

## The Avifauna of Termessos National Park (Antalya-Turkey)

Hakan SERT\*, Ali ERDOĞAN

Akdeniz University, Faculty of Science and Art, Biology Department, 07058, Kampus, Antalya - TURKEY

Received: 12.03.2002

**Abstract:** The bird fauna of Termessos National Park, in south-central Anatolia about 37 km north-west of Antalya city centre, was studied between October 1998 and April 2000.

In the study area, 113 species of forest and mountain birds, belonging to 32 families, were recorded. Their residence status is as follows: 50 residents (R), 40 summer (S) and 14 winter visitors (W), 5 vagrants (V) and 4 passage migrants (Pm).

To show the national and international importance of Termessos National Park, the numbers of threatened bird species are compared with the Red Data Book of Turkey (total 51 threatened species: A.1.2 = 5, A.2 = 13, A.3 = 13, A.4 = 20) and the Classification of Species European Conservation Concern SPEC (total 72 threatened species: SPEC 1 = 1, SPEC 2 = 13, SPEC 3 = 26, SPEC 4 = 32) categories.

**Key Words:** avifauna, birds, breeding, Anatolia, Turkey, Termessos

### Termessos Milli Parkının (Antalya) Avifaunası

**Özet:** Akdeniz Bölgesinde, Antalya ilinin 37 km kuzey batısında korunmuş bir alan olan Termessos Milli Parkı'nın avifaunası Ekim 1998-Nisan 2000 tarihleri arasında çalışılmıştır. Araştırma alanında 32 familyaya ait 113 kuş türü tespit edilmiştir. Çalışma alanında saptanmış olan kuş türlerinden 50'si Yerli, 40'ı Yaz Göçmeni, 14'ü Kış Göçmeni, 4'ü Transit Göçer ve 5'i Vagranttır.

Termessos Milli Parkının kuşlar açısından ulusal ve uluslararası önemine bakmak için buradaki türlerin tehlike dereceleri Türkiye Kırmızı Kitap Kategorileri-RDB (A.1.2 = 5, A.2 = 13, A.3 = 13, A.4 = 20) ile Avrupa Koruma Kategorileri SPEC (SPEC 1 = 1, SPEC 2 = 13, SPEC 3 = 26, SPEC 4 = 32) karşılaştırılarak verilmiştir.

**Anahtar Sözcükler:** avifauna, kuşlar, üreme, Anadolu, Türkiye, Termessos

### Introduction

This paper intends to give an account of the avifauna of Termessos National Park in south-central Anatolia, by providing data on the seasonal occurrence of its species. Southern Turkey, especially Antalya, is a meeting place on the migratory route for bird species migrating to and from Europe and Russia in spring and autumn respectively. Termessos National Park, until now only known for its history, is a suitable feeding, breeding and resting area for the birds. For the most important species and groups of species we identify population trends and evaluate the avifauna in relation to the breeding and wintering of birds in neighbouring regions. Additionally, we present the numbers of endangered bird species in the

area, according to the Red Data Book (RDB) of Turkey (Kızıroğlu, 1993) and the Classification of Species of European Conservation Concern (SPEC) (Hagemeijer, 1997). Due to widespread illegal hunting in Turkey, many species of resident and migratory birds are under threat. Protected areas like Termessos are therefore important for the continued existence and safe migration of bird species. According to hunters from the villages around Termessos, chukar (*Alectoris chukar*) and common quail (*Coturnix coturnix*) populations have shown a large decrease in the last 10 years. The Eurasian woodcock (*Scolopax rusticola*), starling (*Sturnus vulgaris*) and many other species are absent today, probably because of illegal hunting, climate changes, careless use of pesticides and other unknown reasons).

\*Correspondence to: hakanhacer@yahoo.com

Despite there being a few relatively recent publications on the avifauna of Turkey (Kummerloeve, 1961; Cramp, 1988; Kizirođlu, 1989; Roselaar, 1995; Heinzel et al., 1996; Kirwan et al., 1998; Mullarney et al., 1999) and Antalya (Turan and Erdođan, 1998; Erdođan and Tunç, 1998) there are very few published ornithological studies on the forest and mountain birds of Turkey (Erdođan, 1996; Erdođan, 1998). Previous studies have mainly concentrated on wetlands. This study has been prepared as a starting point for further studies in the Antalya region.

### Study Area

Termessos National Park is an indispensable part of natural life in Antalya and has an interesting history and rich vegetation. The park is also ornithologically very interesting. The variety of habitats and the area's location in south-central Anatolia (Figure 1) give the area a rich

and varied fauna. Mean winter (December, January, February) temperatures in the area in 1996-2000 were 0.4 °C-13.7 °C (Antalya Meteorology Institute). The climate is also between the arid-cold central Anatolian and the moist-mild Mediterranean climates. In the Antalya region, the landscape is very variable, even within a small area, and this also affects bird populations. Thus, very different bird species can be recorded in areas very close to one another.

Termessos National Park is situated 34 km north-west of Antalya, within the borders of Antalya province in south-western Turkey (lat 37° 00' N long 30° 30' E) and covers an area of 6702 ha (Figure 1). The study area extends from Altkıkkavak (250 m a.s.l.) via Güllük Dađı. (1100 m a.s.l.), where the ancient city of Termessos is located, to the highest peak of Eren Tepe (1665 m a.s.l.). Due to the elevational range and the geographical location, temperature and precipitation also vary.

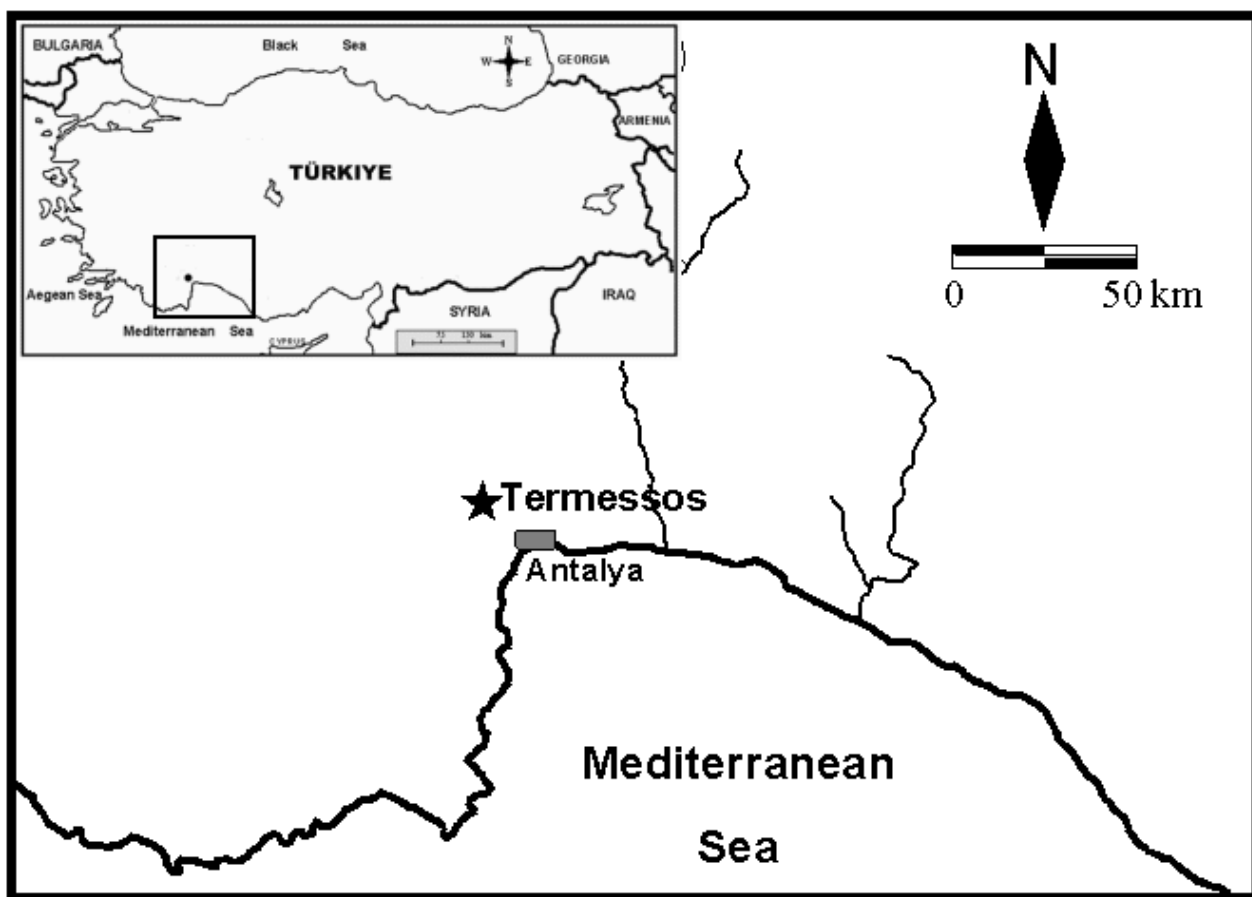


Figure 1. Map of Turkey, the Antalya region and the location of the study area.

In the research area, 680 species (80 endemic) of plants, belonging to 92 families and 392 genera, have been recorded. Four species are members of the divisio *Pteridophyta* and the remaining 676 species are members of the divisio *Spermatophyta* (Alçitepe, 1999). We identified the following six bird habitats, which cover Termessos National Park:

**1) Rocky Mountainous Regions (M):** Where ruins can be found in the research area and areas containing large rocky hills. Although this kind of region contains small rock plants in places it consists mainly of bare rocks.

**2) Broad-Leaved Scrubs/maquis (B):** These areas, unique to the Mediterranean region, are covered with evergreen trees, bushes, and small and large trees. The frequency and combination of plant species vary. Most of the National Park is covered with maquis vegetation. However, parts of the National Park contain a mixture of maqui and forest vegetation. Maquis are important for birds, providing fruit and safe nesting places, especially the following species: *Pistacia terebinthus*, *Quercus coccifera*, *Quercus infectoria*, *Myrtus communis*, *Smilax aspera*, *Daphne sericea*, *Laurus nobilis* and *Arbutus andrachne*. As maquis vegetation is dense and contains thorny plants it is quite difficult to walk in this habitat. The dominating plant species is the Kermes oak (*Q. coccifera*).

**3) Native Pine Woods (NP):** This type of habitat can only be found at low altitudes (250 m-650 m) and contains red pine (*Pinus brutia*) of various densities and ages. Especially on the Yenice side of Güllük Dağı, Mecine Boğazı, the National Park entrance and the first part of the road leading to the car park area red pine dominate the vegetation.

**4) Flat Grasslands (LH):** Grassy plants dominate these flat areas where farm animals sometimes graze. This habitat can be seen in Yenice. Flat grasslands are covered with short grasses, some with a lifespan of 1 year others with a longer lifespan; they are ideal places for bird observation. In the spring the area is covered with green grass, which turns yellow in mid-summer. Birds visiting in winter benefit from the seeds of these grasses, which remain dry until the following spring. There is also a high insect population in the summer which provides nourishment for insect-eating birds.

**5) Streams (S):** In the research area, from Mecine Boğazı to the trout farm, this kind of area is generally

covered with oleander (*Nerium oleander*) and plane (*Platanus orientalis*) trees and in some places with small reedbeds (*Typha* sp.). Many animals, including birds, visit this area in the dry summer months to drink water. The water level changes according to the season.

**6) Agricultural Lands (AL):** These are large olive production areas, which include gardens. There are pomegranate (*Punica granatum*) gardens near to the trout farm, orange (*Citrus sinensis*) gardens near to the Mecine Boğazı and allotments and olive gardens in Yenice. In the olive gardens, maquis and red pine and pear (*Pyrus* sp.) trees can be seen in some places. Individual tall, old red pine trees can be found in the olive gardens, proving that the area was previously covered with red pine forests. As this area is flat it contains sparse vegetation and bird observation is easy.

## Materials and Methods

In this study, we used the "point count" method which is suitable for conspicuous birds in woody or scrubby habitats and for the study of extensive areas (Bibby et al., 1992). In our study 35 observation points from 6 different bird habitats were selected as follows: 4 on flat grasslands (LH), 5 on broad-leaved scrubs/maquis (B), and 5 on agricultural lands (AL), 6 on montane (M), 7 on streams (S) and 7 on native pine woods (NP) (Figure 2). The points to be counted were selected systematically within the study area on suitable and different habitats (no closer than 800 m).

During the observation period between October 1998 and April 2000 the area was visited 51 times (bi-weekly during winter and part of the migration season and weekly during part of the migration and breeding seasons). In summer and winter approximately 70% of the observation points and in spring (during breeding and migration) and autumn (during migration) all 35 observation points were visited. Observations were carried out for variable periods at 35 points representative of the different habitats in the study site (conducted between 6 00 and 1900 o'clock).

The number of species observed is different at different times of the year. In Table 2 the highest number observed for each species is given.

The breeding status of birds observed was defined using only 11 codes from the 16 European Bird Census

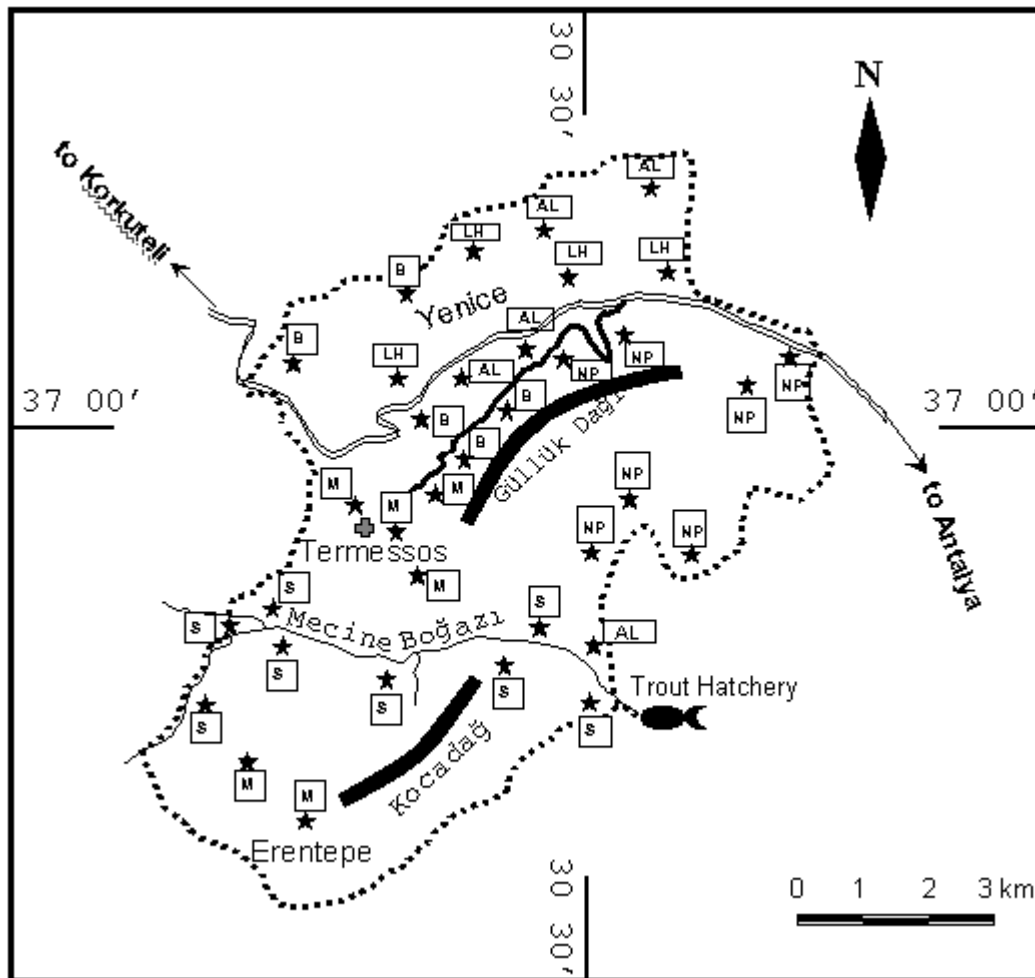


Figure 2. Observation points in Termessos National Park.

B = Broad-leaved scrubs/maquis, M = Rocky Mountainous Regions, NP = Native Pine Woods  
 S = Streams, AL = Agricultural Lands, LH = Flat Grasslands, = Border, = Mountain

Council (EBCC) codes (Hagemeijer, 1997), divided into 3 categories: probable breeding, confirmed breeding and non breeding (Table 1).

### Results

Table 2 presents a list of the species recorded, together with information on their residence status and the maximum number of observed birds. The table also presents the breeding status (Table 1) according to Hagemeijer (1997), and threat categories according to the RDB categorisation of Turkey (Kiziroğlu, 1993) and the Classification of Species of European Conservation Concern according to Hagemeijer (1997).

In the study area, 113 species of forest and mountain birds, belonging to 32 families, were recorded. Their residence status is as follows: 50 residents (R), 40 summer (S) and 14 winter visitors (W), 5 vagrants (V) and 4 passage migrants (Pm). Breeding status was as follows: 48 confirmed breeding, 39 probable breeding, 26 non breeding. Finally 51 bird species are endangered according to the Red Data Book of Turkey and 72 bird species are endangered according to SPEC classifications.

### Discussion

This is the first avifaunistic study of Termessos National Park in addition to 2 recently published

Table 1. Breeding status.

## A: Probable Breeding (P)

1. Pair observed in suitable nesting habitat in breeding season
2. Permanent territory presumed through registration of territorial behaviour (song etc.) on at least 2 different days a week or more apart at the same place
3. Courtship and display
4. Visiting probable nest site
5. Agitated behaviour or anxiety calls from adults

## B: Confirmed Breeding (C)

6. Used nest or eggshells found (occupied or laid within period of survey)
7. Recently fledged young or downy young
8. Adults entering or leaving nest-site in circumstances indicating occupied nest or adult seen incubating
9. Adult carrying faecal sac or food for young
10. Nest containing eggs
11. Nest with young seen or heard

## C: Non-Breeding (-)

Table 2. List of bird species observed in Termessos National Park.

Species	St	Br	Nr	RDB	Spec
1. Short-toed Eagle <i>Circetus gallicus</i>	S	P	1	A.1.2	3
2. Eurasian Sparrowhawk <i>Accipiter nisus</i>	R	P	3	A.2	-
3. Common Buzzard <i>Buteo buteo</i>	V	-	2	A.4	-
4. Long-legged Buzzard <i>Buteo rufinus</i>	S	C	3	A.3	3
5. European Honey Buzzard <i>Pernis apivorus</i>	S	C	1	A.3	4
6. Common Kestrel <i>Falco tinnunculus</i>	R	-	5	A.4	3
7. Lesser Kestrel <i>Falco naumanni</i>	Pm	-	1	A.3	1
8. Peregrine Falcon <i>Falco peregrinus</i>	R	P	2	A.2	3
9. Lanner Falcon <i>Falco biarmicus</i>	V	-	1	A.2	3
10. Eleonora's Falcon <i>Falco eleonora</i>	Pm	-	1	A.1.2	2
11. Chukar <i>Alectoris chukar</i>	R	C	35	A.2	3
12. Common Quail <i>Coturnix coturnix</i>	S	P	5	A.4	3
13. Rock Dove <i>Columba livia</i>	R	P	64	--	-
14. Common Wood Pigeon <i>Columba palumbus</i>	R	C	117	A.4	4
15. Eurasian Collared Dove <i>Streptopelia decaocto</i>	R	P	54	--	-
16. European Turtle Dove <i>Streptopelia turtur</i>	S	P	19	A.2	3
17. Common Cuckoo <i>Cuculus canorus</i>	S	P	1	--	-
18. Eurasian Eagle Owl <i>Bubo bubo</i>	R	P	5	A.1.2	3
19. Long-eared Owl <i>Asio otus</i>	R	P	2	A.2	-
20. European Scops Owl <i>Otus scops</i>	S	C	8	A.3	2
21. Little Owl <i>Athene noctua</i>	R	P	2	A.3	3
22. Tawny Owl <i>Strix aluco</i>	R	P	2	A.1.2	4
23. European Nightjar <i>Caprimulgus europaeus</i>	S	P	6	A.2	2
24. Common Swift <i>Apus apus</i>	S	P	167	A.4	-
25. Alpine Swift <i>Apus melba</i>	S	C	66	A.4	-
26. Common Kingfisher <i>Alcedo atthis</i>	R	P	6	A.1.2	3

Table 2. Continued

Species	St	Br	Nr	RDB	Spec
27. European Bee-eater <i>Merops apiaster</i>	S	P	60	A.4	3
28. European Roller <i>Coracias garullus</i>	S	P	2	A.2	2
29. Eurasian Hoopoe <i>Upupa epops</i>	S	C	17	A.2	-
30. Eurasian Wryneck <i>Jynx torquilla</i>	Pm	-	1	A.3	3
31. European Green Woodpecker <i>Picus viridis</i>	V	-	1	A.2	2
32. Great Spotted Woodpecker <i>Dendrocopos major</i>	R	P	3	A.3	-
33. Syrian Woodpecker <i>Dendrocopos syriacus</i>	R	C	3	A.3	4
34. Middle Spotted Woodpecker <i>Dendrocopos medius</i>	R	P	5	A.3	4
35. White-backed Woodpecker <i>Dendrocopos leucotos</i>	R	P	2	A.2	-
36. Lesser Spotted Woodpecker <i>Dendrocopos minor</i>	R	P	2	A.4	-
37. Crested Lark <i>Galerida cristata</i>	R	C	16	--	3
38. Wood Lark <i>Lullula arborea</i>	R	C	18	--	2
39. Eurasian Skylark <i>Alauda arvensis</i>	R	C	8	--	3
40. Barn Swallow <i>Hirundo rustica</i>	S	P	60	--	3
41. Red-rumped Swallow <i>Hirundo daurica</i>	S	C	8	--	-
42. Eurasian Craig Martin <i>Hirundo rupestris</i>	R	P	13	--	-
43. Common House Martin <i>Delichon urbica</i>	S	-	12	A.4	-
44. Meadow Pipit <i>Anthus pratensis</i>	W	-	4	--	4
45. Water Pipit <i>Anthus spinoletta</i>	W	-	4	A.4	-
46. Grey Wagtail <i>Motacilla cinerea</i>	R	C	15	A.4	-
47. White Wagtail <i>Motacilla alba</i>	R	C	18	A.4	-
48. White-spectacled Bulbul <i>Pycnonotus xanthopygos</i>	S	C	16	A.4	-
49. Winter Wren <i>Troglodytes troglodytes</i>	R	C	19	A.3	-
50. Rufous-tailed Scrub Robin <i>Cercotrichas galactotes</i>	S	P	5	--	-
51. European Robin <i>Erithacus rubecula</i>	W	-	72	--	4
52. Common Nightingale <i>Luscinia megarhynchos</i>	S	P	6	A.3	4
53. Black Redstart <i>Phoenicurus ochrurus</i>	W	-	54	--	-
54. Common Red Start <i>Phoenicurus phoenicurus</i>	S	C	68	--	2
55. Common Stonechat <i>Saxicola torquata</i>	S	-	15	A.3	3
56. Northern Wheatear <i>Oenanthe oenanthe</i>	S	P	6	--	-
57. Pied Wheatear <i>Oenanthe pleschanka</i>	S	C	8	--	-
58. Black-eared Wheatear <i>Oenanthe hispanica</i>	S	C	8	--	2
59. Isabelline Wheatear <i>Oenanthe isabellina</i>	S	P	4	--	-
60. (Rufous-tailed) Rock Thrush <i>Monticola saxatilis</i>	S	P	5	--	3
61. Blue Rock Thrush <i>Monticola solitarius</i>	S	P	5	--	3
62. Common Blackbird <i>Turdus merula</i>	R	C	90	--	4
63. Fieldfare <i>Turdus pilaris</i>	W	-	4	--	4
64. Song Thrush <i>Turdus philomelos</i>	W	-	27	--	4
65. Mistle Thrush <i>Turdus viscivorus</i>	R	C	18	--	4
66. Olive-tree Warbler <i>Hippolais olivetorum</i>	R	P	8	--	2
67. Olivaceous Warbler <i>Hippolais pallida</i>	S	P	6	--	3
68. Sardinian Warbler <i>Sylvia melanocephala</i>	W	-	55	--	4
69. Orphean Warbler <i>Sylvia hortensis</i>	S	P	15	--	3
70. Lesser Whitethroat <i>Sylvia curruca</i>	S	P	7	--	-
71. Blackcap <i>Sylvia atricapilla</i>	R	C	58	--	4
72. Rueppell's Warbler <i>Sylvia ruepelli</i>	S	C	5	--	4
73. Bonelli's Warbler <i>Phylloscopus bonelli</i>	S	P	6	--	4
74. Chiffchaff <i>Phylloscopus collybita</i>	W	-	54	--	4

Table 2. Continued

Species	St	Br	Nr	RDB	Spec
75. Goldcrest <i>Regulus regulus</i>	R	C	7	--	-
76. Firecrest <i>Regulus ignicapillus</i>	W	-	6	--	4
77. Spotted Flycatcher <i>Muscicapa striata</i>	S	C	18	--	3
78. Collared Flycatcher <i>Ficedula albicollis</i>	S	P	9	--	4
79. Long-tailed Tit <i>Aegithalos caudatus</i>	R	C	52	A.2	-
80. Coal Tit <i>Parus ater</i>	R	C	66	--	-
81. Blue Tit <i>Parus caeruleus</i>	R	C	54	--	4
82. Great Tit <i>Parus major</i>	R	C	112	--	-
83. Sombre Tit <i>Parus lugubris</i>	R	C	50	A.4	4
84. Eurasian Nuthatch <i>Sitta europea</i>	R	C	17	--	-
85. Western Rock Nuthatch <i>Sitta neumayer</i>	R	C	4	--	2
86. Krueper's Nuthatch <i>Sitta krueperi</i>	R	C	68	--	4
87. Wallcreeper <i>Tichodroma muraria</i>	W	-	3	--	-
88. Short-toed Treecreeper <i>Certhia brachydactyla</i>	R	C	51	--	4
89. Eurasian Penduline Tit <i>Remiz pendulinus</i>	V	-	1	--	-
90. Red-backed Shrike <i>Lanius collurio</i>	S	C	8	--	3
91. Woodchat Shrike <i>Lanius senator</i>	S	C	5	--	2
92. Masked Shrike <i>Lanius nubicus</i>	S	C	14	--	3
93. Eurasian Jay <i>Garrulus glandarius</i>	R	C	50	--	-
94. Red-billed Chough <i>Pyrrhocorax pyrrhocorax</i>	R	P	5	--	3
95. Hooded Crow <i>Corvus corone</i>	R	C	28	--	-
96. Rose-coloured Starling <i>Sturnus roseus</i>	Pm	-	22	--	-
97. House Sparrow <i>Passer domesticus</i>	R	C	80	--	-
98. Rock Sparrow <i>Petronia petronia</i>	R	C	18	--	-
99. Common Chaffinch <i>Fringilla coelebs</i>	R	C	75	--	4
100. European Serin <i>Serinus serinus</i>	R	C	60	--	4
101. Red-fronted Serin <i>Serinus pusillus</i>	V	-	14	A.4	-
102. European Greenfinch <i>Carduelis chloris</i>	R	C	52	A.4	4
103. European Goldfinch <i>Carduelis carduelis</i>	R	C	80	A.4	-
104. Eurasian Siskin <i>Carduelis spinus</i>	R	C	17	A.4	4
105. Common Linnet <i>Carduelis cannabina</i>	W	-	23	A.4	4
106. Hawfinch <i>Coccothraustes coccothraustes</i>	W	-	5	--	-
107. Yellowhammer <i>Emberiza citrinella</i>	W	-	2	--	4
108. Cirl Bunting <i>Emberiza cirlus</i>	W	-	4	--	4
109. Rock Bunting <i>Emberiza cia</i>	R	C	20	--	3
110. Ortolan Bunting <i>Emberiza hortulana</i>	S	P	3	A.3	2
111. Cretzschmar's Bunting <i>Emberiza caesia</i>	S	P	18	--	4
112. Black-headed Bunting <i>Emberiza melanocephala</i>	S	P	14	A.3	2
113. Corn Bunting <i>Miliaria calandra</i>	R	C	7	A.4	4

## Abbreviations to Table 2:

Residence Status (St): Breeding Records (R), Summer Migrant (S), Winter Visitor (W), Passage Migrant (Pm), Vagrant (V); Breeding Status (Br): Probably Breeding (P), Confirmed Breeding (C), Non Breeding (-); Maximum number of individual birds (Nr); Red Data Book Categorisation (RDB): A1.2 = threatened with extinction, A.2 = severely endangered, A.3 = endangered, A.4 = potentially endangered; The Classification of Species of European Conservation Concern (SPEC): Species of global conservation concern (SPEC 1 = 1), Unfavourable conservation status concentrated in Europe (SPEC 2 = 2), Unfavourable conservation status not concentrated in Europe (SPEC 3 = 3), Favourable conservation status concentrated in Europe (SPEC 4 = 4), Favourable conservation status not concentrated in Europe (Non SPEC).

checklists for areas near the park (Turan and Erdoğan, 1998; Erdoğan and Tunç, 1998).

When compared to previous studies in southern Turkey, especially Antalya, this study has many differences. These are described below.

Of the 165 species of birds seen in Antalya and the west Taurus Mountains (Kummerloeve, 1961), 44 were observed in our research area. Conversely, 19 of the bird species we recorded are not mentioned in Kummerloeve's study.

In a study undertaken in the district of Manavgat (Erdoğan and Tunç, 1998), approximately 90 km south-east of the study area, 188 species of bird were recorded. Only 31 of those were observed in the National Park Area.

In another study undertaken at the Kur\_unlu Waterfall Natural Park, 40 km east of the study area, 152 bird species were recorded (Turan and Erdoğan, 1998): 89 of these species were observed in the National Park.

The Eurasian crag martin (*Hirundo rupestris*) was observed as a resident bird species in the study area, but is only represented as a winter visitor in other distribution maps (Kummerloeve, 1961; Kiziroğlu, 1989; Heinzel et al., 1996; Mullarney et al., 1999).

In this study some new recordings and changes of status for Turkey and Antalya have been determined. Whilst searching through the available literature, no records of the wallcreeper (*Tichodroma muraria*) were found for this region. In this study, the species was recorded in Antalya (Güver Uçurumu and Mecine Boğazı) for the first time on 05.02.1999/2, 26.01.2000/2, 10.02.2000/1 and 31.03.2000/3. It was interesting to find this species in the study area at an elevation of only 250-400 m, when previously it has only been observed at elevations from 1000-4000 m (Perrins, 1996; Kirwan et al., 1998).

The distribution of the yellow-tailed bulbul (*Pycnonotus xanthopygos*) in the Antalya region is limited to the northern boundary of Termessos National Park. This species has been observed in the district of Finike

(Figure 1) in south-western Turkey, and along the coast up to the province of Hatay.

The common chaffinch (*Fringilla coelebs*) is a winter visitor to the coastal region of Antalya (Erdoğan and Tunç, 1998). In spite of this, it is a resident species in Termessos National Park, which is relatively near to the coast (approximately 27 km).

The middle spotted woodpecker (*Dendrocopos medius*) is rare in Termessos but it has been observed in every season (January, February, April, May, June, July, September, November, December) of the year.

In the study area 72 bird species are on the European conservation concern list and 51 are on the endangered bird species list according to the RDB of Turkey.

Very important from the conservation point of view are the highly endangered species. *Otus scops*, *Lullula arborea*, *Phoenicurus phoenicurus*, *Oenanthe hispanica*, *Hippolais olivetorum*, *Sitta neumayer*, *Lanius senator*, *Emberiza hortulana*, *Emberiza melanocephala*, *Caprimulgus europaeus* and *Coracias garullus* are of global and European conservation concern (SPEC 1 and SPEC 2) (Hagemeier, 1997) and *Circaetus gallicus*, *Bubo bubo*, *Strix aluco*, *Alcedo atthis* (A.1.2.), *Accipiter nisus*, *Falco peregrinus*, *Alectoris chukar* *Streptopelia turtur*, *Asio otus*, *Caprimulgus europaeus*, *Coracias garullus*, *Upupa epops*, *Dendrocopos leucotos* and *Aegithalos caudatus* (A.2) are strongly threatened species according to the RDB of Turkey (Kiziroğlu, 1993) and are still breeding in Termessos National Park.

## Acknowledgements

This work was supported by the Akdeniz University Research Fund as a Research Project (98.02.0121.01) for a master's thesis. We thank the South-west Anatolia Forestry National Parks and Wildlife Department for the vehicle support, Orhan Ünal for maps, Barbara Kılıç for the English translation, İlhami Kiziroğlu, Mehmet Öz, Hans Källander for improvements and Hacer Sert, Süleyman Kaçar, Mustafa Yavuz, Gökhan Deniz, Tamer Albayrak, Aziz Aslan and M. Rızvan Tunç for all their help.

## References

Alçitepe, E. 1999. Termessos Milli Parkı (Antalya) Florası Üzerine Bir Araştırma. Akdeniz Üniversitesi (Fen Bil. Enst.), M.Sc. thesis, Akdeniz University, Antalya, 194 pp.

Bibby, C.J., Burgess N.D. and Hill D.A. 1992. Bird Census Techniques. Academic Press, London.



- Cramp S., (ed.) 1988. The birds of the western Palearctic. Vols. I-V. Oxford University.
- Erdoğan, A. 1996. Yedigöller Milli Parkı Avifaunası Üzerine Araştırmalar. *Tabiat ve İnsan*, 30: 6-12.
- Erdoğan, A. 1998. Ankara Kızılcahamam Soğuksu Milli Parkı ve Çevresinin Avifaunası üzerine Araştırmalar. In: XIV. Ulusal Biyoloji Kongresi, cilt 3, Samsun, pp. 146-157.
- Erdoğan A., and Tunç, M.R. 1998. Manavgat Irmağı ve Karpuz Çayı Çevresinin Kuş Türleri Üzerine Araştırmalar. In: XIV. Ulusal Biyoloji Kogresi, Samsun, cilt 3, pp. 169-180.
- Hagemeijer, W.J.M. and Blair, M.J. 1997. The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance. T & A.D. Poyser, London.
- Heinzel H., Fitter, R. and Parslow, J. 1996. Pareys Vogelbuch. Alle Vogel Europas, Nordafrikas und mittleren Ostens. Verlag Paul Parey, Hamburg und Berlin.
- Kirwan, G.M., Martins, R.P., Eken, G. and Davidson P.A. 1998. Checklist of the birds of Turkey. *Sandgrouse*. Suppl. 1: 1-32.
- Kızıroğlu İ. 1993. The Birds of Turkey (Species List in Red Data Book). TTKD Publications, Ankara.
- Kızıroğlu İ. 1989. Türkiye Kuşları. OGM Eğitim Daire Başkanlığı, Gazi / Ankara.
- Kummerloewe H. 1961. Zurkenntnis der Kleinasiens. vol. 12, Bonner Zoologische Beitrage, Bonn.
- Mullarney K., Svensson L., Zetterström D. and Grant P. J., 1999. Collins Bird Guide. Harper Collins. London.
- Perrins C. M. 1996. Die Grosse Enzyklopädie der Vögel. Mosaik Verlag GmbH, München.
- Roselaar C. S. 1995. Songbirds of Turkey. An atlas of biodiversity of Turkish passerine birds. GPB Haarlem.
- Turan L. and Erdoğan A. Avifauna Research of Antalya / Kurşunlu Redpine Natural Forest. *Ornith. Anz.*, 37: 141-148. 1998.