.** Original description: *Anatolichthys splendens saldae* Akşiray, 1955: 58, Pl. 1 (figs. 1-2); figs 1-2 [Lake Salda near Yesilova (37°31'N, 29°39'E), Burdur District, Türkiye; holotype: male (Männchen, not researched)]. — Synonyms: *Aphanius saldae* (Akşiray, 1955). — Revisions: None. — Illustration: Akşiray (1955: 58, Pl. 1 (figs. 1-2); figs 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Akşiray (1948). Listed in previous checklists from Türkiye by Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Salda Lake basin. — Distribution in river basins: 10-Burdur. — General distribution: Asia Minor: Lake Salda, Burdur Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species lives in spring-fed streams with clear waters and dense vegetation, but it is also found in lakes. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — High sensitivity to human activities. — Keystone species. — Decline status: Unknown. — High priority for conservation action.

**Remarks.** Anatolichthys saldae is cooccurring with *A. sureyanus.* Recent molecular findings suggest their possible synonymisation because of low level differences (K2P 0.31%) (Kuyumcu, 2021); therefore, it is probable that *A. saldae* is a synonym of *Anatolichthys sureyanus* (Neu, 1937).

## Anatolichthys splendens Kosswig & Sözer, 1945 [E] — Splendid killifish/none

**Taxonomy.** Original description: *Anatolichthys splendens* Kosswig & Sözer, 1945: 77, fig. 2 [Lake Gölçük, west of Isparta (37°44'N, 30°30'E), central Anatolia, Türkiye; lectotype: ZMH 3505]. — Synonyms: *Aphanius splendens* (Kosswig & Sözer, 1945); *Kosswigichthys splendens*  (Kosswig & Sözer, 1945); *Lebias splendens* (Kosswig & Sözer, 1945). — Revisions: None. — Illustration: Kosswig and Sözer (1945: 77, fig. 2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Kosswig and Sözer (1945). Listed in previous checklists from Türkiye by Kuru (2004); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: ZMH.

**Distribution and habitat.** Distribution in Türkiye: Lake Gölcük. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Lake Gölçük, Isparta Province. — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species is a lacustrine species that inhabits one mountain lake. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: EX. — IUCN: EX (IUCN, 2023). — Threats: COM. — High sensitivity to human activities. — Keystone species. — Decline status: Unspecified. — High priority for conservation action.

### *Anatolichthys sureyanus* (Neu, 1937) [E] — Sureyan killifish/Dişli sazancık

**Taxonomy.** Original description: *Cyprinodon sureyanus* Neu, 1937: 109 (1) [Lake Burdur (37°45'N, 30°15'E), southwestern Türkiye; no types known. On p. 1 of separate]. — Synonyms: *Aphanius sureyanus* (Neu, 1937); *Lebias sureyanus* (Neu, 1937); *Anatolichthys burdurensis* Ermin, 1946; *Kosswigichthys burdurensis* (Ermin, 1946); *Aphanius burduricus* Akşiray, 1948. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Neu (1937). Listed in previous checklists from Türkiye by Kuru (2004); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Burdur Lake basin. — Distribution in river basins: 10-Burdur. — General distribution: Asia Minor: Lake Burdur, Burdur Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This species lives in the littoral zone of a saline lake. Lake Burdur also has spring-fed streams with clear waters and dense vegetation. Freshwater, brackish.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: EN. — IUCN: EN (IUCN, 2023). — Threats: ABS, CLI, EUT, HAB. — High sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — High priority for conservation action.

### Anatolichthys transgrediens (Ermin, 1946) [E] — Acipinar killifish/Dişli sazancık

Taxonomy. Original description: Turkichthys transgrediens

Ermin, 1946: 244, figs. 38-45 [ Stream, fed by the Acipinar spring at the west end of Lake Aci, Denizli District (37°49'N, 29°43'E), Türkiye; no types known]. — Synonyms: *Aphanius transgrediens* (Ermin, 1946); *Kosswigichthys transgrediens* (Ermin, 1946); *Lebias transgrediens* (Ermin, 1946). — Revisions: None. — Illustration: Ermin (1946: 244, figs. 38-45).

**Status in Türkiye.** Recorded from Türkiye in the original description by Ermin (1946). Listed in previous checklists from Türkiye by Kuru (2004); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Acigöl Lake, Burdur. — Distribution in river basins: 10-Burdur. — General distribution: Asia Minor: Acigöl tributary, Denizli Province (Türkiye). — Distribution in ecoregions: 431-Central Anatolia. — Habitat: This fish inhabits a very small spring field and short spring feed streams. This species also inhabited Lake Acı before it dried out. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: CR. — IUCN: CR (IUCN, 2023). — Threats: ABS, CLI, CON, EUT, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

### *Anatolichthys villwocki* (Hrbek & Wildekamp, 2003) [E] — Villwock's killifish/Dişli sazancık

**Taxonomy.** Original description: *Aphanius villwocki* Hrbek & Wildekamp, 2003: 138, figs. 1-2 [Pinarbasi, about 10.5 kilometers east of Emirdag, drainage canal of small spring pond, 39°02′53″N, 31°19′38″E, Türkiye; holotype: MRAC A1-30-P-1]. — Synonyms: None. — Revisions: None. — Illustration: Hrbek and Wildekamp (2003: 138, figs. 1-2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Hrbek and Wildekamp (2003). Listed in previous checklists from Türkiye by Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: MRAC.

**Distribution and habitat.** Distribution in Türkiye: Sakarya River and Konya basins. — Distribution in river basins: 12-Sakarya, 16-Konya. — General distribution: Asia Minor: Akgöl tributary, Afyonkarahisar and Konya provinces (Türkiye). — Distribution in ecoregions: 430-Northern Anatolia, 431-Central Anatolia. — Habitat: This species inhabits lakes, springs, and slowly flowing streams with dense vegetation. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. Aphanius aksaranus => Anatolichthys anatoliae Aphanius alexandri => Paraphanius alexandri

## *Aphanius almiriensis* Kottelat, Barbieri & Stoumboudi, 2007 [N] — Killifish/Dişli sazancık

**Taxonomy.** Original description: *Aphanius almiriensis* Kottelat, Barbieri & Stoumboudi, 2007: 15, figs. 1-2 [Brackish water spring Kokosi at southern end of Almiri beach, at Kato Almiri, about 4 kilometers south of Loutra Elenis, 37°50'32"N, 23°00'58"E, Korinthia District, Peloponnese, Greece; holotype: MHNG 2654.087]. — Synonyms: None. — Revisions: None. — Illustration: Barbieri and Stoumboudi (2007: 15, figs. 1-2).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Valdesalici et al. (2019); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Sea of Marmara and Aegean watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes. — General distribution: Southern Europe: Calabria (Italy), Greece, western Türkiye. — Distribution in ecoregions: 423-Thrace, 429-Western Anatolia. — Habitat: This species inhabits fresh and brackish water springs (up to 23‰ salinity). Freshwater, brackish.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: CR (IUCN, 2023). — Threats: TOU. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Aphanius altus => Anatolichthys danfordii* 

*Aphanius anatoliae => Anatolichthys anatoliae* 

*Aphanius asquamatus => Kosswigichthys asquamatus* 

Aphanius boulengeri => Paraphanius boulengeri

Aphanius burduricus => Anatolichthys sureyanus

*Aphanius chantrei* => *Anatolichthys danfordii* 

Aphanius cypris => Paraphanius mento

Aphanius danfordii => Anatolichthys danfordii

Aphanius fasciatus (Valenciennes, 1821) [N] — Mediterranean banded killifish/Disli sazancık Taxonomy. Original description: Lebias fasciata Valenciennes in Humboldt & Valenciennes, 1821: 160, Pl. 51 (fig. 4) [Salt works of Cagliari, Sardinia. neotype: MNHN 2005-1975]. — Synonyms: None. — Revisions: None. — Illustration: Humboldt & Valenciennes (1821: 160, Pl. 51, fig. 4).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020).) — Turkish material: None. **Distribution and habitat.** Distribution in Türkiye: Mediterranean Sea watersheds. — Distribution in river basins: 8-Batı Akdeniz, 9-Antalya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan. — General distribution: Mediterranean Sea basin endemic. Introduced elsewhere. — Distribution in ecoregions: 430-Northern Anatolia, 432-Southern Anatolia, 437-Orontes. — Habitat: This species inhabits brackish and salty waters, mainly lagoons. Freshwater, brackish, marine.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CLI, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Stable. — Moderate priority for conservation action. *Aphanius flavianalis* => *Anatolichthys anatoliae* 

Aphanius iconii => Anatolichthys iconii Aphanius irregularis => Anatolichthys irregularis Aphanius litoralis => Anatolichthys danfordii Aphanius maeandricus => Anatolichthys maeandricus Aphanius marassantensis => Anatolichthys marassantensis

*Aphanius mento => Paraphanius mento Aphanius mentoides => Paraphanius mentoides Aphanius meridionalis => Anatolichthys meridionalis* Aphanius obrukensis => Anatolichthys anatoliae *Aphanius orontis* => *Paraphanius orontis Aphanius parvus => Anatolichthys meridionalis Aphanius saldae => Anatolichthys saldae Aphanius similis* => *Paraphanius similis Aphanius splendens* => *Anatolichthys splendens Aphanius sureyanus => Anatolichthys sureyanus Aphanius transgrediens => Anatolichthys transgrediens Aphanius venustus* => *Anatolichthys anatoliae Aphanius villwocki* => *Anatolichthys villwocki Cyprinodon anatoliae* => *Anatolichthys anatoliae Cyprinodon chantrei* => *Anatolichthys danfordii Cyprinodon cypris* => *Paraphanius mento Cyprinodon danfordii* => *Anatolichthys danfordii Cyprinodon fasciatus => Aphanius fasciatus Cyprinodon lykaoniensis* => *Anatolichthys anatoliae Cyprinodon sureyanus* => *Anatolichthys sureyanus Kossiwigichthys burdurensis* => *Anatolichthys sureyanus* 

## *Kosswigichthys asquamatus* Sözer, 1942 [E] — Hazar Lake killifish/Dişli sazancık

**Taxonomy.** Original description: *Kosswigichthys* asquamatus Sözer, 1942: 308, fig. 2 [Lake Hazer, Elazig District (38°30'N, 39°25'E), Anatolia, Türkiye; syntypes: (20) MSNG 36472 (3)]. — Synonyms: Aphanius asquamatus (Sözer, 1942); Lebias asquamatus (Sözer, 1942). — Revisions: None. — Illustration: Sözer (1942: 308, fig. 2).

**Status in Türkiye.** Recorded from Türkiye in the original description by Süzer (1942). Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: MSNG.

**Distribution and habitat.** Distribution in Türkiye: Lake Hazer. — Distribution in river basins: 21-Fırat-Dicle. — General distribution: Asia Minor: Lake Hazer endemic, eastern Anatolia, Türkiye. — Distribution in ecoregions: 442-Upper Tigris and Euphrates. — Habitat: This species is a pelagic species that comes to shores in the spring and early summer to spawn. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: LC. — IUCN: LC (IUCN, 2023). — Threats: CLI, HAB. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action.

Kosswigichthys splendens => Anatolichthys splendens Kosswigichthys transgrediens => Anatolichthys transgrediens

*Lebias anatoliae => Anatolichthys anatoliae* 

*Lebias asquamatus => Kosswigichthys asquamatus* 

Lebias chantrei => Anatolichthys danfordii

*Lebias cypris => Paraphanius mento* 

Lebias danfordi => Anatolichthys danfordii

*Lebias mento => Paraphanius mento* 

*Lebias splendens => Anatolichthys splendens* 

*Lebias sureyanus => Anatolichthys sureyanus* 

*Lebias transgrediens => Anatolichthys transgrediens* 

*Paraphanius alexandri* (Akşiray, 1948) [E] — Killifish/Dişli sazancık

**Taxonomy.** Original description: *Aphanius cypris alexandri* Akşiray, 1948: 119 [Coastal creek near Iskenderun, Türkiye (36°35′N, 36°10′E); no types known]. — Synonyms: *Aphanius alexandri* Akşiray, 1948. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Recorded from Türkiye in the original description by Akşiray (1948). Listed in previous checklists from Türkiye by Geiger et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Coastal creek near Iskenderun, Ceyhan River basin. — Distribution in river basins: 20-Ceyhan. — General distribution: Asia Minor: Mediterranean costal region of Ceyhan River basin (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits a wide range of springs, wetlands, lakes, and slow-flowing streams. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish. **Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Paraphanius boulengeri (Akşiray, 1948) [E] — Killifish/Dişli sazancık

**Taxonomy.** Original description: *Aphanius cypris boulengeri* Akşiray, 1948: 118, figs. 13-14 [Lake Gölbaşı, in an area of three small lakes west of Besni, Malatya District, Türkiye (37°45'N, 37°35'E); no types known]. — Synonyms: *Aphanius boulengeri* Akşiray, 1948. — Revisions: None. — Illustration: Akşiray (1948: 118, figs. 13-14).

**Status in Türkiye.** Recorded from Türkiye in the original description by Akşiray (1948). Listed in previous checklists from Türkiye by Geiger et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Lake Gölbaşı, Ceyhan River basin. — Distribution in river basins: 20-Ceyhan. — General distribution: Asia Minor: Mediterranean drainages of Türkiye. — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits a wide range of springs, wetlands, lakes, and slow-flowing streams. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

## Paraphanius mento (Heckel, 1843) [N] — Pearl-spotted killifish/Disli sazancık

**Taxonomy.** Original description: *Lebias mento* Heckel, 1843a: 1089 [99) [Mossul, northern Iraq (36°18'N, 43°18'E); possible syntypes: NMW 21699-704 (6), 59832 (21)]. — Synonyms: *Aphanius mento* (Heckel, 1843). — Revisions: Bayçelebi (2020: 762). — Illustration: Heckel (1843b: pl. 6, fig. 4).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Euphrates-Tigris, Seyhan, and Ceyhan River basins. — Distribution in river basins: 18-Seyhan, 20-Ceyhan, 21-Fırat-Dicle. — General distribution: Asia Minor and Middle East: Tigris River basin (southern Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 432-Southern Anatolia, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species inhabits a wide range of springs, wetlands, lakes, and slow-flowing streams. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are many threats in the area, but none seem to be strong enough to threaten this species. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Decreasing. — Moderate priority for conservation action. *Paraphanius mentoides* (Akşiray, 1948) [E] — Killifish/ Disli sazancık

**Taxonomy.** Original description: *Aphanius sophiae mentoides* Akşiray, 1948: 110, Pl. 1 (figs. 1-2); figs. 7-8 [Kırkgöz, northwestern of Antalya, Türkiye (37°06'N, 30°35'E); no types known]. — Synonyms: *Aphanius mentoides* Akşiray, 1948. — Revisions: None. — Illustration: Akşiray (1948: 110, Pl. 1 (figs. 1-2); figs. 7-8).

**Status in Türkiye.** Recorded from Türkiye in the original description by Akşiray (1948). Listed in previous checklists from Türkiye by Geiger et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Kırkgöz, northwest of Antalya. — Distribution in river basins: 9-Antalya. — General distribution: Asia Minor: Mediterranean Sea tributaries, Antalya and Bitlis provinces (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species inhabits a wide range of springs, wetlands, lakes, and slow-flowing streams. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### Paraphanius orontis (Akşiray, 1948) [N] — Killifish/ Dişli sazancık

**Taxonomy.** Original description: *Aphanius cypris orontis* Akşiray, 1948: 116, Pl. 2 (figs. 5-6); figs. 11-12 [Small ditches near Lake Amik near Antakya, Türkiye (36°17′N, 36°20′E); no types known]. — Synonyms: *Aphanius orontis* Akşiray, 1948. — Revisions: None. — Illustration: Akşiray (1948: 116, Pl. 2 (figs. 5-6); figs. 11-12).

**Status in Türkiye.** Recorded from Türkiye in the original description by Akşiray (1948). Listed in previous checklists from Türkiye by Geiger et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Amik plate channel, Antakya. — Distribution in river basins: 19-Asi. — General distribution: Asia Minor: Orontes River basin (Türkiye). — Distribution in ecoregions: 437-Orontes. — Habitat: This species inhabits a wide range of springs, wetlands, lakes, and slow-flowing streams. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

### *Paraphanius similis* (Akşiray, 1948) [E] — Killifish/Dişli sazancık

**Taxonomy.** Original description: *Aphanius sophiae similis* Akşiray, 1948: 111, Pl. 4 (figs. 38-42); figs. 9-10 [Akgöl between Konya and Ereglisi, Türkiye (37°31'N, 33°45'E); no types known]. — Synonyms: *Aphanius similis* Akşiray, 1948. — Revisions: None. — Illustration: Akşiray (1948: 111, Pl. 4 (figs. 38-42); figs. 9-10).

**Status in Türkiye.** Recorded from Türkiye in the original description by Akşiray (1948). Listed in previous checklists from Türkiye by Geiger et al. (2014); Çiçek et al. (2015, 2018a, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Akgöl between Ereğli and Konya. — Distribution in river basins: 16-Konya, 18-Seyhan. — General distribution: Asia Minor: Mediterranean tributaries, Konya, Adana, and Niğde provinces (south-central Türkiye). — Distribution in ecoregions: 431-Central Anatolia, 432-Southern Anatolia. — Habitat: This species inhabits a wide range of springs, wetlands, lakes, and slow-flowing streams. Freshwater.

**Economic importance.** No commercial importance. Has potential to be used as aquarium fish.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Moderate sensitivity to human activities. — Keystone species. — Decline status: Unknown. — Moderate priority for conservation action.

*Turkichthys transgrediens* => *Anatolichthys transgrediens* **Mugiliformes** 

**Mugilidae Jarocki, 1822 (mullets)** *Chelon abu => Planiliza abu* 

### *Chelon auratus* (Risso, 1810) [N] — Golden grey mullet/ Altınbaş kefal

**Taxonomy.** Original description: *Mugil auratus* Risso, 1810: 344 [Nice, France, northwestern Mediterranean Sea; no types known]. — Synonyms: *Planiliza aurata* (Risso, 1810); *Liza aurata* (Risso, 1810). — Revisions: Durand and Borsa (2015: 268). — Illustration: Ben-Tuvia in Whitehead et al. (1986: 1199, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004)

as *Liza aurata*; Geldiay and Balık (2007) as *Liza aurata*; Fricke et al. (2007) as *Liza aurata*; Kuru et al. (2014) as *Liza aurata*; Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkive: All coastal waters of Anatolia in brackish waters. -Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Western Baltic Sea; North Sea; Mediterranean Sea; Sea of Marmara; Black Sea; Sea of Azov; eastern Atlantic: Scotland south to Senegal, including Azores, Madeira, Canary Islands and Cape Verde Islands (introduced elsewhere). - Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. — Habitat: This species is pelagic, near shore, sometimes in lagoons and estuaries, and rarely in freshwater. Among the Mugilidae recorded from freshwaters, this is the least tolerant of the freshwaters. It spawns at sea. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Chelon carinatus (Valenciennes, 1836) => Planiliza carinata* **Taxonomy.** Original description: *Mugil labrosus* Risso, 1827: 389 [Nice, France, northwestern Mediterranean Sea; no types known]. — Synonyms: *Mugil chelo* Cuvier, 1829. — Revisions: Durand and Borsa (2015: 268). — Illustration: Ben-Tuvia in Whitehead et al. (1986: 1198, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007) as *Mugil (Chelon) labrosus*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: All coastal waters of Anatolia in brackish waters. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Baltic Sea; North Sea; Mediterranean Sea; Sea of Marmara; Black Sea; eastern Atlantic: Norway and Iceland south to Senegal, including Azores, Madeira, Canary Islands, and Cape Verde Islands. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. — Habitat: This species is pelagic, near shores, sometimes in lagoons and estuaries. It spawns at sea in coastal surface water. Freshwater, brackish, marine.

### Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

### *Chelon ramada* (Risso, 1827) [N] — Thinlip mullet/ Pulatarina balığı, ceran

**Taxonomy.** Original description: *Mugil ramada* Risso, 1827: 390 [Nice, France, northwestern Mediterranean Sea; no types known]. — Synonyms: *Liza ramado* (Risso, 1810); *Chelon ramado* (Risso, 1827); *Liza ramada* (Risso, 1827). — Revisions: Durand and Borsa (2015: 268). — Illustration: Ben-Tuvia in Whitehead et al. (1986: 1200, fig.) as *Liza ramada*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Liza ramada*; Geldiay and Balık (2007) *Mugil (Liza) ramada*; Fricke et al. (2007) as *Liza ramado*; Kuru et al. (2014) as *Liza ramada*; Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: All coastal waters of Anatolia in brackish waters. -Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Coruh. — General distribution: Western Baltic Sea; Mediterranean Sea; Sea of Marmara; Black Sea; eastern Atlantic: southern Norway south to Senegal, including Azores, Madeira, Canary Islands, and Cape Verde Islands. Introduced in Red Sea. - Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. - Habitat: This species is pelagic, near shore, entering lagoons and the lower reaches of rivers, and is often found in polluted waters. It spawns offshore at sea. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action.

### Chelon saliens (Risso, 1810) [N] — Leaping mullet/ Kefal, kokar balığı-Kastros

**Taxonomy.** Original description: *Mugil saliens* Risso, 1810: 345 [Nice, France, northwestern Mediterranean Sea; no types known]. — Synonyms: *Liza saliens* (Risso, 1810). — Revisions: Durand and Borsa (2015: 268). — Illustration: Ben-Tuvia in Whitehead et al. (1986: 1201, fig.) as *Liza saliens*.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Liza saliens*; Geldiay and Balık (2007) as *Mugil (Protomegil) saliens*; Fricke et al. (2007) as *Liza saliens*; Kuru et al. (2014) as *Liza saliens*; Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: Mediterranean watersheds. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Mediterranean Sea; Sea of Marmara; Black Sea; Sea of Azov; eastern Atlantic: Bay of Biscay (Spain) south to Western Sahara, including Madeira; introduced in Caspian Sea area. - Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. — Habitat: This species is pelagic, near shore, and sometimes in lagoons and estuaries. It spawns at sea. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Liza abu* => *Planiliza abu* 

Liza ramada => Chelon ramada

Liza ramado => Chelon ramada

 $Liza \ saliens => Chelon \ saliens$ 

Mugil abu => Planiliza abu

*Mugil auratus => Chelon auratus* 

### *Mugil cephalus* Linnaeus, 1758 [N] — Flathead mullet/ Haskefal-Topan kefal

**Taxonomy.** Original description: *Mugil cephalus* Linnaeus, 1758: 316 [European sea, Europe; syntypes: NRM 43 (1), 44 (2), 143 (1)]. — Synonyms: None. — Revisions: Thomson (1997: 483). — Illustration: Ben-Tuvia in Whitehead et al. (1986: 1202, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004);

Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: All coastal waters of Anatolia in brackish waters. -Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Kücük Menderes, Menderes, 8-Batı Akdeniz, 7-Büyük 9-Antalya, 10-Burdur, 11-Akarcay, 12-Sakarva, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh. - General distribution: Nearly circumglobal in temperate and tropical seas and estuaries (including Gulf of Mexico, Mediterranean Sea, Sea of Marmara, Black Sea, Red Sea, Persian Gulf, Sea of Japan); introduced elsewhere. - Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. - Habitat: This species is a euryhaline, pelagic nearshore species that sometimes forages in lagoons, estuaries, and lower courses of rivers and can tolerate freshwater. It inhabits inshore marine waters, estuaries, lagoons, and rivers, where it can tolerate wide ranges of temperature and salinity. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

Mugil labeo => Oedalechilus labeo

Mugil labrosus => Chelon labrosus

Mugil ramada => Chelon ramada

Mugil saliens => Chelon saliens

#### *Oedalechilus labeo* (Cuvier, 1829) [N] — Boxlip mullet/ Dudaklı kefal

**Taxonomy.** Original description: *Mugil labeo* Cuvier, 1829: 233 [Mediterranean Sea; lectotype: MNHN A-3606; lectotype selected by Blanc and Hureau (1971: 692)]. — Synonyms: None. — Revisions: Durand et al. (2012: 693). — Illustration: Ben-Tuvia in Whitehead et al. (1986: 1203, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007) as *Mugil (Oedalechilus) labeo*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: All coastal waters of Anatolia in brackish waters. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Mediterranean Sea; Sea of Marmara; eastern Atlantic: Portugal, northern Morocco, and Madeira; introduced elsewhere. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. — Habitat: This species is a benthopelagic, neritic species found inshore, at the mouths of rivers and sewage effluents, but not entering brackish or freshwater. Freshwater, brackish, marine.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are no known major threats for this species. It may appear in bycatch. This is a commercial species. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

#### Planiliza abu (Heckel, 1843) [N] — Abu mullet/Kefal

Taxonomy. Original description: *Mugil abu* Heckel, 1843a: 1097 (107) [Tigris River, near Mosul, Iraq; syntypes: NMW 9224-30 (7), 67868 (2)]. — Synonyms: *Chelon abu* (Heckel, 1843); *Liza abu* (Heckel, 1843). — Revisions: Thomson (1997: 513 as *Liza abu*). — Illustration: Randall (1995: 234, fig., as *Chelon abu*).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004) as *Liza abu*; Geldiay and Balık (2007) as *Mugil (Liza) abu*; Fricke et al. (2007); Kuru et al. (2014) as *Liza abu*; Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: Euphrates, Tigris, and Ceyhan river basins. — Distribution in river basins: 19-Asi, 20-Cevhan, 21-Fırat-Dicle. — General distribution: Northwestern Indian Ocean: Persian Gulf and adjacent Euphrates and Tigris River drainages (Türkiye, Syria, Iraq, and Iran). — Distribution in ecoregions: 432-Southern Anatolia, 437-Orontes, 441-Lower Tigris and Euphrates, 442-Upper Tigris and Euphrates. — Habitat: This species is a freshwater mullet, found in streams, rivers, drains, channels, canals, lakes, reservoirs, and ponds, including fish farms. It is found in schools. It is found in surface waters and the submerged vegetation of lakes and marshes, preferring a gentle flow of water, and it enters deeper waters in December and January, especially in cold winters. Freshwater, brackish, marine.

**Economic importance.** Locally consumed but of no commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: CLI, EUT. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

Planiliza aurata => Chelon auratus

*Planiliza haematocheila* (Temminck & Schlegel, 1845) *Planiliza carinata* (Valenciennes, 1836) => not occurring in freshwater (see Çiçek et al., 2020) => not occurring in Türkiye (see Cicek et al., 2020)

#### Blenniiformes

#### Blenniidae Rafinesque, 1810 (combtooth blennies) Salariinae Gill, 1859 (salariin blennies)

Blennius fluviatilis => Salaria fluviatilis Blennius pavo => Salaria pavo Lipophrys pavo => Salaria pavo Salaria fluviatilis => Salariopsis fluviatilis

### Salaria pavo (Risso, 1810) [N] — Peacock blenny/ Horozbina

**Taxonomy.** Original description: Blennius pavo Risso, 1810: 13 [Nice, France, northwestern Mediterranean Sea; no types known]. — Synonyms: Lipophrys pavo (Risso, 1810). — Revisions: None. —Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007) as Blennius pavo; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020).— Turkish material: None.

Distribution and habitat. Distribution in Türkiye: Anatolian coastal watersheds, entering brackish and freshwater habitats. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Mediterranean Sea; Sea of Marmara; Black Sea; eastern Atlantic: Bay of Biscay south to Morocco, including Madeira and Canary Islands.— Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. — Habitat: This species occurs in the intertidal zone and shallow bottoms, on rocks or sand between pebbles and vegetation. This species is tolerant to different salinities (euryhaline) and is more commonly found in brackish waters down to 5 ppt. Freshwater, brackish, marine.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: There are no known major threats for this species. — Moderate sensitivity to human activities. —Not considered a keystone species. — Decline status: Stable. — Moderate priority for conservation action.

### Salariopsis burcuae Yoğurtçuoğlu, Kaya, Atalay, Ekmekçi & Freyhof, 2023 [N] — Freshwater blenny/ Tatlı su horozbinası

**Taxonomy.** Original description: *Salariopsis burcuae* Yoğurtçuoğlu, Kaya, Atalay, Ekmekçi & Freyhof, 2023: 90, fig. 3-5 [Türkiye: Adana prov.: Körkün River at Hacılı, 37.2947 35.1539; holotype: FFR 4260]. — Synonyms: None. — Revisions: None. — Illustration: Yoğurtçuoğlu et al. (2023: fig. 3-5).

**Status in Türkiye.** Recorded from Türkiye in the original description by Yoğurtçuoğlu et al. (2023). — Turkish materials: FFR.

**Distribution and habitat.** Distribution in Türkiye: Mediterranean watersheds except Seyhan and Ceyhan River basins. — Distribution in river basins: 9-Antalya, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi. — General distribution: Middle Asia: Mediterranean coastal watersheds from Antalya (Türkiye) to Israel. — Distribution in ecoregions: 432-Southern Anatolia, 437-Orontes. — Habitat: This species is mainly a riverine species that can also be found in lakes. Freshwater, brackish, marine.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

### Salariopsis fluviatilis (Asso y del Rio, 1801) [N] — Freshwater blenny/Tatlı su horozbinası

Taxonomy. Original description: *Blennius fluviatilis* Asso y del Rio, 1801: 31 [Ebro River, Zaragoza, Spain; no types known]. — Synonyms: *Salaria fluviatilis* (Asso y del Rio, 1801); *Ichthyocoris fluviatilis* (Asso y del Rio, 1801); *Blennius vulgaris* Pollini 1816. — Revisions: Duquenne-Delobel et al. (2022: 37) as *Ichthyocoris fluviatilis*, Azzena et al. (2022: 4). — Illustration: Goren (1974: fig. 29).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Salaria fluviatilis*; Geldiay and Balık (2007) as *Blennius fluviatilis*; Fricke et al. (2007) as *Salaria fluviatilis*; Kuru et al. (2014) as *Salaria fluviatilis*; Çiçek et al. (2015, 2020) as *Salaria fluviatilis.* — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Marmara and Aegean seas watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz. — General distribution: Europe, Middle East, North Africa: Mediterranean Sea watersheds. — Distribution in ecoregions: 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia. — Habitat: This species is mainly a riverine species that can also be found in lakes. It likes rubble and gravel substrates with moderate to high current velocities and stays in the deepest part. The male makes a nest under large stones. Larvae are pelagic. Freshwater, brackish, marine. Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: ABS, CLI, CON, COM, HAB, EUT. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

Salariopsis renatorum Yoğurtçuoğlu, Kaya, Atalay, Ekmekçi, Freyhof, 2023 [E] — Freshwater blenny/Tatlı su horozbinası

Taxonomy. Original description: *Salariopsis renatorum* Yoğurtçuoğlu, Kaya, Atalay, Ekmekçi, Freyhof, 2023: 96, fig. 8-11 [Kahramanmaraş prov.: Aksu at Pazarcık, Türkiye, 37.5390 37.3480; holotype: FFR FFR 4262]. — Synonyms: None. — Revisions: None. — Illustration: Yoğurtçuoğlu et al. (2023: fig. 8-11).

**Status in Türkiye.** Recorded from Türkiye in the original description by Yoğurtçuoğlu et al. (2023). — Turkish materials: FFR.

**Distribution and habitat.** Distribution in Türkiye: Seyhan and Ceyhan River basins. — Distribution in river basins: 18-Seyhan, 20-Ceyhan. — General distribution: Middle Asia: Seyhan and Ceyhan River basins (Türkiye). — Distribution in ecoregions: 432-Southern Anatolia. — Habitat: This species is mainly a riverine species that can also be found in lakes. Freshwater, brackish, marine.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: NE (2023). — Threats: Unknown. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Stable. — Low priority for conservation action.

Perciformes

Percoidei

Percidae Rafinesque, 1815 (perches and darters) Percinae Rafinesque, 1815 (freshwater perches)

Acerina cernua => Gymnocephalus cernua

*Gymnocephalus cernua* (Linnaeus, 1758) [I] — Ruffe/ Trakya levreği

**Taxonomy.** Original description: *Perca cernua* Linnaeus, 1758: 294 [European lakes; syntypes: BMNH 1853.11.12.5 [Gronovius coll.] (1, skin), LS 2 (left half-skin)]. — Synonyms: *Acerina cernua* (Linnaeus, 1758). — Revisions: None. — Illustration: Çiçek et al. (2021: 48, fig. 1).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2021). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Trachea region. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara. — General distribution: Europe. Introduced elsewhere. — Distribution in ecoregions: 423-Thrace. — Habitat: This species is found in eutrophic lakes, lowlands, and piedmont rivers. Prefers still or slowflowing water with a soft bottom, without vegetation. Most abundant are estuaries of large rivers, brackish lakes with salinities up to 10%-12% and reservoirs. Generally, abundance increases with increased eutrophication. Freshwater, brackish.

**Economic importance.** Locally commercially important.

**Reasons of introduction.** Unknown: Inadvertently introduced by transboundary waterways for no known reason or method.

**Conservation.** Not relevant (introduced species).

Perca cernua => Gymnocephalus cernua

### Perca fluviatilis Linnaeus, 1758 [N] — European perch/ Tatlı su levreği

Taxonomy. Original description: *Perca fluviatilis* Linnaeus, 1758: 289 [Europe; syntypes: BMNH 1853.11.12.3 (1, left half-skin), 1853.11.12.2 (1, right half-skin)]. — Turkish synonyms: None. — Revisions: Berg (1949: 1032). — Illustration: Berg (1949: 1033, fig. 756).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

**Distribution and habitat.** Distribution in Türkiye: Northwestern parts of Anatolia, introduced into some reservoirs in Anatolia. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 12-Sakarya, 13-Batı Karadeniz, 15-Kızılırmak, 20-Ceyhan. — General distribution: Europe. Introduced elsewhere. — Distribution in ecoregions: 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia. — Habitat: This species is found in a very wide range of habitats, from estuarine lagoons and lakes of all types to medium-sized streams. Freshwater, brackish.

Economic importance. Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. **Luciopercinae Jordan & Evermann, 1896 (pikeperches and Danube perches)** 

Lucioperca lucioperca => Sander lucioperca

Perca lucioperca => Sander lucioperca

### Sander lucioperca (Linnaeus, 1758) [N] — Zander/ Sudak

**Taxonomy.** Original description: *Perca lucioperca* Linnaeus, 1758: 289 [European lakes; no types known]. — Turkish synonyms: *Lucioperca lucioperca* (Linnaeus, 1758); *Stizostedion lucioperca* (Linnaeus, 1758). — Revisions: Berg (1949: 1020) as *Lucioperca lucioperca*. — Illustration: Berg (1949: 1021, fig. 748) as *Lucioperca lucioperca*.

Status in Türkiye. Listed in previous checklists from

Türkiye by Kuru (2004); Geldiay and Balık (2007) as *Stizostedion lucioperca*; Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish materials: None.

Distribution and habitat. Distribution in Türkiye: Northwestern parts of Anatolia, widely introduced into reservoirs in Anatolia. - Distribution in river basins: 1-Meric-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 10-Burdur, 11-Akarçay, 12-Sakarya, 13-Batı Karadeniz, 14-Yesilırmak, 15-Kızılırmak, 16-Konya, 17-Doğu Akdeniz, 18-Seyhan, 20-Ceyhan, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Eastern and central Europe east to Aral Sea drainages; introduced elsewhere. - Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 431-Central Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia. — Habitat: This species occurs in large, turbid rivers and eutrophic lakes, brackish coastal lakes, and estuaries. Freshwater, brackish.

**Economic importance.** Commercially important.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Sander volgensis* (Gmelin, 1789) => not occurring in Türkiye (see Çiçek et al., 2020)

Stizostedion lucioperca => Sander lucioperca Gasterosteidae Bonaparte, 1831

Gasterosteus aculeatus Linnaeus, 1758 [N] — Threespined stickleback/Dikence balığı

**Taxonomy.** Original description: *Gasterosteus aculeatus* Linnaeus, 1758: 295 [Europe; syntypes: ZSL 29 (left half-skin), 30-31 (2, right half-skins)]. — Synonyms: *Gasterosteus gymnurus* Cuvier, 1829. — Revisions: None. — Illustration: Kottelat and Freyhof (2007: 492, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Mediterranean Sea; Sea of Marmara; Black Sea watersheds. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: North Pacific; Atlantic; Baltic Sea; North Sea; Mediterranean Sea; Sea of Marmara; Black Sea and adjacent watersheds; Sea of Japan; widespread in northern Europe, northern Asia and North America. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. — Habitat: This species is typically found in quiet, weedy pools and backwaters. It is also found in the marginal vegetation of streams and over sand and mud bottom substrates. Marine populations are pelagic and usually found inshore along the coast, in estuaries, and in coastal lagoons. In some lakes, two morphologically and ecologically distinct forms may occur, differing in habitat and morphology (one littoral, the other mainly limnetic). Freshwater, brackish, marine.

Economic importance. No commercial importance.

**Conservation.** Conservation status in Türkiye: Unknown. — IUCN: LC (IUCN, 2023). — Threats: COM, EUT. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Gasterosteus gymnurus => Gasterosteus aculeatus Pungitius platygaster* (Kessler, 1859) => not occurring in Türkiye (see Çiçek et al., 2020)

#### Centrarchiformes

Centrarchidae Bleeker, 1859 Lepominae Gill, 1864

#### *Lepomis gibbosus* (Linnaeus, 1758) [I] — Pumpkinseed/ Güneş levreği

**Taxonomy.** Original description: *Perca gibbosa* Linnaeus, 1758: 292 [Carolinas, America; no types known]. — Synonyms: None. — Revisions: None. — Illustration: None.

**Status in Türkiye.** Listed in previous checklists from Türkiye by Kuru (2004); Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020, 2022a). — Turkish material: None.

**Distribution and habitat.** Distribution in Türkiye: Introduced and spreading to western Anatolia and Thrace. — Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 12-Sakarya. — General distribution: North America: Atlantic drainages, Canada, and U.S.A.; introduced elsewhere. — Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia. — Habitat: This species inhabits lakes, reservoirs, ponds, sloughs, and sluggish streams; prefers quiet, clear water with aquatic vegetation and some organic debris. Eggs are laid in a nest constructed by the male in shallow water (less than 1 m deep) on bottoms of sand, gravel, or woody debris. Freshwater.

**Economic importance.** Valuable for the aquarium trade.

Reasons of introduction. Ornamental fish industry.

**Conservation.** Not relevant (introduced species). **Acanthuriformes** 

# Moronidae Jordan & Evermann, 1896 (white basses or temperate basses)

## Dicentrarchus labrax (Linnaeus, 1758) [N] — European seabass/Levrek balığı

**Taxonomy.** Original description: *Perca labrax* Linnaeus, 1758: 290 [Southern Europe, Mediterranean Sea; syntypes: BMNH 1853.11.12.1 (1, skin)]. — Syrian synonyms: *Morone labrax* (Linnaeus, 1758). — Revisions: None. — Illustration: Tortonese in Whitehead et al. (1986: 794, fig.).

**Status in Türkiye.** Listed in previous checklists from Türkiye by Bilecenoğlu et al. (2002, 2014); Kuru (2004) as *Morone labrax*; Geldiay and Balık (2007); Fricke et al. (2007); Kuru et al. (2014); Çiçek et al. (2015, 2020). — Turkish material: None.

Distribution and habitat. Distribution in Türkiye: All coastal Anatolian brackish waters. - Distribution in river basins: 1-Meriç-Ergene, 2-Marmara, 3-Susurluk, 4-Kuzey Ege, 5-Gediz, 6-Küçük Menderes, 7-Büyük Menderes, 8-Batı Akdeniz, 9-Antalya, 12-Sakarya, 13-Batı Karadeniz, 14-Yeşilırmak, 15-Kızılırmak, 17-Doğu Akdeniz, 18-Seyhan, 19-Asi, 20-Ceyhan, 21-Fırat-Dicle, 22-Doğu Karadeniz, 23-Çoruh. — General distribution: Western Baltic Sea; North Sea; Mediterranean Sea; Sea of Marmara; Black Sea; eastern Atlantic: Norway and Iceland south to Senegal, including Madeira; Red Sea: Gulf of Suez (Mediterranean Sea immigrant). - Distribution in ecoregions: 418-Dniester - Lower Danube, 423-Thrace, 429-Western Anatolia, 430-Northern Anatolia, 432-Southern Anatolia, 433-Western Transcaucasia, 437-Orontes. - Habitat: This species is pelagic, near shore, and sometimes in lagoons and estuaries. It spawns at sea. Freshwater, brackish, marine.

Economic importance. Commercially important.

Conservation. Conservation status in Türkiye:

Unknown. — IUCN: LC (IUCN, 2023). — Threats: No major threats known. — Low sensitivity to human activities. — Not considered a keystone species. — Decline status: Unknown. — Low priority for conservation action. *Dicentrarchus punctatus* (Bloch, 1792) => not occurring in freshwater (see Cicek et al., 2020)

*Morone chrysops* (Rafinesque, 1820) => not established in Türkiye (see Çiçek et al., 2020)

Among the ichthyofauna listed in the systematic order given above, 21 species (4.9%) are alien, while 215 species (50.4%) are endemic to Türkiye. Number of species, genus, and families in each order is given in Table 1. The orders with the largest numbers of species in the ichthyofauna of Türkiye are the Cypriniformes (297 species, 69.6%), followed by the Cyprinodontiformes (26 species, 6.1%), the Salmoniformes (25 species, 5.9%), the Gobiiformes (20 species, 4.7%), the Siluriformes (13 species, 3.0%), and the Clupeiformes (9 species, 2.1%). At the family level, Leuciscidae has the greatest number of species (126 species; 29.5% of the total species), followed by Nemacheilidae (63 species, 14.8%), Cyprinidae (59 species, 13.8%), Cobitidae (29 species, 6.8%), Salmonidae (25 species, 5.9%), Aphanidae (23 species, 5.4%), Gobiidae (20 species, 4.7%), and Gobionidae (15 species, 3.5%). A total of 17 species previously reported from Türkiye in previous studies have been excluded from the current checklist.

The IUCN Red List criteria and threats for the naturally distributed species are presented. Among 406 naturally distributed species (alien species not included), four endemics (1.0%) are already extinct (EX), and 99 species (24.4%) are classified as threatened with extinctions, including 28 (6.9%) are CR, 44 (10.8%) are EN, and 27 (6.7%) are VU. Of the total number of taxa assessed, 2.7% (11 species) are NT and 37.0% (150 species) are LC (Figure 1). A total of 142 species are not categorised; 12 species (3.0%) are classified as DD, i.e. because of insufficient knowledge, and 130 species (32.0%) are not assigned (NE).

Taxa	# Families	# Genera	# Species	%		
Petromyzonti						
Petromyzontiformes 1		2	2	0.5		
Petromyzontidae		2	2	0.5		
Actinopteri						
Acipenseriformes	1	2	6	1.4		
Acipenseridae		2	6	1.4		
Anguilliformes	1	1	1	0.2		
Anguillidae		1	1	0.2		
Clupeiformes	4	5	9	2.1		

Table 1. Number of species, genera, and families in each order in the freshwaters of Türkiye.

### Table 1. (Continued).

Clupeidae		1	1	0.2
Ehiravidae		1	2	0.5
Alosidae		2	5	1.2
Drosomatidae		1	1	0.2
Cypriniformes 9		44	297	69.6
Cobitidae		2	29	6.8
Nemacheilidae		5	63	14.8
Cyprinidae		10	59	13.9
Danionidae		1	1	0.2
Xenocyprididae		2	2	0.5
Tincidae		1	1	0.2
Acheilognathidae		1	1	0.2
Gobionidae		3	15	3.5
Leuciscidae		19	126	29.5
Siluriformes	5	5	13	3.0
Loricariidae		1	2	0.5
Bagridae		1	2	0.5
Sisoridae		1	5	1.2
Siluridae		1	2	0.5
Clariidae	1	1	2	0.5
Esociformes 1		1	1	0.2
Esocidae		1	1	0.2
Salmoniformes 1		3	25	5.9
Salmonidae		3	25	5.9
Syngnathiformes	1	2	2	0.5
Syngnathidae	1	2	2	0.5
Gobiiformes	1	8	20	4.7
Gobiidae		8	20	4.7
Synbranchiformes	1	1	1	0.2
Mastacembelidae		1	1	0.2
Carangiformes 1		1	1	0.2
Pleuronectidae		1	1	0.2
Cichliformes	1	2	4	0.9
Cichlidae		2	4	0.9
Atheriniformes	1	1	2	0.5
Atherinidae		1	2	0.5
Cyprinodontiformes 2		7	26	6.1
Poeciliidae		3	3	0.7
Aphaniidae		4	23	5.4
Mugiliformes	1	4	7	1.6
Mugilidae		4	7	1.6
Blenniiformes	1	2	4	0.9
Blenniidae		2	4	0.9

Perciformes	2	4	4	0.9
Percidae		3	3	0.7
Gasterosteidae		1	1	0.2
Centrarchiformes	1	1	1	0.2
Centrarchidae		1	1	0.2
Acanthuriformes	1	1	1	0.2
Moronidae		1	1	0.2
Total	37	97	427	

### 4. Discussion

Based on the present checklist, we document the presence of a total of 427 species from 25 river basins of Turkish inland waters. In the previous studies, 181 species listed by Kuru (2004), 146 species listed by Geldiay and Balık (2007), 187 species listed by Fricke et al. (2007), 287 species listed by Kuru et al. (2014), 368 species, including 28 species are alien and 153 species are endemic to Türkiye, listed by Cicek et al. (2015). In the latest checklist, a total of 384 fish species belonging to 20 orders and 34 families have been reported in the inland waters of Türkiye. Among these, 15 species (3.9%) are nonnative, and 208 species (54.2%) are considered endemic to Türkiye. A total of 119 species were previously reported from Türkiye by Çiçek et al. (2020). After the latest checklist published by Çiçek et al. (2020), a total of 26 new species were described from Türkiye. Additionally, 30 species were documented from Turkish inland waters, whereas a total of 17 species are excluded from the checklist (Table 2).

Local names of the species are also included in the checklist. However, it has not been overlooked that the local names of the species are a major deficiency. It was observed that while large-sized economic species were given names, small fish species without economic value were generally not given local names. For this reason, there is a need for studies to determine the local names.

Out of 427 fish species distributed in Türkiye, 77 species have economic importance, 32 species have regional economic value, while 180 species have no economic importance. Although a total of 107 species are not of economic importance, they are caught and consumed as food by local people. Among the species that are generally found as exotic, seven species are aquarium fish species while 24 species are potentially aquarium species.

Chondrostoma leptosoma Berg, 1914 identified from Kars River, tributary of Aras River. This species firstly synonymized with Chondrostoma cyri (Berg, 1949: 631) and then with Chondrostoma oxyrhynchum (Coad, 1995; Bogutskaya, 1997, 1998). The status of this species should be clarified. If the species is the synonym of C. *oxyrhynchum*, it must be added to the list of Turkish ichthyofauna in future.

#### 4.1. Endemism

We recognise pronounced species richness and a high degree of endemism in the Turkish ichthyofauna. The endemic fish species constitute 50.4% (i.e. 215 species) in Türkiye. Türkiye's unique position at the crossroads between Europe, Asia, and Africa and also bordering the Mediterranean, Aegean, and Black Seas has provided an interesting mixture of fish species due to its diverse geology, climate, and habitats. Türkiye's complex geography yields rivers with diverse habitats, leading to relatively high levels of endemism (Sekercioglu et al., 2011).

#### 4.2. Conservation

It is well established that globally, freshwater biodiversity is declining faster than terrestrial and marine biodiversity (Tickner et al., 2020). Most of this decline is caused by anthropogenic alterations in habitat quality and extent. These pressures are relevant for all freshwater taxonomic groups. There are still major geographic and taxonomic gaps in the data available to support conserving the freshwater components. Approximately a quarter of the freshwater fish distributed in Türkiye are in the threatened category (VU, EN, CR). The other remaining part of endemic species lacks adequate data (Çiçek et al., 2018). These species might qualify for the threatened category when more data becomes available. Therefore, the evaluation of these species, classified as DD or NE, must be done as soon as possible. In addition, there is currently insufficient information on the conservation status of fish species in Türkiye. Therefore, it is of great importance to prepare the Red List of Fishes for Türkiye as a matter of urgency.

#### 4.3. Alien Species

Up to date, a total of 38 exotic species have been introduced deliberately or accidentally into Turkish inland waters. Only 21 species have been naturalised in the wild. The establishment successes of some species in Turkish freshwaters are controversial. A total of 12 species (*Acipenser baerii*, *Coregonus lavaretus*, *C. macrophthalmus*, *Hypophthalmichthys molitrix*, *H. nobilis*, *Ictalurus punctatus*, *Oreochromis mossambicus*, *Salmo salar*, *Salvelinus alpinus*, *S. fontinalis*, *Sarotherodon* 

Species	EQ	Explanation	
Platichthys luscus (Pallas, 1814)		Occasionally found in brackish water but does not enter freshwater.	
Acipenser persicus Borodin, 1897	2	Found in northern parts of Black Sea.	
Acipenser ruthenus Linnaeus, 1758	2	Found in northern parts of Black Sea.	
Alburnus qalilus Krupp, 1992		Found in upper Orontes River basin. Previous records in Türkiye refer to <i>A. magnificus</i> .	
Cobitis levantina Krupp & Moubayed, 1992		Distributed in Syria. , Israel and Lebanon. Previous recor in Türkiye <i>Cobitis levantina refers</i> to <i>C. anabelae</i> .	
Alburnus battalgilae Özuluğ & Freyhof, 2007	3	Synonym of Alburnus attalus.	
Alburnus heckeli Battalgil, 1944		Synonym of Alburnus sellal.	
Alburnus nasreddini Battalgil, 1944		Synonym of Alburnus escherichii.	
<i>Capoeta baliki</i> Turan, Kottelat, Ekmekçi & İmamoğlu, 2006		Synonym of Capoeta tinca.	
Oxynoemacheilus cinicus (Erk'akan, Nalbant & Özeren, 2007)		Synonym of Oxynoemacheilus germencicus.	
Capoeta ekmekciae Turan, Kottelat, Kirankaya, Engin, 2006		Synonym of Capoeta capoeta.	
Capoeta kosswigi Karaman, 1969		Synonym of Capoeta damascina.	
Capoeta mauricii Küçük, Turan, Şahin & Gülle, 2009		Synonym of Capoeta pestai.	
Gobio battalgilae Naseka, Erk'akan & Küçük, 2006		Synonym of Gobio microlepidotus	
Oxynoemacheilus kosswigi (Erk'akan & Kuru, 1986)		Synonym of Oxynoemacheilus seyhanensis.	
Oxynoemacheilus mesudae Erk'akan, 2012		Synonym of Oxynoemacheilus germencicus.	
Squalius cephaloides (Battalgil, 1942)		Synonym of Squalius cii.	

**Table 2.** List of species to be excluded after Çiçek et al. (2020) and their exclusion criterion (EQ) from the freshwater checklist of Türkiye (species are listed in alphabetical order)

galilaeus, and Tristramella simonis) were not introduced in the wild or were not naturalised. Additionally, for some species reported from the wild (*Hemichromis letourneuxi*, *Heteropneustes fossilis*, *Morone* sp. (hybrid), *Pangasius sanitwongsei*, and *Pygocentrus nattereri*), their current presence needs confirmation by specimens. Consequently, a total of 17 alien species were excluded from the ichthyofauna list of Türkiye by Çiçek et al. (2022).

To date, a total of 21 exotic species have been deliberately or accidentally introduced. Of these, five species were brought for aquaculture/research, two species for fisheries development in natural stocks enhancement, two species for biological control, and seven species for aquarium fisheries. The introduction of some exotic fishes, particularly into inland waters, has had catastrophic effects; therefore, the reason for the introduction of five species is unknown.

### 4.4. Excluded species

To date, a total of 547 taxa were excluded in previous studies. Apart from previous checklists, i.e. Kuru (2004), Geldiay and Balık (2007), Fricke et al. (2007), Kuru et al. (2014), and Çiçek et al. (2015, 2016), a total of 119 species were excluded from the latest checklists by Çiçek et al. (2020). According to four exclusion criteria, in addition to

those excluded in the latest checklist (Çiçek et al., 2020), a total of 17 species were excluded from this list as defined in Table 2.

Some marine fish species can be found more or less in lower rivers and/or stay there for a long period of time, and they are listed in this checklist. However, the fish that usually enter and stay in brackish water habitats (coastal lagoons, estuaries, etc.) for feeding. One species are marine species that occurs sometimes in brackish water but not in freshwater habitats and is completely excluded from the list (EQ-1). Four species previously reported, viz., Acipenser persicus, A. ruthenus, and Cobitis levantina, were probably incorrectly identified or reported (EQ-2) because Türkiye is not in the natural distribution range of these species. These species are excluded from the list; however, further documentation is required to confirm the presence of these species with specimens. A total of 12 species that are now determined as synonyms and not nomina species are given in Table 2 (EQ-3). Alien species that have not established themselves in the wild were excluded from the list (Çiçek et al., 2022). However, these alien species need monitoring and confirmation by specimens of future possible establishment success in the wild ecosystem. In addition to this, we keep this list open

for later addenda to insert these excluded species based on further documentation that may confirm their occurrence in specimens.

Some species have even not been reported yet from within the country; they are, however, probably distributed in the transboundary waters between Türkiye and neighbouring countries. Therefore, regular sampling should be carried out in the country's freshwater systems.

A serious problem in recent ichthyological literature is the citation of dubious records without any effort to verify them, which has resulted in a significant number of errors until very recently (Kottelat and Freyhof, 2007); hence, when we were preparing this checklist, we re-checked every record to verify their presence or absence, which was quite a difficult task (even for experienced taxonomists), particularly because of the scarcity of ichthyological collections and museums in Türkiye and prevalent inaccuracies in some older literature (Bilecenoğlu 2020), i.e. these errors were accumulated over long periods of time.

In addition, the number of erroneous first records in scientific journals has been considerably high. In this context, we believe that some of the newly reported

species are ambiguous and need additional discussion and verification by ichthyological authorities. Therefore, further research and taxonomic revisions are needed for the freshwater fish fauna of Türkiye. In the last four decades, 177 species have been identified. However, of these, 17.0% are synonymized. Additionally, there is strong evidence that more than 20 species are synonyms (some details are given with the remarks). Genetic analyses, especially, bring this situation to light. It is crucial to address these issues through comparative studies. In recent years, many species belonging to the genus Salmo have been described in Türkiye. It has been clearly demonstrated that there is no genetic distance between these species. In addition, although different species have been described from the same basin, it is not clear how reproductive isolation for speciation occurs.

Türkiye has the highest freshwater fish diversity compared to its neighbouring countries (Table 3). Furthermore, we anticipate the discovery of more new fish species from Turkey, owing to the increased emphasis on taxonomic studies in lesser-known areas. An appropriate candidate for this comparison is Iran (Eagderi et al., 2022), with 292 freshwater fish. Although the area of Iran is twice

Country	# Total species	# Endemic (rate)	# Introduced (rate)	Source
Syria	108	5 (4.6%)	11 (10.2%)	Saad et al. (2023)
Iraq	97	3 (3.1%)	22 (22.7%)	Çiçek et al. (2023)
Iran	292	102 (35%)	29 (9.9%)	Eagderi et al. (2022)
Armenia	40	3 (7.5%)	4 (10.0%)	Kuljanishvili et al. (2020)
Georgia	96	1 (1.0%)	6 (6.3%)	Kuljanishvili et al. (2020)
Bulgaria	106		26 (24.53%)	Uzunova & Zlatanova (2007)
Greece	160	47 (29.4%)	23 (14.4%)	Barbieri et al. (2015)
European Continent	522			Carpio et al. (2013)
			33 (6.32%)	Kottelat & Freyhof (2007)
Türkiye	427	215 (50.4%)	21 (4.9%)	This study

Table 3. Diversity of freshwater fishes of Türkiye and its neighbouring countries.

Table 4. Number of order, families, genera, and species in Türkiye and its neighbouring countries.

Country	# Order	# Family	# Genera	# Species	Source
Syria	15	25	51	108	Saad et al. (2023)
Iraq	16	28	56	97	Çiçek et al. (2023)
Iran	24	36	106	292	Eagderi et al. (2022)
Greece	18	29	71	160	Barbieri et al. (2015)
Türkiye	20	37	97	427	This study

as large as Türkiye, the number of freshwater fish in Iran is about 31.1% less. In addition, the endemism of fishes contributing to the Turkish ichthyofauna is impressive. Endemic fish species account for half of the total freshwater fish fauna, while there are 102 species (35%) in Iran, 47 species (29.4%) in Greece, and almost less than 10% in other countries.

The number of orders, families, genera, and species in Türkiye and its neighbouring countries are presented in Table 4, showing the highest diversity in Iranian freshwater fishes, followed by Türkiye. The reasons for the high diversity in Iran and Türkiye are the presence of more basins with diverse habitat characteristics within their borders (Çiçek et al., 2020; Eagderi et al., 2022). The fishes of Türkiye (both marine and inland waters) will be kept up-to-date on the website at https://turkfish. org as an online web database. After the completion of its tests, the website will be launched permanently on October 29, 2023, the 100th anniversary of the establishment of the Republic of Türkiye.

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#### References

- Abell R, Thieme ML, Revenga C, Bryer M, Kottelat M et al. (2008). Freshwater Ecoregions of the World: A New Map of Biogeographic Units for Freshwater Biodiversity Conservation. BioScience 58 (5): 403-414. https://doi.org/10.1641/B580507
- Ahnelt H (1995) Two new species of *Knipowitschia* Iljin, 1927 (Teleostei: Gobiidae) from Western Anatolia. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 92: 155-168.
- Ahnelt H (2011). Two new sympatric *Knipowitschia* species (Teleostei: Gobiidae) from an eastern Mediterranean coastal lake-examples of different dispersal patterns? Zootaxa 3114 (1): 22-30. https://doi.org/10.11646/zootaxa.3114.1.2
- Akșiray F (1948). Türkische Cyprinodontidlerii hakkinda I. Revue de la Faculté des Sciences de l'Université d'Instanbul, Série B: Sciences Naturelles 13 (2): 97-138.
- Akşiray F (1955). Uber eine neue Anatolichthys -- Form. Publications of the Hydrobiological Research Institute, Series B, Istanbul Seri B 3 (2-3): 57-62 (in German).
- Aksu İ, Bektaş Y (2019). Mitochondrial phylogeny and biogeography of the genus *Gobio* (Teleostei: Cyprinidae) in Turkey, Zoology in the Middle East 65 (2): 128-141. https://doi.org/10.1080/09 397140.2019.1586126
- Anuradha S (1986). Contributions to the study of bagrid fishes. 19.
  Systematic position of *Macrones halepensis colvillii* Hora & Misra, 1943, with description of a new species (Siluriformes, Bagridae). Revue Suisse de Zoologie 93 (2): 291-296.
- Asso y del Rio IJ de (1801) Introduccion á la ichthyologia oriental de España. Anales de Ciencias Naturales, Madrid 4 (10): 28-52 (in Spanish).
- Băcescu MC (1962). Contribution à la systématique du genre Cobitis. Description d'une espèce nouvelle, Cobitis calderoni, provenant de l'Espagne. Revue de Biologie, Académie de la République Populaire Roumaine, Bucarest 6 (4): 435-448 (in French).

- Balık S (1974a). Batı Anadolu Tatlısu Balıklarının Taksonomisi ve Ekolojik Özellikleri üzerine Araştırmalar. İzmir: Ege Üniversitesi Fen Fakültesi İlmi Raporlar Serisi 236: 1-61 (in Turkish).
- Balık S (1974b). Güney Anadolu Tatlısu Balıklarının Taksonomik Revizyonu. İzmir: Ege Üniversitesi, TÜBİTAK, TBAG-276, 87 s (in Turkish).
- Balık S (1974c). Trakya Bölgesi Tatlısu Balıklarının Bugünkü Durumu ve Taksonomik Revizyonu.TÜBİTAK Temel Bilimler Araştırma Grubu, Proje No: TBAG526,73s (in Turkish).
- Bănărescu PM (1968a). Süßwasserfische der Türkei. Ergänzende Angaben zu Teil 2: Cobitidae. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 65: 353-356 (in German).
- Bănărescu PM (1968b). Stoumboudi Süßwasserfische der Türkei. Ergänzende Angaben zu Teil 2: Cobitidae. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut, 65: 353-356 (in German).
- Bănărescu PM, Bogutskaya NG (eds) (2003). The freshwater fishes of Europe. Cyprinidae 2. Part II: *Barbus*. v. 5/II.: I-x + 1-454.
- Bănărescu PM, Herzig-Straschil B (1995). A revision of the species of the *Cyprinion macrostomus*-group (Pisces: Cyprinidae). Annalen des Naturhistorischen Museums in Wien 97 B: 411-420.
- Bănărescu PM, Nalbant TT (1964). Süßwasserfische der Türkei.
  2. Teil Cobitidae. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 61: 159-201 (in German).
- Bănărescu PM, Nalbant TT, Balik S (1978). Süßwasserfische der Türkei. 11. Teil. Die Gattung Orthrias in der Türkei und in Südbulgarien (Pisces, Cobitidae, Noemacheilinae). Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 75: 255-266 (in German).

- Barbieri RS, Zogaris E, Kalogianni M, Th. Stoumboudi Y, Chatzinikolaou S et al. (2015). Freshwater Fishes and Lampreys of Greece: An annotated checklist. Monographs on Marine Sciences No. 8. Hellenic Centre for Marine Research: Athens, Greece. p. 130.
- Bariche M, Freyhof J (2016). Status of *Pseudophoxinus libani* and *P. kervillei*, two minnows from the Levant (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 27 (3): 203-210.
- Barrois T (1894). Contribution à l'étude de quelques lacs de Syrie. Revue biologique du nord de la France 6 (1893-1894): 224-312 (in French).
- Battalgil F (1941). Les poissons des eaux douces de la Turquie. (Collection de l'Institut de Zoologie de l'Université d'Istanbul.). Revue de la Faculté des Sciences de l'Université d'Instanbul, Série B: Sciences Naturelles 6 (1-2): 170-186 (in French).
- Battalgil F (1942). Contribution à la connaissance des poissons des eaux douces de la Turquie. Revue de la Faculté des Sciences de l'Université d'Instanbul, Série B: Sciences Naturelles 7 (4): 287-306 (in Turkish).
- Battalgil F (1944). Türkiye'de yeni ve az taninmis, baliklar. Poissons nouveaux et peu connus de la Turquie. Revue de la Faculté des Sciences de l'Université d'Instanbul, Série B: Sciences Naturelles 9 (4): 299-305.
- Bayçelebi E (2020). Distribution and diversity of fish from Seyhan, Ceyhan and Orontes river systems. Zoosystic Evolution 96 (2): 747-767. https://doi.org/10.3897/zse.96.55837
- Bayçelebi E, Kaya C, Turan D, Freyhof J (2021). Garra orontesi, a new species from the Orontes River drainage (Teleostei: Cyprinidae). Zootaxa 4952 (1): 169-180.
- Bayçelebi E, Turan D, Japoshvili B (2015). Fish Fauna of Çoruh River and two first record for Turkey. Turkish Journal of Fisheries and Aquatic Sciences 15: 783-794. https://doi.org/10.4194/1303-2712-v15\_4\_01
- Beckman WC (1962). The Freshwater Fishes of Syria and their General Biology and Management. FAO, Rome, 297 pp.
- Behnke RJ (1968). Süßwasserfische der Türkei. 6. Teil. A new subgenus and species of trout, *Salmo (Platysalmo) platycephalus*, from southcentral Turkey, with comments on the classifikation [sic] of the subfamily Salmoninae. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 66: 1-15.
- Bektas Y, Aksu İ, Kaya C, Baycelebi E, Atasaral S et al. (2019). Phylogeny and phylogeography of the genus *Alburnoides* (Teleostei, Cyprinidae) in Turkey based on mitochondrial DNA sequences. Mitochondrial DNA Part A 30 (7): 794-805. https://doi.org/10.108 0/24701394.2019.1664493
- Bennett ET (1835). A letter...to the Secretary by Keith E. Abbott, Esq., ... Trebizond ... Erzeroun ..., a collection of skins of mammals and birds, and of preserved reptiles, fishes, and insects. Proceedings of the Zoological Society of London (3): 89-92.
- Berg LS (1898). On a collection of fishes from Bessarabia. Dnevnik Zoologicheskogo otdeleniya Obshchestva lyubitelei Estestvoznaniya 2 (8): 34.

- Berg LS (1910). Rapport sur une mission zoologique au Cascase en 1909. Zoologicheskago Muzeya Imperatorskoi Akademii Nauk 15: 153-170 (in French).
- Berg LS (1916). Les Poissons des eaux douces de la Russie. Moscow. i-xxvii + 1-563 (in French).
- Berg LS (1923). Les poissons des eaux douces de la Russie. Second edition. Moscow: i-xxx + 1-535 (in French).
- Berg LS (1925). Description of new species of the genus Alburnus (Pisces) from the basin of Urmia Lake. Ezhegodnik. Zoologicheskogo Muzeya Akademii Nauk SSSR. 26 (3-4): 213-214.
- Berg LS (1931). Description of a new siluroid fish, *Glyptosternum kurdistanicum*, from the basin of the Tigris River. Izvestija Akademii Nauk Soiuza Sovetskikh Sotsialisticheskikh Respublik, VII Serija, Otdelenie Matematischeskikh i Estestvennykh Nauk, Moskwa, Leningrad = Bulletin de l'Académie des Sciences de 'Union des Républiques Soviétiques Socialistes, VII Série, Classe des Sciences Mathématiques et Naturelles 1931: 1267-1270, Pl. 1.
- Berg LS (1932). Eine neue Barilius-Art (Pisces, Cyprinidae) aus Mesopotamien. Zoologischer Anzeiger 100 (11/12): 332-334 (in German).
- Berg LS (1933). Les poissons des eaux douces de l'U.R.S.S. et des pays limitrophes. 3-e édition, revue et augmentée. Leningrad. Les poissons des eaux douces de l'U.R.S.S. Part 2: 544-903 + 1 map. [In Russian.] Berg, L. S. 1910. Fishes collected by K. A. Satunin in Gölü basin. Izvestija Kavkazskago Otdela Imperatorskago Russkago Geograficheskago Obshchestva = Bulletin de la Section Caucasienne de la Société Impériale Russe de Géographie, Tiflis 20 (2): 19-20 (in French).
- Berg LS (1948). Ryby presnych vod SSSR i sopredelnych stan. [Freshwater fishes of the U.S. S. R. and adjacent countries.] 4th ed. vol. 1. Opredeliteli po faune SSSR. [Guide to the fauna of the U.S.S.R.), Moskva. Freshwater fishes of the U.S.S.R. and adjacent countries No. 27: 1-466. [In Russian. English translation available, Israel Prog. Sci. Transl., Jerusalem, 1962, p. 1-504.]
- Berg LS (1949a). Fresh-water fish of Iran and of neighbouring countries. Trudy Instituta Zoologii/ Akademiia Nauk SSSR, 8 (4): 783-858.
- Berg LS (1949b). Ryby presnych vod SSSR i sopredelnych stan. [Freshwater fishes of the U.S.S.R. and adjacent countries.] 4th. ed., vol. 3. Opredeliteli po faune SSSR. [Guide to the Fauna of the U.S.S.R.), Moskva. Freshwater fishes of the U.S.S.R. and adjacent countries No. 30: 927-1382, 1 map. [In Russian. English translation appeared in Israel Program of Scientific Translation, Jerusalem, 1965, pp. i-vii + 1-510, 1 map.]
- Berg LS (1949c). Ryby presnych vod SSSR i sopredelnych stan. [Freshwater fishes of the U.S.S.R. and adjacent countries.] 4th. ed., vol. 2. Opredeliteli po faune SSSR. [Guide to the Fauna of the U.S.S.R.), Moskva. Freshwater fishes of the U.S.S.R. and adjacent countries. No. 29: 467-925. [In Russian. English translation appeared in Israel Program of Scientific Translation, Jerusalem, 1964, p. 1-496.]
- Bilecenoğlu M, Taskavak E, Mater S, Kaya M (2002). Checklist of the marine fishes of Turkey. Zootaxa 113: 1-194. https://doi. org/10.11646/zootaxa.113.1.1

- Bilecenoğlu M, Kaya M, Cihangir B, Çiçek E (2014). An updated checklist of the marine fishes of Turkey. Turkish Journal of Zoology 38: 901-929. https://doi.org/10.3906/zoo-1405-60
- Bloch ME (1782). M. Marcus Elieser Bloch's ..., ausübenden Arztes zu Berlin, Oeconomische Naturgeschichte der Fische Deutschlands. Berlin 1: 1-128 (in German).
- Bloch ME (1784). Naturgeschichte der ausländischen Fische. Berlin, 8: i-iv + 1-174 (in German).
- Bloch ME, Schneider JG (1801). M. E. Blochii, Systema Ichthyologiae Iconibus cx Ilustratum. Post obitum auctoris opus inchoatum absolvit, correxit, interpolavit Jo. Gottlob Schneider, Saxo. Berolini. Sumtibus Auctoris Impressum et Bibliopolio Sanderiano Commissum i-lx + 1-584, Pls. 1-110 (in Latin).
- Bogutskaya NG (1992). A revision of species of the genus *Pseudophoxinus* (Leuciscinae, Cyprinidae) from Asia Minor. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 89: 261-290.
- Bogutskaya NG (1995). *Leuciscus kurui*, a new cyprinid fish from the Upper Tigris (Dicle) system. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 92: 149-154.
- Bogutskaya NG (1997). Contribution to the knowledge of leuciscine fishes of Asia Minor. Part 2. An annotated checklist of leuciscine fishes (Leuciscinae, Cyprinidae) of Turkey with descriptions of a new species and two new subspecies. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 94: 161-186.
- Bogutskaya NG, Coad BW (2009). A review of vertebral and fin-ray counts in the genus *Alburnoides* (Teleostei: Cyprinidae) with a description of six new species. Zoosystematica Rossica 18 (1): 126-173.
- Bogutskaya NG, Küçük F, Atalay MA (2006). A description of three new species of the genus *Pseudophoxinus* from Turkey (Teleostei: Cyprinidae: Leuciscinae). Zoosystematica Rossica 15 (2): 335-341.
- Bogutskaya NG, Küçük F, Ünlü E (2000). *Alburnus baliki*, a new species of cyprinid fish from the Manavgat River system, Turkey. Ichthyological Exploration of Freshwaters 11 (1): 55-64.
- Borkenhagen K, Esmaeili HR, Mohsenzadeh S, Shahryari F, Gholamifard A (2011). The molecular systematics of the *Carasobarbus* species from Iran and adjacent areas, with comments on *Carasobarbus albus* (Heckel, 1843). Environmental Biology of Fishes 91: 327-335.
- Borkenhagen K, Krupp F (2013). Taxonomic revision of the genus *Carasobarbus* Karaman, 1971 (Actinopterygii, Cyprinidae). ZooKeys 339: 1-53. https://doi.org/10.3897/zookeys.339.4903
- Boulenger GA (1890). Description of two new Cyprinodontoid fish. Annals and Magazine of Natural History 6: 169-170.
- Boulenger GA (1896). On freshwater fishes from Smyrna. Annals and Magazine of Natural History (Series 6) 18 (104): 153-154.
- Boulenger GA (1897). Descriptions of new fishes from the Upper Shiré River, British Central Africa, collected by Dr. Percy Rendall, and presented to the British Museum by Sir Harry H. Johnston, K. C.
  B. Proceedings of the Zoological Society of London 1896 (pt 4) (art. 2): 915-920.

- Brandt JF, Ratzeburg JTC (1833). Medizinische Zoologie, oder getreue Darstellung und Beschreibung der Thiere, die in der Arzneimittellehre in Betracht kommen, in systematischer Folge herausgegeben. A. Hirschwald, Berlin v. 2: i-iv + 1-364 (in German).
- Burchell WJ (1822). Travels in the interior of southern Africa. 2 vols. London. v. 1: i-xi + 1-582 + 1-4, 1 Map.; v. 2: 1-648.
- Carpenter KE, Krupp F, Jones DA, Zajonz U (1997). FAO species identification guide for fishery purposes. The living marine resources of Kuwait, eastern Saudi Arabia, Bahrain, Qatar, and the United Arab Emirates. FAO Rome 1-293.
- Carpio AP, Sánchez S, Nieto A, Bilz M (2013). Bulgaria's biodiversity at risk. IUCN, European Union Representative Office, Brussels, Belgium, 8p.
- Castelnau FL (1855). Poissons. In: Animaux nouveaux or rares recueillis pendant l'expédition dans les parties centrales de l'Amérique du Sud, de Rio de Janeiro a Lima, et de Lima au Para; exécutée par ordre du gouvernement Français pendant les années 1843 a 1847 ... Part 7, Zoologie. Paris (P. Bertrand), 2: i-xii + 1-112 (in French).
- Chichkoff G (1933). Sur un nouveau spirlin, *Alburnoides bipunctatus tzanevsi* [sic] subsp. nova. Bulletin, Société Bulgare de Géographie 1: 375-383 (in French).
- Chichkoff G (1935). Description d'un Barbeau nouveau-Barbus barbus bergi n. subsp. Godisnik na Sofijskija Universitet = Annuaire de l'Université de Sofia, Fiziko-Matematiceski Fakultet = Faculté des Sciences Physiques et Mathématiques, Sofija 31 (3): 305-314 (in French).
- Chichkoff G (1937). Sur les Goujons habitant les eaux douces de la Bulgarie. Godisnik na Sofijskija Universitet = Annuaire de l'Université de Sofia, Fiziko-Matematiceski Fakultet = Faculté des Sciences Physiques et Mathématiques, Sofija 33 (3): 227-289 (in French).
- Çiçek E (2020). Seminemacheilus dursunavsari, a new nemacheilid species (Teleostei: Nemacheilidae) from Turkey. Iranian Journal of Ichthyology 7 (1): 68-77.
- Çiçek E (2021). Recent status of exotic tilapia species in Turkey. Ege Journal of Fisheries and Aquatic Sciences 38 (1): 111-116. doi:10.12714/egejfas.38.1.14
- Çiçek E, Birecikligil SS, Fricke R (2015). Freshwater fishes of Turkey; a revised and updated annotated checklist. Biharean Biologists 9 (2): 141-157.
- Çiçek E, Birecikligil SS, Fricke R (2016). Addenda and errata of: Freshwater fishes of Turkey: a revised and updated annotated checklist. FishTaxa 1 (2): 116-117.
- Çiçek E, Eagderi S, Seçer B, Sungur S (2021b). Capoeta kosswigi Karaman, 1969 a junior synonym of Capoeta damascina (Valenciennes, 1842) (Teleostei: Cyprinidae). Turkish Journal of Zoology 45 (3): 235-240. https://doi.org/10.3906/zoo-2012-36.
- Çiçek E, Eagderi S, Sungur S (2018). Oxynoemacheilus veyseli, a new nemacheilid species from the upper Aras River drainage of Turkey (Teleostei: Nemacheilidae). Iranian Journal of Ichthyology 5 (3): 232-242.

- Çiçek E, Emiroğlu O, Aksu S, Secer B, Başkurt S et al. (2021). Range extension of *Gymnocephalus cernua* Linnaeus, 1758 (Perciformes: Percidae) as a new invasive species for Turkey. Acta Biologica Turcica 34 (1): 26-30.
- Çiçek E, Fricke R, Eagderi S, Sungur S (2022a). A review of the alien fishes of Turkish inland waters. Turkish Journal of Zoology 46 (1): 1-13. https://doi.org/10.3906/zoo-2109-13.
- Çiçek E, Fricke R, Sungur S, Eagderi S (2018). Endemic freshwater fishes of Turkey. FishTaxa 3 (4): 1-39.
- Çiçek E, Sungur S, Fricke R (2020). Freshwater lampreys and fishes of Turkey; a revised and updated annotated checklist 2020. Zootaxa 4809 (2): 241-270.
- Çiçek E, Jawad L, Eagderi S, Esmaeili HR, Mouludi–Saleh A et al. (2023). Freshwater fishes of Iraq: a revised and updated annotated checklist–2023. Zootaxa 5357 (1): 1-49.
- Coad BW (1984). Acanthobrama centisquama Heckel and the validity of the genus *Mirogrex* Goren, Fishelson and Trewavas (Osteichthyes: Cyprinidae). Hydrobiologia 109: 275-278.
- Coad BW, Sarieyyüpoğlu M (1988). *Cobitis elazigensis*, a new species of cobitidid fish from Anatolia, Turkey. Japanese Journal of Ichthyology 34 (4): 426-430.
- Cuvier G (1829). Le Règne Animal, distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée. Edition 2, 2: i-xv + 1-406 (in French).
- Cuvier G, Valenciennes A (1842). Histoire naturelle des poissons. Tome seizième. Livre dix-huitième. Les Cyprinoïdes. 16: i-xx + 1-472, Pls. 456-487 (in French).
- Cuvier G, Valenciennes A (1844). Histoire naturelle des poissons. Tome dix-septième. Suite du livre dix-huitième. Cyprinoïdes. 17: i-xxiii + 1-497 + 2 pp., Pls. 487-519 (in French).
- Cuvier G, Valenciennes A (1847). Histoire naturelle des poissons. Tome vingtième. Livre vingt et unième. De la famille des Clupéoïdes. 20: i-xviii + 1 p. + 1-472, Pls. 591-606 (in French).
- De Filippi F (1863). Note di un viaggio in Persia nel 1862. Volume unico. G. Daelli, Milano. i-xiii + 1-396 (in Italian).
- De Filippi F (1863). Nuove o poco note specie di animali vertebrati raccolte in un viaggio in Persia nell' estate dell' anno 1862. Archivio per la Zoologia, l'Anatomia e la Fisiologia v. 2: 377-394 (in Italian).
- Delmastro GB (1982). Un nuovo cobite dai tributari del Mar Nero in Asia Minore (Osteichthyes, Cobitidae). Rivista Piemontese di Storia Naturale 3: 53-59 (in Italian).
- Derjavin AN (1934). Fresh-water fish of the south coast of the Caspian Sea. Trudy Azerbaidzhanskogo otdela Zakavkazskogo filiala Akademii Nauk SSSR, Sektor Zoologii 7: 91-126.
- Derjugin KM (1899) Materials for the ichthyological fauna of southwestern Transcaucasia. Ezhegodnik, Zoologicheskago Muzeya Imperatorskoi Akademii Nauk 4: 148-171.
- Deveciyan K (1926). Pêche Et Pêcheries En Turquie (Türkiye'de Balık ve Balıkçılık). Reprint in Turkish by Aras publishing, 8th edition, October 2020, Istanbul, 574p (in French).

- Di Caporiacco L (1935). Escursione del prof. Nello Beccari in Anatolia. Pesci. Monitore Zoologico Italiano 46 (8): 255-259 (in Italian).
- Doadrio I, Carmona JA (2006). Phylogenetic overview of the genus *Squalius* (Actinopterygii, Cyprinidae) in the Iberian Peninsula, with description of two new species. Cybium 30: 199-214.
- Dorofeeva EA (1967). Sravnitel'no morfologiceskie ochovy sistematiki vostojnoevropeiskish lososei. [Comparative morphological principles of taxonomy of East European salmons.]. Voprosy Ikhtiologii 7 (1, art. 42): 3-17 (in Esperanto).
- Drensky P (1926). Neue und seltene Fische aus Bulgarien. Trudove na Bulgarskogo Prirodoizpitatelno Druzhestvo = Travaux de la Société Bulgare des Sciences Naturelles 12: 121-150 (in German).
- Drensky P (1928). Die Fische der Familie Cobitidae in Bulgarien. Izvestija na Carskite Prirodonaucni Instituti va Sofija = Mitteilungen aus den Königlichen Naturwissenschaftlichen Instituten in Sofia, Bulgraien = Bulletin des Institutions Royales d'Histoire Naturelle à Sofia, Bulgarie 1: 156-181 (in German).
- Drensky P (1943). *Chalcalburnus chalcoides* Güld. in Bulgarien. I. Godisnik na Sofijskija Universitet = Annuaire de l'Université de Sofia, Fiziko-Matematiceski Fakultet = Faculté des Sciences Physiques et Mathématiques, Sofija 39 (3): 343-360 (1-18].
- Eagderi S, Jalili P, Çiçek E (2018). *Oxynoemacheilus elsae*, a new species from the Urmia Lake basin of Iran (Teleostei: Nemacheilidae). FishTaxa 3 (2): 453-459.
- Eagderi S, Jouladeh-Roudbar A, Jalili P, Sayyadzadeh G, Esmaeili HR (2017). Taxonomic status of the genus *Cobitis* Linnaeus, 1758 (Teleostei: Cobitidae) in the southern Caspian Sea basin, Iran with description of a new species. FishTaxa 1: 48-61.
- Eagderi S, Mouludi-Saleh A, Esmaeili HR, Sayyadzadeh G, Nasri M (2022). Freshwater lamprey and fishes of Iran; a revised and updated annotated checklist-2022. Turkish Journal of Zoology 46: 500-522. https://doi.org/10.55730/1300-0179.3104
- Eagderi S, Seçer B, Freyhof J (2022). *Cobitis indus*, a new spined loach from the Dalaman River in the Eastern Aegean Sea basin (Teleostei: Cobitidae). Zootaxa 5162 (4): 410-420. https://doi. org/10.11646/zootaxa.5162.4.5
- Ege V (1939). A revision of the genus *Anguilla* Shaw. A systematic, phylogenetic and geographical study. Dana Report No. 16: 1-257, Pls. 1-6.
- Eichwald CE (1831). Zoologia specialis quam expositis animalibus tum vivis, tum fossilibus potissimum Rossiae, in universam, et Poloniae in specie, ... Wilna. Pars posterior 3: 404 pp (in Latin).
- Ekmekçi FG, Atalay MA, Yoğurtçuoğlu B, Turan D, Küçük F (2015). A new species of *Pseudophoxinus* (Teleostei: Cyprinidae) from southwestern Anatolia, Turkey. Zootaxa 4033 (1): 117-128.
- Ekmekçi FG, Bănărescu PM (1998). A revision of the generic position of *Barynotus* (*Systomus*) verhoeffi, and the validity of the genera *Carasobarbus*, *Kosswigobarbus* and *Mesopotamichthys* (Pisces, Cyprinidae). Folia Zoologica: International Journal of Vertebrate Zoology 47 (suppl. 1): 87-96.

- Elp M, Osmanoğlu Mİ, Kadak AE, Turan D (2018). Characteristics of *Capoeta oguzelii*, a new species of cyprinid fish from the Ezine Stream, Black Sea basin, Turkey (Teleostei: Cyprinidae). Zoology in the Middle East 64 (2): 102-111.
- Elvira B (1987). Taxonomic revision of the genus *Chondrostoma* Agassiz, 1835 (Pisces, Cyprinidae). Cybium 11 (2): 111-140.
- Elvira B (2001). Identification of non-native freshwater fishes established in Europe and assessment of their potential threats to the biological diversity. Convention on the conservation of European wildlife and natural habitats. Council of Europe T-PVS 6: 35p.
- Engin S, Innal D (2017). A new species of Pomatoschistus (Teleostei: Gobiidae) from Southern Anatolia. Zoology in the Middle East 63 (4): 316-324.
- Erençin Z, Baran I, Ergüven H (1971). Zwergwelsen in Ostanatolien (*Ameiurus nebulosus* (sic) Le Sueuer, 1890 (sic). Ankara Üniversitesi Veteriner Fakültesi Dergisi 18: 214-218.
- Erk'akan F, Atalay-Ekmekçi FG, Nalbant TT (1998). Four new species and one new subspecies of the genus *Cobitis* (Pisces: Ostariophysi: Cobitidae) from Turkey. Turkish Journal of Zoology 22 (1): 9-15.
- Erk'akan F, Kuru M (1986). A new Noemacheilinae loach subspecies from the Lake Van Basin, Turkey (Osteichthyes, Cobitidae). Doga Turk Biyoloji Dergisi 10 (2): 160-162.
- Erk'akan F, Nalbant TT, Özeren SC (2007). Seven new species of *Barbatula*, three new species of *Schistura* and a new species of *Seminemacheilus* (Ostariophysi: Balitoridae: Nemacheilinae) from Turkey. Journal of Fisheries International 2: 69-85.
- Erk'akan F, Özdemir, F. & Özeren SC (2017). Two new species of the genus *Cobitis* Linnaeus (Teleostei: Cobitidae) from Turkey. FishTaxa 2 (2): 82-89.
- Erk'akan F, Özeren SC & Nalbant TT (2008a). *Cobitis evreni* sp. nova a new spined loach species (Cobitidae) from the southern Turkey. Journal of Fisheries International 3: 112-114.
- Erk'akan F, Özeren SC, Nalbant TT (2008b). Two new species of stone loaches from Turkey (Teleostei: Nemacheilidae). Journal of Fisheries International 3: 115-119.
- Ermin R (1946). Cyprinodontid'lerde pul reduksiyonu. Schuppenreduktion bei Zahnkarpfen (Cyprinodontidae). Revue de la Faculté des Sciences de l'Université d'Instanbul, Série B: Sciences Naturelles 11 (4): 217-272.
- Esmaeili HR, Sayyadzadeh G, Özulug M, Geiger MF, Freyhof J (2014). Three new species of *Turcinoemacheilus* from Iran and Turkey (Teleostei: Nemacheilidae). Ichthyological Exploration of Freshwaters 24 (3): 257-273.
- Freyhof J (2022). Egirdira, a new generic name for Pararhodeus niger Kosswig & Geldiay, 1952 (Teleostei: Leuciscidae). Zootaxa 5104 (4): 586-592. https://doi.org/10.11646/zootaxa.5104.4.8
- Freyhof J, Erk'akan F, Özeren SC, Perdices A (2012). An overview of the western Palaearctic loach genus Oxynoemacheilus (Teleosei: Nemacheilidae). Ichthyological Exploration of Freshwaters 22 (4): 301-312.

- Freyhof J, Esmaeili HR, Sayyadzadeh G, Geiger MF (2014). Review of the crested loaches of the genus *Paracobitis* from Iran & Iraq with the description of four new species (Teleostei: Nemacheilidae). Ichthyological Exploration of Freshwaters 25 (1): 11-38.
- Freyhof J, Turan D, Ünlü E (2016). The latest status and distribution of fishes in Upper Tigris River and two new records for Turkish freshwaters. Turkish Journal of Fisheries and Aquatic Sciences, 16: 545-562. https://doi.org/10.4194/1303-2712-v16\_3\_07
- Freyhof J, Kaya C, Turan D (2017). Oxynoemacheilus kentritensis, a new species from the upper Tigris drainage in Turkey with remarks on O. frenatus (Teleostei: Nemacheilidae). Zootaxa 4258 (6): 551-560.
- Freyhof J, Özulug M, Saç G (2017). Neotype designation of Aphanius iconii, first reviser action to stabilise the usage of A. fontinalis and A. meridionalis and comments on the family group names of fishes placed in Cyprinodontidae (Teleostei: Cyprinodontiformes). Zootaxa 4294 (5): 573-585. https://doi. org/10.11646/zootaxa.4294.5.6
- Freyhof J, Bayçelebi E, Geiger MF (2018a). Review of the genus *Cobitis* in the Middle East, with the description of eight new species (Teleostei: Cobitidae). Zootaxa 4535 (1): 1-75.
- Freyhof J, Özulug M, Kaya C, Bayçelebi E, Geiger MF, Turan D (2018b). Redescription of *Alburnus kotschyi* Steindachner, 1863, with comments on *Alburnus sellal adanensis* Battalgazi, 1944 (Teleostei: Leuciscidae). Zootaxa 4382 (3): 573-582. https://doi. org/10.11646/zootaxa.4382.3.8
- Freyhof J, Kaya C, Bayçelebi E, Geiger MF, Turan D (2018c). Generic assignment of *Leuciscus kurui* Bogutskaya from the upper Tigris drainage, and a replacement name for *Alburnus kurui* Mangit & Yerli (Teleostei: Leuciscidae). Zootaxa 4410 (1): 113-135. https:// doi.org/10.11646/zootaxa.4410.1.6
- Freyhof J, Kaya C, Bayçelebi E, Geiger MF, Turan D (2019). Comments on the holotype of *Alburnus kurui* Mangit & Yerli 2018 and redescription of A. carianorum Freyhof, Kaya, Bayçelebi, Geiger & Turan, 2019 (Teleostei: Leuciscidae). Zootaxa 4550 (4): 594-596.
- Freyhof J, Kaya C, Turan D, Geiger MF (2019). Review of the Oxynoemacheilus tigris group with the description of two new species from the Euphrates drainage (Teleostei: Nemacheilidae). Zootaxa 4612 (1): 29-57.
- Freyhof J, Kaya C, Yoğurtçuoğlu B (2021a). Oxynoemacheilus sarus, a new nemacheilid loach from the lower Ceyhan and Seyhan in southern Anatolia (Teleostei: Nemacheilidae). Zootaxa 4964 (1): 123-139. https://doi.org/10.11646/zootaxa.4964.1.6
- Freyhof J, Kaya C, Abdullah YS, Geiger MF (2021b). The *Glyptothorax* catfishes of the Euphrates and Tigris with the description of a new species (Teleostei: Sisoridae). Zootaxa 4969 (3): 453-491. https://doi.org/10.11646/zootaxa.4969.3.2
- Freyhof J, Kaya C, Geiger MF (2022). A practical approach to revise the Oxynoemacheilus bergianus species group (Teleostei: Nemacheilidae). Zootaxa 5128 (2): 151-194. https://doi. org/10.11646/zootaxa.5128.2.1
- Freyhof J, Özulug M (2006). *Pseudophoxinus ninae*, a new species from Central Anatolia, Turkey (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 17 (3): 255-259.

- Freyhof J, Özulug M (2010a). *Pseudophoxinus evliyae*, a new species of spring minnow from western Anatolia with remarks on the distribution of *P. ninae* and the systematic position of *P. fahirae* (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 20 (4): 309-318.
- Freyhof J, Özulug M (2010b). Pseudophoxinus fahrettini, a new species of spring minnow from Central Anatolia (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 20: 325-332.
- Freyhof J, Özulug M (2010c). *Pseudophoxinus hittitorum*, a new species of spring minnow from Central Anatolia (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 21: 239-245.
- Freyhof J, Özulug M (2014). Acanthobrama thisbeae, a new species of bream from southern Anatolia, Turkey (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 25: 1-10.
- Freyhof J, Özulug M (2017). Oxynoemacheilus hazarensis, a new species from Lake Hazar in Turkey, with remarks on O. euphraticus (Teleostei: Nemacheilidae). Zootaxa 4247 (4): 378-390. https:// doi.org/10.11646/zootaxa.4247.4.2
- Freyhof J, Geiger MF (2021). *Oxynoemacheilus shehabi*, a new nemacheilid loach from the upper Orontes in southern Syria (Teleostei: Nemacheilidae). Zootaxa 4908 (4): 571-583.
- Freyhof J, Turan D (2019). Alburnus magnificus, a new species of bleak from the Orontes River drainage (Teleostei: Leuciscidae). Zootaxa 4559 (2): 373-383. https://doi.org/10.11646/ zootaxa.4559.2.10
- Freyhof J, Yoğurtçuoğlu B (2020). A proposal for a new generic structure of the killifish family Aphaniidae, with the description of *Aphaniops teimorii* (Teleostei: Cyprinodontiformes). Zootaxa 4810 (3): 421-451. http://doi.org/10.23788/IEF-1152
- Freyhof J, Yoğurtçuoğlu B (2023). Mystus misrai Anuradha, 1986, a valid species from the Orontes drainage (Teleostei: Bagridae). Zootaxa 3506 (4): 445-462. https://doi.org/10.11646/zootaxa.5306.4.3
- Fricke R, Bilecenoğlu M, Sari HM (2007). Annotated checklist of fish and lamprey species (Gnathostomata and Petromyzontomorphi) of Turkey, including a Red List of threatened and declining species. Stuttgarter Beiträge zur Naturkunde, Serie A (Biologie) (706): 1-172.
- Gaillard C (1895). Notes sur quelques espèces de Cyprinodons de l'Asie Mineure et de la Syrie. Archives du Muséum d'Histoire Naturelle de Lyon 6 (2): 2-15 (in French).
- Geiger MF, Herder F, Monaghan MT, Almada V, Barbieri R et al. (2014). Spatial heterogeneity in the Mediterranean Biodiversity Hotspot affects barcoding accuracy of its freshwater fishes. Molecular Ecology Resources 14: 1210-1221. https://doi.org/10.1111/1755-0998.12257
- Geldiay R, Balık S (1988). Freshwater Fishes of Turkey. I. Edition, Ege University Press, İzmir, Türkiye, 519 pp.
- Geldiay R, Balık S (1996). Freshwater Fishes of Turkey. II. Edition, Ege University Press, İzmir, Türkiye, 519 pp.
- Geldiay R, Balık S (1999). Freshwater Fishes of Turkey. III. Edition, Ege University Press, İzmir, Türkiye, 532 pp.
- Geldiay R, Balık S (2002). Freshwater Fishes of Turkey. IV. Edition, Ege University Press, İzmir, Türkiye, 532 pp.

- Geldiay R, Bahk S (2007). Freshwater Fishes of Turkey. V. Edition, Ege University Press, İzmir, Türkiye, 638 pp.
- Gervais FLP (1848). Sur les animaux vertébrés de l'Algérie, envisagés sous le double rapport de la géographie zoologique et de la domestication. Annales des Sciences Naturelles, Paris (Zoologie) (Sér. 3) 10: 202-208 (in French).
- Girard CF (1859). Ichthyological notices. Proceedings of the Academy of Natural Sciences of Philadelphia 11: 56-68.
- Godwin JC, Steen DA, Werneke D, Armbruster JW (2016). Two Significant Records of Exotic Tropical Freshwater Fishes in Southern Alabama. Notes of the Southeastern Naturalist 15 (4): 57-60.
- Goren M (1974). The freshwater fishes of Israel. Israel Journal of Zoology 23 (2): 67-118.
- Goren M, Fishelson L, Trewavas E (1973). The cyprinid fishes of *Acanthobrama* Heckel and related genera. Bulletin of the British Museum (Natural History) Zoology 24 (6): 293-315.
- Gratzianov VI (1907). Opyť obzora ryby Rossiskoi Imperii v' sistematicheskom' i geograficescom' otnoshenii. [Versuch einer Übersicht derFische des Russischen Reiches in systematischer und geographischer Hinsicht.) [A synoptic essay of the fishes of the Russian Empire.]. Trudy Otdela Ichtiologii Imperatorskago Russkago Obshchestva Akklimatizacii Zivotnych' i Rastenii. v. 4: i-xxx + 1-567.
- Grimm O von (1901). The herrings of the Sea of Azov. Vestnik Rybopromyshlennosti St. Petersburg 16 (2): 57-70.8
- Güçlü SS, Kalayci G, Küçük F, Turan D (2020). *Barbus xanthos*, a new barbel from the south-eastern Aegean basin (Teleostei: Cyprinidae). Journal of Fish Biology 96 (6): 1309-1319.
- Güçlü SS, Kalayci G, Özulug F, Küçük F, Turan D (2021). *Barbus ida*, a new barbel species from the Southern Marmara Sea basin (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters IEF-1164: 1-13.
- Güçlü SS, Küçük F, Turan D, Çiftçi Y, Mutlu AG (2018). A new *Chondrostoma* species from the Büyük Menderes River Basin, Turkey (Teleostei: Cyprinidae). Zoology in the Middle East 64 (4): 315-321.
- Güldenstädt JA von (1773). *Cyprinus capoeta* et *Cyprinus mursa*. Novi Commentarii Academiae Scientiarum Imperialis Petropolitanae 17 (for 1772): 507-520.
- Günther A (1868). Catalogue of the fishes in the British Museum. Catalogue of the Physostomi, containing the families Heteropygii, Cyprinidae, Gonorhynchidae, Hyodontidae, Osteoglossidae, Clupeidae,... [thru]... Halosauridae, in the collection of the British Museum. v. 7: i-xx + 1-512
- Günther A (1899). Fishes [of Lake Urmi, n.w. Persia, and its neighbourhood]. The Journal of the Linnean Society of London Zoology 27 (177): 381-391, Pls. 23-24.
- Hankó B (1925). Fische aus Klein-Asien. Annales Historico-Naturales Musei Nationalis Hungarici, 21 (for 29 Dec. 1924): 137-158, Pl. 3 (in German).

- Heckel JJ (1837). Ichthyologische Beiträge zu den Familien der Cottoiden, Scorpaenoiden, Gobioiden und Cyprinoiden. Annalen des Wiener Museums der Naturgeschichte 2 (1) (for 1840): 143-164 (in German).
- Heckel JJ (1843a). Ichthyologie [von Syrien]. In: J. von Russegger. Reisen in Europa, Asien und Afrika, mit besonderer Rücksicht auf die naturwissenschaftlichen Verhältnisse der betreffenden Länder unternommen in den Jahren 1835 bis 1841, etc. E. Schweizerbart'sche Verlagshandlung. Stuttgart. Ichthyologie [von Syrien]. In Russegger 1 (2): 991-1099 (in German).
- Heckel JJ (1843b). Abbildungen und Beschreibungen der Fische Syriens, nebst einer neuen Classification und Characteristik sämmtlicher Gattungen der Cyprinen, 991-1044, Pl. 1-13. In: Fenzl, E., Heckel, J. J. & Redtenbenher, L. (eds): Abbildungen und Beschreibungen neuer und seletner Thiere und Pflanzen in Syrien und im westlichen Taurus gesammelt von Th. Kotschy. V. 1 (pt 2) (in German).
- Heckel JJ (1847). Naturhistorischer Anhang. [Various subtitles.] In: Russegger, J. von: Reisen in Europa, Asien und Afrika, .... unternommen in den Jahren 1835 bis 1841. E. Schweizerbart'sche Verlagshandlung, Stuttgart 2 (3): 207-357 (in German).
- Heckel JJ (1848). Eine neue Gattung von Poecilien mit rochenartigem Anklammerungs-Organe. Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe 1 (1-5) (1848): 289-303, Pls. 8-9 (in German).
- Hrbek T, Wildekamp RH (2003). Aphanius villwocki, a new species from the Sakarya River basin of central Anatolian plain, Turkey (Teleostei: Cyprinodontiformes). Ichthyological Exploration of Freshwaters 14 (2): 137-144.
- Huber JH (2019). A nomenclatural and systematic analysis of livebearing Cyprinodontiformes (Acanthopterygii: Anablepsinae, Goodeinae, Poeciliidae). Killi-Data Series 2019: 4-155.
- Humboldt FHA, Valenciennes A (1821). Recherches sur les poissons fluviatiles de l'Amérique Équinoxiale. In: Voyage de Humboldt et Bonpland, Deuxième partie. Observations de Zoologie et d'Anatomie comparée. Paris, 2 (Title page 1833): 145-216 (in French).
- Innal D (2022) Juvenile fish fauna of the transitional waters on the Mediterranean coasts of Turkey; a structural and environmental assessment. Acta Biologica Turcica 35(2): A8:1-11.
- Jouladeh-Roudbar A, Ghanavi HR, Doadrio I (2020). Ichthyofauna from Iranian freshwater: Annotated checklist, diagnosis, taxonomy, distribution and conservation assessment. Zoological Studies 59: 21. https://doi.org/10.6620/ZS.2020.59-21.
- Kamangar BB, Prokofiev AM, Ghaderi E, Nalbant TT (2014). Stone loaches of Choman River system, Kurdistan, Iran (Teleostei: Cypriniformes: Nemacheilidae). Zootaxa 3755 (1): 33-61.
- Kamensky SN (1899). Die Cypriniden der Kaukasusländer und ihrer angrenzenden Meere. Tiflis. i-vii + 1-157, Pls. 1-12 (in German).
- Kamensky SN (1901). Die Cypriniden der Kaukasusländer und ihrer angrenzenden Meere. 2. Lieferung. Tiflis. i-ii + i-ii + 1-192, Pls. 7-12 (in German).

- Karaman S (1922). Über eine neue *Cobitis*-Art aus Jugoslavien, Cobitis balcanica n. sp. Glasnik Hrvatskoga naravoslovnoga drustva = Glasnik der Kroatischen Naturwissenschaftlichen Gesellschaft in Zagreb 34 (3): 307-310 (in German).
- Karaman SL (1955). Die Fische der Strumica (Struma-System). Acta Musei Macedonici Scientiarum Naturalium 3 (7): 181-208 (in German).
- Karaman S (1969). Beitrag zur Kenntnis der Süßwasserfische Jugoslaviens. (Salmoniden, l. Teil.). Glasnik Skopskog Nauchnog Drustva [Glasnik -- Bulletin de la Société Scientifique de Skopje]. 18: 131-139 (in German).
- Karaman MS (1969). Süßwasserfische der Türkei. 7. Teil. Revision der kleinasiatischen und vorderasiatischen Arten des Genus Capoeta (Varicorhinus, partim). Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 66: 17-54 (in German).
- Karaman MS (1971). Süßwasserfische der Türkei. 8. Teil. Revision der Barben Europas, Vorderasiens und Nordafrikas. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 67: 175-254, Pls. 1-2 (in German).
- Karaman MS (1972). Süßwasserfische der Türkei. 9. Teil. Revision einiger kleinwüchsiger Cyprinidengattungen *Phoxinellus*, *Leucaspius*, *Acanthobrama* usw. aus Südeuropa, Kleinasien, Vorder-Asien und Nordafrika. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 69: 115-155, Pl. 1 (in German).
- Kaya C (2020a). Spirlins of the southern Black Sea basin, with the description of a new species (Teleostei: Leuciscidae). Zootaxa 4763 (3): 419-428. https://doi.org/10.11646/zootaxa.4763.3.6
- Kaya C (2020b). New record of three freshwater fish species from a western drainage of Lake Urmia for the Turkish fauna. Ege Journal of Fisheries and Aquatic Sciences 37 (4): 325-328. https://doi.org/10.12714/egejfas.37.4.01.
- Kaya C (2022). Contributions to the ichthyofauna of Turkish part of Aras River, with remarks on the rapid spread of exotic Amur goby (*Rhinogobius lindbergi*). Addressing of Invasive Alien Species Threats in Terrestrial Areas and Inland Waters in Turkey Europeaid/139606/Ih/Ser/Tr. Activity 3.3 International Conference. Ankara, Hilton Hotel Date: 19-21 September 2022.
- Kaya C, Bayçelebi E, Turan D (2020a). Taxonomic assessment and distribution of fishes in upper Kura and Aras river drainages. Zoosystematics and Evolution 96: 325-344, https://doi. org/10.3897/zse.96.52241.
- Kaya C, Turan D, Bayçelebi E, Kalaycı G, Freyhof J (2020b). Oxynoemacheilus cilicicus, a new nemacheilid loach from the Göksu River in southern Anatolia (Teleostei: Nemacheilidae). Zootaxa 4808 (2): 284-300. https://doi.org/10.11646/ zootaxa.4808.2.3.
- Kaya C, Turan D, Kalaycı G, Bayçelebi E, Freyhof J (2020c). The westernmost known population of *Paracobitis* (Teleostei, Nemacheilidae), with the description of a new species from the Euphrates River in southern Anatolia. Zootaxa 4838 (4): 525-534. https://doi.org/10.11646/zootaxa.4838.4.6

- Kaya C, Yoğurtçuoğlu B, Freyhof J (2020d). Oxynoemacheilus amanos, a new nemacheilid loach from the Orontes River drainage (Teleostei: Nemacheilidae). Zootaxa 4938 (5): https://doi. org/10.11646/zootaxa.4938.5.3
- Kaya C, Yoğurtçuoğlu B, Aksu İ, Bayçelebi E, Turan D. (2023). Turcinoemacheilus ekmekciae, a new dwarf loach from Upper Tigris and Euphrates (Teleostei: Nemacheilidae). Journal of Fish Biology https://doi.org/10.1111/jfb.15578
- Kessler KF (1857). Nachträge zur Ichthyologie des südwestlichen Russlands. Bulletin de la Société Impériale des Naturalistes de Moscou 30 (2): 453-481 (in German).
- Kessler KF (1859). Auszüge aus dem Berichte über die nordwestlichen Küsten des schwarzen Meeres und durch die westliche Krym unternommene Reise. Bulletin de la Société Impériale des Naturalistes de Moscou 32 (1): 520-546 or 186-268 (in German).
- Kessler KF (1874). A description of fishes belonging to the families common to both the Black and the Caspian seas. Trudy St.-Peterburgskogo Obscestva Estestvoispytatelej = Travaux de la Société des Naturalistes de St. Pétersbourg 5: 191-324, 1 pl.
- Kessler KF (1877). The Aralo-Caspian Expedition. IV. Fishes of the Aralo-Caspio-Pontine ichthyological region. St. Petersburg. i-xxviii + 1-360, Pls. 1-8.
- Khaefi R, Esmaeili HR, Geiger MF, Eagderi S (2017). Taxonomic review of the cryptic *Barbus lacerta* species group with description of a new species (Teleostei: Cyprinidae). FishTaxa 2 (2): 90-115.
- Kırankaya ŞG, Ekmekçi FG (2021). First Record of a Feral Population of Green Swordtail (*Xiphophorus hellerii*) with an Additional Record of Guppy (*Poecilia reticulata*) in Turkish Freshwaters. Hacettepe Journal of Biology and Chemistry 49 (1): 433- 441. https://doi.org/10.15671/hjbc.961220
- Kobayakawa M (1989). Systematic revision of the catfish genus Silurus, with description of a new species from Thailand and Burma. Japanese Journal of Ichthyology 36 (2): 155-186.
- Kosswig C (1950). Die Gattung Tylognathus in Vorderasien. In: Ergänzungband "Neue Ergebnisse und Probleme der Zoologie", Festschrift Berthold Klatt. Zoologischer Anzeiger 145: 406-415 (in German).
- Kosswig C, Sözer F (1945). Nouveaux Cyprinodontides de l'Anatolie centrale. Revue de la Faculté des Sciences de l'Université d'Instanbul, Série B: Sciences Naturelles 10 (2): 77-83 (in French).
- Kosswig C, Geldiay R (1952). Eğirdir Gölü Balıkları. Balık ve Balıkçılık, Istanbul Universitesi, Fen Fakültesi Hidrobiyoloji Araştırmaları Enstitüsü Yayınları 3 (1): 3-14 (in Turkish).
- Kottelat M (1997). European freshwater fishes. Biologia (Bratislava) 52 (suppl. 5): 1-271.
- Kottelat M (2012). Conspectus cobitidum\*: an inventory of the loaches of the world (Teleostei: Cypriniformes: Cobitoidei). The Raffles Bulletin of Zoology 26: 1-199.
- Kottelat M, Economidis PS (2006). *Squalius orpheus*, a new species of cyprinid fish from Evros drainage, Greece (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 17 (2): 181-186.
- Kottelat M, Freyhof J (2007). Handbook of European freshwater fishes. Cornol, Switzerland, Publications Kottelat. i-xiii+ 1-646.

- Kottelat M, Barbieri R, Stoumboudi MT (2007). Aphanius almiriensis, a new species of toothcarp from Greece (Teleostei: Cyprinodontidae). Revue suisse de Zoologie 114 (1): 13-31. https://doi.org/10.5962/bhl.part.80385
- Kottelat M, Freyhof J (2009). Notes on the taxonomy and nomenclature of some European freshwater fishes. Ichthyological Exploration of Freshwaters 20 (1): 75-90.
- Kovačić M, Engin S (2008). Two new species of *Neogobius* (Gobiidae) from northeastern Turkey. Cybium 32: 73-80.
- Kovačić M, Renoult JP, Pillon R, Svensen R, Bogorodsky SV et al. (2022). Identification of Mediterranean marine gobies (Actinopterygii: Gobiidae) of the continental shelf from photographs of in situ individuals. Zootaxa 5144 (1): 1-103.
- Krupp F (1985a). Barbus chantrei (Sauvage, 1882), a valid species of cyprinid fish from the northern Levant. Senckenbergiana Biologica 66: 17-25.
- Krupp F (1985b). Rehabilitation of *Barbus lorteti* Sauvage, 1882, and comments on the validity of the generic names Bertinius Fang, 1943, and Bertinichthys Whitley, 1953 (Pisces: Cyprinidae). Hydrobiologia 120: 63-68.
- Krupp F (1985c). A new species of *Chondrostoma* from the Orontes River drainage basin of Turkey and Syria. Senckenbergiana Biologica 66 (1/3): 27-33.
- Krupp F, Schneider W (1989). The fishes of the Jordan River drainage basin and Azraq Oasis. Fauna of Saudi Arabia 10: 347-416.
- Krupp F, Schneider W (1991). Two new species of *Nemacheilus* Bleeker, 1863 from the Orontes River drainage basin of Lebanon, Syria and Turkey (Pisces: Osteichthyes: Balitoridae). Senckenbergiana Biologica 71 (1/3): 23-34.
- Küçük F (2007). Pseudophoxinus alii (Teleostei: Cyprinidae) a new fish species from the Antalya Region, Turkey. Turkish Journal of Zoology 31: 1-8.
- Küçük F, Çiftçi Y, Güçlü SS, Turan D (2021). Chondrostoma smyrnae, a new nase from the Tahtalı reservoir drainage in the Aegean Sea basin (Teleostei, Leuciscidae). Zoosystematics and Evolution 97 (1): 235-248.
- Küçük F, Güçlü SS (2014). A new Pseudophoxinus (Teleostei, Cyprinidae) species from Asi River Drainage (Turkey). ZooKeys 411: 57-66. https://doi.org/10.3897/ zookeys.411.6833
- Küçük F, Gülle I, Güçlü SS (2016). Pseudophoxinus iconii, a new species of spring minnow from Central Anatolia (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 27 (3): 283-288.
- Küçük F, Gülle I, Güçlü SS, Çiftçi Y, Erdogan Ö (2013) A new Pseudophoxinus (Teleostei, Cyprinidae) species from southwestern Anatolia, with remarks on the distribution of the genus in western Anatolia. ZooKeys 320: 29-41. https:// doi.org/10.3897/zooKeys.320.4447
- Küçük F, Turan D, Güçlü SS, Mutlu AG, Çiftçi Y (2017) Two new species of *Chondrostoma* Agassiz, 1832 (Teleostei: Cyprinidae) from the Ceyhan, Seyhan and Göksu Rivers in the East Mediterranean Region of Turkey. Turkish Journal of Fisheries and Aquatic Sciences 17: 795-803. https://doi. org/10.4194/1303-2712-v17\_4\_15.

- Kuljanishvili T, Epitashvili G, Freyhof J, Japoshvili B, Kalous L et al. (2018). Checklist of the freshwater fishes of Armenia, Azerbaijan and Georgia. Journal of Applied Ichthyology 36 (4): 501-514. https://doi.org/10.1111/jai.14038
- Kuru M (1971). The fresh-water fish fauna of eastern Anatolia. İstanbul Üniversitesi Fen Fakültesi Mecmuası Seri B 36: 137-147.
- Kuru M (1975). Dicle-Fırat, Kura-Aras, Van Gölü ve Karadeniz Havzası tatlısularında yaşayan Balıkların (Pisces) Sistematik ve Zoocoğrafik Yönden İncelenmesi. Doçentlik Tezi, Atatürk Üniversitesi, Erzurum (in Turkish).
- Kuru M (1980b). A new fish species from Lake Van (Cyprinidae) (description). Hacettepe Bulletin of Natural Science and Engineering: a bulletin published by Hacettepe University, Faculty of Science 9: 97-102.
- Kuru M (1980a). Turkey Tatlısu Balıkları Katalogu 73 pp., Hacettepe Üniv. Fen Fak. Yay. Yardımcı Kitaplar Dizisi-1 (in Turkish).
- Kuru M (2004). Recent systematic status of inland water fishes of Turkey. Journal of Education Faculty of Gazi 24: 1-21.
- Kuru M, Yerli SV, Mangit F, Ünlü E, Alp A (2014). Fish Biodiversity in Inland Waters of Turkey. Journal of Academic Documents for Fisheries and Aquaculture 1 (3): 93-120.
- Kux Z, Steiner HM (1972). Lampetra lanceolata, eine neue Neunaugenart aus dem Einzugsgebiet des Schwarzen Meeres in der nordöstlichen Türkei. Časopis Moravského Musea, Acta Musei Moraviae, Vědy Přírodní / Scientiae Naturales No. 56/57 (for 1971-1971): 375-384 (in German).
- Lacepède BGE (1803). Histoire naturelle des poissons. v. 5: i-lxviii + 1-803 + index, Pls. 1-21. [Publication date: Hureau & Monod 1973, 2: 323 (in French).
- Ladiges W (1960). Süßwasserfische der Türkei, I. Teil Cyprinidae. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut 58: 105-150 (in German).
- Langeneck J, Englezou C, Di Maggio M, Castelli A, Maltagliati F (2021). Phylogeography of *Aphanius fasciatus* (Osteichthyes: Aphaniidae) in the Mediterranean Sea, with a focus on its conservation in Cyprus. Hydrobiologia 848: (1-23) 4093-4114.
- Leidenfrost G (1912). Kis-ázsiai halak. [Fishes from Asia Minor.]. Állatani Közlemények, Budapest 11: 125-132, 159-160 (in Hungarian).
- Lelek A (1987). The freshwater fishes of Europe. Threatened fishes of Europe. Aula-Verlag, Wiesbaden 9: 1-343
- Levin BA, Freyhof J, Lajbner Z, Perea S, Abdoli A et al. (2012). Phylogenetic relationships of the algae scraping cyprinid genus *Capoeta* (Teleostei: Cyprinidae). Molecular Phylogenetics and Evolution 62: 542-549. https://doi.org/10.1016/j.ympev.2011.09.004
- Levin BA, Prokofiev AM, Roubenyan HR (2019). A new species of algae eaters *Capoeta kaput* sp. nov. (Teleostei, Cyprinidae) from Transcaucasia. Inland Water Biology 12 (1): 32-41.
- Linnaeus C (1758). Systema Naturae, Ed. X. (Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Tomus I. Editio decima, reformata.) Holmiae. v. 1: i-ii + 1-824.

- Linnaeus C (1766). Systema naturae sive regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Laurentii Salvii, Holmiae. 12th ed. 1 (1): 1-532 (in Latin).
- Lortet L (1883). Études zoologiques sur la faune du lac de Tibériade, suivies d'un aperçu sur la faune des lacs d'Antioche et de Homs. I. Poissons et reptiles du lac de Tibériade et de quelques autres parties de la Syrie. Archives du Muséum d'Histoire Naturelle de Lyon 3: 99-189 (in French).
- Lovetsky A (1828). On the fishes belonging to the sturgeon genus and inhabiting waters of the Russian Empire. Novyi Magazin, Estestvennoi Istorii, Fiziki, Khimii i Svedenii i Svedenii Ekologicheskikh, Izdannyi 1. Dviubskim Part 2: 14-22, 73-79, 145-150.
- Mangit F, Yerli SV (2018). Systematic evaluation of the genus *Alburnus* (Cyprinidae) with description of a new species. Hydrobiologia 807 (1): 297-312. https://doi.org/10.1007/s10750-017-3405-y
- Marty VJ (1940). Systematics and biology of the Russian sturgeon of the Caucasian coast of the Black Sea. Zoologicheskii Zhurnal 19 (6): 865-872.
- McEachran JD, Fechhelm JD (1998). Fishes of the Gulf of Mexico. Volume 1: Myxiniformes to Gasterosteiformes. Univ. of Texas Press, Austin. 1-1112.
- Mouludi-Saleh A, Eagderi S, Abbasi K, Nasri M (2022). Validation of two sympatric fish species of Urmia chub, *Petroleuciscus ulanus* and Urmia bleak, *Alburnus atropatenae*, based on morphologic characters in MahabadChai River. Nova Biologica Reperta 8: 289-296.
- Mousavi-Sabet H, Eagderi S, Saemi-Komsari M, Kaya C, Freyhof J (2022). *Garra rezai*, a new species from two widely disjunct areas in the Tigris drainage (Teleostei: Cyprinidae). Zootaxa 5195 (5): 419-436.
- Nalbant TT (1998). The presence of the genus *Schistura* (Pisces: Ostariophysi: Nemacheilidae) in Tigris drainage, western Asia. The description of a new species. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa" No. 40: 371-375.
- Naseka AM, Erk'akan F, Küçük F (2006). A description of two new species of the genus Gobio from central Anatolia (Turkey) (Teleostei: Cyprinidae). Zoosystematica Rossica 15: 185-194.
- Nellen W, Ruckes E (1975). Die Nutzbarmachung des Assadsees, Arabische Republik Syrien, filr die Fischerei und M6glichkeiten einer UnterstUtzung durch die Bundesrepublik Deutschland.
  Studie ftlr die Deutsche Gesellschaft ftlr Technische Zusammenarbeit, Projekt-Nr.: 62.2195.6 (75.2007.5), Kiel & Berlin, 124 pp (in German).
- Nelson JS, Grande TC, Wilson MVH (2016). Fishes of the World. Fifth edition. John Wiley & Sons, Inc, Hoboken, New Jersey, 707.
- Neu W (1937). Burdur gölünden çikan *Cyprinodon sureyanus* n. sp. [Cyrinodon [sic] sureyanus n. sp. aus dem Burdur Göl]. Revue de la Faculté des Sciences de l'Université d'Instanbul, Série B: Sciences Naturelles 2 (2): 109-113.

- Nordmann A von (1840-1842). Prodrome de l'ichthyologie pontique. Pp. 353-635, 748-755, Pisces Pls. 1-32. In: Démidoff, A. de (editor). Voyage dans la Russie méridionale et la Crimée. V. 3. E. Bourdin et Ce, Paris (in French).
- Özulug M, Freyhof J (2007). Rediagnosis of four species of *Alburnus* from Turkey and description of two new species (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 18: 233-247.
- Özulug M, Freyhof J (2008b). *Alburnus demiri*, a new species of bleak from Western Anatolia, Turkey (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 18: 307-312.
- Özulug M, Freyhof J (2011). Revision of the genus *Squalius* in Western and Central Anatolia, with description of four new species (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 22: 107-148.
- Özulug M, Geiger MF, Freyhof J (2018). *Alburnus goekhani*, a new species of bleak from the Anatolian Black Sea basin (Teleostei: Leuciscidae). Zootaxa 4410 (1): 29-40. https://doi. org/10.11646/zootaxa.4425.1.2
- Pallas PS (1771-1778). Reise durch verschiedene Provinzen des russischen Reiches. St. Petersburg. 3 vols. [vol. 1, 1771: 12 unnumb. index, + Pls. A-Z, AA-NN] (in German).
- Pallas PS (1814). Zoographia Rosso-Asiatica, sistens omnium animalium in extenso Imperio Rossico et adjacentibus maribus observatorum recensionem, domicilia, mores et descriptiones anatomen atque icones plurimorum. 3 vols. (1811-1814]. Academia Scientiarum, Petropolis [Sankt Petersburg]. v. 3: i-vii + 1-428 + index (I-CXXV), Pls. 1, 13, 14, 15, 20 and 21.
- Pellegrin J (1911). Poissons de Syrie recueillis par H. Gadeau de Kerville. Bulletin de la Société Zoologique de France 36: 107-111 (in French).
- Pellegrin J (1927). Description d'un cyprinidé nouveau d'Asie Mineure. Bulletin de la Société Zoologique de France 52 (for 1927): 34-35 (in French).
- Perea S, Böhme M, Zupančič P, Freyhof J, Šanda R et al. (2010). Phylogenetic relationships and biogeographical patterns in circum-Mediterranean subfamily Leuciscinae (Teleostei, Cyprinidae) inferred from both mitochondrial and nuclear data. BMC Evolutionary Biology 10 (265): 1-27.
- Peters W (CH) (1859). Eine neue vom Herrn Jagor im atlantischen Meere gefangene Art der Gattung Leptocephalus, und über einige andere neue Fische des Zoologischen Museums. Monatsberichte der Königlichen Preussischen Akademie der Wissenschaften zu Berlin 1859: 411-413 (in German).
- Pfleiderer SJ, Geiger MF, Herder F (2014). *Aphanius marassantensis*, a new toothcarp from the Kızılırmak drainage in northern Anatolia (Cyprinodontiformes: Cyprinodontidae). Zootaxa 3887: 569-582. https://doi.org/10.11646/Zootaxa.3887.5.4
- Pietschmann V (1913). Eine neue *Glyptosternum*-Art aus dem Tigris. Anzeiger der Kaiserlichen Akademie der Wissenschaften in Wien, Mathematisch-Naturwissenschaftlichen Klasse 50 (8): 93-95 (in German).

- Pietschmann V (1933). Drei neue Fischarten (Cypriniden) aus Kleinasien. Anzeiger der Akademie der Wissenschaften in Wien, Mathematisch-Naturwissenschaftliche Klasse 70: 21-23 (in German).
- Prokofiev AM (2009). Problems of the classification and phylogeny of Nemacheiline loaches of the group lacking the preethmoid I (Cypriniformes: Balitoridae: Nemacheilinae). Journal of Ichthyology 49 (10): 874-898.
- Rauchenberger M (1989). Systematics and biogeography of the genus *Gambusia* (Cyprinodontiformes: Poecilidae). American Museum Novitates No. 2951: 1-74.
- Richardson J (1845). Ichthyology.-Part 3. In: Hinds RB (editor) The zoology of the voyage of H. M. S. Sulphur, under the command of Captain Sir Edward Belcher, R. N, C. B, F. R. G. S, etc, during the years 1836-42, No. 10. London: Smith, Elder & Co. 99-150, Pls. 55-64.
- Richardson J (1857). On some fish from Asia Minor and Palestine. Proceedings of the Zoological Society of London 1856 (pt 24) (art. 2): 371-377.
- Risso A (1810). Ichthyologie de Nice, ou histoire naturelle des poissons du Département des Alpes Maritimes. F. Schoell, Paris. i-xxxvi + 1-388, Pls. 1-11 (in French).
- Risso A (1827). Histoire naturelle des principales productions de l'Europe méridionale, et particulièrement de celles des environs de Nice et des Alpes maritimes. F. G. Levrault, Paris & Strasbourg. 3: i-xvi + 1-480, Pls. 1-16 (in French).
- Robalo JI, Almada VC, Levy A, Doadrio I (2007). Re-examination and phylogeny of the genus *Chondrostoma* based on mitochondrial and nuclear data and the definition of 5 new genera. Molecular Phylogenetics and Evolution 42: 362-372.
- Roberts TR (1994). Systematic revision of Asian bagrid catfishes of the genus *Mystus* sensu stricto, with a new species from Thailand and Cambodia. Ichthyological Exploration of Freshwaters 5 (3): 241-256.
- Russell A (1794). Natural History of Aleppo. Second Edition, revised by P. Russell. v. 2: i-vii + 1-430 + i-xxxiv + 26 p. index, Pls. 1-16.
- Saad A, Çiçek E, Esmaeili HR, Fricke R, Sungur S et al. (2023). Freshwater fishes of Syria: a revised and updated annotated checklist-2023. Zootaxa 5350 (1): 1-62.
- Saç G, Özuluğ M (2015). New data on the distribution and conservation status of *Phoxinus strandjae* (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 25: 381-383.
- Saç G, Özuluğ M, Geiger MF, Freyhof J (2023). Pseudophoxinus cilicicus, a new spring minnow from southern Anatolia (Teleostei: Leuciscidae). Zootaxa 4671 (1): 105-118.
- Şahin F, Seçer B, Sungur S, Çiçek E (2022). Osteological characterization of Seminemacheilus lendlii (Hankó 1925) (Actinopterygii: Nemacheilidae). Acta Biologica Turcica 35 (4): D7:1-10.
- Sanjur OI, Carmona JA, Doadrio I (2003). Evolutionary and biogeographical patterns within Iberian populations of the genus Squalius inferred from molecular data. Molecular Phylogenetics and Evolution 29: 20-30.

- Sauvage H-E (1882). Catalogue des poissons recueillis par M. E. Chantre pendant son voyage en Syrie, Haute-Mésopotamie, Kurdistan et Caucase. Bulletin de la Société philomathique de Paris (7th Série) 6: 163-168 (in French).
- Saygun S, Ağdamar S, Özuluğ M (2021). Oxynoemacheilus fatsaensis, a new nemacheilid loach from the Elekçi Stream in Northern Anatolia (Teleostei: Nemacheilidae). Journal of Comparative Zoology 294: 39-49. https://doi.org/10.1016/j.jcz.2021.07.011
- Sayyadzadeh G, Esmaeili HR (2020). *Oxynoemacheilus marunensis*, a new loach species from the Persian Gulf basin with remarks on *O. frenatus* (Teleostei: Nemacheilidae). Zootaxa 4885 (2): 189-206.
- Schöffmann J (2021). Trout and salmon of the genus *Salmo*. American Fisheries Society, Bethseda, MD: i-xxi + 1-303. Trout and salmon of the genus *Salmo*.
- Schöter C, Özulug M, Freyhof J (2009). *Capoeta caelestis*, a new species from Göksu River, Turkey (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 20: 229-236.
- Seegers L (1996). The fishes of the Lake Rukwa drainage. Annales, Musée Royal de l'Afrique Centrale, Tervuren, Série in 80, Sciences Zoologiques 278: 1-407.
- Segherloo IH, Freyhof J, Berrebi P, Ferchaud A-L, Geiger MF et al. (2021). A genomic perspective on an old question: Salmo trouts or Salmo trutta (Teleostei: Salmonidae)? Molecular Phylogenetics and Evolution 162 (art. 107204): 1-16.
- Sekercioglu ÇH, Anderson S, Akçay E, Bilgin R, Can ÖE et al. (2011). Turkey's globally important biodiversity in crisis. Biological Conservation 144: 2752-2769. https://doi.org/10.1016/j. biocon.2011.06.025
- Skelton PH, Teugels GG (1992). Neotype description for the African catfish *Clarias gariepinus* (Burchell, 1822) (Pisces: Siluroidei, Clariidae). Ichthyological Bulletin of the J. L. B. Smith Institute of Ichthyology 56: 1-7.
- Sözer F (1942). Türkiye Cyprinodontid'leri hakkında. Contributions à la connaissance des Cyprinodontides de la Turquie. Revue de la Faculté des Sciences de l'Université d'Instanbul, Série B: Sciences Naturelles 7 (4): 307-316.
- Steindachner F (1863). Ueber eine neue Alburnus-Art aus Syrien. Sitzungsberichte der Mathematisch-Naturwissenschaftlichen Classe der Kaiserlichen Akademie der Wissenschaften 48 (1. Abth.): 193-194 (in German).
- Steindachner F (1864). Ichthyologische Mittheilungen. (VII.) [With subtitles I-VIII]. Verhandlungen der K.-K. zoologischbotanischen Gesellschaft in Wien 14: 223-232, Pls. 7-8 (in German).
- Steindachner F (1897). Bericht über die von Dr. Escherich in der Umgebung von Angora gesammelten Fische und Reptilien. Denkschriften der Kaiserlichen Akademie der Wissenschaften in Wien, Mathematisch-Naturwissenschaftliche Classe. 64: 685-699 (in German).
- Stoumboudi MTh, Kottelat M, Barbieri R (2006). The fishes of the inland waters of Lesbos Island, Greece. Ichthyological Exploration of Freshwaters 17: 129-146.

- Sungur S, Çapar OB, Çiçek E & Eagderi S (2023a). Threatened fishes of the world: *Cobitis joergbohleni* (Teleostei: Cobitidae) with a suggestion of the IUCN Red List category. Taxa 2: ad23202, 7p.
- Sungur S, Çapar OB, Çiçek E & Eagderi S (2023b). Threatened fishes of the world: Seminemacheilus ahmeti Sungur, Jalili, Eagderi & Çiçek, 2018 (Teleostei: Nemacheilidae) with a suggestion of the IUCN Red List category. Taxa 1: ad23103, 7p.
- Sungur S, Jalili P, Eagderi S (2017). Oxynoemacheilus ciceki, new nemacheilid species (Teleostei, Nemacheilidae) from the Sultan Marsh, Kayseri Province, Turkey. Iranian Journal of Ichthyology 4 (4): 375-383.
- Sungur S, Jalili P, Eagderi S, Çiçek E (2018). *Seminemacheilus ahmeti*, a new species of Nemachelid from Sultan Marshes, Turkey. FishTaxa 3 (2): 466-473.
- Tan M, Armbruster JW (2018). Phylogenetic classification of extant genera of fishes of the order Cypriniformes (Teleostei: Ostariophysi). Zootaxa 4476 (1): 006-039. https://doi. org/10.11646/zootaxa.4476.1.4
- Temminck CJ, Schlegel H (1846). Pisces. In: Siebold PF de (editor): Fauna Japonica, sive descriptio animalium, quae in itinere per Japoniam ... suscepto annis 1823-1830 collegit, notis, observationibus et adumbrationibus illustravit Ph. Fr. de Siebold. Lugduni Batavorum [Leiden] (A. Arnz et soc.). Parts 10-14: 173-269 (in Latin).
- Teugels GG (1982). Preliminary results of a morphological study of five African species of the subgenus Clarias (Clarias) (Pisces; Clariidae). Journal of Natural History 16 (3): 439-464.
- Teugels GG (1986). Clariidae (pp. 66-101). In: Daget J, Gosse JP, Thys van den Audenaerde DFE (editors.) 1986. Check-list of the freshwater fishes of Africa. CLOFFA. ISNB Bruxelles, MRAC Tervuren, ORSTOM Paris. v. 2: i-xiv + 1-520.
- Thomson JM (1997). The Mugilidae of the World. Memoirs of the Queensland Museum 41 (3): 457-562.
- Tortonese E (1954). The trouts of Asiatic Turkey. Publications Institute Hydrobiology University of Istanbul (Sér. B) 2 (1): 1-26.
- Turan D (2022). Description of a new species Squalius from Lake Hazar and upper Tigris River drainages in Anatolia (Teleostei: Leuciscidae). Journal of Anatolian Environmental and Animal Sciences 7 (3): 336-340.
- Turan D, Aksu İ, Oral M, Kaya C, Bayçelebi E (2021). Contribution to the trout of Euphrates River, with description of a new species, and range extension of *Salmo munzuricus* (Salmoniformes, Salmonidae). Zoosystematics and Evolution 97 (2): 471-482. https://doi.org/10.3897/zse.97.72181
- Turan D, Aksu S (2021). A new trout species from Southern Marmara Sea drainages (Teleostei: Salmonidae). Journal of Anatolian Environment and Animal Sciences 6 (2): 232-239.
- Turan D, Bayçelebi E (2020). First record of Salmo pelagonicus Karaman, 1938 (Teleostei: Salmonidae) in the Karamenderes River, Turkey. Journal of Anatolian Environment and Animal Sciences 5 (4): 551-555.
- Turan D, Aksu, S, Kalayci G (2023c). Two new Oxynoemacheilus species in western Anatolia (Teleostei, Nemacheilidae). Zoosystematics and Evolution 99 (2): 439-455. https://doi. org/10.3897/zse.99.102575
- Turan D, Bayçelebi E, Kalayci G (2023a). Oxynoemacheilus marmaraensis, a new species from the Susurluk River, Türkiye (Teleostei: Nemacheilidae). Journal of Fish Biology 2023: 1-7. https://doi.org/10.1111/jfb.15506
- Turan D, Bayçelebi E, Özuluğ M, Gaygusuz Ö, Aksu İ (2023b). Phoxinus abanticus, a new species from the Lake Abant drainage in Turkey (Teleostei: Leuciscidae). Journal of Fish Biology 102 (5): 1157-1167. https://doi.org/10.1111/jfb.15371
- Turan D, Bektas Y, Kaya C, Bayçelebi E (2016a). Alburnoides diclensis (Actinopterygii: Cyprinidae), a new species of cyprinid fish from the upper Tigris River, Turkey. Zootaxa 4067 (1): 79-87. https://doi.org/10.11646/zootaxa.4067.1.6
- Turan D, Kaya C, Geiger MF, Freyhof J (2018a). Barbus anatolicus, a new barbel from the Kızılırmak and Yesilirmak River drainages in northern Anatolia (Teleostei: Cyprinidae). Zootaxa 4461 (4): 539-557. https://doi.org/10.11646/zootaxa.4461.4.5
- Turan D, Dogan E, Kaya C, Kanyilmaz M (2014c). Salmo kottelati, a new species of trout from Alakir Stream, draining to the Mediterranean in southern Anatolia, Turkey (Teleostei, Salmonidae). ZooKeys 462: 135-151. https://doi.org/10.3897/ zookeys.462.8177
- Turan D, Ekmekçi FG, Ilhan A, Engin S (2008b). Luciobarbus kottelati, a new species of barbel (Teleostei: Cyprinidae) from the Büyük Menderes River, Turkey, with rediagnose of L. lydianus. Zootaxa 1824: 35-44. https://doi.org/10.11646/ zootaxa.1824.1.4
- Turan D, Ekmekçi FG, Kaya C, Güçlü SS (2013b). Alburnoides manyasensis (Actinopterygii, Cyprinidae), a new species of cyprinid fish from Manyas Lake basin, Turkey. ZooKeys 276: 85-102. https://doi.org/10.3897/zooKeys.276.4107
- Turan D, Ekmekçi FG, Luskova V, Mendel J (2012a). Description of a new species of genus *Gobio* from Turkey (Teleostei: Cyprinidae). Zootaxa 3257: 56-65. https://doi.org/10.11646/ zootaxa.3257.1.4
- Turan D, Japoshvili B, Aksu I, Bektas Y (2016b). Description of two new species of the genus *Gobio* (Teleostei: Cyprinidae) from the Black Sea coast of Turkey. Zoology in the Middle East 62: 112-124. http://dx.doi.org/10.1080/09397140.2016.1182779
- Turan D, Kalayci G, Bektas Y, Kaya C, Baycelebi E (2020). A new species of trout from the northern drainages of Euphrates River, Turkey (Salmoniformes: Salmonidae). Journal of Fish Biology 96 (6): 1454-1462. https://doi.org/10.1111/jfb.14321.
- Turan D, Kalayci G, Kaya C, Bektas Y, Küçük F (2018b). A new species of *Petroleuciscus* (Teleostei: Cyprinidae) from the Büyük Menderes River, southwestern Anatolia, Turkey. Journal of Fish Biology 92: 875-887. https://doi.org/10.1111/jfb.13525
- Turan D, Kaya C, Aksu İ, Bektaş Y (2022b). *Paracapoeta*, a new genus of the Cyprinidae from Mesopotamia, Cilicia and Levant (Teleostei, Cypriniformes). Zoosystematics and Evolution 98 (2): 201-212.

- Turan D, Kaya C, Aksu, I, Bayçelebi E, Bektas Y (2019b). Alburnoides coskuncelebii, a new species from the stream Büyük Melen in north western Anatolia (Teleostei: Leuciscidae). Ichthyological Exploration of Freshwaters 29 (3): 201-210. http://doi. org/10.23788/IEF-1107
- Turan D, Kaya C, Bayçelebi E, Aksu I, Bektas Y (2017c). Gobio baliki, a new gudgeon from Turkey (Teleostei: Cyprinidae). Zootaxa 4350 (2): 284-290. https://doi.org/10.11646/zootaxa.4350.2.4
- Turan D, Kaya C, Bayçelebi E, Aksu I, Bektas Y (2018c). Description of Gobio fahrettini, a new gudgeon from Lake Ilgin basin, Central Anatolia (Teleostei: Gobionidae). Ichthyological Exploration of Freshwaters 28 (4): 365-373. https://doi.org/10.23788/ief-1073
- Turan D, Kaya C, Bayçelebi E, Bektas Y, Ekmekçi FG (2017a). Three new species of *Alburnoides* from the southern Black Sea basin (Teleostei: Cyprinidae). Zootaxa 4242 (3): 565-577. https://doi. org/10.11646/zootaxa.4242.3.8
- Turan D, Kaya C, Ekmekçi FG, Dogan E (2014a). Three new species of *Alburnoides* (Teleostei: Cyprinidae) from Euphrates River, Eastern Anatolia, Turkey. Zootaxa 3754: 101-116. https://doi. org/10.11646/zootaxa.3754.2.1
- Turan D, Kaya C, Kalayci G, Bayçelebi E, Aksu I (2019b). Oxynoemacheilus cemali, a new species of stone loach (Teleostei: Nemacheilidae) from the Çoruh River drainage, Turkey. Journal of Fish Biology 94 (3): 458-468. https://doi.org/10.1111/jfb.13909.
- Turan D, Kottelat M, Bayçelebi E (2017b). Squalius semae, a new species of chub from the Euphrates River, Eastern Anatolia (Teleostei: Cyprinidae). Zoology in the Middle East 63 (1): 33-42. https:// dx.doi.org/10.1080/09397140.2017.1290761
- Turan D, Kottelat M, Bektas Y (2011). Salmo tigridis, a new species of trout from Tigris River, Turkey (Teleostei: Salmonidae). Zootaxa 2993: 23-33. https://doi.org/10.11646/zootaxa.2993.1.2
- Turan D, Kottelat M, Dogan E (2013a). Two new species of Squalius, S. adanaensis and S. seyhanensis (Teleostei: Cyprinidae), from the Seyhan River in Turkey. Zootaxa 3637: 308-324. https://doi. org/10.11646/zootaxa.3637.3.4
- Turan D, Kottelat M, Ekmekçi FG (2008). Capoeta erhani, a new species of cyprinid fish from Ceyhan River, Turkey (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 19 (3): 263-270.
- Turan D, Kottelat M, Ekmekçi FG (2008a). Capoeta erhani, a new species of cyprinid fish from Ceyhan River, Turkey (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters 19: 263-270.
- Turan D, Kottelat M, Ekmekçi FG (2009a). Barbus niluferensis, a new species of barbel (Teleostei: Cyprinidae) from Nilüfer River, Turkey, with re-description of B. oligolepis. Zootaxa 1981: 15-28. https://doi.org/10.11646/zootaxa.1981.1.2
- Turan D, Kottelat M, Ekmekçi FG, Imamoglu HO (2006). A review of *Capoeta tinca*, with descriptions of two new species from Turkey (Teleostei: Cyprinidae). Revue Suisse de Zoologie 113 (2): 421-436. https://doi.org/10.5962/bhl.part.80358
- Turan D, Kottelat M, Engin S (2010). Two new species of trouts, resident and migratory, sympatric in streams of northern Anatolia (Salmoniformes: Salmonidae). Ichthyological Exploration of Freshwaters 20: 333-364.

- Turan D, Kottelat M, Engin S (2012b). The trouts of the Mediterranean drainages of southern Anatolia, Turkey, with description of three new species (Teleostei: Salmonidae). Ichthyological Exploration of Freshwaters 23: 219-236.
- Turan D, Kottelat M, Engin S (2014b). Two new species of trouts from the Euphrates drainage, Turkey (Teleostei: Salmonidae). Ichthyological Exploration of Freshwaters 24: 275-287.
- Turan D, Kottelat M, Kaya C (2017d). Salmo munzuricus, a new species of trout from the Euphrates River drainage, Turkey (Teleostei: Salmonidae). Ichthyological Exploration of Freshwaters 28: 55-63.
- Turan D, Kottelat M, Kaya C (2022a). The trouts of the upper Kura and Aras rivers in Turkey, with description of three new species (Teleostei: Salmonidae). Zootaxa 5150 (1): 43-64. https://doi. org/10.11646/zootaxa.5150.1.2
- Turan D, Küçük F, Güçlü SS, Aksu I (2021). Turcichondrostoma, a new genus for the Leuciscidae (Teleostei: Cypriniformes) from southwestern Anatolia. Journal of Fish Biology 99 (6): 1968-1977 (1-10).
- Turan D, Küçük, F, Kaya C, Güçlü SS, Bektas Y (2017e). Capoeta aydinensis, a new species of scraper from southwestern Anatolia, Turkey (Teleostei: Cyprinidae). Turkish Journal of Zoology 41: 436-442. https://doi.org/10.3906/zoo-1510-43
- Turan D, Yilmaz BT, Kaya C (2009b). Squalius kottelati, a new cyprinid species (Teleostei: Cyprinidae) from Orontes River Turkey. Zootaxa 2270: 53-62. https://doi.org/10.11646/ zootaxa.2270.1.3
- Türkmen G (2019). First record of the guppy (*Poecilia reticulata* Peters, 1859) in inlandwaters of Turkey. Journal of Fisheries and Aquatic Sciences 36 (4): 397-400. https://doi.org/10.12714/egejfas.36.4.11
- Uzunova E, Zlatanova S (2007). A review of the fish introductions in Bulgarian freshwaters. Acta Ichthyologica et Piscatoria 37: 55-61.
- Valdesalici S, Brahimi A, Freyhof J (2019). First record of Aphanius almiriensis from Italy and notes on the distribution of Aphanius fasciatus (Teleostei: Aphaniidae). Journal of Applied Ichthyology 35: 541-550. https://doi.org/10.1111/jai.13873
- Vasil'eva ED, Vasil'ev VP (2006). *Cobitis pontica* sp. nova a new spined loach species (Cobitidae) from Bulgarian waters. Journal of Ichthyology 46: 15-20. https://doi.org/10.1134/ S003294520610002X
- Walbaum JJ (1792). Petri Artedi sueci genera piscium. In quibus systema totum ichthyologiae proponitur cum classibus, ordinibus, generum characteribus, specierum differentiis, observationibus plurimis. Redactis speciebus 242 ad genera 52. Ichthyologiae pars III. Ant. Ferdin. Rose, Grypeswaldiae (Greifswald). Part 3: [i-viii] + 1-723, Pls. 1-3 (in Latin).
- Weber C (1991). Nouveaux taxa dans Pterygoplichthys sensu lato (Pisces, Siluriformes, Loricariidae). Revue Suisse de Zoologie 98 (3): 637-643 (in French).
- Wheeler AC (1958). The Gronovius fish collection: a catalogue and historical account. Bulletin of the British Museum (Natural History) Historical Series 1 (5): 185-249, Pls. 26-34.

- Whitehead PJP, Bauchot M-L, Hureau J.-C, Nielsen JG, Tortonese E (1986). Fishes of the North-eastern Atlantic and the Mediterranean. Vol. III. UNESCO. 1015-1473.
- Wildekamp RH, Küçük F, Ünlüsayin M, van Neer W (1999) Species and subspecies of the genus *Aphanius* Nardo, 1897 [sic] (Pisces: Cyprinodontidae) in Turkey. Turkish Journal of Zoology 23: 23-44.
- Wildekamp RH, Valkenburg K (1994). Notizen über Zahnkarpfen-Lebensräume in Anatolien. Die Aquarien und Terrarien Zeitschrift 47 (7): 447-453 (in German).
- Woltereck R, Neu W (1934). Untersuchungen an türkischen Seen. Internationale Revue der Gesamten Hydrobiologie und Hydrographie, Leipzig v. 30 (nos 5-6): 440-452. [Part I by Woltereck, Part II by Neu and subtitled: Der Zwerghering des Albuliond Göl: *Clupeonella muhlisi* n. sp. (446-452) (in German).
- Yogurtçuoglu B, Freyhof J (2018). *Aphanius irregularis*, a new killifish from south-western Anatolia (Cyprinodontiformes: Aphaniidae). Zootaxa 4410 (2): 319-330. https://doi. org/10.11646/zootaxa.4410.2.4
- Yoğurtçuoğlu B, Kaya C, Geiger MF, Freyhof J (2020a). Revision of the genus *Seminemacheilus*, with the description of three new species (Teleostei: Nemacheilidae). Zootaxa 4802 (3): 477-501. https://doi.org/10.11646/zootaxa.4802.3.5.
- Yoğurtçuoğlu B, Kaya C, Freyhof J (2020b). Freshwater fishes of the Anatolian Midwestern Black Sea basin. Ichthyological Exploration of Freshwaters 30 (2): 111-130. http://doi. org/10.23788/IEF-1152
- Yoğurtçuoğlu B, Kaya C, Freyhof J (2021a). Oxynoemacheilus nasreddini, a new nemacheilid loach from Central Anatolia (Teleostei: Nemacheilidae). Zootaxa 4974 (1): 135-150.
- Yoğurtçuoğlu B, Kaya C, Özuluğ M, Freyhof J (2021b). *Oxynoemacheilus isauricus*, a new nemacheilid loach from Central Anatolia (Teleostei: Nemacheilidae). Zootaxa 4975 (2): 369-378.
- Yoğurtçuoğlu B, Kaya C, Freyhof J (2022). Revision of the *Oxynoemacheilus angorae* group with the description of two new species (Teleostei: Nemacheilidae). Zootaxa 5133 (4): 451-485. https://doi.org/10.11646/zootaxa.5133.4.1
- Yoğurtçuoğlu B, Kaya C, Atalay MA, Ekmekçi FG, Freyhof J (2023). Two new freshwater blennies from the Eastern Mediterranean basin (Teleostei: Blenniidae). Zootaxa 5311 (1): 85-104. https:// doi.org/10.11646/zootaxa.5311.1.4
- Zareian H, Esmaeili HR (2017). Mitochondrial phylogeny and taxonomic status of the *Capoeta damascina* species group (Actinopterygii: Cyprinidae) in Iran with description of a new species. Iranian Journal of Ichthyology 4 (3): 231-269. https:// doi.org/10.22034/iji.v4i3.23902.015