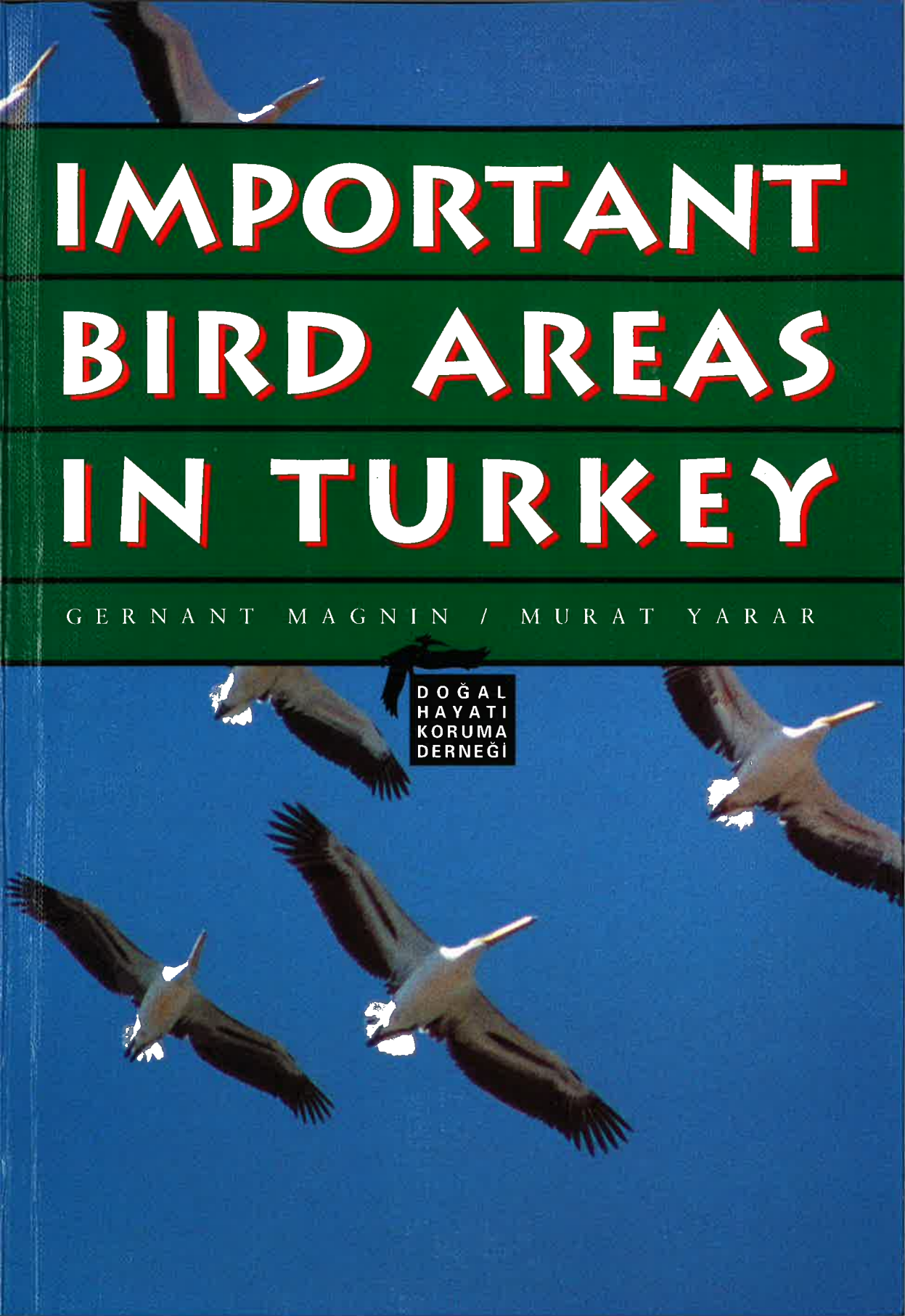
IMPORTANT BIRD AREAS IN TURKEY

GERNANT MAGNIN / MURAT YARAR

DOĞAL HAYATI KORUMA DERNEĞİ



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the Society for the Protection of Nature, Turkey

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Conservation activities are focussed on natural forests, freshwater ecosystems, coastal and marine ecosystems, steppe and grasslands, and threatened species.

DHKD is an Associate Member of the World Wide Fund for Nature (WWF) and BirdLife partner for Turkey.

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IMPORTANT BIRD AREAS in TURKEY

by

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sponsored by

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Contents

Acknowledgements ____ 5

Introduction ____ 7

Turkey: some background information ____ 18

National and international legislation relevant to the conservation of IBAs ____ 23

Conclusions ____ 27

Site Accounts ____ 29

Appendices

Appendix 1.
Important Bird Areas: summary of categories and criteria ____ 255

Appendix 2.
IBA criteria categories: Turkey population thresholds ____ 258

Appendix 3.
Qualifying bird records used to select IBAs ____ 263

Appendix 4.
Example of Site Recording Form ____ 277

Appendix 5.
List of scientific, Turkish and English bird names ____ 279

Appendix 6.
List of Turkish wetlands qualifying as Wetland of International Importance (Ramsar criteria) ____ 287

Appendix 7.
Wetland loss in Turkey ____ 293

References ____ 297

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Introduction

Important Bird Areas (IBAs)

Birds are excellent indicators of the overall health of the environment. Birds occur in all habitat types and are sensitive to environmental change. More is understood of their taxonomy, distribution and biology than any other large group of animals or plants. Monitoring and understanding birds and bird populations is, in fact, one of the most convenient ways of monitoring the global environment and hence our own. Well before we realise it, birds may warn us about, for example, the impacts of forest loss, the effects of degradation of wetland habitat, or the long-term effects of irresponsible- and over-use of pesticides. Moreover, birds are widely appreciated and can serve as "tangible" flagship species to rally public support for conservation action.

A comprehensive bird conservation strategy incorporates three essential elements: protection of individual species, conservation of sites and conservation of the wider environment. These activity fields are complementary. The Important Bird Area (IBA) approach aims to promote the second element by providing key information on sites of major importance for the conservation of a country's avifauna, as well as its biological diversity. In 1989 the International Council for Bird Preservation (ICBP, now BirdLife International) and the International Waterfowl and Wetlands Research Bureau (IWRB, now Wetlands International), published "Important Bird Areas in Europe". This represented a major contribution towards bird conservation in Europe, since it was the first comprehensive listing of priority sites for bird conservation across Europe in a standardised manner. The book describes 2444 sites, of which 79 lie within Turkey.

The number of areas where birds appear at any time during their life-cycle is extremely large, and accurate protection of all these sites is practically impossible. The IBA concept aims to provide a list of priority sites, adequate protection and management of which will promote bird- and biodiversity conservation in the most effective way.

The IBA approach, being a site-oriented conservation tool, has certain limitations. Many species have dispersed distributions at one or more stages during their annual cycle. For example, gulls and terns breed in dense colonies (where they can be protected) but disperse over a large area after the breeding season. Other species, such as storks, breed dispersed across the countryside (where they cannot easily be protected) but congregate during migration at only a handful of sites (especially wetlands, where they could be protected adequately). Hence, a protected-area network can only provide protection to a limited proportion of any bird species during a limited period of time. To address this issue, BirdLife International launched its "Dispersed Species Project" in 1990 which intends to work more explicitly for the conservation of habitats. The main drawback of this approach, however, is that it requires an extremely detailed knowledge of the different habitats and the distribution of all bird species, and very advanced governmental implementation instruments. In Turkey, although some first efforts are now underway to promote habitat-protection

schemes, the best chances for short- and medium-term conservation successes still lie with the site-oriented approach which tends to be better defined and easier to implement.

History of the Turkish IBA project

Acknowledging the importance of Turkey for birds and the relatively poor state of bird and nature conservation, BirdLife International funded the publication of a Turkish language version of the Turkey section of the "Important Bird Areas in Europe" inventory. The book (published in May 1989 by DHKD) was a milestone in Turkey's nature conservation history, as it was the first time that Turkey's significance for birds and natural habitats, as well as the threats faced by them, had been comprehensively described. The Turkish IBA inventory also formed the basis for one of DHKD's principal long-term conservation projects. The "IBA project" started in 1990 and aimed to promote the conservation of Turkish IBAs through public awareness, undertaking advocacy and campaigning activities, lobbying for the designation of protected areas, monitoring developments at the IBAs, and identifying new sites.

Since the start of the IBA project, important successes have been achieved, particularly at wetland IBAs that are the bulk of the Turkish IBAs (e.g. Göksu Deltası, Büyük Menderes Deltası, Kızılırmak Deltası, Sultansazlığı, Ereğli Sazlığı, Burdur Gölü and Kuş Gölü). A large number of publications on habitat and site management have been translated, adapted and distributed amongst decision-makers and site managers across Turkey. In particular, the project has succeeded in increasing the profile of wetlands amongst the general public and government, resulting directly or indirectly in a substanstial increase in the number of protected sites, ratification of the Ramsar Convention and the establishment of a Wetlands Department within the Ministry of Environment. A number of development projects (mostly planned decades earlier), such as dams and large-scale irrigation schemes, have been cancelled or put on hold as a result of DHKD's intervention. However, as the site accounts in this book emphasize, the loss or degradation of wetland and other habitats continues at an alarming rate, mainly as a result of the boom in population and income, compounded by the lack of political will to tackle environmental issues and the complicated and contradictory nature of existing legislation.

In spite of some drawbacks of the IBA concept as a conservation tool, DHKD quickly came to realise that in Turkey, where nature conservation was seriously under-developed compared to most other European countries, the IBA concept would serve well to direct site-based conservation action for a number of years to come. The detailed information and administrative structures required for successful habitat-based conservation will not be available in Turkey in the near future but regularly up-dated and selected site-inventories will lead to a better understanding of the distribution of habitats and threats facing them.

Aims of this inventory

Up-to-date information on 97 sites in Turkey is provided in this inventory. Each site account gives detailed information on physical features and human activities within

the site, specifies the site's importance for birds and (where known) other fauna and flora, and states the protection status and conservation problems related to the IBA. This publication intends to promote bird and nature conservation in Turkey by informing national and international development and consultancy agencies, land-use planners, conservationists (governmental and non-governmental), scientific institutions and the general public of the existence of, importance of and threats to Turkish IBAs. Hence it aims to stimulate the development of national action plans for site and bird conservation and to promote implementation of national and international legislation. Furthermore, it aims to stimulate adherence to other international agreements (notably the Bonn Convention) relevant to nature protection. This inventory will also be used by BirdLife International for the production of the update of its European inventory, due in summer 1998.

Methodology

Site identification

BirdLife International has developed the following list of points to be considered whilst preparing an IBA inventory:

- IBAs are places of international significance for the conservation of birds at the global and regional level.
- IBAs are practical tools for conservation.
- IBAs are chosen using standardised and agreed criteria applied with common sense.
- IBAs must, where ever possible, be large enough to support self-sustaining populations of those species for which they are important.
- IBAs must be amenable to conservation and, as far as possible, be delimitable from surrounding areas.
- IBAs will preferably include, where appropriate, existing Protected Area Networks.
- IBAs are not appropriate for all bird species and, for some, are only so in parts of their ranges.
- IBAs should form part of a wider, integrated approach to biodiversity conservation that embraces sites, species and habitat protection.

It is crucial to ensure that IBAs are "independent" units so that effective measures can be taken for their preservation. A single nest of a Peregrine on a cliff in the Taurus mountains would qualify as an IBA by bird criteria, but the fact that it is impossible to draw a border for this IBA in a landscape that is largely similar for thousands of square kilometres prohibits declaration as an IBA. We accept that decisions of this nature are often a little arbitrary and, indeed, that often a certain amount of common sense seems required to designate IBAs, especially IBAs that are located in montane, steppe or forest areas.

The selection criteria for IBAs were thoroughly re-written by BirdLife International during 1994 and 1995, based on new and often hitherto unavailable bird populations figures. We have, in turn, applied these criteria to the Turkish IBAs, and a summary of these are presented below (for the detailed list of criteria see appendix 1).

Summary of IBA Criteria Categories

Category	Criteria
A1	Globally threatened species
A2	Restricted-range species
A3	Biome-restricted assemblage
A4i	≥1% biogeographic waterbird population
A4ii	≥1% global non-waterbird population
A4iii	≥ 20,000 waterbirds or ≥ 10,000 seabirds
A4iv	Migratory bottleneck
Bii	≥1% flyway/distinct waterbird population
Biii	≥1% distinct seabird population
Biiii	≥1% distinct population of other congregatory species
Biiv	≥ 5000 storks or ≥ 3000 raptors
B2	Species of European Conservation Concern Category 1, 2 or 3
B3	Species of European Conservation Concern Category 4

Collecting data

The 1989 IBA inventory often used information (relating to both birds and sites) originating from the 1960s and 1970s. The current inventory uses only post-1988 information, unless otherwise stated. During the period 1989-1996 over 150,000 kilometres were covered in Turkey by the authors to document existing IBAs and to discover new ones: a wealth of information also emerged as a result of the birdwatching activities by Turkish and foreign birders, and much was added to our knowledge of Turkish birds and sites as a result of detailed studies carried out at several sites, mainly by foreign organisations and experts and mostly in cooperation with DHKD.

The data from birdwatchers was collected on standardised forms (an example of which can be found as appendix 4) that had been designed and distributed with help from the Ornithological Society of the Middle East (OSME) and processed on a specially designed database at DHKD headquarters in İstanbul. Although "only" some 30,000 records were collected, this database proved instrumental in the process of drawing up the final list of IBAs. The population thresholds we applied to select IBAs are listed in appendix 2 and are based on the most recent and most reliable estimates on the sizes of the European and Turkish populations. Little is known about the distribution and population size of Turkish songbird populations (which also tend to be difficult to cover by a site-oriented approach), and therefore these have principally not been used for IBA selection. Appendix 3 shows the results of our data collection and efforts, stating clearly for what species each site qualifies. The list was supplemented with the results of various recent studies, and with selected records from the copies of hundreds of "trip reports" that were kindly donated to DHKD by OSME and the Dutch Birding Association.

The list in appendix 3 does not include all records that meet the IBA criteria as, since

this inventory is in the first instance not a "bird book" but rather a "site book", we have taken the liberty to omit some records that are "repetitive": for example in the case of three Dalmatian Pelican records (of 250, 50 and 40 birds) in the same month, we would only mention the first record of 250. In a few other cases we have opted to include records from before 1989 or from the former IBA inventory, if we deemed it necessary to emphasize the importance of a site for a certain species. In the case of sites that appear for the first time in this IBA list, we have normally taken any information available.

To complement the site-information gathered during fieldtrips, an extensive literature review was undertaken during 1995 to collate all available information on Turkish IBAs. The libraries of İstanbul, İstanbul Technical, Bosphorus, Aegean, Nine September, Hacettepe, Ankara, Bilkent and Middle East Technical Universities, YÖK and TÜBİTAK were extensively searched. Further information held at universities was obtained through correspondence with 86 departments from 42 universities in Turkey. Further site information was requested and received from DSİ (State Water Works), Ministry of Environment, Ministry of Agriculture, Ministry of Culture, Ministry of Forestry, General Directorate of Meteorology, General Directorate of Rural Affairs and General Directorate of National Parks and Game-Wildlife.

It must be stated, however, that required information (especially statistics) was often lacking or conflicting. Notably, information on fisheries was often not available or highly unreliable. Likewise, different (official) publications give different information on various parameters such as altitudes or sizes of areas, and in such cases we have stuck to the information that seemed most realistic or in line with our own field records.

Coverage of this inventory

This is not a full list of Turkish IBAs. Birdwatching activity in Turkey is still limited by European standards and many more sites need further exploration or have as yet not even been discovered. Large parts of the country have never been visited by birdwatchers, especially in eastern and south-eastern Turkey where access has been limited for most of the last decade. Outside the dry period, large parts of Turkey are very difficult, if not impossible, to access without proper equipment (such as four-wheel drive vehicles). We expect many more promising sites (especially mountain, forest and steppe areas) to be discovered in the near future and we would like to urge anyone to share their information with DHKD in order to up-date the present IBA inventory.

Wetlands are the fastest disappearing habitat in Turkey and they have recently received the most attention from (bird) conservationists: therefore this inventory is biased towards wetlands.

We are relatively confident that the current inventory includes most of the important larger wetlands in Turkey. A number of smaller wetlands (e.g. important for breeding White-headed Duck) or large wet grass plains (for breeding Crane) may still be added to the list but other than that most larger marsh and lake areas are described in this inventory (provided they qualify as IBA). Recent research showed that a number of

reservoirs in western and central Turkey may hold significant numbers of waterfowl and these are subsequently treated as IBAs in this book: other reservoirs, especially ones in central and eastern Turkey that freeze much later than natural wetlands, may prove to meet IBA criteria in the future (although a number of these have been visited in recent years but did not meet site selection criteria). With the natural process of reservoirs turning slowly into shallower lakes with fringe vegetation, the number of "reservoir-wetland" IBAs may be expected to increase in the future.

In general, we have applied "the benefit of the doubt" principle to wetlands that do not strictly qualify on their present importance but of which we know that this is mainly due to (probably temporary) low waterlevels or to a lack of visits by birdwatchers in recent years.

This inventory describes 97 sites, compared with 79 in the 1989 inventory. This does not, however, reflect a net increase of 18 sites, as some of the IBAs in the latter have been merged and others split: in addition 14 IBAs from the 1989 inventory have not been included in the new inventory since they do not meet new IBA criteria (and sometimes not even old IBA criteria). In all, 36 IBAs in the present inventory are new.

Order of the sites

Turkey is divided by DSİ into 26 catchment areas (water basins), typically formed by one large river, though a few comprise the catchments of a number of smaller streams. Four catchment areas are closed basins. The map at the end of this book shows the 26 catchments.

The regional division of governmental institutions does not coincide with these catchments but is mostly organised according to provincial boundaries. As described in this book, this leads to, amongst others, a lack of integrated management of water resources and unclear situations with regards to protection of sites. The problems of Beyşehir Gölü and related IBAs in two catchments (IBA no. 67-73) present an illuminating (if gloomy) example of what can happen in the case of a total lack of catchment-wide planning.

To emphasize the need for an integrated management approach, especially with regards to water resources, the sites in this inventory are grouped per catchment.

Structure of the site accounts

A box at the beginning of each site account gives alternative site names, administrative regions, size, coordinates and altitude. Under the heading "SITE DESCRIPTION" follows basic information on physical features, vegetation and land-use. Under "BIRDS", the first paragraph always states why the site qualifies as an IBA; this information is based on appendix 3, but is not necessarily complete as incidental or repetitive data have normally been omitted. For a full overview of qualifying information of each site, appendix 3 should be consulted. Under "Additional bird information" information on other bird species of note that breed or occur regularly is listed, as well as any other information on birds we thought might interest the reader. Under "CONSERVATION ISSUES" the first paragraph gives details on protection status, if any, whilst following paragraphs deal with conservation problems for that site. Practically all site accounts have small coloured maps that show the basic features of

Overview of Turkish IBAs

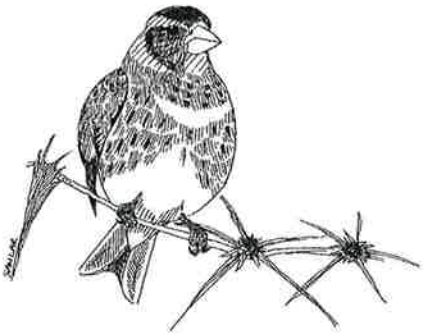
IBA no	site name	old IBA no	size (ha)	brief description	protected?	site qualifies for criteria	site account on page
	Meriç-Ergene catchment						
01	Meriç Deltası	008	7000	freshwater lakes, coastal lagoons	yes	A1, A4i, A4iii, B1i, B2	31
	Marmara catchment						
02	İğneada Ormanları	-	3000	freshwater lakes, alluvial forest	yes	B1iv, B2	34
03	Büyükçekmece Gölü	002	2850	reservoir	yes	A4i, A4iii, B1i	37
04	Küçükçekmece Gölü	-	1500	coastal lagoon	no	A1, A4i, A4iii, B1i	40
05	Boğaziçi	003	55,000	bottleneck, forest	partial	A4ii, A4iv, B1ii, B1iv	42
06	Şile Adaları	-	5	coastal rock islets	yes	B1i, B3	45
07	İznik Gölü	004	29,830	freshwater lake	yes	A1, B2	46
	Susurluk catchment						
08	Uludağ	010	20,000	forest, montane	partial	B2	48
09	Uluabat Gölü	001	13,500	freshwater lake, marsh	no	A1, A4i, A4iii, B1i, B2	50
10	Kuş Gölü	006	16,000	freshwater lake, alluvial forest	yes	A1, A4i, B1i, B2	53
11	Kocaçay Deltası	005	4200	coastal lagoons, alluvial forest	no	A1, A4i, A4iii, B1i, B2	56
	North Aegean catchment						
12	Foça Adaları	-	124	coastal rock islets	yes	B1i, B3	59
	Gediz catchment						
13	Murat Dağı	-	52,500	forest, montane	no	B2	61
14	Demirköprü Barajı	-	5060	reservoir	no	A4i, B1i	63
15	Marmara Gölü	041	6800	freshwater lake, marsh	no	A1, A4i, A4iii, B1i, B2	65
16	Gediz Deltası	036	20,400	coastal lagoons, salt pans	partial	A1, A4i, A4iii, B1i, B2, B3	68
	Küçük Menderes catchment						
17	Ildır Körfezi Adaları	-	957	coastal rock islets	yes	B1i, B3	71
18	Küçük Menderes Deltası	040	1500	freshwater lakes, marsh	yes	A1	72
	Büyük Menderes catchment						
19	Akdağ	-	42,394	montane, forest	yes	B2	74
20	Işıklı Gölü	038	7300	freshwater lake, marsh	no	A1, A4i, A4iii, B1i, B2	75
21	Bafa Gölü	034	12,281	freshwater lake	yes	A1, A4i, A4iii, B1i, B2	78
22	Büyük Menderes Deltası	035	9800	coastal lagoons, salt marsh	yes	A1, A4i, A4iii, B1i, B2, B3	81

	Western Mediterranean catchment						
23	Güllük Deltası	037	1400	coastal lagoon, marsh	no	A1, A4i, B1i	84
24	Köyceğiz Gölü	055	8000	freshwater lake, marsh	yes	A1, A4i, A4iii, B1i	86
	Burdur catchment						
25	Acıgöl	043	21,000	salt lake, steppe	partial	A4i, B1i, B2, B3	89
26	Çorak Gölü	049	1150	salt lake	no	A1, A4i, A4iii, B1i	92
27	Salda Gölü	056	4370	brackish lake	yes	A1	94
28	Karataş Gölü	053	1190	freshwater lake	yes	A1, B1i	96
29	Yarışlı Gölü	057	1400	brackish lake	no	A1, A4i, B1i	98
30	Burdur Gölü	047	23,700	brackish lake	yes	A1, A4i, A4iii, B1i, B2	100
	Antalya catchment						
31	Eğirdir Gölü	051	47,250	freshwater lake	yes	A1, A4i, A4iii, B1i	104
	Akarçay catchment						
32	Karamık Sazlığı	039	4500	freshwater marsh	yes	B2	107
33	Akşehir & Eber Gölü	019, 022	53,600	freshwater lakes, marsh	yes	A1, A4i, B1i, B2	109
	Sakarya catchment						
34	Çavuşçu Gölü	021	1200	freshwater lake	yes	A4i, A4iii, B1i, B2	112
35	Altıntaş Ovası	-	19,200	upland plain, cultivation	yes	A1, B2	114
36	Türkmenbaba Dağı	-	17,500	forest, montane	partial	A1, B1iii, B2	116
37	Aliken	-	11,500	upland plain, cultivation	no	A1, B2	118
38	Balıkdamı	-	1470	freshwater lake, marsh	yes	A1, A4i, A4iii, B1i, B3	120
39	Uyuz Gölü	-	15	freshwater lake	yes	A1, B2	122
40	Çöl Gölü	-	4700	saline lake, marsh	no	A1, A4i, A4iii, B1i, B2	124
41	Mogan Gölü	028	1500	freshwater lake, marsh	yes	A1, A4i, A4iii, B1i, B2	125
42	Kızılcahamam Ormanları	014	9500	forest, montane	partial	A1, B2	127
43	Kavaklı Dağı	-	8100	montane, forest	yes	A1, B2	129
44	İnözü Vadisi	-	50	gorge, rocky cliffs	no	B2	131
45	Sarıyar Barajı	-	8400	reservoir, rocky cliffs	partial	A4i, B1i, B2	132
46	Hamam Dağı	-	14,000	forest, montane	no	A1, B2	134
47	Sapanca Gölü	-	4700	freshwater lake	yes	A4i, A4iii, B1i	136

	Western Black Sea catchment						
48	Ilgaz Dağları	012	35,000	forest, montane	partial	B2	138
49	Sarıkum Gölü	079	785	brackish lake, forest	yes	A1, A4iii	140
	Kızılırmak catchment						
50	Tödürge Gölü	031	750	brackish lake, marsh	no	B2	142
51	Palas Gölü	033	2720	salt lake	yes	A4i, B1i, B2	144
52	Sultansazlığı	030	39,000	fresh & salt lakes, steppe	yes	A1, A4i, A4iii, B1i, B2, B3	146
53	Seyfe Gölü	029	14,000	salt/brackish lake, steppe	yes	A1, A4i, A4iii, B1i, B2, B3	150
54	Hirfanlı Barajı	-	26,300	reservoir	no	A1, A4i, A4iii, B1i	153
55	Beynam Ormanı	-	2100	forest	yes	A1, B2	155
56	Kızılırmak Deltası	015	16,110	freshwater lakes, marsh	yes	A1, A4i, A4ii, A4iii, B1i, B1ii, B2	157
	Yeşilırmak catchment						
57	Yedikır Barajı	-	593	reservoir	yes	A4i, B1i	161
58	Yeşilırmak Deltası	018	3000	freshwater lakes, dunes	yes	B1i, B1ii, B2	163
	Eastern Black Sea and Çoruh catchment						
59	Akkuş Adası	011	2	coastal rock islets	no	B1i, B3	166
60	Doğu Karadeniz Dağları	013, 016	1,230,000	forest, alpine, bottleneck	partial	A1, A3, A4iv, B1iii, B1iv, B2	167
	Konya catchment						
61	Samsam Gölü	-	830	brackish lake	yes	B1i	171
62	Kozanlı Gökgöl	-	650	freshwater lake, marsh	yes	A1, B2	173
63	Kulu Gölü	027	860	brackish lake	yes	A1, A4i, B1i, B2, B3	174
64	Ereğli Sazlığı	023	37,000	freshwater marsh, steppe	partial	A1, A4i, B1i, B2, B3	176
65	Karapınar Ovası	025	15,200	brackish lake, salt steppe	yes	A4i, B1i, B2	179
66	Eşmekaya Sazlığı	-	11,250	fresh & salt lakes, marsh	yes	A1, A4i, A4iii, B1i, B2, B3	181
67	Beyşehir Gölü	046	73,000	freshwater lake	yes	A4i, A4iii, B1i	183
68	Suğla Gölü	-	16,500	freshwater lake	no	A4iii	186
69	Hotamış Sazlığı	024	16,500	freshwater marsh, small salt lake	partial	A1, A4i, B1i, B2	188
70	Bolluk Gölü	020	1150	salt lake, salt pans	yes	A4i, B1i, B2, B3	191
71	Tersakan Gölü	032	6400	salt lake, salt pans	yes	A4i, A4iii, B1i, B3	193
72	Tuz Gölü	032	260,000	salt lake, steppe	yes	A1, B1i, B2, B3	194

	Eastern Mediterranean catchment						
73	Göksu Deltası	052	14,480	fresh & salt lakes, marsh	yes	A1, A4i, A4iii, B1i, B2	197
74	Aydıncık Adaları	048	2	coastal rocky islets	no	A1	202
	Seyhan & Ceyhan catchment						
75	Aladağlar	045	54,514	montane, forest	yes	B2	203
76	Tuzla Gölü	050	2800	brackish lake, dunes	yes	A1, A4i, A4iii, B1i, B2	207
77	Akyatan Gölü	050	14,000	lagoon, dunes	yes	A1, A4i, A4iii, B1i, B2	209
78	Ağyatan Gölü	050	2200	lagoon, dunes	yes	A1, A4i, A4iii, B1i, B1iv, B2	212
79	Yumurtalık Lagünleri	050	16,430	lagoons, salt marsh	yes	A4i, A4iii, B1i, B2	213
80	Gavur Gölü	-	1500	freshwater lake, marsh	no	A1, A4iii	216
	Asi catchment						
81	Nur Dağları	059	21,500	bottleneck, forest	partial	B1iv, A4iv	218
	Fırat (Euphrates) catchment						
82	Erzurum Ovası	-	3300	freshwater lakes, marsh	no	A4i, B1i, B2	220
83	Sarısu Ovası	-	4800	freshwater marsh	no	B2	222
84	Haçlı Gölü	-	2500	freshwater lake	no	A4i, B1i, B2	224
85	Bulanık Ovası	073	8000	riverine, steppe	no	A1, A4i, B1i, B2	226
	Aras catchment						
86	Ardahan Ormanı	-	2500	forest, marsh	no	B3	228
87	Aktaş Gölü	-	2700	salt lake	yes	A1, A4i, B1i, B2	230
88	Çıldır Gölü	-	14,000	freshwater lake	no	A4i, B1i	232
89	Kuyucuk Gölü	-	219	freshwater lake	yes	B2	234
90	Çalı Gölü	-	25	freshwater lake, marsh	no	A1, B2	236
91	Balık Gölü	066	3400	freshwater lake	yes	B1i	238
92	Doğubeyazıt Sazlığı	075	8750	freshwater marsh, steppe	no	B3	240
	Van catchment						
93	Nemrut Gölü	074	4500	freshwater lake, montane	no	B1i, B2	242
94	Sodalıgöl	076	1500	salt lake	no	A1, A4i, B1i, B2	244
95	Erçek Gölü	071	9520	salt lake	no	A4i, B1i, B2, B3	246
96	Van Gölü	-	390,000	salt lake, islands	partial	A1, A4i, B1i, B2	249
	Dicle (Tigris) catchment						
97	Yüksekova	078	24,900	freshwater marsh, upland plain	no	B3	252
		TOTAL	**2,999,136**				

the site. Complete and up-to-date maps are nearly impossible to obtain in Turkey and the maps in this book were produced by scanning 1:250,000 scale maps that mostly date from pre-1980, and updating these according to more modern road maps and especially recent fieldnotes.



Crimson-winged Finch (Sancar Barış)

TURKEY: some background information

Turkey is divided into seven major geographical regions, each with their own distinct climate, topography and consequently habitats, flora and fauna: Marmara, Black Sea, Aegean, Mediterranean, Central Anatolia, Eastern Anatolia and South-eastern Anatolia. The map on page 20 shows the different major topographical and habitat features of Turkey. Turkey lies in various climate zones, with extremes being the Mediterranean climate (with hot and dry summers and mild and wet winters) and the Eastern Anatolian climate with summer temperatures of up to 40°C and long winters with temperatures as low as -30°C. The mountain ranges along the Black Sea and the Mediterranean receive good precipitation (>1000 mm/p.a., with >2000 mm/p.a. in the eastern parts of the Black Sea mountains), whilst large parts of Central Anatolia receive less than 400 mm/p.a. (the table below shows the yearly average precipitation, during three 10-year periods, at selected locations in Turkey).
Alpine habitats are confined to the higher ranges of mountains in the eastern Black Sea, Taurus and Eastern Anatolia. Forests once covered large parts of Turkey but as a result of more than one thousand years of unsustainable felling, today only about 12% of Turkey's surface is covered by larger stretches of intact forest, mainly in the major mountain ranges in the north and south. Large parts of Anatolia are characterised by a mixture of arable and fallow land, rocky areas with scattered *Quercus* or *Juniperus* scrub and (normally over-grazed) grassland/steppe (most of this was originally woodland). Original salt steppe is found around the salt lakes in Central Anatolia, whilst different gradations of arid, montane and subalpine steppe prevail in Eastern Anatolia. According to official figures, nearly half of Turkey is under cultivation, with cereals and sugar beet being the characteristic crops in large parts of Central and Eastern Anatolia, whilst coastal areas are largely taken up by fruit plantations, tobacco and cotton; tea and hazelnut are the main crops in the eastern part of the coastal Black Sea region.

Yearly average precipitation (mm), during three 10-year periods, at selected locations. Source: General Directorate of Meteorology.

location:	catchment:	period 1965-74	period 1975-84	period 1985-94
İpsala	Meriç-Ergene	614	636	511
Salihli	Gediz	521	546	449
Aydın	Büyük Menderes	637	717	535
Burdur	Burdur	417	443	391
Tefenni	Burdur	501	503	424
Afyon	Akarçay	356	411	410
Develi	Kızılırmak	356	388	350
Beyşehir	Konya	483	498	475
Cihanbeyli	Konya	306	329	330
Çumra	Konya	286	348	320
Konya-Ereğli	Konya	328	334	289
Konya	Konya	336	369	306
Kulu	Konya	368	413	397
Seydişehir	Konya	807	781	728
Ahlat	Van	587	599	637
Erciş	Van	540	419	467
Tatvan	Van	841	798	948

Economic and agricultural development

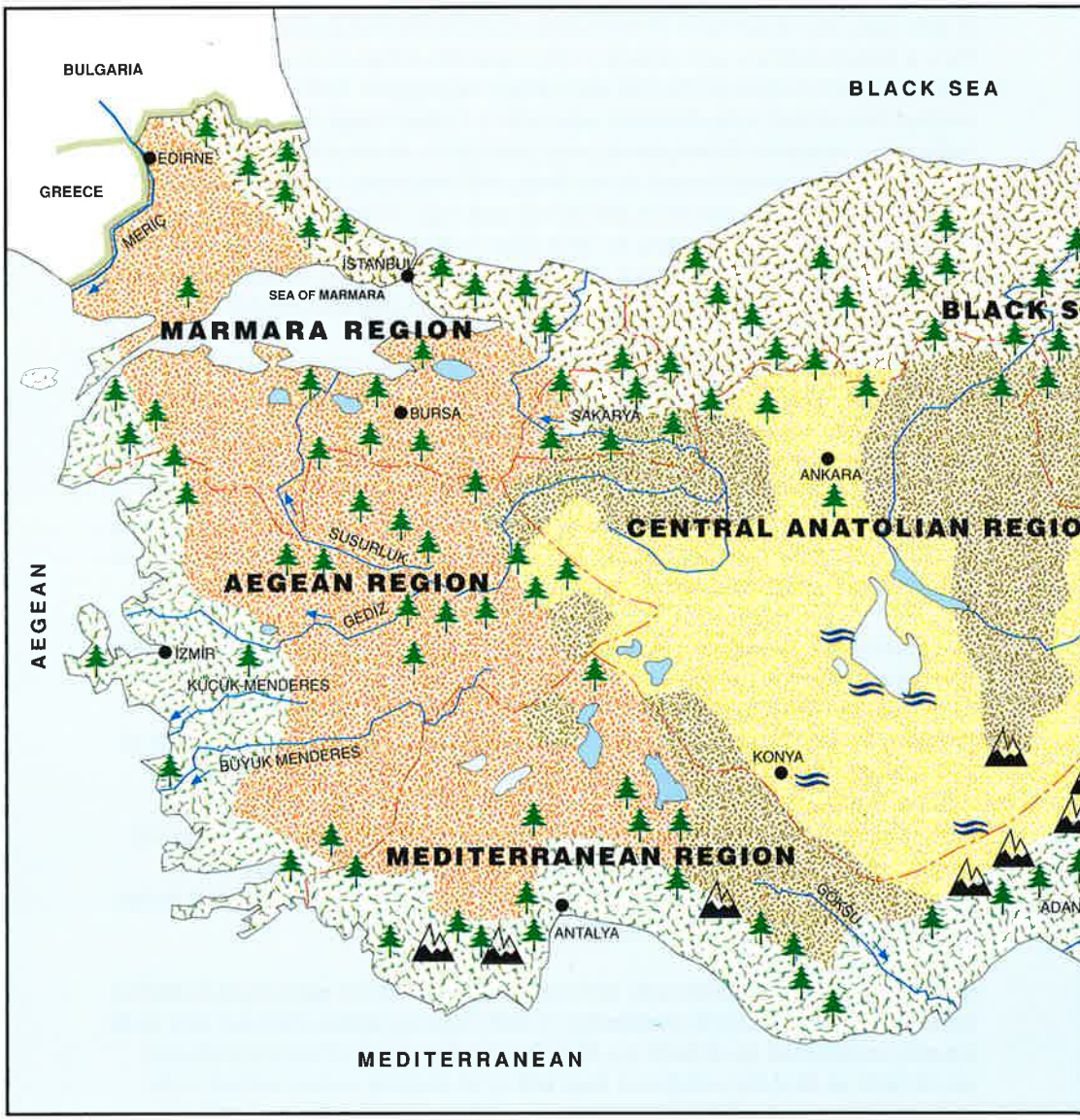
In June 1947, as a direct result of the Truman Doctrine, the USA announced its Marshall Plan, a massive military and economic aid programme designed to rebuild Europe, open up export markets for the USA and contain communism. Both the USA and Turkey realised that aid had to be chanelled especially to Turkey's large agricultural base before other economic developments could possibly be accomplished. The massive American aid was primarily used to buy (imported) machinery: e.g. the number of tractors increased from 1750 to 30,000 during 1948-1952. In December 1953 the DSİ (State Water Works) was founded, its main tasks being flood control, irrigation, reclamation of marshes, production of hydro-power, provision of drinking water and the "taming of rivers". The Turkish government also provided low-interest credits to farmers.

Also during the 1950's, infrastructure and transportation was improved (Turkey had only 1600 km of hard-surfaced road in 1950 and this was increased to 7000 km by 1960). By 1960, Turkey's agriculture had been more or less successfully modernised and the industrial base widened. The direct impact and long-term effects of the massive investments were impaired, however, by a lack of investment in long-term improvements in the productive capacity, a lack of economic planning and politically inspired investment decisions leading to investments in unpromising locations and in the wrong sectors (Zürcher 1993).

As a result of the various initiatives the output of crops increased dramatically, mainly through expansion in the area under cultivation (14.5 million ha in 1948, 22.5 million ha in 1956, 36 million ha in 1994, i.e. 46.6 % of total surface area) and reduced fallowing through double-cropping. This expansion was at the cost of the amount of available grazing land (this was reduced by 50% during 1950-1984) and hence an increase in grazing pressure (from 1.79 ha/BHU (Bovine Head Unit) in 1950 to 0.86 ha/BHU in 1985). This, in turn, led to over-grazing and erosion, the latter also being exacerbated by unsustainable farming practices such as down-hill ploughing on steep-gradient land (6 million ha of steep-gradient land is under cultivation). In 1991, the total irrigated area was 4 million hectares.

In 1990, 49.3 % of the economically active population worked in agriculture (a decline from 72 % in 1965), whilst its contribution to GNP (total 109 billion USD) was only 18.1%: industry contributed 33.2% (with 15.4 % of the workforce) and services contributed 48.7% (with 30.1% of the workforce). Over 80% of all working women worked in the agricultural sector. Farms are typically small and fragmented, with only 10% being contained in one integrated piece. Of the 12,547,000 people working in the agricultural sector, 99% work in the "agricultural and animal husbandry" sub-sector, and the rest in the fishing sub-sector (output 335,000 tons during 1990). There are no figures to indicate the size and economic importance of the animal husbandry sub-sector, but indicative is the steady decrease in the total number of animals: from 72 million in 1986 to 61 million in 1993.

As of the 1960s, the government started to develop five-year development plans, and the Turkish economy expanded steadily e.g. with an average growth rate of 6.9% between 1963 and 1976, and 6.8% during 1985-1990. Exports grew dramatically (22%

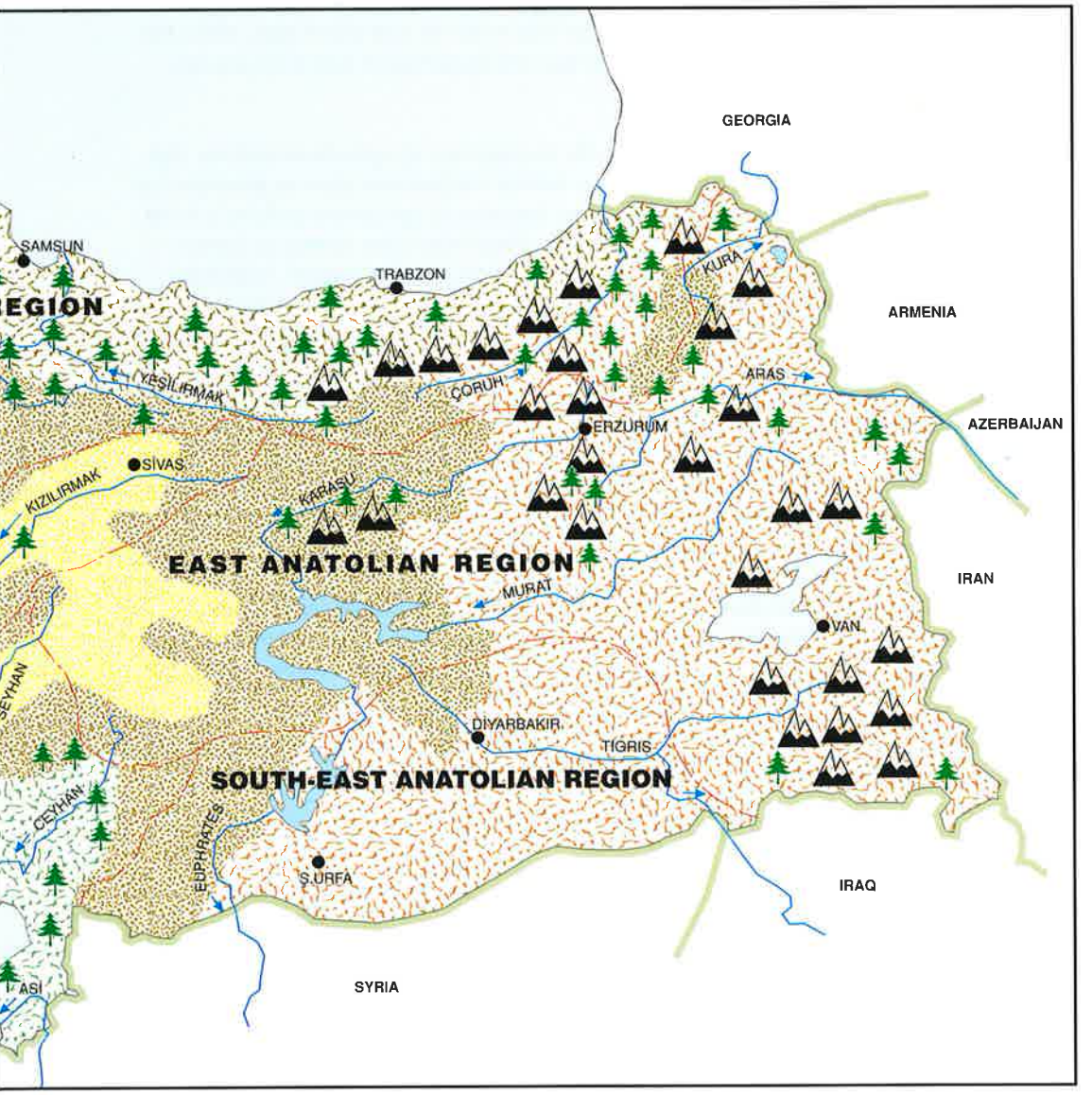


Western Turkey: heavily degraded forest and intensively cultivated land

Pre-steppe woodland

Black Sea: degraded forest and cultivation

Mediterranean vegetation



Eastern Turkey: steppe complexes and semi-desert

Central Anatolian steppe

Main concentrations of natural forest

Halophytic vegetation

Montane vegetation over 2500 metres

p.a. during 1980-1987) but the share of agricultural products fell from 60% in 1979 to 20% in 1988. GNP per capita grew from 538 USD in 1970 to 1906 USD in 1990, whilst the population increased from 18,790,000 in 1945 and 35,321,000 in 1970 to 56,473,000 in 1990.

The Ministry of Agriculture coordinates the development of agricultural policies, that have to fit into other planning structures, notably the five-year plans as developed by the State Planning Organisation. The actual execution of agricultural policies is in the hands of a large number of state institutions. Direct input from farmers or farmer-dominated cooperatives is limited and most decisions on price support, subsidies, distribution, pricing policies, import and export quotas etc. are thus taken by the state. It is difficult to realistically assess how successful the agricultural policies in Turkey have been but it appears that these have exacerbated rather than alleviated problems related to small scale farms, low levels of education and thus low productivity. A fundamental component of the Turkish agricultural policy is to maintain agricultural incomes, hence little pressure is exerted on farmers to become more efficient (OECD 1994). Agricultural price-support schemes have turned out to be an expensive and inefficient management tool and by 1994 crop yields were half European levels.

The rapid agricultural developments (conversion, flood protection, reclamation, damming, water diversion and forest clearing, cf. appendix 7), have caused extensive damage to Turkey's natural environment, in particular wetland-, steppe-, grassland- and forest habitat.

National and international legislation relevant to the conservation of IBAs

There are many legal instruments that relate to nature conservation in general and (directly or indirectly) affect habitats and species. The Turkish Constitution states that all individuals have the right to live in a healthy environment. It states that all sea coasts, lake shores and river banks are under the jurisdiction and at the disposal of the State and their use should be based on public benefit principles. Furthermore, the Constitution orders the preservation of natural assets, forests, pasture- and arable lands and the prevention of erosion.

The following laws are of particular importance in relation to nature conservation:

- The Environment Law (1983) and the related Decree-Law concerning the Establishment and Functions of the Ministry of Environment (1991) are the major legal instruments regulating environmental protection in Turkey. The first regulates the legislative and technical aspects of environmental conservation in Turkey, the latter defines the terms of reference of the Ministry of Environment.
- The National Parks Law (1983) and Hunting Law (1937) are the major laws which provide protection to particular sites and species. These laws are the responsibility of the Ministry of Forestry, General Directorate of National Parks and Game-Wildlife. The National Parks Law sets up a network of protected areas, whilst the Hunting Law, through the annual Central Hunting Committee, decides on hunting regulations. Under the Hunting Law, sites can be permanently or temporarily closed to hunting.
- The Law on Protection of Cultural and Natural Assets (1983) regulates the protection and maintenance of movable and immovable assets which are of particular historical, archeological, cultural or natural importance. Areas protected under this law are known as "SİT": natural areas are classified as "Natural SİT", whereas areas protected under this law for their archeological values are "Archeological SİT". The implementation of this law is the responsibility of the Ministry of Culture, General Directorate for the Protection of Cultural and Natural Assets. Some SİTs were also declared prior to 1983 under a similar law.

The following legal instruments are indirectly associated with the conservation of natural areas:

- The Salt Law (1936) regulates the salt (sodium chloride) mining activities (managed entirely by the State).
- The Forestry Law (1956) defines and regulates the use of forests. It divides forests into three categories according to their character: preservation forests, national parks and production forests. The first two seek the protection of forest areas. The status of national parks has been superceded by the National Parks Law (see above).
- The Aqua-products Law (1971) regulates aquaculture and the use, control and preservation of aqua-products on inland wetlands (including reservoirs), lagoons and seas. A circular issued annually identifies areas where fishing is prohibited or restricted.
- The Bosphorus Law (1983) mobilises planning and control procedures for the

development of the Boğaziçi (IBA no. 05).
• The Building Code (1985) concerns development planning and land-use, and is applicable in matters that have not been regulated by other legislation. The Ministry of Public Works prepares environmental master plans in accordance with national and regional planning decisions. These plans relate to settlement activities such as housing, industrial and touristic development, agriculture, transportation and land-use.
• The Coastal Law (1990) regulates the protection and use of coastal areas (including shores of natural and artificial reservoirs and rivers) taking account of their natural and cultural importance and according to public benefit criteria.
• The Decree-Law on the Establishment of the Authority for the Protection of Special Areas (1989) organises the administrative aspects of the management of Specially Protected Areas. The Authority for the Protection of Special Areas (APSA) is part of the Ministry of Environment.
• The Water Pollution Control Regulation (1988) sets the criteria for the use and protection of surface and underground water resources. It deals in particular with pollution issues. It regulates human activities within zones surrounding drinking water reservoirs to maintain high water quality.
• The Regulation on the Use of the Agricultural Land for Non-Agriculture Purposes (1989) defines agricultural land and sets limitations on its use for non-agricultural activities.
• The Environmental Impact Assessment (EIA) Regulation (1993) made EIAs compulsory for planned developments at defined sensitive areas including wetlands and forests, and for any development in protected areas.
• The Prime Minister's Decree on the Conservation of Wetlands was issued in January 1993 and calls for a revision of all projects that may possibly affect wetland habitats. This decree was the first legal instrument ever issued in Turkey dealing explicitly with wetlands.
• The Pasture Land Law regulates the use, protection and improvement of pasture land. A draft was forwarded in 1996 and is due to be signed into law during 1997.

Other laws sometimes contradict the above mentioned legal instruments and their implementation has resulted in or could result in damage to natural areas:
• The Law Concerning Drainage of Swamps (1950), the Law Concerning the Establishment and Functions of the General Directorate of State Water Works (1953) and the Law on Malaria Eradication (1960) promote and facilitate the reclamation of wetlands.
• The Tourism Promotion Law (1982) dictates that utmost priority should be given to development of the tourism sector. The Ministry of Tourism received far-reaching powers to declare vast areas (including already protected natural areas) as tourism areas and heavily subsidise development particularly on the coast.
• The Mining Law (1985) dictates absolute priority to mining activities over other types of land-use.
• The Agricultural Reform Law Concerning Regulation of Irrigated Land (1985) regulates, amongst others, the allocation of non-forest land for agricultural purposes.

International treaties:

Turkey is party to a number of international conventions on nature conservation. The most important ones are:

- Convention for the Protection of Birds (Paris, 1950), ratified in 1966.
- Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention, 1975), ratified in 1976.
- Convention Concerning the Protection of the World Cultural and Natural Heritage (1975), ratified in 1982.
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, 1979), ratified in 1984.
- Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention, 1971), ratified in 1994.
- Convention on the Protection of the Black Sea Against Pollution (Bucharest, 1992), ratified in 1994.
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973), ratified in 1996.
- Convention on Biological Diversity (1992), signed but not yet ratified.
- Convention on Combating Desertification (Paris, 1994), signed but not yet ratified.
- Protocol on Mediterranean Special Protected Areas (MedSPA-under Barcelona Convention, 1982), ratified in 1988.
- Declaration of the I. Conference of the Central Asian and Balkan States' Ministers of Environment (İstanbul, 1994).

The Turkish Constitution states that international treaties which have been ratified by Parliament automatically become law of the land. Therefore all Conventions mentioned above have become an act of Turkish domestic law after their ratification and they have superior ruling over the existing laws and they may not be challenged before the Constitutional Court.

Ramsar Convention

Upon ratification in 1994 five wetlands were declared as "Wetlands of International Importance" under the Convention: Kuş Gölü (IBA no. 10), Burdur Gölü (IBA no. 30), Sultansazlığı (IBA no. 52), Seyfe Gölü (IBA no. 53) and Göksu Deltası (IBA no. 73). A related communique issued in 1995 by the Ministry of Environment states that it is the leading authority dealing with Ramsar Convention-related issues.
Currently the Wetlands Department of the Ministry of Environment is developing management plans for the five Ramsar sites. In addition, drafts of a Wetland Regulation were prepared in 1995. This regulation will define different wetland zones and set limitations to the land and resource uses within these zones. It is also envisaged to establish a National Ramsar Committee.

OVERVIEW OF PROTECTION STATUSES RELEVANT TO IBAs

a) **Nature Reserve, National Park and Nature Park (17 IBAs):** Nature Reserves are strictly protected areas whilst in National Parks and Nature Parks limited recreational use is allowed.

b) **Permanent Wildlife Reserve (28 IBAs):** often declared in wetlands to protect waterfowl, and in forest or mountain areas for the protection of large mammals.

c) **Wetland of International Importance under the Ramsar Convention (5 IBAs).**

d) **Specially Protected Area (4 IBAs):** initially (1988) designated under the Bern Convention and later associated with the Barcelona Convention MedSPA.

e) **SİT (42 IBAs):** three categories of this status allow varying degree of development. The majority of SİTs in this inventory are "natural SİTs".

f) **Drinking Water Reservoir (5 IBAs):** based on the Water Pollution Control Regulation.

g) **Ministry of Public Works Management Plan (5 IBAs):** Zonation and resource-use criteria for wetlands started to be included in the environmental master plans developed in settlement areas near wetlands within the scope of the Building Code. Zonation and usage principals were developed under guidance of the Ministry of Environment.

h) **Military Zone (2 IBAs):** are, amongst others, established along international borders, and human activities and access is restricted.

i) **Preservation Forest (2 IBAs):** forests excluded from timber production.

In total 65 IBAs are fully or partially protected; 32 have no protection status at all. Nine IBAs have three or more protection statuses.

Conclusions

The 97 IBAs described in this book cover nearly 3 million hectares. Of this, ca. 1,240,000 ha comprises wetland habitat within 76 IBAs.
Principally since 1960, across Turkey at least 1,300,000 ha of wetland habitat (about one third of this was located within IBAs) has disappeared as a result of reclamation, drainage, irrigation, damming and other water manipulation schemes (cf. appendix 7): future DSİ schemes will affect several hundreds of thousands of hectares.
All these schemes (except a handful that aimed to eradicate malaria) are brought about by the continuous expansion of the area of arable land. In Turkey, 46,6 % of the total land area is under cultivation (up from 18% in 1945). In spite of the dwindling economic importance in terms of contribution to GDP (although still important in terms of employment), efforts to improve the situation mainly concentrate on increasing the area under cultivation. Compounding this is the lack of a realistic, comprehensive, participatory and integrated agricultural policy in Turkey. Surely, were modern farming technologies widely and successfully introduced, there would be no reason to develop hitherto unused tracts of land often of marginal agricultural quality: the site accounts of Sultansazlığı (IBA no. 52), Seyfe Gölü (IBA no. 53) and Eşmekaya Sazlığı (IBA no. 66) are good examples of sites where cultivation is now on the point of occupying the remaining natural areas but where the feasibility of these conversions is highly questionable.

Circa 75 % of all water in Turkey is used in the agricultural sector (compared to 10% used in industry and 15% used for domestic use) but farmers hardly (if at all) pay for the water and there is therefore no incentive for economical use of water: methods of irrigation are normally very conventional and excessively wasteful, and recent technologies such as drip irrigation have not yet been introduced on any significant scale.

Conversion into arable land (and the associated use of water resources) and unsustainable land-use (notably over-fishing, over-grazing and unsympathetic forest management) are the main threats to most of the sites listed in this book. As a result of the reduction of suitable habitat, birds and bird populations are increasingly threatened by (illegal) hunting.

There is one great difference between the 1989 inventory and the current listing: the number of protected sites. In 1989 only 25 % of Turkish IBAs had some kind of protection status: today this stands at 68%. This increase is largely due to the large number of SİTs declared by the Ministry of Culture. Although SİT legislation existed since 1983, a large wave of SİT declarations occurred since 1990. A positive side of the SİT status is that it can be quickly granted to any site by regional committees, without consent of other ministries, and that it can trigger rapid legal action against construction and other developments. The negative side of the SİT status is that, as soon as pressure against the protection status mounts, it can easily be cancelled or weakened. Good examples of the fragile nature of the SİT status is seen in the Boğaziçi

(IBA no. 05) where the SİT status (declared in 1983 and 1995) for large areas on the Bosphorus did hardly cause the slowing down of construction activities, the prime reason for the declaration.
Also more Nature Reserves, National Parks, Nature Parks and Permanent Wildlife Reserves have been declared by the Ministry of Forestry since 1989, but also this has often failed to improve matters *in situ*. İğneada Ormanları (IBA no. 02), Kuş Gölü (IBA no. 10) and Sultansazlığı are good examples of the shortcomings in implementation. These examples serve only to illustrate that it would be wrong to interpret the higher number of protected IBAs as a guarantee of the long-term security of these sites. Important progress has been made with regards to individual site protection, but these have often resulted from the efforts of motivated individuals within relevant ministries.

The 1993 regulation that made environmental impact assessments compulsory has been largely ineffective, whilst since the 1993 "Prime Minister's Wetland Decree" wetland destruction has continued unabatedly. Some of the legal instruments dealing with the protection or wise-use of sites and/or habitats (as listed above) contradict each other, whilst most are not or incompletedly implemented.

Relevant (government) institutions responsible for nature conservation matters are hampered by a chronic lack of trained staff and equipment (both at their central offices and local branches), the lack of dialogue and the equivocal situation of responsibilities on an inter-ministerial level, the lack of scientific data from (long-term) monitoring schemes, the lack of long-term conservation strategies (including schemes to alter prevailing public attitudes), and insufficient funds to implement even small components of existing conservation programmes.

SITE ACCOUNTS

MERİÇ DELTASI

IBA no 01
Province(s) Edirne
District(s) Enez, İpsala
Size 7000 ha
Coordinates 40°47'N 26°14'E
Altitude sea level

SITE DESCRIPTION

The Meriç Deltası has formed where the 530 km-long Meriç (or Evros in Greek and Maritsa in Bulgarian) river flows into the Aegean Sea. The delta is situated on the Turkish-Greek border (access is restricted on both sides) and measures ca. 45,000 ha; 10,000 ha of this is covered by Greek IBA no. 001. The Turkish IBA comprises a complex of freshwater lakes (Büyük Gala, Küçük Gala, Pamuklu), extensive reedbeds, lagoons (Taşaltı, Bücürmene and Dalyan) and 3400 ha of the former delta floodplain which has largely been converted into farmland. Büyük Gala lake (560 ha) is 2 m deep, fed by drainage channels and during winter by the river (through a sluice constructed to allow fish to enter); it drains into the lagoons. There are extensive reedbeds at its fringes. Küçük Gala lake (190 ha) and Pamuklu lake (188 ha) are covered with dense reed. North of the IBA is Sığırcı lake (190 ha) which has been converted into a reservoir in recent years resulting in the loss of its natural importance. The lagoons between Enez and the sea total 550 ha.

The Meriç river is embanked along its entire course on the Turkish side. Scarcely any of the flooded forests which once covered large parts of the river bed remain.

The lakes and marshes are surrounded by rice fields (the region produces 25% of all Turkish rice) which are normally irrigated with water from the river but in dry years water from the lakes is also used. Sheep and cattle grazing is common throughout the IBA. There are five dairy farms in the villages around Enez.

There is a fishing cooperative in Enez which has 112 members and caught 20 tons of fish in the lagoons and 25 tons of fish in the freshwater lakes in 1995.

BIRDS

The site holds significant breeding populations of Little Bittern (50 pairs), Night Heron (200 pairs), Squacco Heron (300 pairs), Purple Heron (100 pairs), Glossy Ibis (100 pairs), Spoonbill (40 pairs), Collared Pratincole (200 pairs), Little Tern (200 pairs) and Whiskered Tern (500 pairs). Large numbers of waterfowl occur in winter (max. 48,440), including Pygmy Cormorant (max. 1450), Dalmatian Pelican (max. 291), Mute Swan (max. 2030), Whooper Swan (max. 214) and Pochard (max. 15,528).

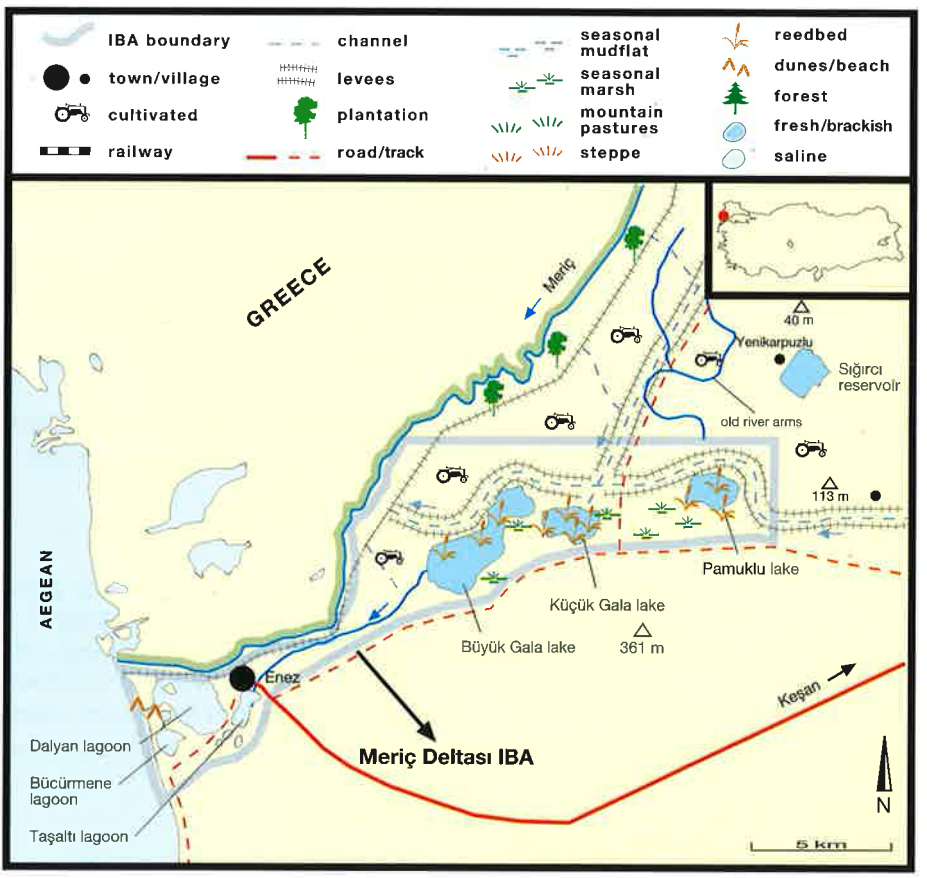
Additional bird information.

Other breeding birds of note include Little Egret (400 pairs), Grey Heron (30

pairs), Black-winged Stilt (300 pairs) and Black Tern (100 pairs). Large numbers of White Pelicans roost on the lakes during migration.

CONSERVATION ISSUES

- Küçük Gala and Pamuklu lakes were declared a Nature Reserve in 1991 (2369 ha). In 1992 the entire IBA was declared a SİT.
- Substantial parts of the delta and lower river valley have been converted to rice and wheat production following drainage. An official Ordnance Survey from 1909 indicates a 24,000 ha wetland in Turkey. Reservoirs in Bulgaria reduced the river flow and in Turkey the river was embanked cutting the lakes and floodplains off from their main water supply. In 1972 only 9500 ha of wetland area remained. A 1994 DHKD field survey estimated the remaining wetland at 3600 ha, largely occupying the low lying Gala lake complex (which measured 4200 ha in 1909). Thus ca. 85% of wetland area has been lost since 1909.
- Currently DSİ (State Water Works) is implementing plans to irrigate 19,650 ha and flood control for 4065 ha within the framework of the Lower İpsala Project (known within DSİ as the "Gala lake Nature Protection Scheme").



outside the IBA. The scheme includes the construction of three reservoirs (Koyuntepe, Hamzadere and Sığırcı reservoirs, built on small streams but principally storing Meriç river water) which will provide 130 hm^3 of irrigation water. The DSİ scheme includes provisions to prevent pollution and further loss of wetland habitats by diverting drainage water during the peak of the irrigation season so that polluted water does not enter the wetland, and releasing water from the reservoirs into the wetland when needed.

- Pollution is a main threat to the IBA. The Meriç river is heavily polluted by industrial waste from Bulgaria and Turkey. The Ergene river, one of the main tributaries of the Meriç, drains the untreated waste of hundreds of industries in Turkish Thrace. In addition to industrial waste, untreated sewage from a number of cities and agricultural run-off (especially from rice fields) enters the river. Even in the lower part of the basin, river water is usually the sole or main source of irrigation water: current and future irrigation schemes include the taking of 730 hm^3 of water from the Meriç river. The polluted drainage water from 17,500 ha (of which 13,500 ha is rice fields) in the Ipsala plain is drained into Büyük Gala and Küçük Gala lake: the pollution and associated eutrophication of the lakes have been subject to detailed studies and is well described. One source states that on average 85 tons of fertiliser, 220 tons of herbicides, 33 tons of insecticides and 85 tons of fungicides enters the wetland annually. During periods of drought the lake water is also used for irrigation which has led to a dramatic drop in water levels (the wetland virtually dried up in 1985), dystrophic crises, intrusion of sea water and mass fish deaths.
- In recent years the fishing industry in the lakes and lagoons has collapsed. In 1975, 211 tons were caught (of which 42 tons were Eel *Anguilla anguilla*, a local speciality) but only 75 tons in 1985, 48 tons in 1990 and 45 tons in 1995 (of which 0.6 tons were Eel). Pollution, over- and out-of-season fishing, changes in the water regime, and silting up of the river mouth (preventing fish from entering the lakes) are quoted as the main reason for the collapse of the fishing industry.

İĞNEADA ORMANLARI

IBA no	02
Alternative name(s)	İğneada Longozu
Province(s)	Kırklareli
District(s)	Demirköy
Size	3000 ha
Coordinates	41°52'N 27°57'E
Altitude	sea level

SITE DESCRIPTION

A complex of seasonally flooded forests, swamps, freshwater lakes and sand dune habitat on the Black Sea coast near the Turkish-Bulgarian border. The area is bordered in the south and west by the Turkish Istranca mountains (peak 1035 m). Water from the mountains flows via a number of streams to the sea (the most prominent being the Çavuşdere (or Deringeçit stream) and Bulanıkdere) and accumulates behind the dunes where it feeds the flooded forests which are largely below sea level. Five small lakes with a rich and diverse aquatic flora are found within the area. The northernmost, Erikli (43 ha), just north of İğneada, is a coastal lagoon with no outlet to the sea during summer. Saka lake (5 ha) in the south is a freshwater lake located immediately inland of the sand dunes. Mert lake (266 ha) just south of İğneada is in fact a small delta of the Çavuşdere stream. Hamam lake (19 ha) and Pedina lake (10 ha) are situated further inland. The ca. 10 km-long pristine dunes and beach are an important feature of the IBA and are of high botancial importance, with a range of south-west Black Sea specialities.

Large areas of the flooded forest are rarely utilised by man and their natural character has been largely preserved. The Ministry of Forestry has a large tree nursery in the centre of the forest. In addition there are large private poplar plantations, especially near Pedina lake.

Within and adjacent to the Nature Reserve there are some scattered farms which principally grow fruit and vegetables. Cattle (especially water buffalo) and sheep grazing occurs lightly across most of the area.

There are small fisheries in Mert lake. The village of İğneada is a major centre for open sea fishery. Reed in Mert and Erikli lake is harvested by local people and sold to an export company.

BIRDS

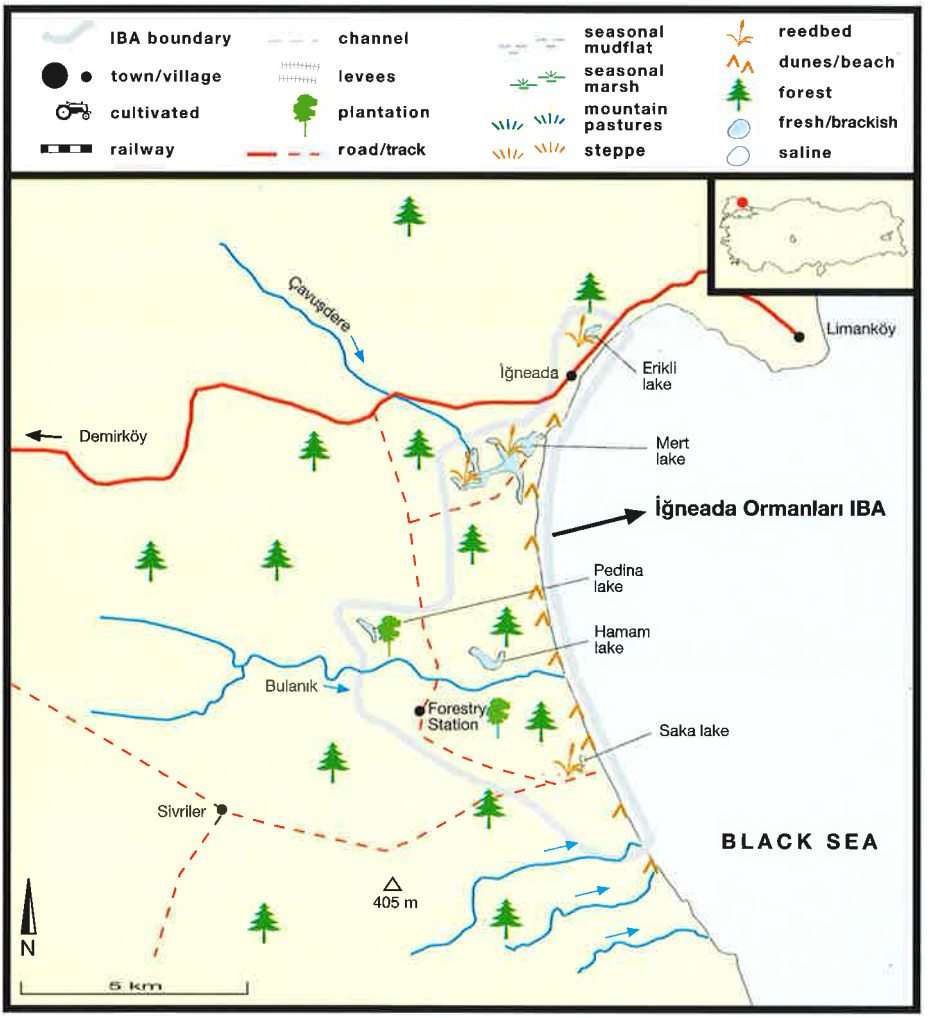
The site qualifies for its breeding population of Black Stork (5 pairs). Significant numbers of White Stork (max. 8366 during two days of counting) pass over during autumn migration.

Additional bird information.

The site lies on a major bird migration route (cf. Boğaziçi IBA no. 05). Although no comprehensive counts have been undertaken as yet, available evidence suggests that the area is also a bottleneck for migratory raptors.

CONSERVATION ISSUES

- In 1978 the majority of the IBA was declared a Permanent Wildlife Reserve (5399 ha). The southern part of the IBA (1345 ha) was granted Nature Reserve status in 1988: initially the Ministry of Forestry employed wardens but these were withdrawn in 1995. During 1990 and 1991 (in two stages), the whole area was granted SİT status.
- Possibly the most important threat to the IBA are the plans by İSKİ (the İstanbul Water and Sewerage Administration) to divert water from the Istranca mountains to İstanbul, in order to augment its drinking water supplies. Eventually, this large scheme plans to build four regulators and a reservoir on the five major streams flowing into the flooded forests. Obviously, any major reductions in the water input to the IBA could have disastrous environmental consequences, and it is a matter of urgency that



possible impacts are studied by the authorities before plans are developed further.

- Another major threat is the projected Bulgaria-Turkey coastal highway which would bisect the IBA. Some sources claim that these plans have been shelved due to environmental concerns but no confirmation of this has been obtained. The persistent rumours of the possible highway construction has increased land speculation in and around the IBA.
- Tourism is developing along the entire Black Sea coast and has now reached İğneada. The main threat is the construction of holiday home complexes: some have already been built on the shores of Erikli lake and Mert lake. Especially noteworthy is the case of a 1800 member cooperative, established in the 1970s, which received permission to build houses in the centre of Mert lake. Access roads to the lake were built but the project was not developed further due to technical difficulties in dealing with the wet conditions and, more recently, environmental concerns. As a result of the area becoming a SİT, this project was permanently cancelled.
- People from other regions in Turkey continue to migrate to the İgneada area, increasing human pressure on the natural areas. Small areas of forest are continuously cleared and converted. In winter, shepherds open or lower the outlets to the sea in order to reduce the amount of flooded land.
- Every year all reed is cut in Mert lake, leaving no areas with old reed for birds to nest.
- Clearing of the natural forest for poplar plantations takes place in areas within and adjacent to the Nature Reserve.
- Sand extraction takes place illegally along the Bulanıkdere stream and on the beach near Mert lake. Sand is used for construction in the town of İğneada.

BÜYÜKÇEKMECE GÖLÜ

IBA no 03
Province(s) İstanbul
District(s) Büyükçekmece, Çatalca
Size 2850 ha
Coordinates 41°03'N 28°34'E
Altitude 6 m

SITE DESCRIPTION

A freshwater lake west of İstanbul which formed where the Karasu stream flows into the Marmara Sea. It has a catchment area of 622 km². Since 1989 the lake has been used as a drinking water reservoir (producing 70 hm³ per year). A dam was constructed in the south and embankments built along the northern shores and the river, and the lake was dredged; it is now up to 6 m deep. During dry years less than 25 % of the lake remains flooded. Mudflats, small sandbanks and reedbeds have begun to form again in the north where the river deposits silt. South of the dam is a small brackish lake with reedy fringes and small islands providing good feeding and roosting opportunities for birds.
The lake is largely surrounded by arable land (mainly cereals and sunflower) and, increasingly, industrial and residential development. Several stone quarries are found close to the shores of the lake. There is a small airport in the north-east and motorways cut across the northern and southern ends of the lake.
Büyükçekmece Gölü is managed by İSKİ (the İstanbul Water and Sewerage Administration).
Thirty species of fish were found in the lake before the conversion. Currently only 15 species remain, 4 of which are recent introductions. Commercial fishing is prohibited by İSKİ.
The IBA includes the marshes and wet grasslands along the Karasu stream and other smaller streams north of the lake.

BIRDS

The lake qualifies for its large numbers of wintering waterfowl (max. 22,681) including Pochard (max. 14,036). Large numbers of Yellow-legged Gull occur especially in winter (max. 8775) and in spring significant numbers of Little Gull (max. 1740) and Mediterranean Gull (max. 10,000) occur.

Additional bird information.
Breeding birds include Little Bittern, Garganey, Pochard, Moorhen, Coot, Black-winged Stilt, Collared Pratincole and Common Tern, whilst Ferruginous Duck is suspected to breed. Especially during autumn migration the arable land around the lake can hold thousands of White Storks which roost here before crossing the Boğaziçi (IBA no. 05). The mudflats are the favoured habitat for several species of migrant waders.

CONSERVATION ISSUES

- The lake has the status of Drinking Water Reservoir which theoretically offers basin-wide protection.
- The ecological character of the lake, formerly a 1100 ha lagoon, was drastically altered following its conversion into a reservoir: large areas of reed and marsh along the northern and western shores disappeared (no detailed information is available on its former nature conservation importance). The present water regime is based on the needs of the 12 million inhabitants of İstanbul. During winter and spring the lake is completely filled and marsh vegetation cannot develop until the level starts to drop: this is normally after the breeding season.

- Despite being one of İstanbul's most important supplies of drinking water, to date the authorities have been unable to prevent potentially dangerous developments which threaten the ecology of the lake. Within a few kilometres of the lake several large industries have been or are being built (notably the Çatalca industrial area), and residential housing (lacking proper facilities for sewage treatment) development is uncontrolled. The nearby airport and motorways increase disturbance.
- Due to its proximity to İstanbul, Büyükçekmece Gölü is subject to high levels of hunting.

KÜÇÜKÇEKMECE GÖLÜ

IBA no 04
Province(s) İstanbul
District(s) Küçükçekmece, Avcılar
Size 1500 ha
Coordinates 41°00'N 28°45'E
Altitude sea level

SITE DESCRIPTION

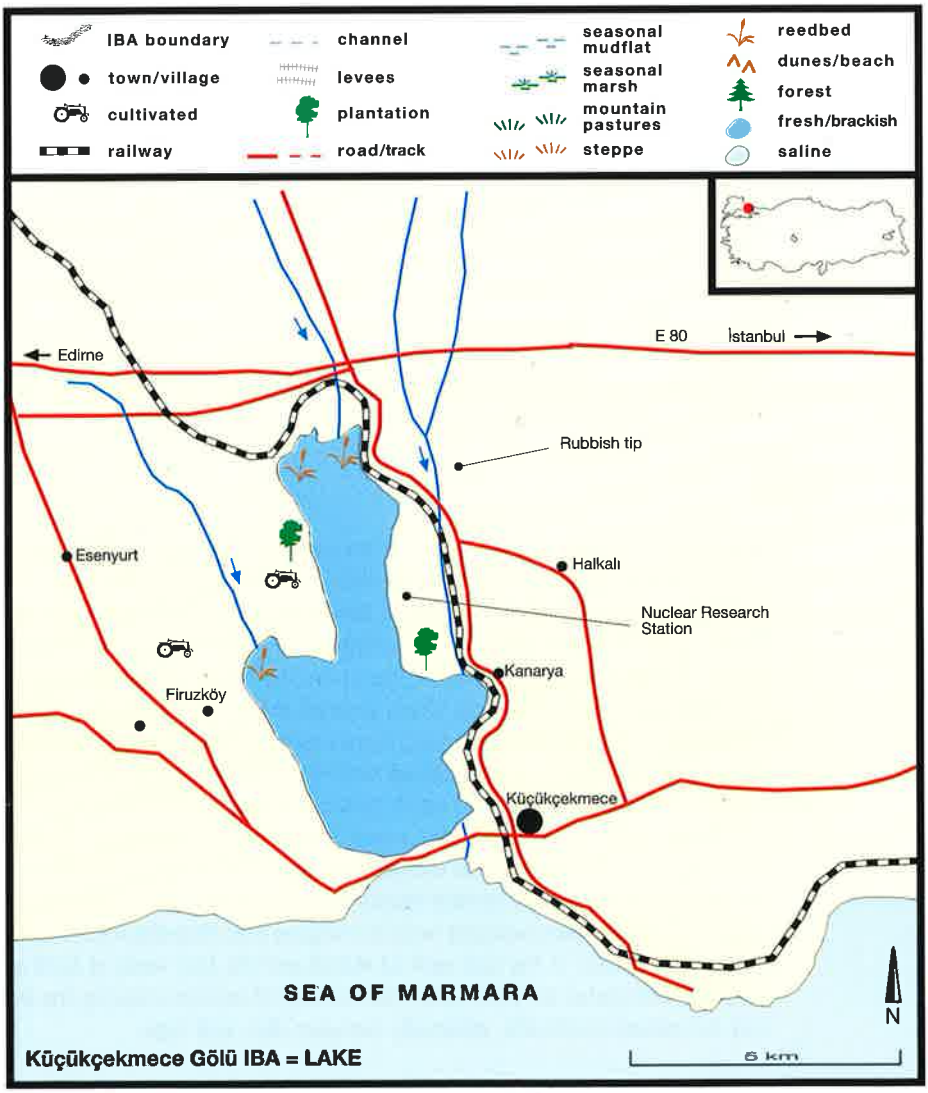
A 20 m-deep natural brackish lagoon on the Sea of Marmara, west of İstanbul, fed by the Sazlı, Hadımköy and Nakkaş streams. There is very little fringe vegetation, largely confined to an area of reedbeds in the north. Due to its proximity to İstanbul, it is surrounded by unplanned buildings. The only relatively undisturbed area with some woodland lies within the grounds of the nuclear energy research centre and associated military camp on the east shore. There are still some arable areas west of the lake. The E-80 motorway passes the northern side of the lake. A vast rubbish tip east of the lake was closed in 1995. Fisheries are of minor importance, with 4 tons taken during 1995.

BIRDS

The site holds significant numbers of waterfowl in winter (max. 21,273) including Great Crested Grebe (max. 5750), Cormorant (max. 10,200) and Yellow-legged Gull (max. 2685). Pygmy Cormorant occurs in early winter and spring (max. 160).

CONSERVATION ISSUES

- The site has no protection status.
- The construction of a drinking water reservoir (91 hm^3) on the Sazlı stream in 1995 has reduced freshwater inflow and the lake may become more saline as a result of sea water intrusion.
- The lake is suffering from urban and industrial pollution which will intensify as a result of the on-going development of the lake's surroundings. The high level of pollution is the main reason for the lake not being converted into a drinking water reservoir.


IBA boundary
town/village
cultivated
railway
channel
levees
plantation
road/track
seasonal mudflat
seasonal marsh
mountain pastures
steppe
reedbed
dunes/beach
forest
fresh/brackish
saline
Edirne
E 80
İstanbul
Rubbish tip
Esenyurt
Halkalı
Nuclear Research Station
Kanarya
Firuzköy
Küçükçekmece
SEA OF MARMARA
N
Küçükçekmece Gölü IBA = LAKE
6 km

BOĞAZİÇİ

IBA no	05
Province(s)	İstanbul
District(s)	Sarıyer, Beşiktaş, Beyoğlu, Şişli, Eminönü, Üsküdar, Beykoz, Ümraniye, Kartal, Pendik
Size	55,000 ha
Coordinates	41°10'N 29°05'E
Altitude	0-409 m

SITE DESCRIPTION

The Boğaziçi (Bosphorus) is one of the major European bottleneck areas for migrant birds. The Boğaziçi strait is ca. 33 km north-south, in most places ca. 1.5 km wide, and separates Europe from Asia. The site is dominated by the city of İstanbul (12 million inhabitants) but north of the city are still largely forested areas (particularly within military zones). Good watchpoints to observe the massive migration in spring and autumn are the hills at Sarıyer (on the European side) and the two hills at Çamlıca (on the Asian side).
The IBA includes the forested areas west and east of the strait which are known to be of importance to roosting migratory birds. Hence the IBA includes the Belgrade forest (5296 ha) on the European side and the Polonezköy Nature Park (3006 ha) on the Asian side, the only sizeable protected forest areas in the İstanbul region. The IBA does not include some sites within the city (such as the Çamlıca hills and the islands in the Sea of Marmara) which would qualify as an IBA in their own right for the large numbers of migrants passing over these sites, but which provide limited scope for bird conservation.

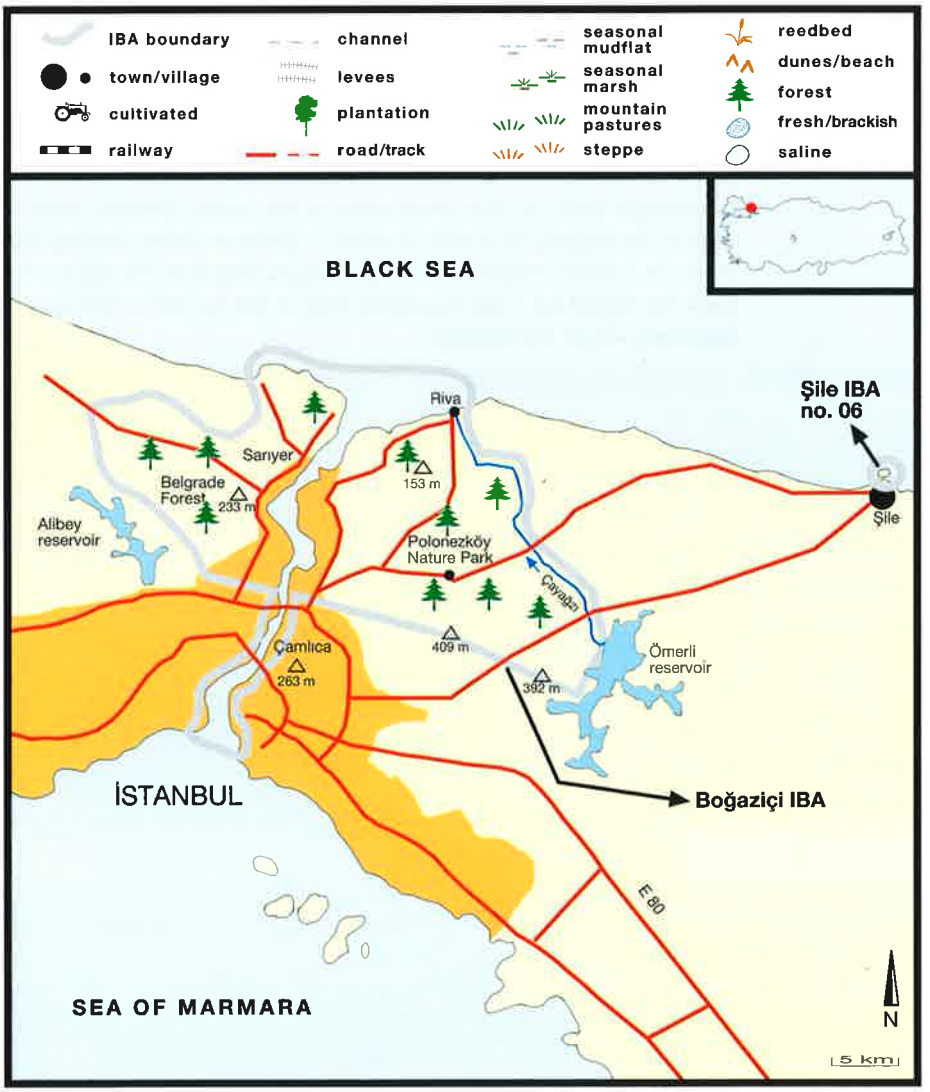
BIRDS

Since the 1760s the Boğaziçi has been recognised as a major bottleneck for migrant birds. Despite its popularity with foreign birdwatchers, few complete counts (covering the entire spring or autumn migration period) have been undertaken. Autumn migration lasts from mid-August until mid-October with totals of some species as follows (figures are the total numbers from counts in the mid-1960s and early 1970s which covered the entire migration period): Black Stork (8318), White Stork (338,353), Honey Buzzard (25,751), Black Kite (2707), Buzzard (32,895) and Lesser Spotted Eagle (18,898). More recent notable autumn records include 11,703 Lesser Spotted Eagles counted during one day in September 1990 at Çamlıca and 11,379 at Sarıyer on the same day (available data suggests that passage at the Boğaziçi occurs on a broad front and counts at the two localities may involve relatively little duplication). Spring migration is poorly studied but available records indicate that migration commences mid-March, peaks in the last week of March and the first week of April and is virtually completed by mid-April. The number of raptors crossing the Boğaziçi has decreased drastically, especially between 1870 and 1930.

The Boğaziçi also qualifies for the large numbers of Yelkouan Shearwater that

fly up and down the strait in groups of up to several hundred throughout the year: up to 6000 have been counted in one hour.
Storks forced to delay their crossing of the Boğaziçi due to adverse weather conditions often roost in flocks of thousands in fields outside the city. Birds of prey (and occasionally storks) prefer to roost in forests near the city.

Additional bird information.
Black Kites marauding the Boğaziçi and its shores were a classic sight until recently, but disturbance from Yellow-legged Gulls (which now breed in their thousands in the city) and possibly pollution are thought to be the reason for the drastic decline in breeding numbers of this raptor.



CONSERVATION ISSUES

- A Permanent Wildlife Reserve (2338 ha) was established north of Sarıyer in 1978. Polonezköy was declared a Nature Park in 1994, and Belgrade forest is a Preservation Forest. Large parts of the Boğaziçi coastal area were granted SİT status in 1983 with extensions in 1995.
- The main threat to the IBA is the rapid expansion of İstanbul. A 1993 DHKD study demonstrated that several tens of thousands of houses are (both legally and illegally) built annually, mainly by immigrants from elsewhere in Turkey. The population of Sultanbeyli on the Asian side increased by 2100 % during the period 1985-1990 and the total İstanbul population during that period by 45%. By 1996, the İstanbul population was 12 million and still growing by 400,000 per year. In addition to houses, vast industrial complexes have been or are being constructed, often well beyond the present city borders. Other loss to natural habitat is caused by mining and road building. Large tracts of İstanbul forest disappeared during recent decades. Birds forced to roost overnight before undertaking the crossing of the Boğaziçi have to find a place often several tens of kilometres away from the strait. Storks in particular are affected as meadows and other large open areas are increasingly built up. The conservation of the current forested areas on both sides of the Boğaziçi is crucial, in order to preserve raptor roosting sites.
- There are isolated instances of people, originating from the eastern Turkish Black Sea region (cf. Doğu Karadeniz Dağları IBA no. 60), catching migrating Sparrowhawks at the Boğaziçi.

ŞİLE ADALARI

IBA no. 06
Province(s) İstanbul
District(s) Şile
Size 5 ha
Coordinates 41°11'N 29°36'E
Altitude 0-20 m

FOR MAP SEE IBA NO. 05

SITE DESCRIPTION

A complex of four small islands at the entrance of Şile harbour, a holiday resort on the Black Sea coast east of İstanbul. The islands are sparsely vegetated with only low grass and scrub vegetation on the higher parts.
The largest island holds the ruins of a Genoese castle. Although the islands are only 50 m offshore and tens of thousands of people come to Şile during summer from İstanbul, little disturbance to the breeding colonies has been noted.

BIRDS

The site qualifies for its breeding population of Shag (175 pairs). All the islands are used for breeding but the majority breed on the largest island and the island east of it: the two other islands are mainly used for roosting. Birds nest in crevices or on the barren ground.

Additional bird information.
In addition to the Shags, 350 pairs of Yellow-legged Gull breed. In contrast to the Shags, Yellow-legged Gulls often nest in the grass.

CONSERVATION ISSUES

- The islands were declared a SİT in 1992.

İZNİK GÖLÜ

IBA no	07
Province(s)	Bursa
District (s)	Orhangazi, İznik
Size	29,830 ha
Coordinates	40°26'N 29°32'E
Altitude	87 m

SITE DESCRIPTION

İznik Gölü is the largest lake in the Marmara region and the fifth largest natural lake in Turkey. It is a tectonic freshwater lake, with a maximum depth of 80 m. It is enclosed by mountain ranges to the north and south. Small deltas with extensive reedbeds have formed where streams enter the lake, especially at the Karasu in the north-east and Sölöz in the south-west. The Karsak stream is the only outlet and flows from the western end of the lake to the Sea of Marmara: a levee has been constructed to prevent flooding.

The lake is entirely surrounded by arable land and olive groves, whilst there are extensive poplar plantations west of the levee in the former lake bed. Water is taken from the lake via several pumping stations, for use by a textiles factory in Gemlik and to irrigate the surrounding arable land. Some industrial development (metal, chemical and textiles) is found between Orhangazi and the lake. The town of İznik attracts many (day) tourists and there are some small holiday home complexes. A road circumnavigates the lake.

There are fishing cooperatives in Çakırca, İznik, Boyalıca and Gölyaka. The principal catch is Crayfish *Astacus leptodactylus* although its population is reported to have declined since the 1980s, probably as a result of the Crayfish plague.

BIRDS

The site qualifies for its breeding population of Pygmy Cormorant (30 pairs) and Night Heron (250 pairs) which breed in mixed colonies in the reedbeds.

Additional bird information.

Other breeding species include hundreds of pairs of Great Crested Grebe, Squacco Heron (20 pairs), Little Egret (100 pairs) and Grey Heron (50 pairs). Up to 15,000 Coot occur in autumn. For reasons not understood the lake has never been found to hold significant numbers of wintering waterfowl, although the site could be expected to act as a refuge when the lakes of the Anatolian plateau are frozen.

CONSERVATION ISSUES

- İznik Gölü was declared a SİT in 1990.
- During 1963, 416 ha of wetland west of the lake was reclaimed following the

construction of the levee. Simultaneously, the levee served to retain water and the lake has effectively been converted into a reservoir. Approximately 9000 ha of land is presently irrigated with water from the lake, and work is under way to increase this by a further 6945 ha. In addition, farmers extract lake water to irrigate fields close to the lake shore.

- From the small amount of information available, it appears that the lake was, ornithologically, more important prior to its conversion to a reservoir (it is assumed that large areas of reed and marsh disappeared as a result of the higher water levels).
- The industries at Orhangazi discharge untreated waste into the lake, as do cities and villages and some local olive oil processing plants. No comprehensive research into the pollution problems of the lake has been undertaken, but recent algal blooms and massive fish deaths may indicate the possible impact and magnitude of the problem.

ULUDAĞ

IBA no	08
Province(s)	Bursa
District(s)	Bursa, Keles, İnegöl, Kestel
Size	20,000 ha
Coordinates	40°04'N 29°13'E
Altitude	1250-2543 m

SITE DESCRIPTION

The Uludağ range south of Bursa is the highest mountain in western Anatolia. At lower altitudes the IBA is dominated by *Pinus nigra* whilst *Abies/Fagus* forest dominate between 1500-2000 m; alpine scrub and pasture occupy the higher altitudes. Extensive exposed stone fields occupy the summit areas of the highest limestone peaks, whilst to the north of the summit ridge there are substantial dry montane cliff communities. A series of small alpine lakes are found below these cliffs at an altitude of over 2000 m.

The area is a prominent winter sport and skiing resort. There are 25 private and public sector hotels with a total 6000 bed capacity, along with tens of ski slopes and lifts. The mountain is also an important destination for trekkers and campers.

Within the National Park there is no grazing and no forest management. Roe Deer *Capreolus capreolus* and Wild Boar *Sus scrofa* occur, as well as a relict population of the butterfly *Parnassus apollo graslini* which is threatened by collectors.

BIRDS

The site qualifies as an IBA for its breeding populations of Lammergeier (2 pairs) and Golden Eagle (2 pairs).

Additional bird information.

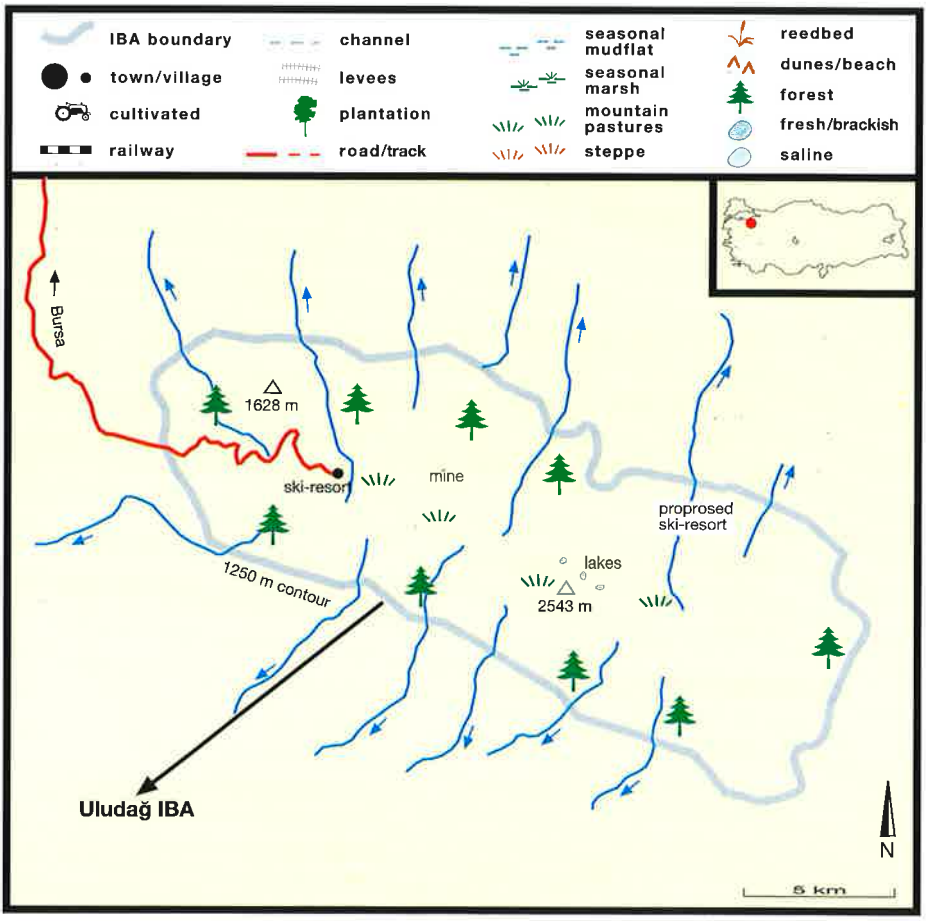
Griffon Vulture, Goshawk, Booted Eagle, Lanner and Peregrine are suspected to breed. Krüper's Nuthatch and Red-fronted Serin reach their western limit of occurrence on Uludağ, and the IBA is one of the few known Turkish sites for Tengmalm's Owl.

CONSERVATION ISSUES

- The Uludağ National Park (11,338 ha) was established in 1961 and increased to 12,732 ha in 1996. Uludağ was declared a SİT in 1978.
- Nearly all water resources at higher elevations are used by the hotels. Parts of the forest have been cleared for ski slopes. A second ski resort centre is planned east of the existing centre, north of the summit, where the Ministry of Forestry has given the Ministry of Tourism the right to build six hotels with an 1800 bed capacity. No study of the consequences of this project with reference to the increased strain on water resources, disturbance of wildlife

and destruction of natural habitats has been carried out.

- Several reports state that Uludağ is affected by acid rain caused by Bursa, and industrial pollution.
- Extensive areas of alpine *Juniperus* moorland have been destroyed by wolfram mining but this activity has now ceased.



ULUABAT GÖLÜ

IBA no	09
Alternative name(s)	Apolyont Gölü, Ulubat Gölü
Province(s)	Bursa
District(s)	Bursa, Karacabey, Mustafakemalpaşa
Size	13,500 ha
Coordinates	40°10'N 28°35'E
Altitude	9 m

SITE DESCRIPTION

A large turbid, shallow (max. 6 m deep) and eutrophic freshwater lake on the south side of the Sea of Marmara. The lake is principally fed by the Mustafakemalpaşa (or Kirmastı) river, and its only outlet is in the north-west where it drains into the Kocaçay (Susurluk or Simav) river. There are four islands in the lake. The entire west side of the lake, as well as several kilometres of the Mustafakemalpaşa river, is embanked. Incoming silt has formed an inland delta largely under agriculture. Remaining natural areas are only found at the edges, usually sand banks covered with *Tamarix* scrub. Along the western and southern shores of the lake vast reedbeds with clusters of trees are found, whilst in the east and north reedbeds are more localised.
The IBA is bordered to the south by steep hills covered with olive plantations, maquis and forests, otherwise the lake is surrounded by arable land and willow plantations. Lake water is used to irrigate surrounding fields.
Fishery is the main human activity, and villages such as Gölyazı are wholly dependent on it.

BIRDS

Uluabat Gölü holds significant breeding populations of Pygmy Cormorant (300 pairs), Squacco Heron (30 pairs) and Spoonbill (75 pairs). Large numbers of waterfowl occur in winter (max. 429,423 in 1996, representing the highest count at any Turkish site since 1970), including Pygmy Cormorant (max. 1078), Dalmatian Pelican (max. 136), Pochard (42,500), Tufted Duck (13,600) and Coot (321,550).

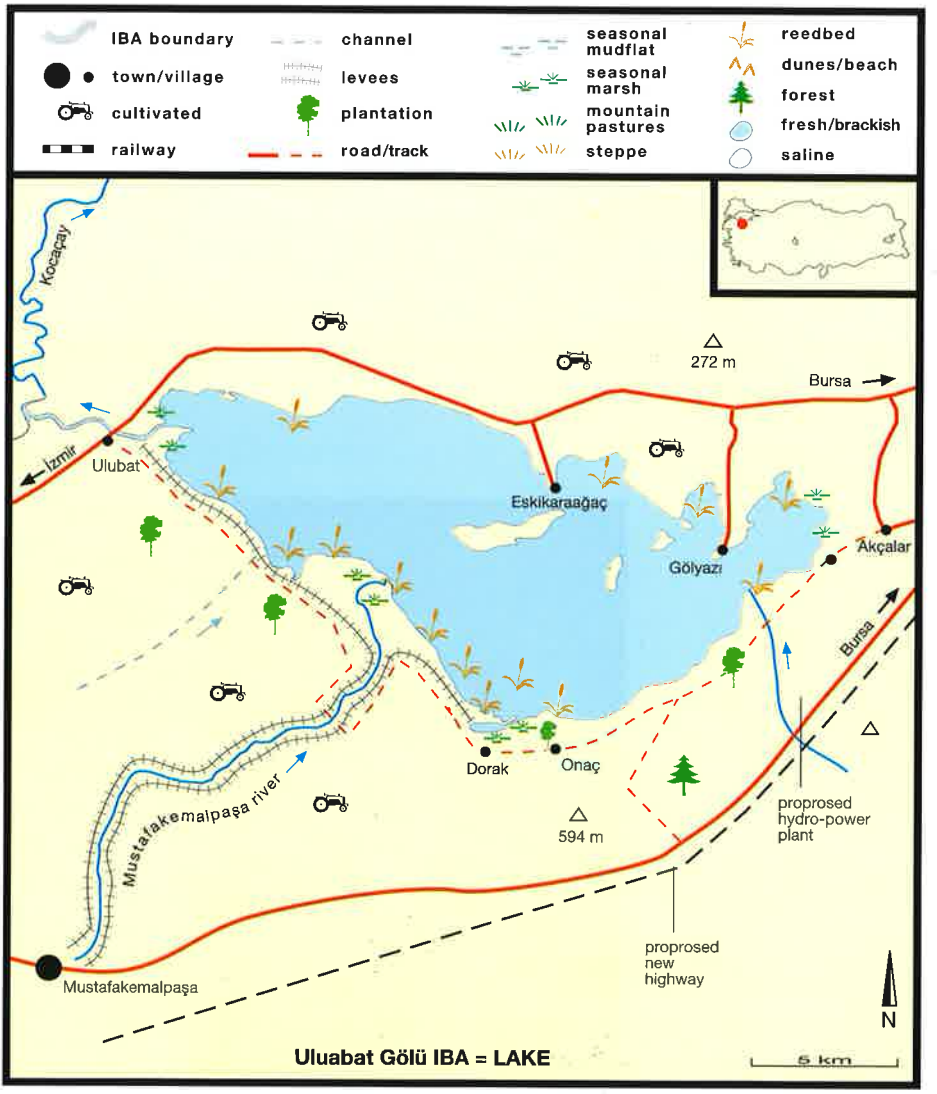
Additional bird information.
Other breeding birds of note include Little Egret (25 pairs) and Glossy Ibis (10 pairs).

CONSERVATION ISSUES

- The site has no protection status.
- During the period 1937-1993, 14,880 ha of floodplain was drained by constructing embankments along the western side of the lake and along the Mustafakemalpaşa river between Mustafakemalpaşa town and the lake. The floodplain has been entirely converted into irrigated arable land. A new delta quickly formed but was rapidly colonised by farmers who plough any natural

area as soon as it can carry the weight of their machines. It is crucial that further colonisation of the inland delta is prevented and the remaining natural habitat preserved.

Lake water is pumped to irrigate 6350 ha to the north and east of the lake. Inflow into the lake is reduced as a result of water being pumped from the Mustafakemalpaşa river for the irrigation of 20,250 ha near Mustafakemalpaşa. Further reduction of inflow will be caused by the planned construction of a reservoir (Çınarcık) on a major tributary of the Mustafakemalpaşa river, 20 km south-east of the lake. The reservoir will store 373 hm^3 of water (representing one-third of the total lake inflow) which will flow via a 11 km-long tunnel to the Uluabat hydro-power plant (548 GWh/p.a.) to be built just south-east to the lake, after which the water will flow back to the lake. No study has been undertaken to investigate the



possible effects (e.g. with regards to reduced water level fluctuations) of this project on the lake's ecosystem.

- There are plans to route a new Bursa-İzmir highway several kilometres south of the lake. This would imply the possibility of the construction of holiday homes on the lake's shore but the Bursa municipality is in the process of drawing up legislation to prevent this.
- The Mustafakemalpaşa river drains a large part of the southern Marmara and north Aegean region, bringing large quantities of urban and industrial waste into the lake. The drainage water from surrounding fields flows back into the lake. Although no studies are available, further and intensive eutrophication may pose a serious threat to the lake's ecosystem. As a result of the increased pollution, plans to develop the lake as a source of drinking water for Bursa were cancelled.
- Despite existing regulations, out-of-season and over-fishing is regular and widespread. The lake yielded 30% of Turkish Crayfish *Astacus leptodactylus* production but this collapsed in 1986 as a result of the Crayfish plague (the Crayfish population is now said to be recovering).

Shooting of protected species is still common at many Turkish wetlands: shot Whooper Swan (Gernant Magnin)

KUŞ GÖLÜ

IBA no.	10
Alternative name(s)	Manyas Gölü
Province(s)	Balıkesir
District(s)	Gönen, Manyas, Bandırma
Size	16,000 ha
Coordinates	40°11'N 27°58'E
Altitude	18 m

SITE DESCRIPTION

Kuş Gölü (15,700 ha) is a shallow eutrophic freshwater lake with an average depth of 3 m. The lake is fed by the Kocasu (Madra), Sığırcı, Mürvetler and Dutlu streams, as well as by groundwater. The Kocasu stream constitutes 70% of the lake's water supply. The outlet is the Karadere stream which later joins the Kocaçay (Susurluk or Simav) river. Where the Kocasu, Mürvetler and Sığırcı flow into the lake small deltas have formed with extensive marshes and tree-lined river banks (total 300 ha). Narrow belts of reed fringe much of the lake. The south and south-west shores of the lake are embanked and the outflow controlled by two regulators. The lake's water is stored for irrigating arable land in the Karacabey plain east of the IBA. Water is pumped from the lake for use in the Bandırma Etibank factory. Cattle and sheep grazing is common along the lake shores. A 64 ha area at the point where the Sığırcı stream enters the lake is protected as the Kuşcenneti National Park, consisting of partially flooded forests (mainly willow) and reedbeds. The National Park has an observation tower and visitors centre.
Fishery is of local importance with 100 tons caught during 1995.

BIRDS

The site holds significant breeding populations of Pygmy Cormorant (150 pairs), Dalmatian Pelican (35 pairs), Night Heron (150 pairs), Squacco Heron (100 pairs) and Spoonbill (200 pairs). Large numbers of Cormorant occur throughout the year (max. 2650), and White-headed Duck is regularly recorded in winter (max. 34), as well as Dalmatian pelican (max. 117). White Pelicans occur during migration and often roost at the lake.

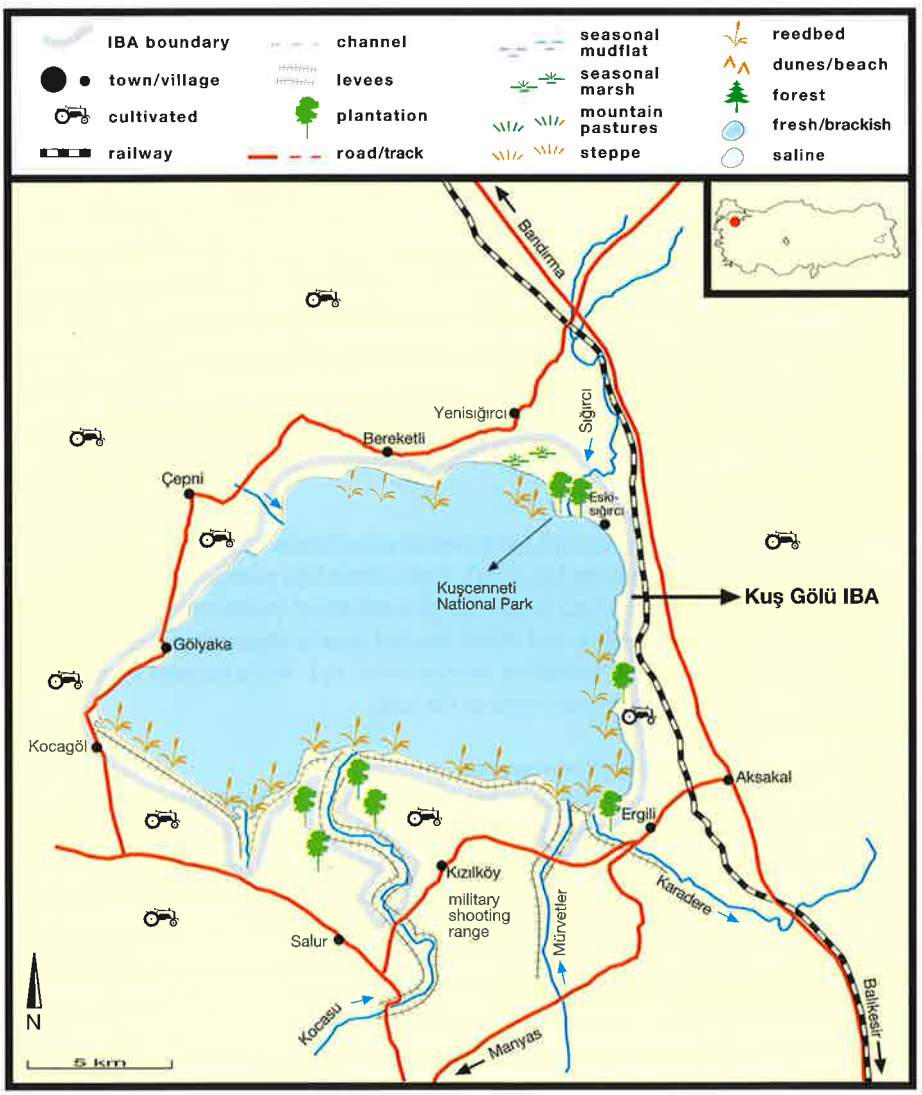
Additional bird information.
The breeding colonies in the National Park also hold Cormorant (2000 pairs), Little Egret (30 pairs), Grey Heron (250 pairs) and Glossy Ibis (10 pairs). Breeding birds elsewhere include Common Tern (150 pairs).
During the late 1960s up to 60,000 waterfowl were counted in winter but recent counts have produced insignificant numbers.

CONSERVATION ISSUES

- The 64 ha (0.4 % of the total wetland area) National Park was declared in 1959. In 1977 the entire lake was declared a Permanent Wildlife Reserve

(23,667 ha), and in 1981 the National Park and its surroundings were declared a SİT. Finally in 1994, 10,200 ha was declared one of the first five Turkish Ramsar sites (the official explanation as to why only 65% of the lake was declared is that this was the result of pressure from hunters). It was granted a class "A" Diploma by the Council of Europe in 1976, a status subsequently renewed four times (most recently in 1996).

- In order to store irrigation water, DSİ (State Water Works) has gradually turned Kuş Gölü into a reservoir. An old regulator on the outlet produced an artificial water regime, a situation compounded in 1992 when DSİ completed 31 km of embankments on the south and south-west shores, and in 1994 with the construction of the large Ergili regulator on the outflow. The embankments immediately led to the reclamation of 3800 ha of valuable marshland. The Manyas reservoir and hydro-power station (of which



preparatory construction work has started), 35 km upstream on the Kocasu stream, will store 393 hm^3 water and produce 59 GWh/p.a. The presence of the hydro-power station implies that water will be continuously released into the lake. Moreover, 154 hm^3 (i.e. one third of the annual flow of the Kocasu stream) will be released from the reservoir to irrigate 20,050 ha south of the lake (including the recently reclaimed marshes south of the embankments). 16,683 ha will eventually be irrigated in the Karacabey plain with water from Kuş Gölü. No drainage water will be fed back into the lake.
In 1979 DSİ declared its commitment to maintain the natural character of Kuş Gölü and agreed with the Ministry of Forestry to regulate the water levels according to set minimum and maximum levels. However, as DSİ admits, since the completion of the embankments in 1992, water levels have been extremely high, especially in summer when they are over a metre above previous normal levels (e.g. in July 1996 it was 122 cm above the agreed maximum level). The high water levels have resulted in the loss of feeding marshes for birds which were inundated during the breeding season. In addition, the nesting trees in the National Park began to die as a result of their prolonged inundation, and the lower more foliated parts of the forests have remained permanently inundated, leading to very low breeding numbers of the smaller heron species. In contrast, the Cormorants have proved highly successful in competing for the remaining nesting space: 2000 pairs bred during 1995 compared with 300 pairs in the 1970s.
DSİ claims that the high water level problem will be rectified as soon as the Karadere stream has been deepened (and its maximum flow increased from 32 to 70 m^3/per second) and the Manyas reservoir has been completed.

- Another major threat is the severe pollution from over 50 industries and numerous farms in Bandırma which is carried into the lake by the Sığırcı stream. The Kocasu stream also carries industrial and household pollution into the lake. The sources and types of pollution are well-known, many studies have been carried out and solutions to the problem suggested. To date the Ministry of Environment has built (in 1993) only one physical treatment installation near the Sığırcı stream. This installation has insufficient capacity. In addition, the Ministry was not able to fully implement the regulations which dictate that all polluters must be connected to the treatment plant: thus far no factories are connected. A new plan foresees industries establishing their own treatment facilities.
- Nesting sites of Dalmatian Pelican on the former Kabak and Kazak islands were destroyed during the 1970s by locals in order to avoid the area's inclusion in a planned expansion of the National Park. The only remaining suitable breeding area for tree-nesting species at present lie within the Kuşcenneti National Park. This makes the colonies here very vulnerable but the forest is not subject to any management scheme.
- Due to overfishing, Crayfish plague, pollution and possibly the effects of the changing water regime, fish catches have declined drastically. In 1975, 900 tons were caught, but the present day catch largely involves commercially less valuable species. Most of the fish cooperatives have closed down. Fish migration into the lake through the Karadere stream is now impossible due to the construction of the regulator.

KOCAÇAY DELTASI

IBA no	11
Alternative name(s)	Kocasu Deltası, Nilüfer Deltası
Province(s)	Bursa
District(s)	Karacabey
Size	4200 ha
Coordinates	40°23'N 28°29'E
Altitude	sea level

SITE DESCRIPTION

A complex of coastal lakes, marshes and forests on the southern shores of the Sea of Marmara. The delta formed at the point where the Kocaçay (also known as the Susurluk or Simav) river enters the sea: just inland of this the river is joined by the Nilüfer stream from Bursa, the Karadere stream which drains Kuş Gölü (IBA no. 10) and the stream which drains Uluabat Gölü (IBA no. 09).
The western half of the delta consists of two lagoons, Poyraz and Dalyan lakes (total 194 ha, fed by the Maliç stream), reedbeds (600 ha), extensive alluvial forest (730 ha) consisting of Ash, Alder and Willow, and a wide dune stripe. Overall the flora is very rich. The eastern half of the delta is more open with one large lagoon, Arapçiftliği lake (391 ha, max. depth 4 m), arable land, orchards, dunes, reedbeds and large mudflats covered with *Salicornia* and *Tamarix*.
South of the IBA is a 8594 ha Permanent Wildlife Reserve consisting of hills (up to 830 m) covered with dense mature deciduous forests and including a Pheasant breeding station, a deer protection area and a bear rehabilitation centre.
Agriculture is practised in the areas between the lakes and the forests, whilst the alluvial forests and the wetlands are used for cattle grazing.
There is limited fishing activity in the western lakes (7.3 tons in 1995). Arapciftliği lake is a study area for fishery research by the Aquaproducts Department of the Uludağ University (Bursa) and is thus closed to commercial fishing. One kilometre upstream of the Kocaçay rivermouth is a small fishing harbour.

BIRDS

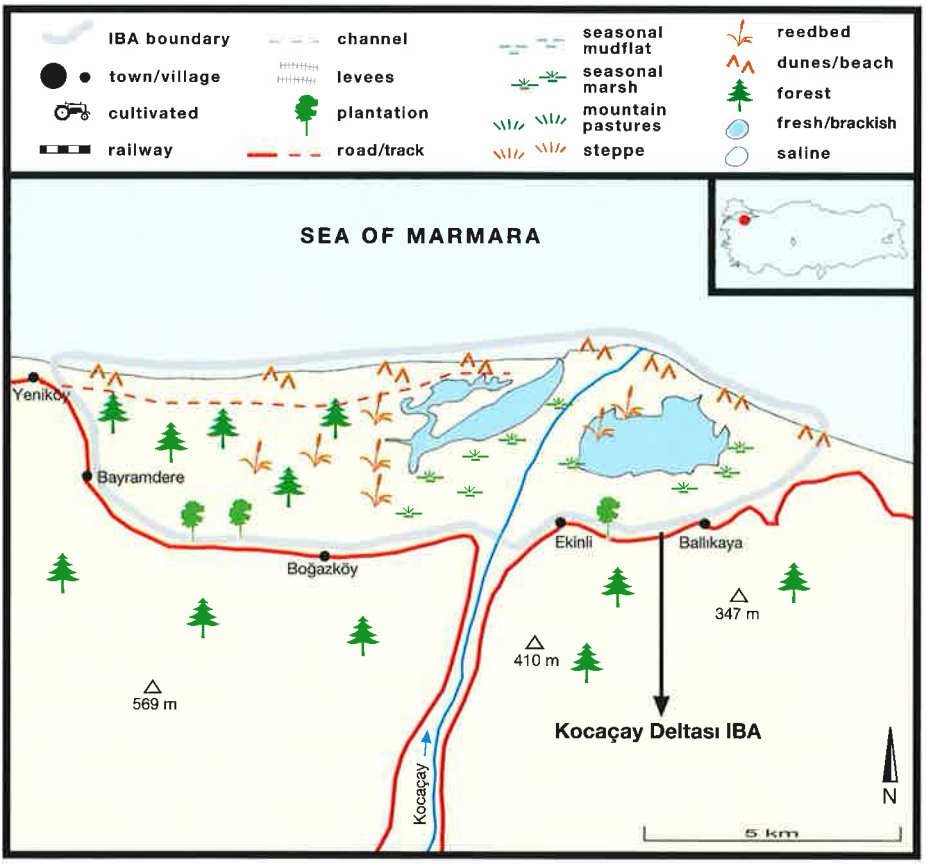
The site qualifies as an IBA for its breeding populations of Black Stork (10 pairs), Ferruginous Duck (70 pairs), Collared Pratincole (80 pairs) and Kentish Plover (60 pairs). Significant numbers of Pygmy Cormorant (max. 150) and White Pelican (max. 800) occur during migration and large numbers of wintering waterfowl (max. 46,291) include Coot (max. 42,610).

Additional bird information.
Other breeding birds of note include Little Bittern (10 pairs), Night Heron (20 pairs), Squacco Heron (10 pairs), Little Egret (40 pairs), Grey Heron (10 pairs), Mute Swan, Mallard, Garganey, Red-crested Pochard (10 pairs), Pochard (30 pairs), White-tailed Eagle (one of the few confirmed Turkish breeding sites), Coot, Oystercatcher, Common Tern (70 pairs), Little Tern (20 pairs) and several

species of woodpecker. Purple Heron, Glossy Ibis, and Lesser Spotted Eagle are suspected to breed. Just outside the IBA, Cormorant (50 pairs), Goshawk, Buzzard, Imperial Eagle, Golden Eagle and Booted Eagle are confirmed or presumed breeders.

CONSERVATION ISSUES

- The site has no protection status.
- Immigrants from other regions of Turkey have settled throughout the area, especially in the area bordering the alluvial forest in the south-west. Forest and other natural habitats are cleared for arable land and poplar plantations. The alluvial forests are increasingly disturbed by illegal felling and the construction of small farms.
- Yeniköy is quickly developing as a tourist centre, and further expansion eastward into the dunes and alluvial forests should be halted. The dunes here are rapidly destroyed to fulfil the demand for sand. Housing complexes are also encroaching the IBA from the east but the recent demolishing of hundreds of illegally built houses on the coast there indicates that this threat is no longer imminent. An unfinished three-floor building (belonging to the Uludağ University) in the centre of the eastern part of the delta is of concern.



- Whereas Arapçiftliği lake is state-owned, the other lakes are claimed to be privately owned, an impossibility according to Turkish law. This situation hampers effective management of the wetland.
- The effect of the heavily polluted Kocaçay river (especially from the Nilüfer river which drains all Bursa household and industrial wastes) on the delta's ecology has not been studied.

FOÇA ADALARI

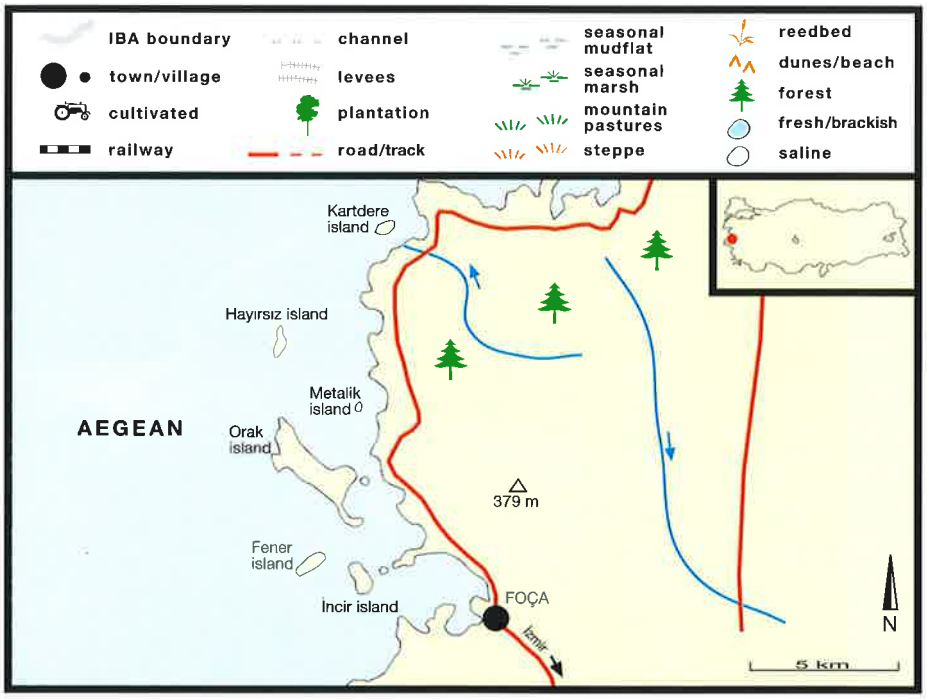
IBA no	12
Province(s)	İzmir
District(s)	Foça
Size	124 ha
Coordinates	38°42'N 26°43'E
Altitude	0-80 m

SITE DESCRIPTION

An island group off İzmir Bay, consisting of six uninhabited islands: Orak (93 ha), Hayırsız (5ha), Fener (14 ha), İncir (18 ha), Kartdere (2 ha) and Metalik (1.5 ha). There is a long pebble beach on the south shore of Orak, whilst cliffs of moderate height (up to 80 m) are largely found on Orak, Hayırsız and Kartdere. The islands are largely covered with herbaceous plants, garrigue and maquis. There is a small pine wood on the east coast of İncir and a small cactus field on Fener.

Tourism is the major economic activity of the Foça region. Especially during summer, Foça is packed with tourists and İncir island in particular is used as a picnic area and beach by tourists and locals. There is nearly no human activity on the other islands.

The islands and their surroundings host one of the last major Monk Seal *Monachus monachus* colonies in Turkey. Several species of lizard and (introduced) rabbits occur on the islands.



BIRDS

The site qualifies as an IBA for its breeding population of Shag (59 pairs).

Additional bird information.
Other breeding birds include Yellow-legged Gull (257 pairs), Common Tern (60 pairs) and Little Tern (20 pairs).

CONSERVATION ISSUES

- The area was declared a SİT in 1977. In 1990 Foça and its surroundings waters were declared a Specially Protected Area (2800 ha). Apart from Hayırsız and Kartdere, all islands are within the protected area. The declaration of the SPA halted several developments on the mainland and has secured the future of the islands.
- The area was also declared a "Mediterranean Monk Seal Conservation Area", a non-official status granted by the Monk Seal National Committee.
- Until the area was declared a SPA, the islands were used as a training site for army marines: this caused serious disturbance to the seabird colonies.
- Most recreational activities (such as angling and scuba-diving) on and around the islands are now prohibited.
- A Monk Seal Research and Conservation Project has been jointly administered by WWF International and the Turkish Underwater Research Society since 1993.

Common Tern (Cem Kiraç)

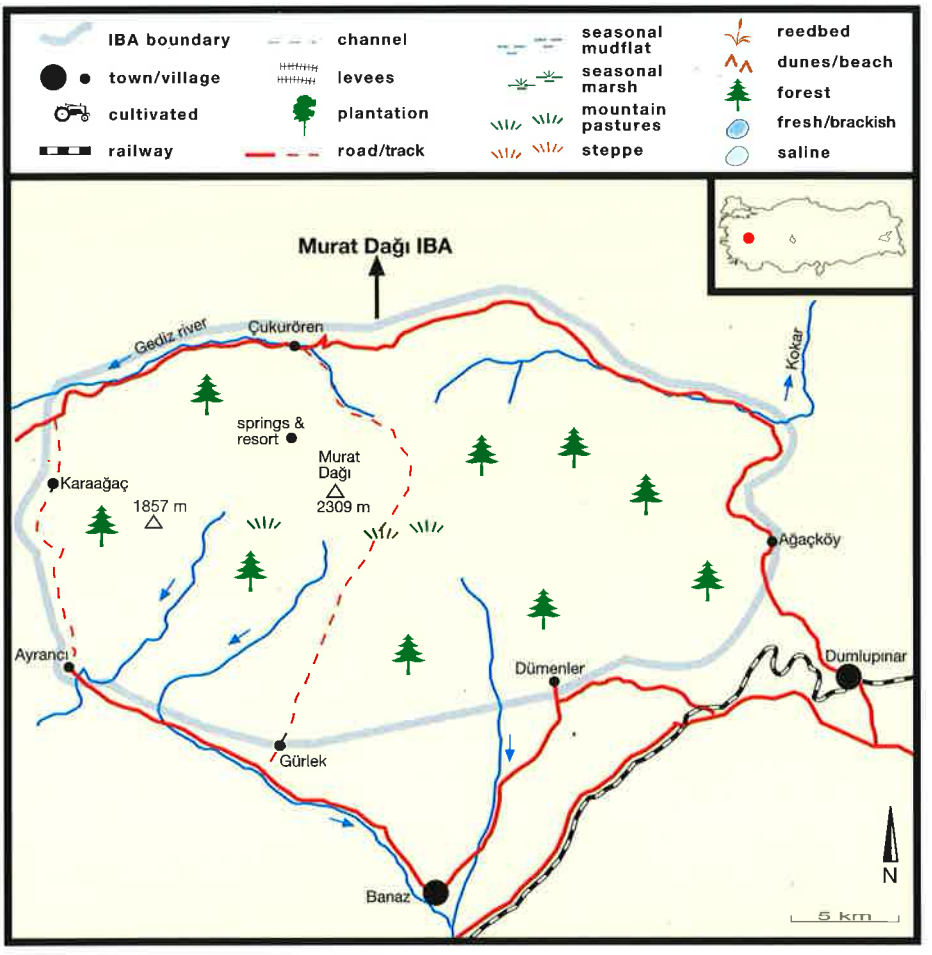
MURAT DAĞI

IBA no	13
Province(s)	Uşak, Kütahya
District(s)	Banaz, Gediz, Altıntaş, Dumlupınar
Size	52,500 ha
Coordinates	38°56'N 29°43'E
Altitude	1000-2312 m

SITE DESCRIPTION

A large mountain range with a high east-west barren mountain ridge rising to 2312 m. All slopes are extensively forested below 2000 m with *Pinus nigra, P.sylvestris* and *Quercus.* Large parts of the complex have been clear-felled and reforested. These forests are intensively managed and bisected by numerous tracks. Grazing pastures are found at higher altitudes.

A holiday village is located around hot springs on the north slopes and is still



expanding with several smaller holiday homes and one large hotel under construction.

BIRDS

The site holds breeding Lammergeier (1 pair), Black Vulture (2 pairs) and Golden Eagle (2 pairs).

CONSERVATION ISSUES

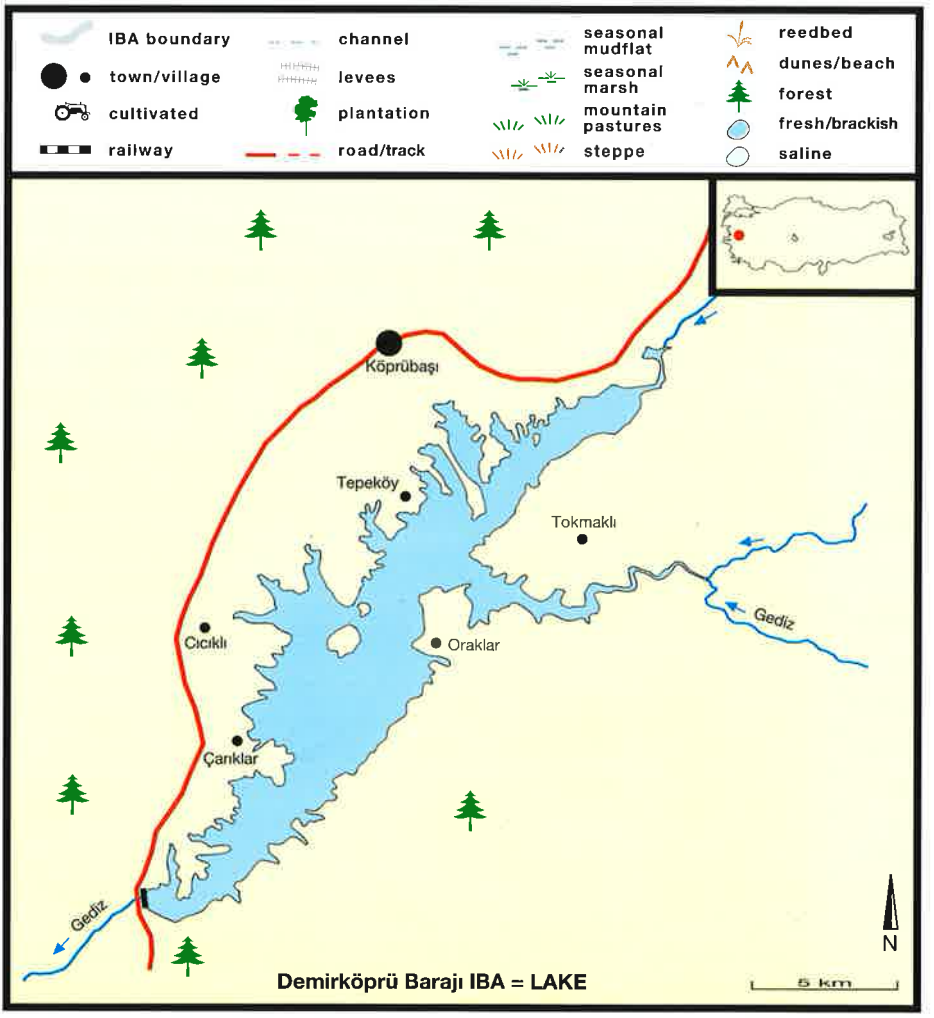
- The site has no protection status.
- The two occupied and three unoccupied Black Vulture nests found in one valley during a 1996 survey indicate that larger numbers of birds presumably bred on Murat Dağı before wholescale clear-felling and reforestation programmes were implemented. A management plan to preserve the remaining old growth forests, especially in the steeper valleys, would secure the future of the Black Vultures. Forestry management should be timed in accordance with the breeding season and distribution of the raptors (leaving a no-activity buffer zone around each breeding valley) and old pines should not be felled.

DEMİRKÖPRÜ BARAJI

IBA no	14
Province(s)	Manisa
District(s)	Demirci, Köprübaşı, Salihli
Size	5060 ha
Coordinates	38°41'N 28°23'E
Altitude	244 m

SITE DESCRIPTION

A reservoir on the Gediz river near Manisa. The reservoir was completed in 1960 and provides electricity (193 GWh/p.a.), flood control, and water to irrigate 99,000 ha of land. Most of the reservoir is bordered by barren rocky hills. Studies by the DSİ (State Water Works) during the 1960s found the lake rich in



phyto- and zooplankton. In 1992 the fish catch was 85 tons.

BIRDS

Winter counts in the late 1960s did not produce significant numbers of waterfowl, but in recent winters significant numbers of Ruddy Shelduck (830) and Teal (10,410) were counted.

CONSERVATION ISSUES

- The site has no protection status.

MARMARA GÖLÜ

IBA no	15
Alternative name(s)	Gölmarmara Gölü
Province(s)	Manisa
District(s)	Salihli, Gölmarmara
Size	6800 ha
Coordinates	38°37'N 28°00'E
Altitude	79 m

SITE DESCRIPTION

Originally a temporary brackish lake in a closed basin and fed only by small streams and groundwater, Marmara Gölü was converted into an irrigation reservoir during 1932-1953. The lake measures 3400 ha on average and is 3-4 m deep. Only during the 1960s did the lake almost fill its maximum capacity when it covered nearly 6800 ha. In summer 1993 the lake almost completely dried up. Reedbed and marsh cover varies according to the water level and is most extensive in the north.

The lake is surrounded by hills to the north and north-east, whilst a depression opens to the Gediz valley in the south and to the Akhisar valley in the north-west: it is separated from these valleys by alluvial barriers. Grapes and olives are the main agricultural products grown on the hill slopes, whilst floodplain areas within and outside the embankments are principally used for growing cotton. Cattle grazing is widespread, especially in the marshes west and north of the lake. Fishery is the main economic activity of local people.

BIRDS

The site holds significant numbers of breeding Little Bittern (30 pairs), Squacco Heron (200 pairs), Ferruginous Duck (15 pairs), Spur-winged Plover (10 pairs) and Whiskered Tern (100 pairs). Large numbers of waterfowl (max. 45,278) occur, especially in winter, including Pygmy Cormorant (max. 100), Dalmatian Pelican (max. 73), Great White Egret (max. 428), Ruddy Shelduck (max. 290), Wigeon (max. 8500), Pochard (max. 24,000), Ferruginous Duck (max. 860), White-headed Duck (max. 120) and Avocet (max. 1402).

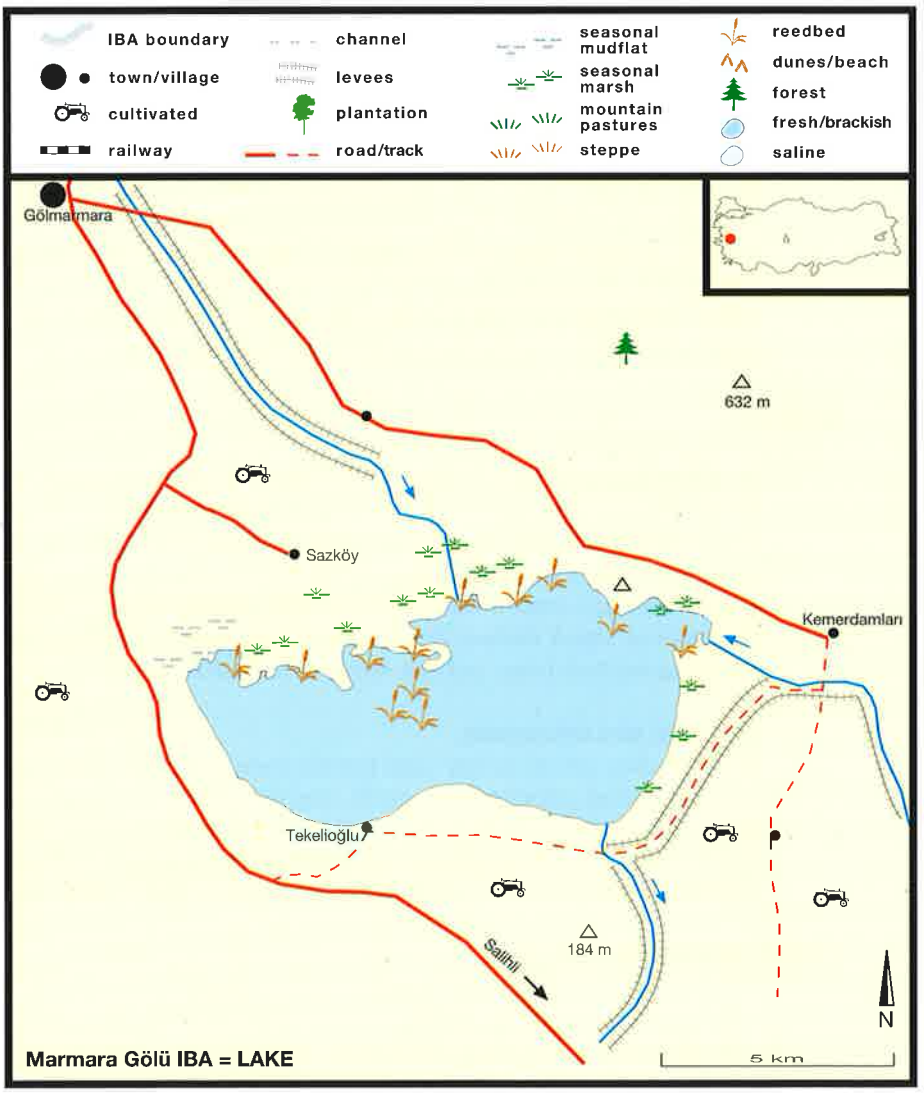
Additional bird information.

Other breeding species include Great Crested Grebe (100 pairs), Black-necked Grebe (100 pairs), Little Egret (150 pairs), Grey Heron (20 pairs), Night Heron (20 pairs), Purple Heron (30 pairs), Spoonbill (10 pairs), Mute Swan (3 pairs), Greylag Goose (20 pairs), Gadwall (5 pairs), Mallard, Gargeney, Pochard, Coot and Black-winged Stilt (100 pairs). Dalmatian Pelican is suspected to breed.

CONSERVATION ISSUES

- The site has no protection status.
- Marmara Gölü was formerly a temporary lake until it was converted into a reservoir. In 1953 the government completed over 10 km of embankments and

diverted the Gördes and Kum rivers into the lake. Also the Gediz river (controlled by the Adala regulator) supplies water to Marmara Gölü during wet years. Water from Marmara Gölü is used to irrigate a large portion of the Ahmetli sub-project of the Lower Gediz Irrigation Scheme, which totals 54,875 ha. In addition, the lake provides water for the Menemen sub-project (28,483 ha, cf. Gediz Deltası IBA no. 16) within the same scheme. The lake has a capacity of 320 hm^3 and its levels are, in theory, operated between 73.6 and 79.2 m, corresponding with a lake surface area of 3178 ha and 6800 ha respectively. However in 1993, after two dry years exacerbated by continuous pumping by farmers, the water level dropped to 72.6 m, and the lake virtually dried up in summer. Although officially denied, it was clear that had DSİ (State Water Works) recognised the problem and stopped releasing water, as well as addressing the problem of illegal abstraction, drying up of the lake



could have been prevented. As an emergency measure 5 hm^3 was released from the Demirköprü Barajı (IBA no. 14) but it was already too late to save the fish stocks (see below). As a result of public outcry over bad management, no irrigation water was released during the summers of 1994 and 1995.

- Further expansion of the irrigation network requires more water and DSİ is now constructing a third channel which will allow more water to be brought in from the Gediz river through the Ahmetli regulator. This channel is 15.5 km long and could add up to 169 hm^3 of (polluted) Gediz river water to Marmara Gölü during winter, permitting the irrigation of an additional 9443 ha. Eventually DSİ plans to build an additional 10 km of embankments on the north-west shore and to elevate the existing embankments so that the lake's storage capacity is increased to 400 hm^3 (and the maximum level to 81 m). No study has been undertaken to investigate the implications of these schemes for the ecological character of the lake.
- DSİ plans to construct a 42 GWh/p.a. hydro-power station on the existing channel connecting the Gediz river and Marmara Gölü.
- Ecologically valuable tracts of mudflat that appear during periods of low water levels are temporarily converted into arable land by local farmers.
- Up to 300 tons of fish were caught at Marmara Gölü before its conversion. Production then increased, with up to 400 fishing boats in use and a record catch of 963 tons in 1963 (a period with high water levels). As a result of the drying up of the lake in 1993, the fishing industry collapsed. Over half a million fish fry were released, and following a fishing ban and an increase of the water level, fish populations are fast recovering. Out-of-season fishing is common.

GEDİZ DELTASI

IBA no	16
Alternative name(s)	Çamaltı Tuzlası, İzmir Kuşcenneti
Province(s)	İzmir
District(s)	İzmir, Menemen
Size	20,400 ha
Coordinates	38°30'N 26°55'E
Altitude	sea level

SITE DESCRIPTION

An extensive coastal wetland consisting of bays, saltmarshes, freshwater marshes, large saltpans and four lagoons which formed at the former mouth of the Gediz river, 25 km north-west of İzmir. The river was diverted in the late 19th century (in order to prevent the entrance to İzmir bay from silting up) and now flows into the Aegean at the northern end of the IBA.
The four lagoons, Homa (1824 ha), Çilazmak (725 ha), Kırdeniz (400 ha) and Taş (500 ha) are highly saline and have shoals and islands separating them from the sea. There are commercial saltpans covering 3300 ha. In the south-east, between the saltpans and İzmir, there is a 5000 ha saltmarsh, including a 150 ha freshwater marsh. The area north of the salines consists of dry grasslands, arable land and some low woodland. A 500 ha reed-covered freshwater marsh formed where a drain (the S47) entered the IBA east of Kırdeniz Dalyanı, but due to water shortage has been largely dry in recent years.
The site has been managed as salines since 1863 when the first saltpans were created by Italian entrepreneurs. Subsequently the salines were owned by Greek, Armenian and Jewish bankers. Since 1912 the area has been managed by the Turkish Government, and now produces ca. 500,000 tons annually on 232 ha of the salines (37% of Turkey's total salt production). Sea water is pumped into the higher parts of the system and fed by gravity from basin to basin until it reaches the collecting pans aligned along the seafront, next to which the salt is stored for the winter in order to increase the NaCl concentration from 95% to 98%.
Two military airports are situated just east of the IBA.
The Homa lagoon is managed and studied for fishery by the Aegean University in İzmir, whilst there is a fishing cooperative in the Çilazmak lagoon.

As a result of local public awareness campaigns and the publicity given to the wetland restoration project (see below), the site has become a well-known wetland and a popular weekend destination for people from İzmir. There are several bird observation towers and a visitors centre .

BIRDS

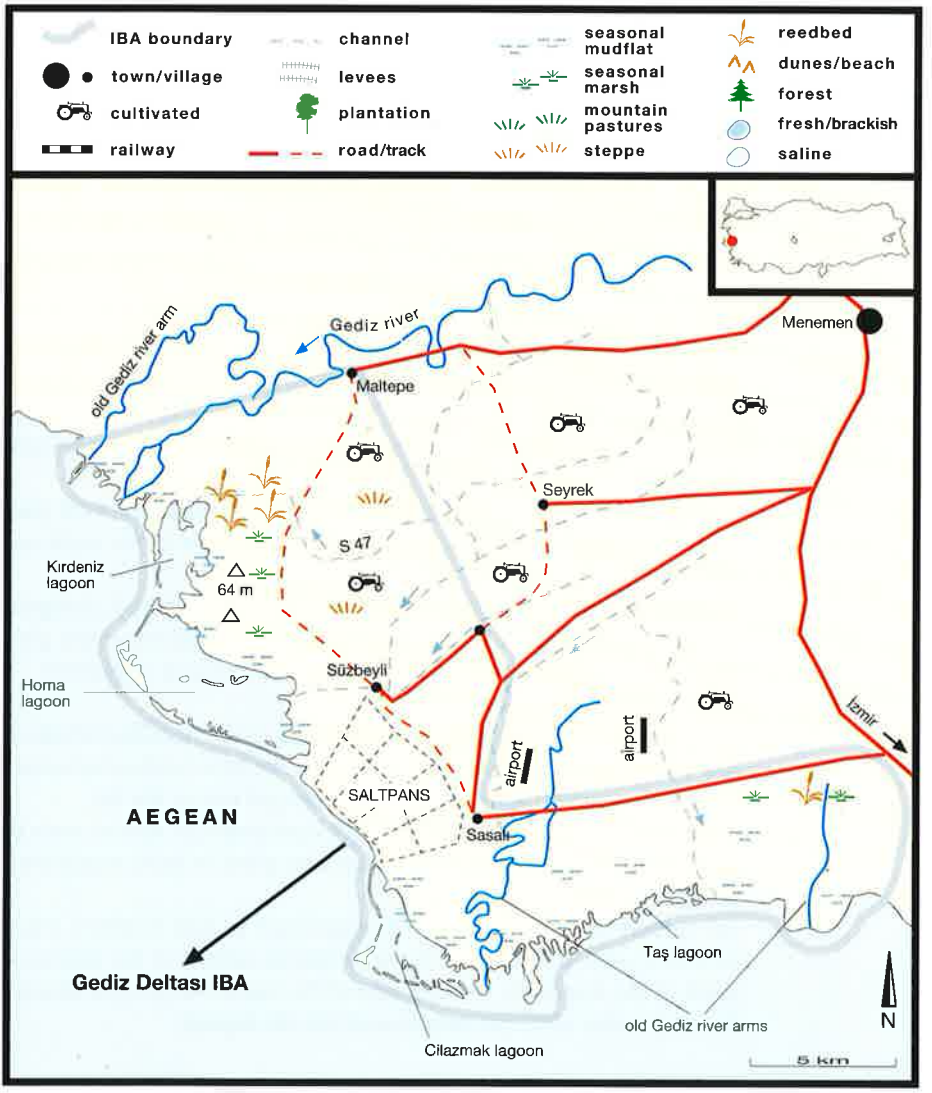
The site qualifies as an IBA for its breeding populations of Dalmatian Pelican (35 pairs), Greater Flamingo (1,450 pairs), Lesser Kestrel (25 pairs), Avocet (55 pairs), Stone Curlew (30 pairs), Collared Pratincole (35 pairs), Kentish Plover (1000 pairs), Spur-winged Plover (50 pairs), Mediterranean Gull (900 pairs) Little Tern (205 pairs) and Caspian Tern (100 pairs). During winter large

numbers of waterfowl (max. 25,239) including Pygmy Cormorant (max. 1,000), Dalmatian Pelican (max. 341), Greater Flamingo (max. 21,300) and Ruddy Shelduck (max. 450) occur.

Additional bird information.
Other breeding birds include Oystercatcher (25 pairs), Yellow-legged Gull (1350 pairs), Sandwich Tern (53 pairs in 1996, the first Turkish breeding record), and Common Tern (2150 pairs).

CONSERVATION ISSUES

- In 1980, 8,000 ha (covering the saltpans and the lagoons) was declared a Permanent Wildlife Reserve and in 1981 the same area was declared a SİT.



- The Gediz river is the major water source for agriculture in the region. The first irrigation programmes began in the 1940s and to date three dams (both for irrigation and hydro-power) have been built on the river and its tributaries. Cotton and rice (the latter only when there is sufficient flow) are the main crops in the areas irrigated with river water. The Menemen Irrigation Project (part of the larger DSİ (State Water Works) Lower Gediz Irrigation Scheme) north-east and partly within the IBA, aims to improve soil conditions and irrigate 23,000 ha.
- The Gediz river is heavily polluted by at least 130 industrial sources and virtually all (mostly untreated) household waste generated in its basin, but the effects of this on the wetland are unknown. Anaerobic water from the salines is thought to cause sea pollution.
- During the early 1990s the 500 ha freshwater marsh, fed by the S47 drain, dried up when DSİ started using the drainage water for irrigation and eventually large parts of the marsh burnt. Public outcry and governmental concern resulted in the construction, with private funds, of a 5 km-long pipeline through which clean groundwater was pumped into the marsh. This provision permits the flooding of only 70 ha of the marsh in winter and 30 ha in summer. Moreover, due to disagreement among government departments on who should finance the running cost of the groundwater pumps, the scheme was only initiated for a short period. In addition, a scientific mission found that the groundwater initially used for the flooding of the marsh was highly saline and would probably have damaged the marsh in the long term.
- Disturbance to the Greater Flamingo colony in the salines is caused by lorries which pass by on a frequent basis; repairs to the saltpans undertaken in March and April may delay breeding (and even cause the colony to be abandonded, as happened in 1995). To increase the ecotourism value of the flamingo colony, disturbance should be reduced and small modifications to the breeding islands should fix the location of the colony.
- The İzmir municipality plans to build a 2000 ha sewage treatment plant (for which it received 184 million USD World Bank support) in the south-east part of the IBA.
- Another plan concerns the dumping of 7,000,000 m^3 of mud, dredged from the bottom of the İzmir Bay, onto land near the sewage treatment plant and within the IBA borders. The mud is heavily polluted and considered hazardous to humans.
- The city of İzmir is encroaching upon the IBA. Large housing complexes, the Atatürk Industrial Complex (495 units) and the İzmir Leather Factories Complex (190 units) are under construction just east of the IBA.
- Plans to expand the saltpans have been considered for several years but appear to have been shelved. There are also plans to build a separate sea port for the saltworks.
- Fish catches in the Homa lagoon dropped from 70 tons in 1986 to maximum 20 tons in 1995, possibly due to the increasing salinity of the lagoons as a result of the drastically reduced flow of the Gediz river and the diversion of drainage water which formery flowed into the lagoon.

ILDIR KÖRFEZİ ADALARI

IBA no 17
Province(s) İzmir
District(s) Çesme , Karaburun
Size 957 ha
Coordinates 38°27'N 26°21'E
Altitude 0-218 m

NO MAP

SITE DESCRIPTION

The Ildır bay is situated between the Çeşme and Karaburun peninsulas, west of İzmir. The bay has two groups of uninhabited islands. One, situated at the mouth of the bay, consists of Karaada, Toprak, Küçükada, Uzunada and a few smaller islands, with a total area of 830 ha. Karaada island, the largest (670 ha) and highest (218 m), has steep cliffs on its western and eastern shores. It is also known as Goni or Eşek (donkey) island, due to the presence of feral donkeys on the island: Wild Boar *Sus scrofa* also occurs. All islands are maquis covered. The second group is situated closer to the mainland and comprises seven small, sparsely vegetated rocky islands totalling 127 ha, including Mustafa Çelebi, Karabağ, Çifte and Yassıada islands.
There is very little human activity around the islands. Some fishing takes place in the Ildır bay, and there is a fish farm in a bay east of Karabağ Island (1992 catch was 22 tons).

BIRDS

The site qualifies for its breeding population of Shag (84 pairs).

Additional bird information.
Other breeding species include Lesser Kestrel (5 pairs), Chukar and Yellow-legged Gull whilst Long-legged Buzzard, Short-toed Eagle, Peregrine and Kestrel are suspected to breed.

CONSERVATION ISSUES

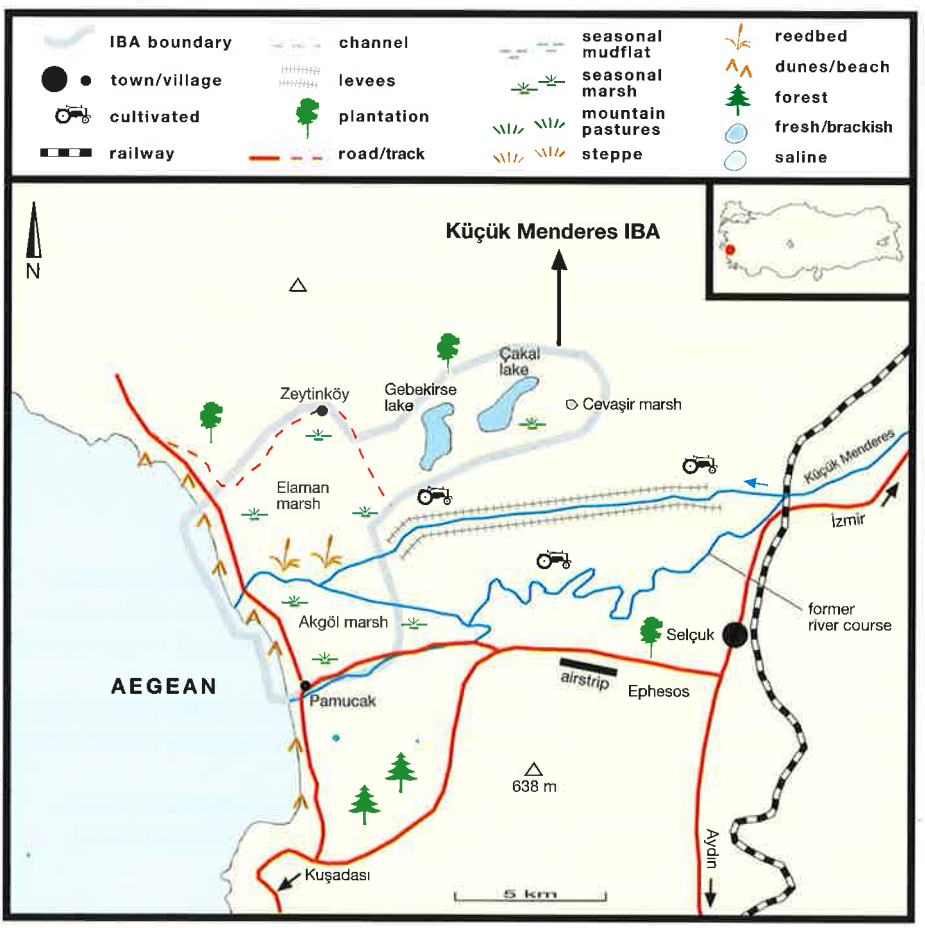
- All islands were granted SİT status in 1995. Karaada was declared a Permanent Wildlife Reserve in 1994 (670 ha). Two pairs of Ibex *Capra aegagrus* were released on the island and it is planned to open the island for hunting tourism in the future.
- Introduced Rabbits *Oryctolagus cuniculus* occur on the eastern island group and are illegally hunted throughout the year, especially on Çifte island where the largest number of Shag breed.
- Yacht tourism is common but probably has no significant impact.
- There are plans to build fish farms in the bays of Karaada island.

KÜÇÜK MENDERES DELTASI

IBA no	18
Province(s)	İzmir
District(s)	Selçuk
Size	1500 ha
Coordinates	37°59'N 27°18'E
Altitude	sea level

SITE DESCRIPTION

A wetland complex consisting of Çakal lake (a 74 ha, 4 m-deep freshwater lake) and Gebekirse lake (a 75 ha, 5 m-deep brackish lake) and marshes (most extensive being the Elaman and Akgöl marshes) in the alluvial plain north of the Küçük Menderes river. The former Cevaşir lake only floods in winter. The lakes are fringed with *Phragmites*: large parts of the marshes are covered with *Tamarix*. Sea water reaches up to four kilometres upriver but only affects Gebekirse lake.



Maquis, fields, willow and olive orchards occupy much of the surrounding higher ground: in the plain cotton is the principal crop. Major coastal roads disect the site and there is a small airstrip just west of Ephesos, a major tourist attraction.

Twelve fish species occur in the two lakes but fishing only takes place in Gebekirse lake (10 tons bagged during 1995). Fish fry is collected at the river mouth.

BIRDS

The site holds siginificant numbers of Pygmy Cormorant (max. 160) during migration.

CONSERVATION ISSUES

- A 1000 ha area within the IBA was declared a Permanent Wildlife Reserve in 1984 and in 1991 the whole delta was granted SİT status.
- The 125 km-long Küçük Menderes river and the fertile soils in its valley were noted for their agricultural potential in historical times, but full exploitation only began in the 1930s. As part of an anti-malaria scheme, a large reclamation programme was implemented, resulting in the disappearance of at least 26,000 ha of temporary or permanent wetlands along the entire course of the Küçük Menderes river and its main tributaries. The scheme included the reclamation of numerous lakes up to 50 km inland (including Nohut, Cellat and Akarca lakes). In addition the river was canalised and diverted to run from the north of Selçuk in a straight line to the sea. The two remaining lakes were formerly considerably larger and coalesced to become one large lake during periods of high water.
- The 1500 ha of wetland which remains is far from safe as DSİ (State Water Works) plans to construct four dams (to irrigate tens of thousands of hectares of land upstream) on the Küçük Menderes river and its tributaries, which will greatly reduce its flow and may lead to the drying up of the Elaman and Akgöl marshes.
- Along the coast holiday homes and tourist hotels projects encroach upon the area from the north and especially from Kuşadası in the south.
- The site's present ornithological importance is a far cry from its former glory. Preservation and sympathetic management of the remaining wetland areas in the Küçük Menderes Deltası could increase its natural importance.
- Although infrequently used, the effects of the airstrip on the IBA should be investigated.

AKDAĞ

IBA no	19
Province(s)	Denizli, Afyon
District(s)	Çivril, Kızılören, Sandıklı
Size	42,394 ha
Coordinates	38°20'N 30°00'E
Altitude	900-2446 m

FOR MAP SEE IBA NO. 20

SITE DESCRIPTION

A high rocky mountain adjacent to Işıklı Gölü (IBA no. 20). The mountain is bisected north-south by a long gorge with high cliffs on each side and steep forested valleys to the north. The south-facing slope is barren and very steep. The flatter high ground above the valleys is forested but a large fire in the 1970s has left the area covered solely by young conifers.The forests are managed in the accessible parts. Red Deer *Cervus elaphus* and feral horses occur.

BIRDS

The site qualifies for its breeding raptors: Black Vulture (3 pairs), Griffon Vulture (3 pairs), Lammergeier (1 pair) and Booted Eagle (4 pairs).

Additional bird information.
Other breeding species include Golden Eagle (1 pair) and White-tailed Eagle (1 pair) and Chough (50 pairs). Lesser Spotted Eagle is suspected to breed.

CONSERVATION ISSUES

- The IBA follows the borders of the Permanent Wildlife Reserve declared in 1970 to protect the Red Deer.
- Forestry management should be timed in accordance with the breeding season and distribution of the raptors (leaving a no-activity buffer zone around each breeding valley) and old pines should not be felled.

IŞIKLI GÖLÜ

IBA no	20
Alternative name(s)	Çivril Gölü, Akgöl
Province(s)	Denizli
District(s)	Çivril
Size	7300 ha
Coordinates	38°14'N 29°55'E
Altitude	821 m

SITE DESCRIPTION

Situated on the headwaters of the Büyük Menderes river south of the Akdağ (IBA no. 19), this freshwater (max. 7 m deep) lake is fed by the Akçay stream, the Işıklı springs, groundwater and water from the two main tributaries of the Büyük Menderes river. The lake is now a reservoir, used to store irrigation water for the extensive agriculture schemes in the surrounding plains. Embankments have been constructed along the western, southern and eastern shores. Due to high water levels marsh vegetation is only present in the north-west where the Kufi channel carries silt into the lake, and there are a few reed islands in the centre of the lake. The western and eastern shores of the lake are bordered by extensive poplar plantations and agricultural fields, whilst the southern shore borders an extensive plain, utilised for cereal growth.

Fishing is an important economic activity, practised by 1000 fishermen from 10 villages who catch up to 70 tons of fish per year. Crayfish *Astacus leptodactylus* was once the most profitable and abundant species but was virtually exterminated by the Crayfish plague in the 1980s: Işıklı Gölü was the first lake in Turkey where the Crayfish plague occurred before it spread to other lakes.

The IBA includes the Gökgöl marshes (ca. 700 ha, including a maximum 300 ha lake) which are located on the Büyük Menderes river, 3 km east of Işıklı Gölü.

BIRDS

The site qualifies for its breeding populations of Squacco Heron (30 pairs), Whiskered Tern (110 pairs) and Gull-billed Tern. The lake is extremely important for wintering waterfowl (max. 211,482), including Pygmy Cormorant (max. 141), White-fronted Goose (max. 8178), Red-crested Pochard (max. 1060), Pochard (max. 18,370), Ferruginous Duck (max. 97) and Coot (max. 190,690).

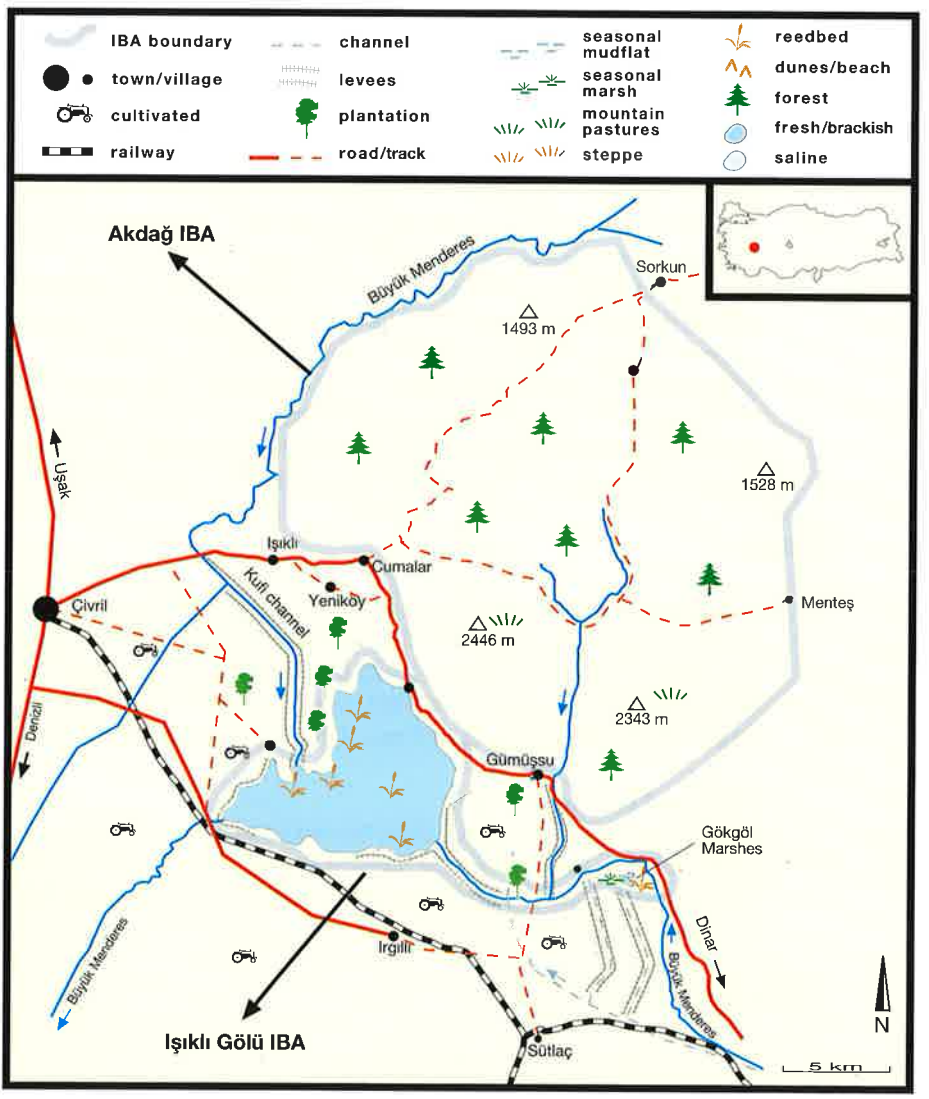
Additional bird information.

Other breeding species include Great Crested Grebe (60 pairs), Black-necked Grebe (5 pairs), Purple Heron (20 pairs), a few pairs of Glossy Ibis and Black-headed Gull (170 pairs). White-tailed Eagle (which breed on Akdağ, IBA no. 19) is seen at Işıklı Gölü throughout the year.

CONSERVATION ISSUES

- The site has no protection status.
- Işıklı Gölü was originally surrounded by many thousands of hectares of

freshwater marsh; the entire complex covered ca. 10,000 ha. Irrigation of the surrounding land started in the 1930s, and during the 1960s up to 2000 ha of marsh was drained. In 1949 the conversion of the lake started and in 1968 the present system of embankments and the regulator were completed, and Işıklı Gölü was converted into a reservoir (it is now called, rather aptly, the Işıklı reservoir by DSİ [State Water Works]). The northern tributary of the Büyük Menderes river was diverted into the lake (through the Kufi scheme, responsible for 60% of water input). Presently the lake fills during and after the winter. Water remains high, with only a few reed islands in the centre, until June when water is released for irrigation (especially of cotton fields downstream) from the Baklan regulator in the south-west corner of the lake. A total of 72,300 ha of land is irrigated with water from Işıklı Gölü. High water



levels during spring do not permit the development of suitable breeding habitats such as reedbeds and have largely eliminated winter/spring mudflats which are important as feeding areas for birds. Only during August and September (a few months later than under the natural regime) is the area of open water significantly reduced and up to 70% of the area is vegetated. With a water level of 816.5 m the water surface area is 1550 ha, whilst at the maximum level of 821 m the water surface area is 6580 ha.

- It seems probable that in the past, Işıklı Gölü formed a single wetland with the Gökgöl marshes. Large areas south of Gökgöl marshes have been drained, but in 1996 the Ministry of Forestry proposed the area as a Permanent Wildlife Reserve.
- Fishery practices are largely uncontrolled, with out-of season fishing widespread.
- Hunting is a significant problem with shooting taking place throughout the winter, day and night, by large numbers of hunters.

Winter landscape of Işıklı Gölü, with Akdağ IBA in the background (Gernant Magnin)

BAFA GÖLÜ

IBA no	21
Alternative name(s)	Çamiçi Gölü
Province(s)	Aydın, Muğla
District(s)	Yenihisar, Söke, Milas
Size	12,281 ha
Coordinates	37°30'N 27°26'E
Altitude	5 m

SITE DESCRIPTION

A slightly saline lake (max. 6708 ha) situated south-east of the Büyük Menderes Deltası (IBA no. 22) and enclosed by mountain ranges covered by forest and maquis, except in the west where the land opens towards the Menderes plain. The lake is principally fed with river water during periods of heavy flow; in addition there are a few small streams and springs which feed the lake. A levee constructed in 1985 separates the lake from the Büyük Menderes river. Normal water levels fluctuate between 1-2 m a.s.l., and the lake is a maximum of 25 m deep. The lake was formerly a bay until 50-300 AD when alluvial deposits carried by the Büyük Menderes river separated it from the sea. There are four islands in the lake. The north-west end is sometimes referred to as Serçin lake. The western shores of Bafa Gölü are shallow and covered with extensive marsh. The lake is very rich in zooplanktons and aquatic vegetation.
North of the IBA are Azap, Avşar and Sülükür lakes, small shallow lakes totalling a few hundred hectares, which have been largely destroyed as a result of the construction of levees which cut them off from the Büyük Menderes river floods.

On the southern slopes especially, there are extensive olive groves (with small olive oil refineries in some villages). There are some rice fields in the east and cotton is widely grown in the west. Fishery is the main economic activity in the lake which was formerly owned by a private owner, who possessed the fishing rights. However, in 1978 the government appropriated the lake and subsequently leased the fishing rights to local cooperatives. There is a simple fish trap on the channel in the west which connects Bafa Gölü with the Büyük Menderes river.

Bafa Gölü is a popular destination for Turkish and foreign tourists. Due to strict building regulations, the shores have not been spoiled by holiday home complexes that have ruined many other areas in the Aegean region. There is only one holiday village on the south shore, and a number of camping places.

BIRDS

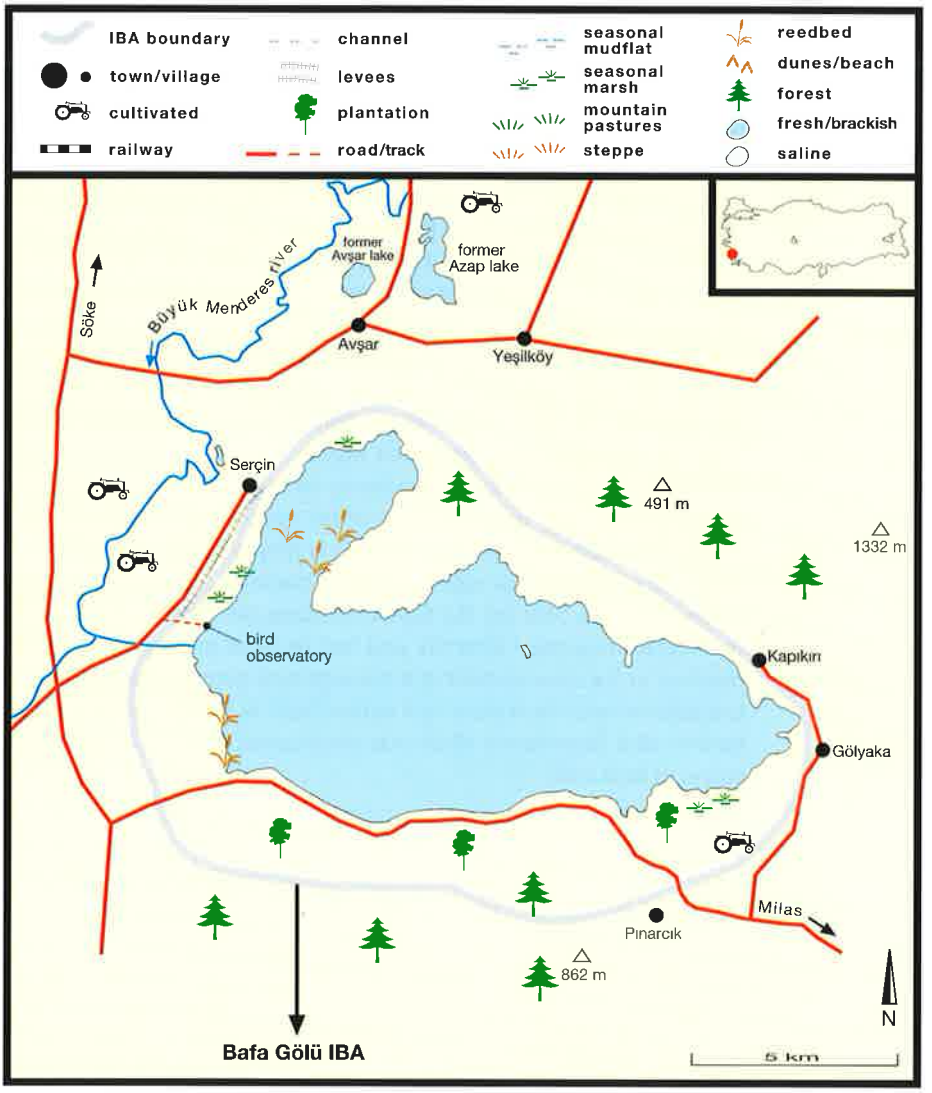
The site qualifies for its breeding populations of Collared Pratincole (50 pairs) and Spur-winged Plover (30 pairs). Significant numbers of Dalmatian Pelican (max. 74), mainly from the nearby Büyük Menderes Deltası occur throughout the year. Bafa Gölü is very important for wintering waterfowl (max 91,507)

including Little Grebe (max. 1805), Great Crested Grebe (max. 6240), Black-necked Grebe (max. 1136), Cormorant (max. 2000), Pygmy Cormorant (max. 140), Gadwall (max. 1250), Pochard (max. 27,085) and Coot (max. 68,500).

Additional bird information.
One of the islands supports a heronry with breeding Little Egret (120 pairs) and Grey Heron (70 pairs). Up to two pairs of White-tailed Eagle breed in the forests around the lake but their fate is uncertain: one nest was destroyed and a poisoned adult bird found in 1994.

CONSERVATION ISSUES

- In 1989 Bafa Gölü was declared a SİT and a Nature Park in 1994. The Nature Park covers 12,281 ha and the IBA follows its boundaries.



- Formerly the lake was fed by river water during periods of high water level in the Büyük Menderes river, and the river and the lake eventually merged. In 1985 a levee was constructed between the river and the lake in order to reclaim land for cotton production, severing the lake from its main water supply. Moreover, the construction of large dams along the entire course of the river much reduced the river flow, and further reduction was caused by a number of regulators which take water for the Söke irrigation project. Even if the levee had not been built, it is unlikely that the river flow would be currently sufficient to feed Bafa Gölü as formerly. In 1990 the water level in the lake was at an all time low and large parts dried up. As result of falling levels, farmers started to appropriate the area east of the levee, and hundreds of hectares of cotton fields were planted on the former lake bottom. In 1993, after strong representations by NGOs, DSİ (State Water Works) started pumping water into the lake from the river and in 1996, after a wet winter, the water level in the lake was again at natural levels. Without a detailed management plan and due commitments it remains to be seen, however, how long the present situation will prevail.
- The small lakes north of Bafa Gölü have virtually disappeared as a result of the water manipulation schemes but could be restored by DSİ.
- As a result of the falling water level, severing the connection between the lake and the river (so that fish stocks were unable to reproduce by natural means) and continuous over-fishing, the fish stock has drastically declined. In 1987 total reported catches amounted to 328 tons, but only 14 tons were taken in 1991 and 22 tons in 1994. A 700 member fishing cooperative went bankrupt and had only 30 members in 1996.
- The planned construction of a housing complex with a 10,000 person capacity several kilometres south of the lake but within its catchment area should not be allowed to proceed, unless all possible effects of the project have been assessed and necessary precautions taken.
- Bafa Gölü was formerly subject to heavy hunting pressure but conditions have improved with the declaration of the Nature Park and tighter hunting regulations; nonetheless illegal hunting is frequently observed.
- DHKD ran a project (1991-1995) seeking to conserve the Büyük Menderes Deltası and Bafa Gölü (cf. the Büyük Menderes Deltası IBA). Although DHKD terminated the project after the area had received protection status, it is still involved in the development of a management plan for the area (in cooperation with the Nature Park authorities), as well as running the Rosie Baldwin Bird Observatory which was constructed by DHKD in 1996 on the west shores of Bafa Gölü.

BÜYÜK MENDERES DELTASI

IBA no 22
Province(s) Aydın
District(s) Yenihisar, Söke
Size 9800 ha
Coordinates 37°34'N 27°12'E
Altitude sea level

SITE DESCRIPTION

The Büyük Menderes river meanders 560 km through western Turkey before reaching the Aegean: the Büyük Menderes Deltası has formed at its mouth. The delta consists of several lagoons, extensive salt steppes and mudflats. Freshwater vegetation can be found along the river and the main drainage channels. The eastern border of the IBA is formed by a motorway which runs north-south through the delta: east of this road most of the delta has been converted to vast cotton fields although some former oxbow lakes may still provide good habitat in places. West of the road the salt steppes have recently been partially converted into cotton fields. To the north the delta is bordered by the steep hills and mountains of the Dilek pensinsula. The northernmost lagoon, Karine (or Dil) is the largest (2460 ha). Other lagoons include Deringöl (130 ha), Mavigöl, Karagöl (or Karaca, 538 ha) and Akköy (Kabahayıt or Bölme) lagoon (500 ha). A narrow sandbar separates the lagoons from the sea.

The delta is important for animal husbandry. Large numbers of cattle and sheep graze in the delta. Fishery is an important economic activity in the delta, practised in the lagoons, ditches and at the outlet to the sea. During 1995 there were three fishing cooperatives with 530 members and fish production was 100 tons. Fish fry is collected at the river mouth.

Despite being located between popular tourist centres in the north and the south, tourism, other than day-tourism, is undeveloped in the area. The main attraction for day-tourists are the ancient sites of Miletus and Priene just east of the IBA. Foreign birdwatchers are increasingly including the site in their itineraries.

BIRDS

The site supports significant breeding populations of Dalmatian Pelican (42 pairs), Collared Pratincole (85 pairs), Kentish Plover (150 pairs), Mediterranean Gull (800 pairs), Caspian Tern (6 pairs) and Little Tern (300 pairs). During winter significant numbers of waterfowl (max. 29,982) occur, including Cormorant (max. 3005), Pygmy Cormorant (max. 350), Dalmatian Pelican (max. 434), Great White Egret (max. 312), Greater Flamingo (max. 8650), Wigeon (max. 5623), Avocet (max. 1000) and Slender-billed Gull (max. 1284).

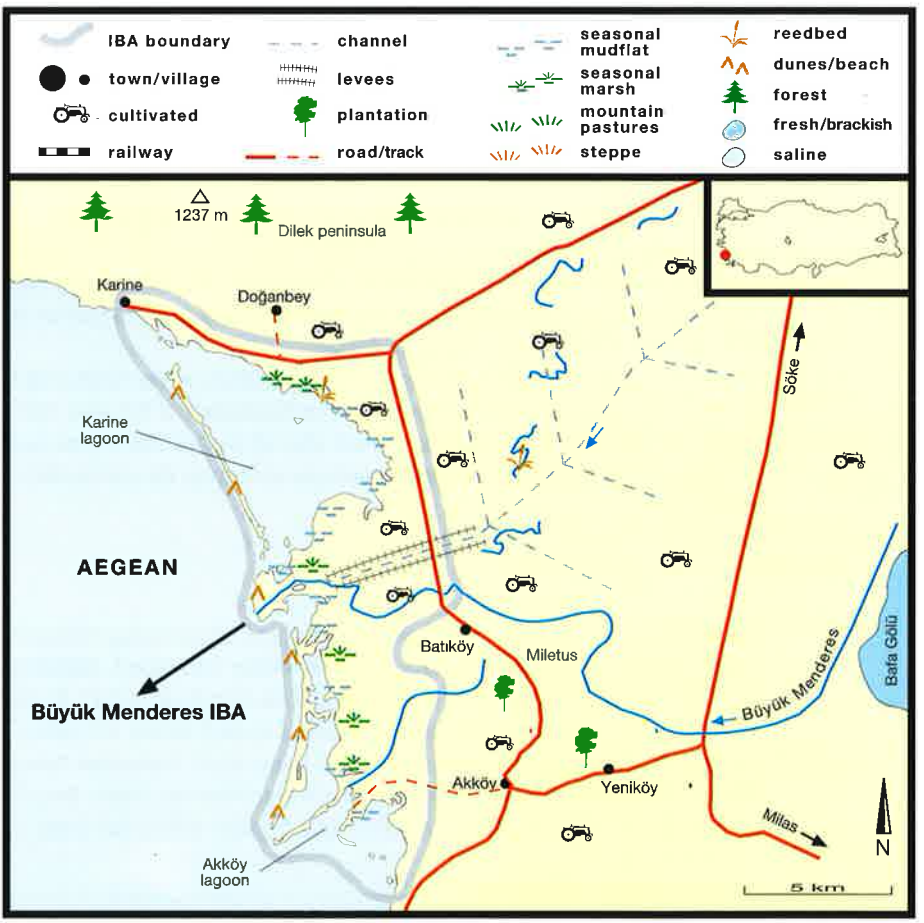
Additional bird information.

Other breeding species of note include Little Egret (20 pairs), Grey Heron (165

pairs), Oystercatcher (40 pairs), Yellow-legged Gull (90 pairs) and Common Tern (200 pairs).

CONSERVATION ISSUES

- The Büyük Menderes Deltası was included in the Dilek Yarımadası National Park (totalling 27,675 ha) in 1993. During 1994 the delta was declared a SİT.
- Along the entire course of the Büyük Menderes river, cotton is the main crop and it is one of the most important cotton producing areas in Turkey. A number of irrigation projects, including 13 reservoirs, have been and are being developed on the river and its tributaries with drastic consequences for the river's hydrology and the loss of large tracts of natural habitat. The DSİ (State Water Works) Söke Plain Irrigation Project (29,850 ha) is the last main cotton growing area on the river's course. During the development of this project over the last two decades, most of the natural habitat east of the IBA has been reclaimed. In addition ca. 500 ha within the IBA was (illegally) converted by local farmers who use water from the drains to irrigate their land: this water is not fed back into the drains but flows into the lagoons.



Demand for irrigation water is so enormous that in summer farmers block the main drainage channel and the river, in order to retain water for irrigation and to prevent sea water intrusion. The river water is used many times over for irrigation, increasing its pollution content. Compounding this is the largely untreated waste from several large cities and numerous industries on the Büyük Menderes river. The uncontrolled irrigation within the IBA implies that this heavily polluted water eventually enters the lagoons, and massive fish deaths have occurred in recent years.

Current DSİ plans include the construction of more irrigation dams on the Büyük Menderes river and its tributaries. The lack of a river basin-wide management approach will lead to more conflict at the end of the river where water is scarcest, especially during years of comparative drought.

A comprehensive 1989 report by a team of German researchers drew international attention to the threats to the remaining natural areas in the Büyük Menderes Deltası. As a result of subsequent protests by national and international conservation organisations, the World Bank (which was in negotiation with DSİ to fund an"On-farm Development Project" aiming to improve the drainage and irrigation of the Söke project) sent several missions to the area to discuss more sustainable solutions, but it could not acquire the necessary guarantees and cooperation for these, and eventually withdrew from the project.

- Possibly as a result of the hydrological manipulations, as well as over-fishing and pollution, fisheries have nearly collapsed in recent years: in 1990, the fishing cooperatives had 1169 members and the annual catch was 614 tons: this was 100 tons in 1995. Fish fry is collected, without proper control, and sold to fish farms. There are plans to establish fish farms in the lagoons but it is crucial that their environmental impacts are assessed first. The 1989 study found that fish in the lagoon contained toxic substances such as Cydodien and DDE, a result of the inflow of heavily polluted drainage water from the cotton fields.
- Fishermen used to destroy the pelican colonies on islands in the Karine lagoon. Due to regular guarding since 1992 and awareness activities by DHKD, this practice has largely ceased.
- Despite National Park status there is considerable pressure to build holiday home complexes on the slopes north of the Karine lagoon. This would exert unacceptable additional pressure on the delta. During 1996, possibly as an action against regulations that limit building activity, the forests on the southern slopes of the Dilek pensinsula were set alight and several thousands of hectares of forest destroyed.
- During 1991-1995 DHKD ran a conservation project in the Büyük Menderes Deltası and Bafa Gölü (IBA no. 21). The project carried out extensive education activities throughout the region and a nature information centre was established in Priene. The main achievements of the project were that, after intensive lobbying and campaigning, the Büyük Menderes Deltası and Bafa Gölü were declared a National Park and Nature Park respectively. During 1996 DHKD assisted the National Park authorities in drawing up a management plan for the delta.

GÜLLÜK DELTASI

IBA no 23
Province(s) Muğla
District(s) Milas
Size 1400 ha
Coordinates 37°15'N 27°38'E
Altitude sea level

SITE DESCRIPTION

A small delta, formed where the Hamzabey and the Sarıçay streams flow into the Aegean Sea. Very much reduced in size, the site now consists of a 200 ha lagoon, two smaller lakes, *Phragmites* reedbeds, some flats with *Salicornia* vegetation and *Tamarix* scrub. The lagoon is fed by freshwater via drainage channels resulting in the lagoon becoming progressively less saline.
Agriculture, principally cotton and corn, now occupies most of the delta.
There is a basic fish-trap installation at the river mouth, producing 30 tons of fish (in 1995) and 200 kg of caviar per year. Fish fry is also caught, and 100 fishermen are employed by one fishing cooperative.
The town of Güllük, west of the delta, has become a major holiday resort and the associated building boom has resulted in large complexes of holiday homes being constructed on the hill slopes south-west of the marshes. A new yacht harbour is under construction in Güllük village.

BIRDS

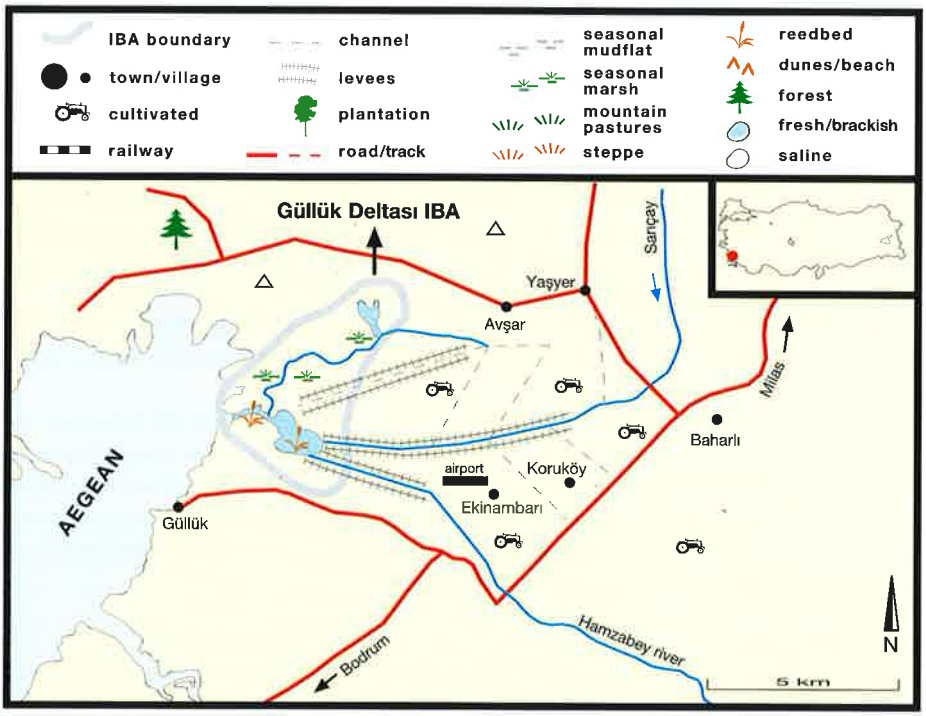
The site qualifies as an IBA for its large numbers of Pygmy Cormorant (max. 221) which occur during migration.

Additional bird information.
Breeding birds include Collared Pratincole (20 pairs). The site has lost most of its ornithological importance due to wetland drainage. Formerly White-breasted Kingfisher and Pied Kingfisher bred but only the latter is now recorded irregularly outside the breeding season. No information on the former importance of the site as a wintering site for waterfowl exists, but recent counts produced insignificant numbers.

CONSERVATION ISSUES

- The site has no protection status.
- The area has been drastically reduced in size during the last three decades. In the delta plain east of the IBA DSİ (State Water Works) completed reclamation of 2327 ha (including two lakes) and the canalisation of the Sarıçay in 1963. A reservoir (41 hm^3) was completed on the Sarıçay in 1988. Numerous drainage channels now bisect the delta.
- The ornithological importance of the Güllük Deltası is expected to deteriorate further as a result of an airport development a few kilometres inland.

Construction of the 2.8 km-long runway started in 1993 and was nearing completion in summer 1996. The possible effects on the wetland and its avifauna of landing and taking-off planes have not been assessed by the authorities.



KÖYCEĞİZ GÖLÜ

IBA no	24
Province(s)	Muğla
District(s)	Köyceğiz, Ortaca
Size	8000 ha
Coordinates	36°54'N 28°38'E
Altitude	sea level

SITE DESCRIPTION

A wetland complex of brackish lakes, canals, marshes, reedbeds, sand dunes, coastal habitats and flooded Liquidamber *Liquidamber orientalis* forest. The surrounding hills are covered by pine forest and maquis. Köyceğiz Gölü (6300 ha) is a brackish lake fed by springs and several streams, of which Namnam stream is the most significant: several drainage channels enter the lake. The lake is maximum 30 m deep, but there are several local depressions of 70 m. There are a few small rocky islands in the lake, some pine-covered. Extensive reedbeds are principally found along the east, south-east and northern shores.

The delta area, often referred to as "Dalyan", measures 1700 ha and consists of a labyrinth of (former) floodplains, reedbeds and four lakes, of which Sülüngür lake (250 ha) is the largest. İztuzu lake was formerly used as a natural saltpan. A prominent feature of Dalyan is its 4100 m-long beach which is a major breeding area of the threatened Loggerhead Turtle *Caretta caretta*, whilst the threatened Nile Soft-shelled Turtle *Trionyx triunguis* breeds on the lake side of the beach.

The lake and the delta are surrounded by extensive arable land and forested hills. Cotton, sesami, corn, citrus fruits and wheat are the main crops. Olive groves dominate in the higher parts. Greenhouse farming, mainly of vegetables, is becoming increasingly widespread. 2500 ha of arable land north and east of the IBA are irrigated. Cattle are grazed in the reedbeds and grasslands of the delta. The IBA includes a few hundred hectares of *Liquidamber* forest, a tertiary relict tree species confined to south-west Anatolia and Rhodes, the oil of which is used in the pharmaceutical and perfume industry.

Tourism is the main economic activity and most people living in the IBA make their living from it. The pristine beaches, ancient ruins and thermal springs attract up to 3000 tourists per day.

Fishery is also an important economic activity in which 580 fishermen are active. There are several fish traps situated on the 12 km-long, 1.5-2m-deep channel which connects Köyceğiz Gölü and the sea, and there is a simple fish farm in Sülüngür lake. There are 19 fish species, 11 of which are economically important. On average 525 tons are caught per annum. An additional 5 tons of caviar is produced annually.

BIRDS

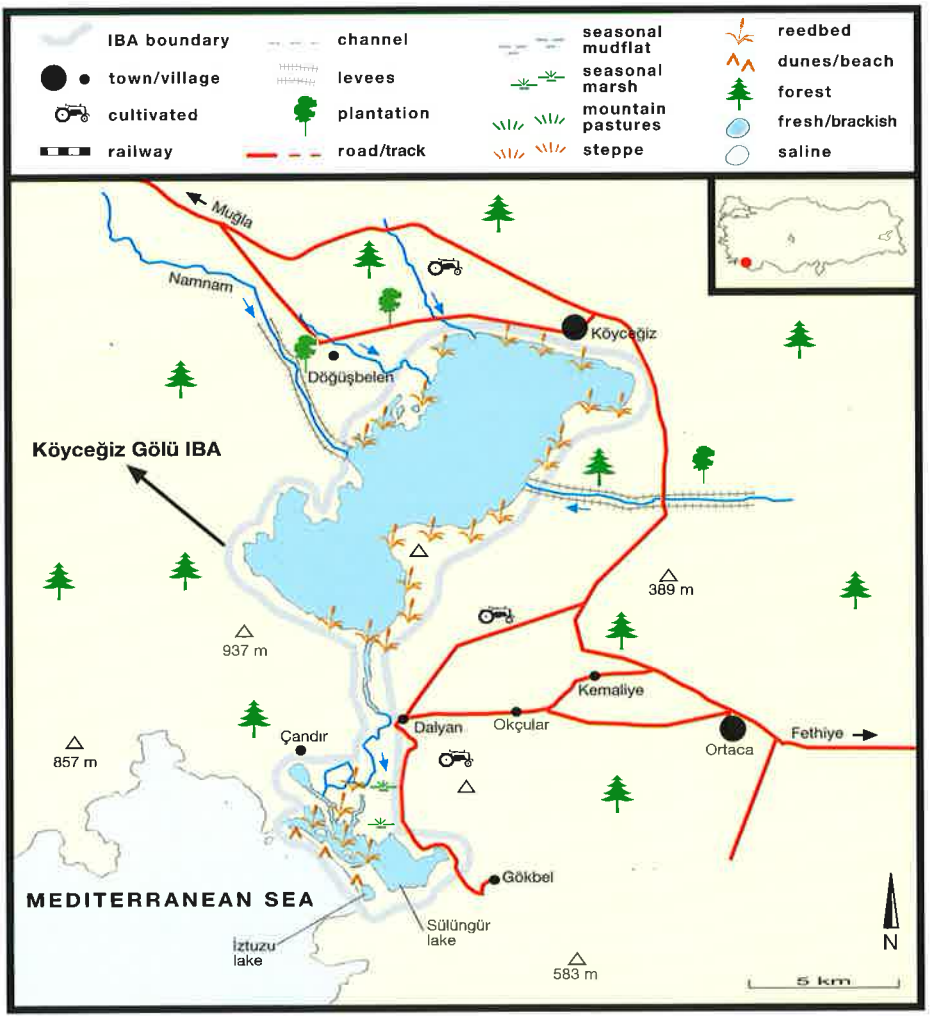
The site holds large numbers of wintering waterfowl (max. 47,654) including

Cormorant (max. 1525), Pygmy Cormorant (max. 40), Red-crested Pochard (max. 528) and Coot (max. 34,120).

Additional bird information.
White-tailed Eagle is presumed to breed in the surroundings, whilst White-breasted Kingfisher and Pied Kingfisher still breed but in small and declining numbers.

CONSERVATION ISSUES

- The site is part of a Specially Protected Area designated in 1988 (and expanded in 1990) which covers 38,500 ha.
- Public campaigns started in 1986 and led by DHKD, resulted in the cancellation of a 3000-bed hotel complex at the İztuzu end of the beach. The government then accepted an offer from the German government to use the



loan for environmental protection, declaring the area a Specially Protected Area. The SPA authority has developed a management plan for the entire area but implementation has only been partial. Moreover, some aspects of the plan have not been accepted by environmentalists, such as the planned increase of the residential population of Dalyan.

- The wetland is polluted by agricultural run-off and untreated urban waste, although sewage treatment plants for Dalyan and Köyceğiz are now being constructed with German funding. Another source of pollution is the heavy tourist boat traffic on the canals between the lake and the sea that also results in disturbance of wildlife and wave-damage to the reedbeds. Limits to the number, size and speed of the boats were set but have rarely been implemented.

ACIGÖL

IBA no	25
Alternative name(s)	Acıtuz Gölü, Tuz Gölü, Başmakçı Gölü, Çardak Gölü.
Province(s)	Afyon, Denizli
District(s)	Dazkırı, Başmakçı, Çardak
Size	21,000 ha
Coordinates	37°49'N 29°48'E
Altitude	836 m

SITE DESCRIPTION

Acıgöl is a shallow lake (max. 16,500 ha) of tectonic origin north-west of the Söğüt mountain which separates it from Burdur Gölü (IBA no. 30). The lake is fed by run-off from the mountains, springs, and the Kocaçay stream which enters the lake near Başmakçı; there is no outlet. Freshwater marshes have developed at some of the springs. During summer, the lake largely dries up. To the north-west it is bordered by the Maymun mountain. The mountain slopes are sparsely vegetated principally with scrub, but some pockets of high forest are found at higher altitudes and a reforestation scheme is under way. The plain in the south-west is mainly salt steppe whilst the plain in the north-east has better soils and is intensively farmed. Grazing is practised around the lake, especially on the eastern and north-eastern shores. There is only one small irrigation project near Gemiç; elsewhere farmers use water from wells for small-scale irrigation.

With the exception of Tuz Gölü (IBA no. 72), the lake is the most saline in Turkey with a very high sodium sulphate (Na_2SO_4) content. There are saltpans (total 450 ha) in the west and north-west, operated by three companies (Alkim and Sodaş (both also operating refineries) and Otuzbir) who have leased the lake from the government since the late 1950s. In total they produce 350,000 tons of sodium sulphate p.a. which is sold both in Turkey and abroad. Because of low water levels, Sodaş constructed a 1.5 km channel to flood its saltpans.

The Çardak (or Denizli) airport is situated west of the IBA. It is primarily a military airport but is also used by 3-4 Turkish Airlines flights to and from İstanbul every week.

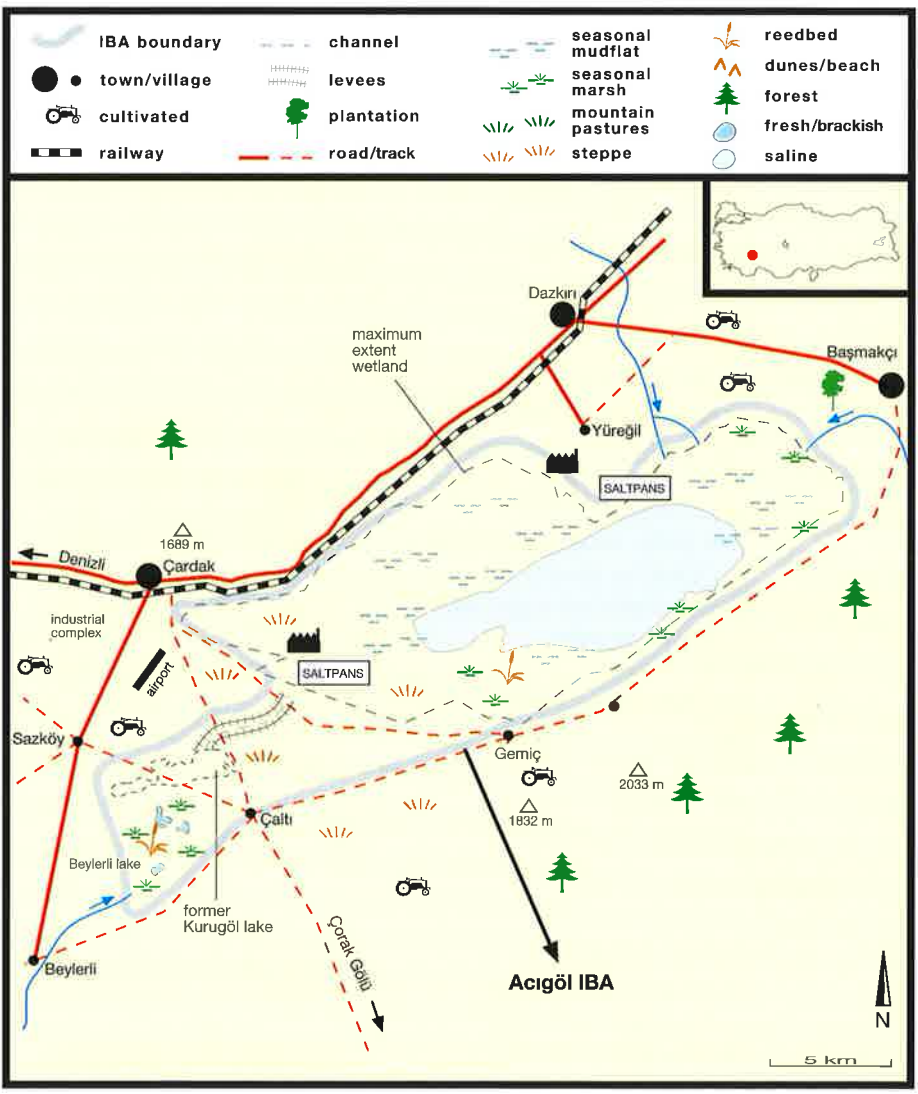
The site includes Çaltı lake, a complex of small lakes such as Kurugöl (450 ha, now drained) and Beylerli lakes (max 400 ha), 10 km south-west of Acıgöl. Beylerli lake is a freshwater lake, covered by reeds and fed by springs and the Değirmen stream. At present the lake is largely dry (see below). The altitude of Çaltı lake is 850 m and its waters flow naturally to Acıgöl to which it is now connected through a drain. Local people harvest reed.

BIRDS

Large numbers of Ruddy Shelduck (which also breed in the surrounding mountains) occur throughout the year. In 1993 Greater Flamingo was confirmed to breed (the colony was estimated at 150 nests); Acıgöl is one of the five breeding sites for this species in Turkey (although breeding probably does not occur annually). The site also qualifies for its breeding populations of Avocet,

Kentish Plover, Spur-winged Plover and Gull-billed Tern.
Acıgöl formerly had a well-known breeding population of Great Bustards; one locality in the north-east is named after the bird (Toygüden, i.e. "fields where the Great Bustards feed"). In recent years very few have been recorded but it seems certain that a small population survives. Apart from a reduction in habitat, relentless hunting by locals may have assisted in the demise of the species.

Additonal bird information.
Possibly due to low water levels, Acıgöl has produced smaller numbers of birds in recent years than in the past (cf. the 1989 IBA inventory). Çaltı lake has been virtually dry for the last ten years but its potential was highlighted during the winter of 1969 when a record 113,102 waterfowl was counted. A colony with over



50 nests of Slender-billed Gulls is located near the saltpans in the north, and small numbers of Little Tern and Common Tern breed. A few pairs of Cranes still breed around the lake, and the surrounding mountains may still hold breeding vultures.

CONSERVATION ISSUES

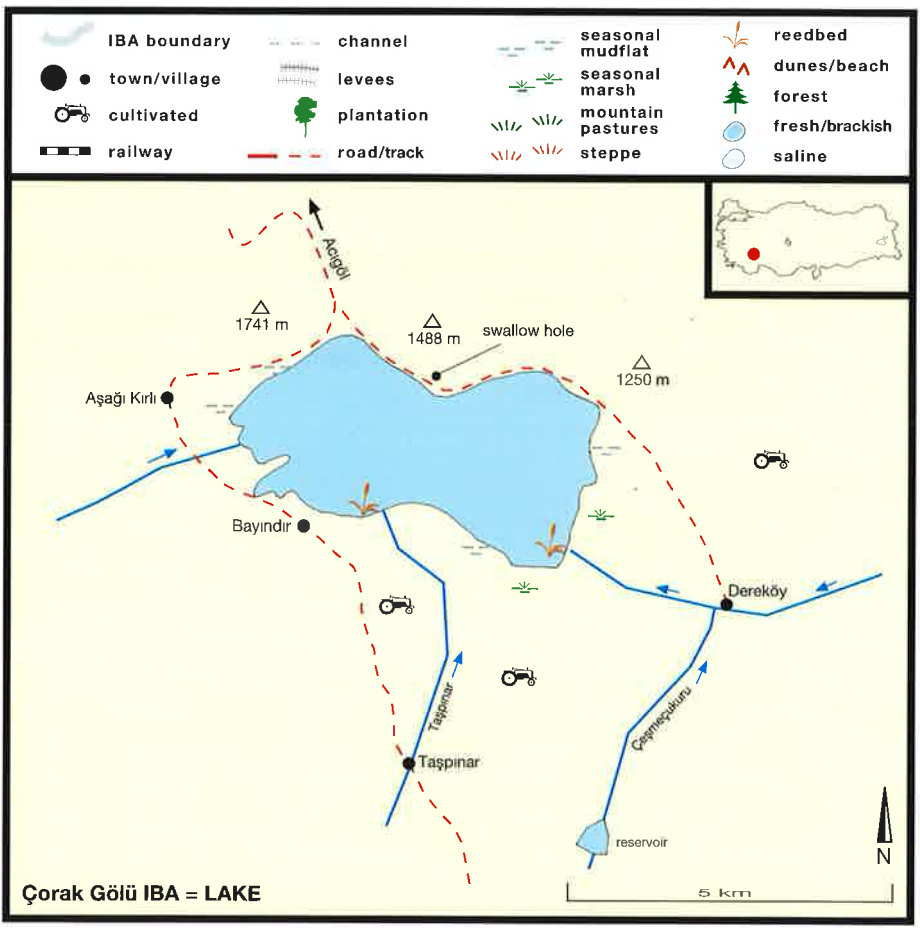
- Çaltı lake was declared a Permanent Wildlife Reserve (1100 ha) during 1981.
- In 1981 a drainage channel between Çaltı lake and Acıgöl was built, as well as a small reservoir on the Değirmen stream: as a result Kurugöl lake dried up completely. Many sources claim that Beylerli lake was then drained and reduced from 400 ha to 35 ha. DSİ (State Water Works), however, claims that it cancelled drainage of Beylerli lake after protests by villagers. The lake has been virtually dry for at least the last decade. The Rural Affairs Directorate installed pumps at the springs near Gemiç and pumps 600 ltr/sec to irrigate 625 ha south-west of Acıgöl.
- Current DSİ plans propose the drainage of 13,620 ha of land between Acıgöl and Çaltı lake, thereby destroying the largest untouched salt steppe ecosystem in the region. By using water from the springs, the Değirmen reservoir and the Gemiç pumping station, only 3500 ha of this total will be irrigated and all water will be drained to Acıgöl. No environmental impact assessment study has been carried out to date.
- Salt from the salines is blown onto adjacent agricultural areas and reportedly damages crops and causes human respiratory problems. Local villagers have filed lawsuits and in one case a refinery was convicted and ordered to pay indemnities.
- In 1996 construction started of an industrial complex west of the airport. Up to 90 factories, principally textile, will use water from artesian wells. No investigations have been carried out into the possible effects of this scheme (in particular regarding pollution of the wetland and the lowering of the ground water levels).

ÇORAK GÖLÜ

IBA no	26
Alternative name(s)	Bayındır Gölü, Akgöl
Province(s)	Burdur
District (s)	Yeşilova
Size	1150 ha
Coordinates	37°41'N 29°46'E
Altitude	1050 m

SITE DESCRIPTION

A small salt lake of tectonic origin bordered by steep mountains to the north and agricultural lands to the south, east and west. It is fed by a number of small streams, of which the Taşpınar, Balaban and Çeşmeçukuru (or Armut) streams are the most important; small reedbeds have developed at the inflows. During periods of high water levels the lake drains via a swallow hole north of the lake.



During the last decade the lake has been almost permanently dry, with a maximum of 5% flooded at the deepest points during March 1994.

BIRDS

The site qualifies as an IBA (pre-1987 data) for the high numbers of waterfowl (max. 45,900), including Teal (max. 20,200), Pochard (max. 40,000), Ferruginous Duck (max. 100) and White-headed Duck (max. 930). However, due to low water levels, recent counts have only produced insignificant numbers.

CONSERVATION ISSUES

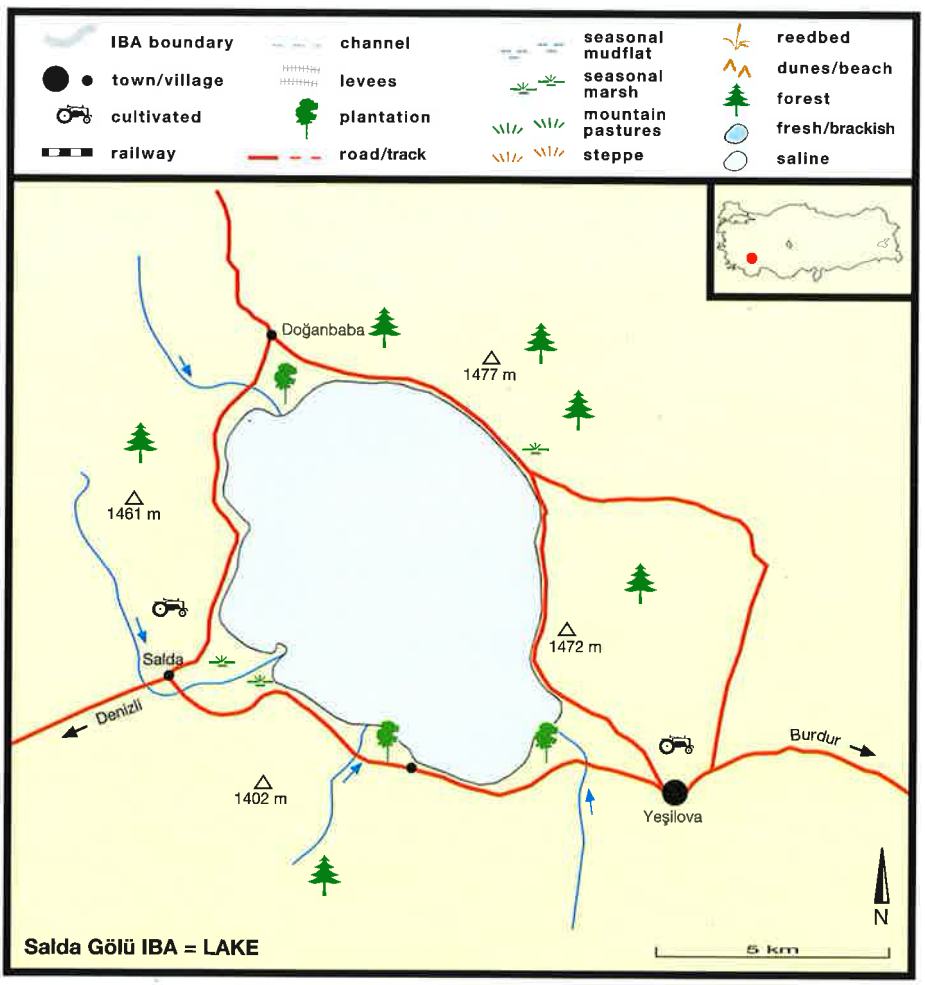
- The site has no protection status.
- In 1981, DSİ (State Water Works) completed a 18 ha reservoir on the Çeşmeçukuru stream south-west of Dereköy. Water from the dam is used to irrigate 23 ha. However, at current levels of usage it is unlikely that the dam has played a significant role in the drying up of the lake in recent years. During 1988 DSİ widened the outlet of the lake. It is unclear whether this, or the lack of rainfall in recent years, is responsible for the low water levels.

SALDA GÖLÜ

IBA no	27
Alternative name(s)	Yeşilova Gölü, Gökçe Gölü
Province(s)	Burdur
District(s)	Yeşilova
Size	4370 ha
Coordinates	37°33'N 29°40'E
Altitude	1139 m

SITE DESCRIPTION

A slightly saline lake of tectonic origin surrounded by forested hills, rocky terrain and small alluvial plains. It is one of the deepest lakes in Turkey, reaching a depth of 184 m. The lake is fed by small streams (Değirmendere, Köpek, Çaldan and Sıtlıklı streams) and by the Sultan springs in the south.



Karstic swallow holes in the lake floor are the only outlets. The water is always clear and possesses a turquoise colour, making it scenically one of the most beautiful lakes in Turkey. There are several sandbanks, especially on the south-west and south-east shores.

The lake is high in magnesium-sulphate ($MgSO_4$) and therefore very poor in aquatic organisms. It has only one small fish species *Aphanius anatolicus* which occurs around the inflows. There is limited fringe vegetation, mainly where the streams enter the lake. Small-scale agricultural activities include apple orchards, vineyards and cereal production.

There are several hotels, restaurants, camping and picnic places on the south and south-west shores.

BIRDS

The site holds significant numbers of Ferruginous Duck (max. 400) and White-headed Duck (max. 128) in winter.

CONSERVATION ISSUES

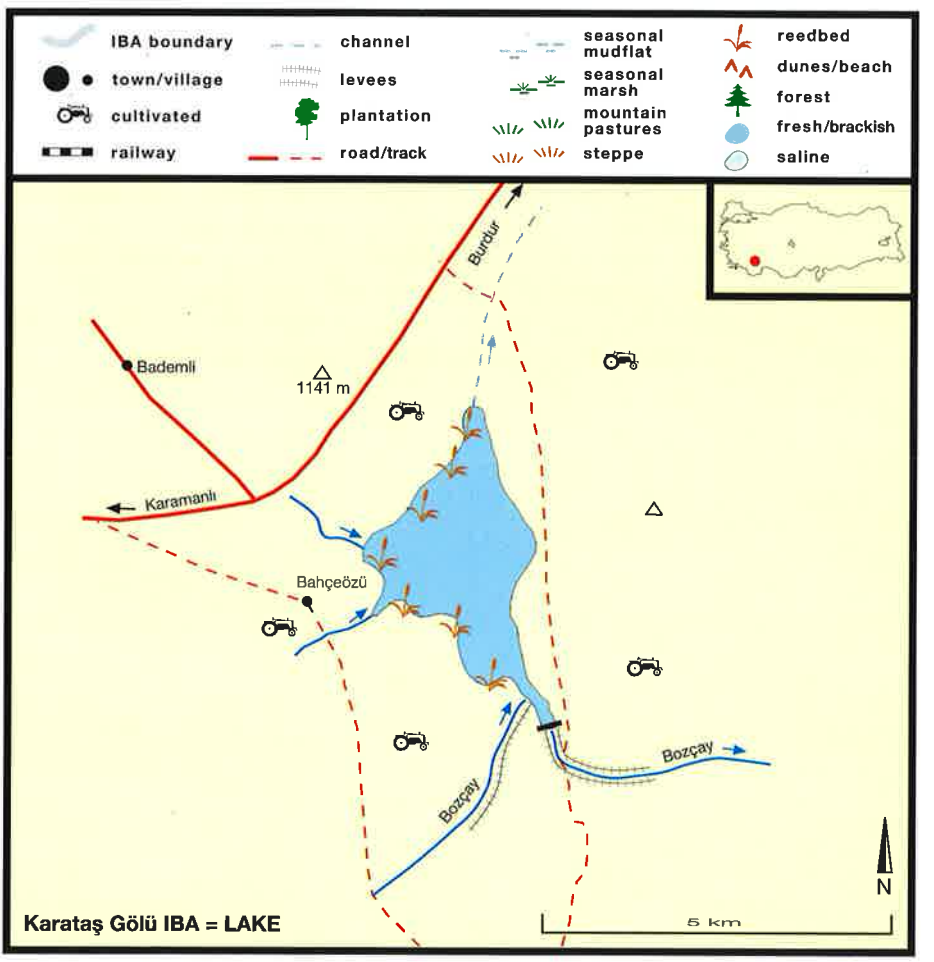
- The lake was declared a SİT in 1989, but this status was modified in 1992 in order to allow limited construction activities.
- The fields around the lake are irrigated with water from the inflows. A DSİ (State Water Works) scheme foresees the construction of a small reservoir on the Değirmendere stream. The reservoir will have a capacity of 1.6 hm^3 and 1.16 hm^3 will be used annually for the irrigation of 182 ha between Yeşilova and the lake via a 3 km-long irrigation channel. No assessment of the possible impacts of this scheme has been carried out.
- Some of the hotels discharge their untreated sewage into the lake, and more tourist facilities are planned, including government facilities.

KARATAŞ GÖLÜ

IBA no	28
Alternative name(s)	Bahçeözü Gölü , Karamanlı Gölü
Province(s)	Burdur
District(s)	Karamanlı
Size	1190 ha
Coordinates	37°23'N 29°58'E
Altitude	1053 m

SITE DESCRIPTION

A small shallow freshwater lake situated in the north-east part of the Tefenni plain. It is principally fed by the Bozçay (or Eren) stream. There is little lake side vegetation, principally restricted to the western shore.
The lake is surrounded by arable land with cereals and sugar beet being the principal crops.



There is fishery activity on the lake (50 fishermen are involved), with 65 tons caught in 1982 and 148 tons in 1984.

BIRDS

The site qualifies for its wintering population of Ruddy Shelduck (max. 212) and White-headed Duck (max. 82).

CONSERVATION ISSUES

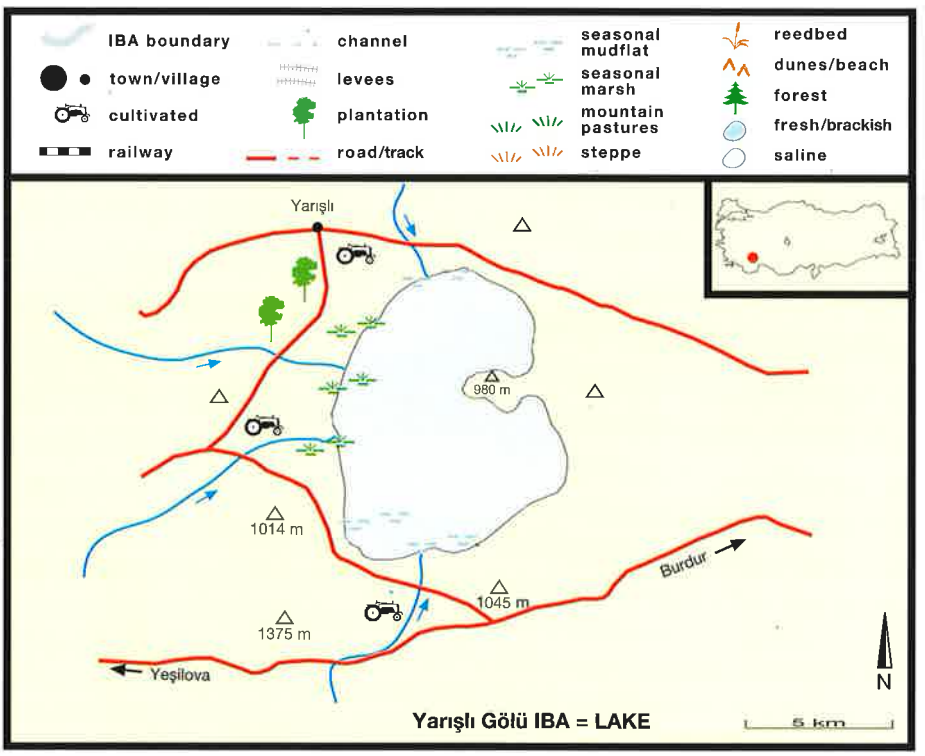
- The site was declared a Permanent Wildlife Reserve in 1995 (4720 ha).
- Originally, only during periods of high water level, the Bozçay river flowed into Karataş Gölü and the lake was small but permanent with extensive reedbeds. In 1982 DSİ (State Water Works) completed a conversion scheme that included the provision of a regular inflow of water from the Bozçay river. Karataş Gölü now effectively became a reservoir (max. 1190 ha), storing 65 hm^3 to irrigate 6600 ha of surrounding land (water is taken from two points). The increase in water levels (from 1043 m to maximum 1053 m) probably resulted in the significant loss of marginal vegetation. As a result of drought in recent years and increasing demands for irrigation water (water from the Bozçay is also stored in the Karamanlı reservoir (24 hm^3), upstream from Karataş) the lake has usually been less than half full, representing 600 ha: fishing has lost most of its importance. The Bademli reservoir (3 hm^3), proposed for construction on a northern inflow of the lake, will possibly further reduce water levels.

YARIŞLI GÖLÜ

IBA no	29
Alternative name(s)	Kocapınar Gölü
Province(s)	Burdur
District(s)	Yeşilova, Burdur
Size	1400 ha
Coordinates	37°34'N 29°58'E
Altitude	915 m

SITE DESCRIPTION

A shallow lake with high concentrations of sodium phosphate, sodium chloride and sodium sulphate, located south-west of Burdur Gölü (IBA no.30) and separated from it by a small range of hills. It is fed by several springs and was formerly also fed by a stream which carried water from Gencali lake (317 ha), 6 km west of Yarışlı. Gencali lake was drained during the 1960s with the result that the water level at Yarışlı Gölü increased. The water level of the lake fluctuates greatly during the year and in summer the lake almost entirely dries up, leaving extensive saltmarshes and mudflats. The lake has no outlets. To the north and west the lake is bordered by farmland, otherwise the shores are rocky and steep in places. Small vegetated areas are found where freshwater enters the lake. It is reportedly very poor in aquatic life, with only one species of fish



Aphanius chantrei, which is of no economic value.
Small numbers of animals are grazed around the lake.

BIRDS

The site holds significant numbers of Ruddy Shelduck (max. 1736) and White-headed Duck (max. 46) in winter.

CONSERVATION ISSUES

- The site has no protection status.
- A former DSİ (State Water Works) plan to drain Yarışlı Gölü into Burdur Gölü was cancelled as a result of poor soil quality.

Yarışlı Gölü (Gernant Magnin)

BURDUR GÖLÜ

IBA no	30
Province(s)	Burdur, Isparta
District(s)	Burdur, Isparta, Keçiborlu
Size	23,700 ha
Coordinates	37°44'N 30°11'E
Altitude	857 m

SITE DESCRIPTION

A large lake of tectonic origin situated in a closed basin and fed by several streams, most prominent of which is the Bozçay which enters the lake in the south-west. The lake is amongst the deepest in Turkey (max. 110 m) and has an average depth of 40 m. It is high in soda, sulphur and chlorides. To the north-east and south-west lie extensive alluvial flats, the latter a small delta formed by the Bozçay with some remnants of drained reedbeds and marshes visible in places. The lake is flanked by hills and mountains covered with scrub and forest: particularly to the south and east of the lake large areas have been afforested, and the higher parts of the northern mountain range has Black Pine *Pinus nigra* forest in places.

The near surroundings of the lake are entirely under agriculture (10% of which is groundwater-irrigated) with the main crops being cereals, grapes, fruit and vegetables, almond, sugar beet, sesami, opium and hemp. Extensive poplar stands are found, especially north-east of Burdur town. A particular characteristic of the region is the cultivation of roses, the precious oil of which is used in the perfume and food industries. Large areas in the north and north-east are largely covered by rose fields. There is some sheep and goat grazing in the surrounding hills and on the grassy plains on the lake shore.

There are only few species of fish in the lake and no commercial fisheries. *Aphanius burduricus* is an endemic fish species, and *Arctodioptomus burduricus* an endemic zooplankton.

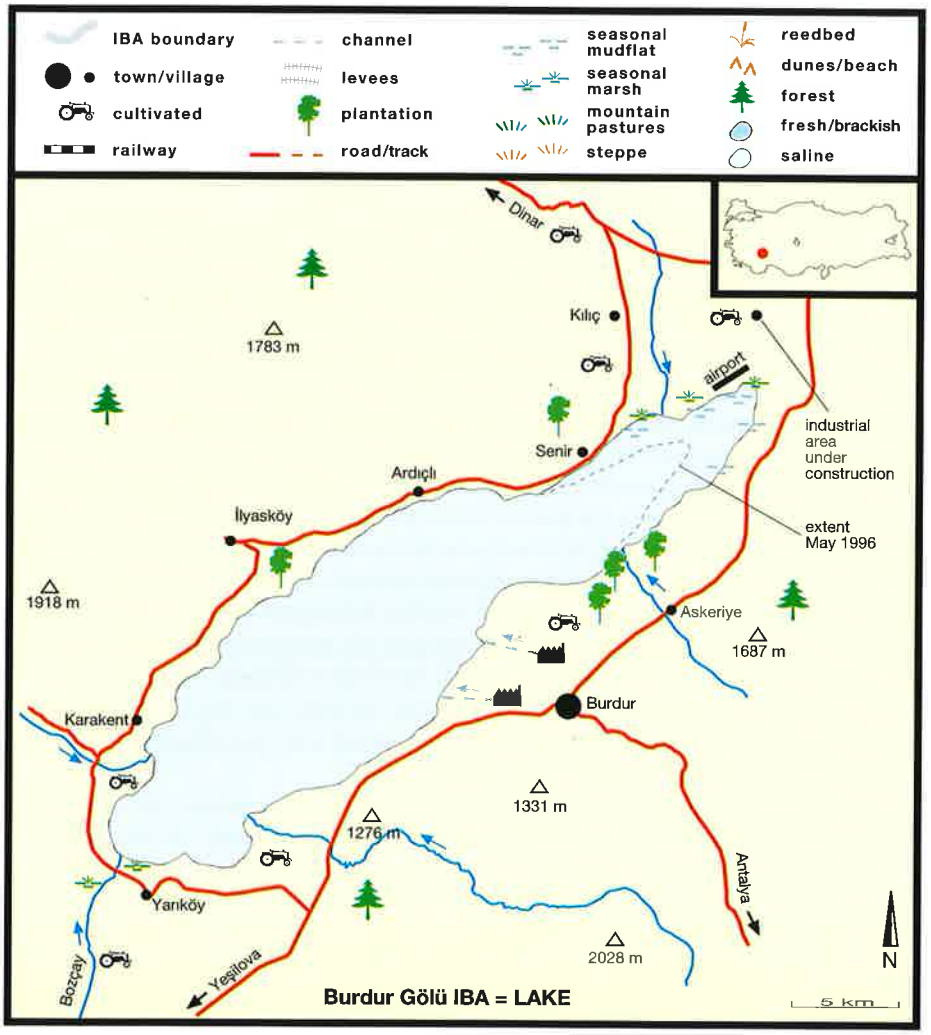
BIRDS

Burdur Gölü is primarily important for the vast numbers of waterfowl that occur, principally in winter. It is the single most important wintering site in the world for the globally threatened White-headed Duck (max. 10,927, i.e. over two-thirds of the world wintering population), with large numbers occurring throughout the year except during the breeding season. The maximum number of winter waterfowl counted in recent years is 202,119, notable species include Black-necked Grebe (max. 25,280), Ruddy Shelduck (max. 1889 in July, max. 472 in winter), Red-crested Pochard (max. 2814), Pochard (max. 57,555), Tufted Duck (max. 6000) and Coot (max. 138,925).

Spur-winged Plover breeds around the lake.

CONSERVATION ISSUES

- In 1993 a 38,125 ha Permanent Wildlife Reserve was declared including the lake and its surroundings. In 1994 ca. 50% of the lake (12,600 ha) was declared a Ramsar site (the official explanation as to why only a part of the lake was declared is that this was the result of pressure from hunters).
- Possibly as a result of distortions in the lake bed and clogging of the outflows in its bottom, the average water level in Burdur Gölü started increasing in 1960, reaching a peak in May 1970 when the level stood at 857.44 m and the lake occupied 23,700 ha: during this ten year period, the lake rose nearly 6 m. Since 1971 the average water level has decreased, with an obvious drop noted since 1986. In May 1996 the water level was 848.15 m, representing a lake surface area of 18,500 ha. The decrease in size resulted in wetland habitat loss, as areas which dried up were shallow areas of prime importance to waterfowl. Two plausible explanations are offered for the decreasing water



level. The average annual precipitation in the Burdur basin was 422 mm prior to 1984 but only 347 mm during 1984-1991. Water manipulation schemes in the Bozçay basin which has an average annual inflow of 125 hm^3 may have had a greater effect. Inflow has been reduced by the construction of the Karamanlı reservoir (taking 24 hm^3/p.a.), the conversion of Karataş Gölü (IBA no. 28) to a reservoir (taking 65 hm^3/p.a.) and the construction of the Tefenni and Belenli reservoirs (4 hm^3/p.a. in total). Together these reservoirs support the irrigation of some 11,000 ha. Finally the planned Bozçay-Karaçal dam project will irrigate 5006 ha whilst reducing the Bozçay inflow by a further 32 hm^3. For the last few years, no water has reached Burdur Gölü through the Bozçay. With most of the existing dams nearly empty, DSİ (State Water Works) had to reconsider its plans and the Suludere stream damming scheme, amongst others, has been cancelled. The input of sulphur, salt and soda into the lake has increased disproportionately since these elements are carried by the smaller streams (which contribute 24 hm^3/p.a.) which were not dammed. Groundwater is pumped to Burdur town, but it is unclear whether this is effecting the lake's hydrology.

- The alluvial flats south-west of the lake will be permanently converted into arable land as a result of the Bozçay-Karaçal irrigation project. The extensive grasslands north-east of the lake are also threatened by further agricultural intensification (7777 ha will be irrigated with water from Eğirdir Gölü, IBA no. 31).
- Construction of an airport on the plain north-east of the lake started in 1993 and was almost complete by 1996. Simultaneously, preliminary work started for an industrial complex (comprising 160 factories, mainly textile plants) a few kilometres north of the airport and within the area proposed for irrigation. Despite a large-scale protest campaign emphasizing the importance of the lake as a Ramsar site and the lack of environmental impact assessments, as well as court orders (which were later reverted) to halt construction (following a lawsuit filed by DHKD and Burdur and Ankara conservationists), the construction activities have continued. The airport is very close to the shallow north-east section of the lake which holds up to 100,000 waterfowl in autumn and winter, creating the possibility of crashes as a result of collisions between aircraft and birds. If the lake's water level rises again the airport will most probably abut the lake shores. The Turkish government is urged to investigate the environmental impact of this scheme. The risks to planes and people involved in landing and taking off in one of the most bird-rich areas in Turkey requires close assessment. Further work on the industrial complex should be halted until guarantees for the long-term survival of the lake have been secured.
- A number of factories and a state-owned mine release their wastes directly into the lake. The major polluters are the sugar and milk factories in Burdur, with high contents of nitrates and phosphates in their waste water. A meat factory in Burdur discharges organic waste, but this is used to irrigate gardens, strongly reducing the potential pollution. The Etibank sulphur mine at Keçiborlu 15 km north of the lake discharges inorganic mining wastes via the Adalar stream into Burdur Gölü, reducing pH levels where it enters the lake. This mine is now working at minimum capacity and is likely to be shut

down at short notice. Further pollution of the lake concerns agricultural run-off and sewage from Burdur town which is released into the lake. Treatment plants for the town's sewage and for the milk and sugar factories are under construction but it will take several years before these become operational. Recently large new housing developments have been completed south-west of the town, adding to the pollution problem.

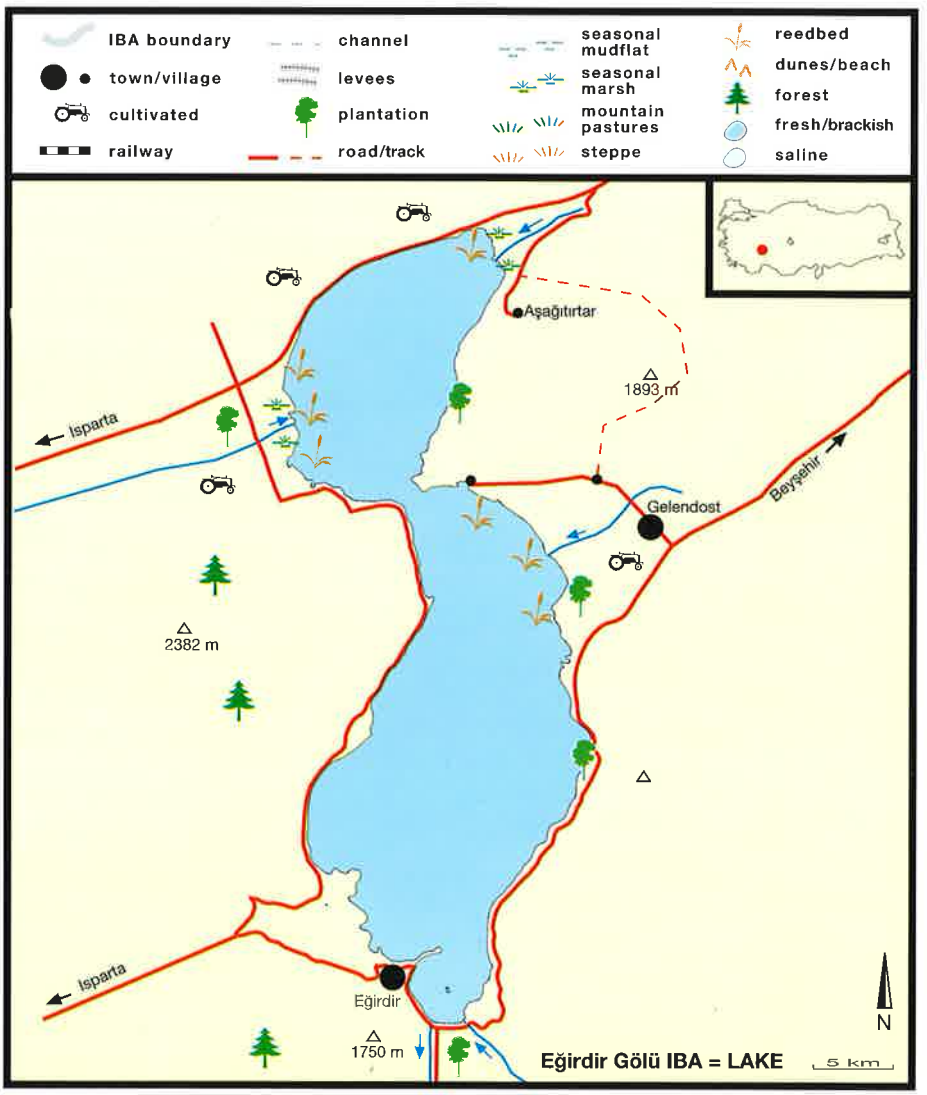
- The lake was a popular waterfowl hunting ground until the 1990s. A hunting ban in 1993 and more importantly educational and wardening activities by the Ankara-based Game & Wildlife Conservation, Development and Promotion Foundation and Burdur municipality have resulted in major improvements.

EĞİRDİR GÖLÜ

IBA no	31
Province(s)	Isparta
District(s)	Eğirdir, Senirkent, Yalvaç, Gelendost
Size	47,250 ha
Coordinates	38°00'N 30°54'E
Altitude	918 m

SITE DESCRIPTION

A large oligotrophic lake of tectonic origin which narrows in its centre and has a maximum depth of 13 m: the northern part is sometimes referred to as Hoyran



Gölü, and is shallower than the southern part. The lake is fed by three major streams (which largely dry up in summer) and a number of springs. The only outlet is in the south where water flows south to Kovada lake. Lake water is used for irrigation and drinking water for the towns of Isparta and Eğirdir. The northern and eastern parts of the lake are bordered by arable land (mainly apple orchards): elsewhere steep hills and mountains surround the lake. Several tens of hectares of reedbed are found in the east, north of the point where the Yalvac (or Akçay) stream enters the lake. The only other significant area of reedbed is in the north-west.

The main fish species caught on the lake is Pike Perch *Stizostedion lucioperca* (introduced in 1955, on the recommendation of the German scientist Numann). Over 300 fishermen from 25 settlements are employed in fisheries.

BIRDS

The site qualifies for the large numbers of waterfowl (max. 107,199) which overwinter, including Pygmy Cormorant (max. 81), Red-crested Pochard (max. 1503), Pochard (max. 15,198), Tufted Duck (max. 12,665) and Coot (max. 64,419).

CONSERVATION ISSUES

- The lake has the official protection status of Drinking Water Reservoir.
- Originally DSİ (State Water Works) planned to use up to 355 hm^3/p.a. for irrigation, drinking water and hydro-power (for two hydro-power stations built in 1960 and 1971 which require 225 hm^3/p.a.). Due to water shortages, at present only 150 hm^3/p.a. is used for irrigation and 30 hm^3/p.a. for drinking water: the two hydro-power stations have been idle since 1990. In spite of reduced water usage, the lake's water level has dropped with 2.5 m during the last 25 years. It is unclear whether the lack of water is due to manipulations in its watershed or to reduced precipitation (available data indicate a 15-20% reduction in precipitation during the same period). Obviously, the water utilisation schemes will have to be re-considered and based on realistic assessments of the amount of water available without affecting the lake's ecology. Further expansions (currently underway or planned, such as the Gönen-Keçiborlu irrigation project [cf. Burdur IBA no. 30]) and the construction of a third hydro-power plant (requiring an additional 30 hm^3/p.a.) do not appear feasible.
- Former marsh and steppe areas around the lake have been drained or reclaimed, notably the area east of Hoyran Gölü.
- The town of Eğirdir discharged its untreated sewage into the lake prior to the completion of a sewage treatment plant in 1995. A number of fruit processing plants have been established in the area south of Eğirdir. Massive numbers of fish deaths in the stream which connects the lake with Kovada lake have been attributed to a cooling warehouse discharging ammoniac. Agro-chemicals have been reported to pollute the lake.
- The fishing industry has declined dramatically during the last three decades. 2852 tons of Crayfish *Astacus leptodactylus* were netted in 1977 (70% of the total Turkish catch) and 2010 tons in 1984, but this fell to 10 tons in 1986 due

to the Crayfish plague: in 1990 the catch was less than 1 ton, but there are now signs that the population is slowly recovering. Similarly catches of Carp *Cyprinus carpio* fell from 500 tons in 1969 to 35 tons in 1990, as a result of the introduction of Pike Perch. The latter is the only species still caught in reasonable, but now also declining, quantities: 482 tons in 1979 and 110 tons in 1990. Eight species of fish disappeared after the introduction of the Pike Perch. The number of active fishermen fell from 2500 in 1978 to 350 in 1993.

KARAMIK SAZLIĞI

IBA no	32
Province(s)	Afyon
District(s)	Çay
Size	4500 ha
Coordinates	38°26'N 30°50'E
Altitude	1002 m

SITE DESCRIPTION

A freshwater swamp consisting of extensive *Phragmites* and *Typha* beds and other aquatic vegetation interspersed with areas of open water. No major streams enter the marshes and the only water supply is run-off from the surrounding hills and a number of springs. Water leaves the site through two swallow holes in the south. The marsh is bordered by agricultural fields and pastures in the east and west, whilst extensive poplar plantations are found in the north and north-east.

There are large cattle herds in and around the marshes. Fisheries are of minor importance. The main economic value of the site results from the harvesting of reed. The SEKA state paper factory, 10 km north of the site, rents the area between 1 December-31 March and reed-cutters from surrounding villages cut the reed and transport it to the factory. According to official figures, 10,000 tons of reed were harvested during 1995. Reed-cutters typically harvest 10-15 tons/p.a. each, at 600 TL (0.10 USD)/kg in 1992.

BIRDS

The site qualifies as an IBA for its breeding populations of Little Bittern (25 pairs) and Ferruginous Duck (10 pairs).

Additional bird information.

Other breeding birds include Little Grebe, Great Crested Grebe, Red-necked Grebe, Black-necked Grebe, Pochard, Black-winged Stilt and Whiskered Tern. White-headed Duck is suspected to breed.

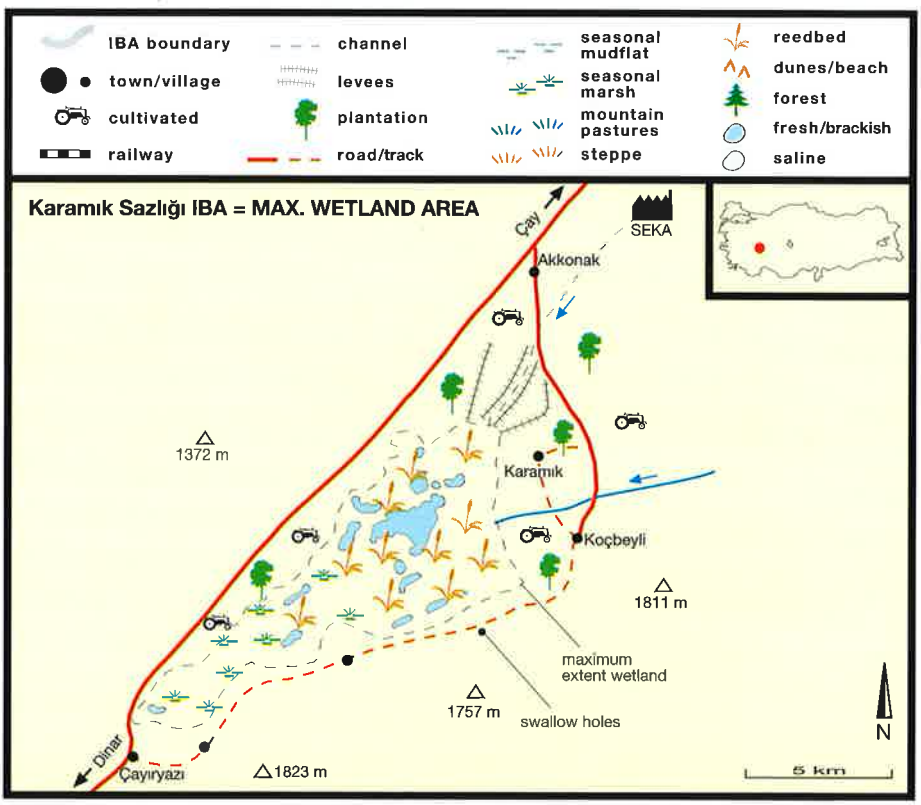
Karamık Sazlığı was ornithologically of much greater importance before DSİ (State Water Works) started lowering the water level. The results of the winter counts in the early 1970s (max. 97,961) and the near legendary reputation of the site with İstanbul and Ankara duck hunters is testament to the site's former importance.

CONSERVATION ISSUES

- The site was declared a SİT in 1993.
- The marsh area has decreased drastically over the last decades with more than half of the original wetland area being dry during March 1995. At the swallow holes, DSİ operates sluices (constructed in the 1970s) in order to maintain a maximum water level of 1002 m, thus increasing reed growth in

the wetland and reducing flooding. Although no information exists on the exact water level required to flood the entire former extent of the wetland, observations from March 1993 showed that when water is released from the sluices, the southern part of the IBA remains dry. Hence restoration of the wetland requires modification of the current DSİ management principles. Water for irrigation is extracted from the marshes via pumping stations.

- The SEKA state paper factory discharges all its waste water into Karamık Sazlığı. According to a study by the Environmental Foundation of Turkey in 1991-1992, this waste water mainly consists of non-water soluble cellulose fibre and its derivatives, together with lignin derivatives dissolved in alkali. This implies a risk of serious eutrophication of the marshes. The SEKA state paper factory claims that it has always operated a sewage treatment plant and closely monitors water quality. Since 1980 Hacettepe University, Ankara has monitored the waste water and reports that it is not harmful and perhaps even beneficial to the marshes. Permission for discharging is now given by the Ministry of Environment.
- In addition to the waste water, the paper factory dumps large amounts of lime in open pits just north-west of the marshes.
- Local people are complaining about the decreasing quality and height of the reed as a result of the pollution. This, and the decreasing size of the marsh, implied that during the 1994-1995 harvesting season 100% of the available reed was cut.
- Out-of-season fishing takes place on a large scale.



AKŞEHİR & EBER GÖLÜ

IBA no	33
Province(s)	Konya, Afyon
District(s)	Bolvadin, Çay, Sultandağı, Akşehir, Tuzlukçu
Size	53,600 ha (the two lakes and a 1500 ha corridor inbetween them)
Coordinates	38°36'N 31°18'E
Altitude	Akşehir Gölü 966 m, Eber Gölü 967 m

SITE DESCRIPTION

Two adjacent lakes in the Akarçay closed basin. Akşehir Gölü (max. 35,300 ha) is a tectonic lake up to 7 m-deep, principally fed by five streams from the Sultan mountains in the south and a sixth (4 km-long) inlet from Eber Gölü in the west; it has no outlet, and the lake is nearly fresh in the western and southern parts, becoming increasingly saline towards its centre and the north. The link with Eber Gölü is presently severed because of low water levels. Thin reedbeds fringe most of the lake shores, but extensive (up to several km-wide) reedbeds are found in the west and especially the north-east corners. To the west and south of the lake extensive irrigated orchards are the major landuse, with cereals being the dominant crop on the northern shore. Animal husbandry was formerly common but has become increasingly rare during the last decade. Fishing is an important economic activity (cf. below).
Eber Gölü (max. 16,800 ha) is maximum 6 m-deep freshwater lake, situated 4 km north-west of Akşehir Gölü and fed mainly by the Akarçay that flows into the lake from the west. Water then flows through the Taşköprü stream (alternatively called the Eber channel) to Akşehir. The lake itself is nearly completely covered with reed 5-6 m high in places.

The two lakes were previously treated as separate IBAs (no. 19 and no. 22) but have been merged for two reasons. Firstly, the lakes constitute a single ecological unit with several bird species breeding at one and feeding at the other. Secondly, the lakes form one hydrological system, hence possible solutions for the pressing conservation problems of the sites can only be designed for the whole area.

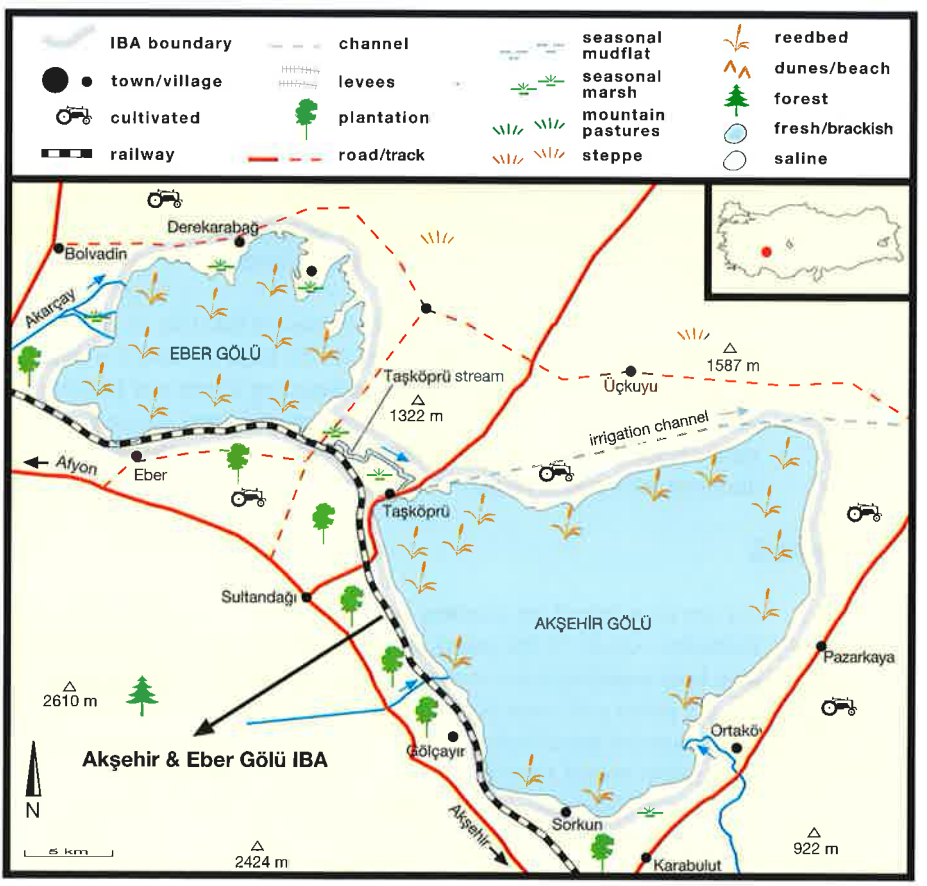
BIRDS

The site is an important breeding site for Pygmy Cormorant (50 pairs) and Dalmatian Pelican (a few pairs). Mixed heron colonies on reed islands in Akşehir Gölü hold breeding Squacco Heron (70 pairs), Purple Heron (50 pairs), Glossy Ibis (50 pairs) and Spoonbill (15 pairs). Ferruginous Duck (10 pairs) and Gull-billed Tern (20 pairs) breed on small sandbanks in the reedbeds, whilst Greater Sand Plover breeds around the lake. White-fronted Goose (max. 15,900) occurs in winter, and the site also qualifies as a stopover for migrating White Pelican (max. 2000) and Glossy Ibis (max. 1536).

Additional bird information.
Other breeding species in the heronries include Little Egret (175 pairs) and Night Heron (100 pairs).
The site used to be of major importance for wintering waterfowl before its water regime was controlled, with 33,000 waterfowl at Eber in 1967, and 205,000 in 1969 and 37,721 in 1971 at Akşehir.

CONSERVATION ISSUES

- Akşehir Gölü and Eber Gölü were declared a SİT in 1992.
- The surface area of Akşehir Gölü has decreased from a maximum extent of 35,300 ha in 1969 to 17,700 ha in 1993, whilst the extent of Eber Gölü has declined from 16,800 ha to 7600 ha over the same period. During the period 1986-1993 the water level in Akşehir Gölü fell 3.85 m. Precipitation levels and thus lake surface areas are subject to extreme natural fluctuations in this region: Akşehir Gölü was totally dry in 1933. However, precipitation figures from the last 30 years indicate that insufficient precipitation is not the reason for the drastic long term reductions in water levels. Large amounts of water are now diverted from inflowing streams or pumped from underground



sources in order to provide drinking and irrigation water. DSİ (State Water Works) began a large scale irrigation scheme in the early 1960s and two dams on the Akarçay were built: the Seyitler dam (1965) and the Selevir dam (1967). DSİ states that these two dams are responsible for a 10% reduction of the total lake area. Under construction at present are the Kayabelen, the Kırka and Akdeğirmen dams, all on the Akarçay stream, doubling the volume of water retained in the dams, and further reducing the flow of water to both Eber Gölü and Akşehir Gölü. The DSİ irrigation scheme plans to redirect Eber Gölü water from the Taşköprü connection into irrigation channels north of Akşehir Gölü. DSİ partly revised its plans considering the recent water shortages and now foresees the irrigation of only 12,400 ha (originally 52,000 ha) adjacent to the IBA: drainage water will flow back into the lake. According to the DSİ calculations this would imply a further reduction of the Akşehir Gölü surface area of 3200 ha. Given the serious size reduction of Akşehir Gölü during the last two decades, this leaves little hope for the long-term survival of the lake. The water in Akşehir Gölü is becoming increasingly saline as a result of the reduced water levels.

- The Akarçay brings pollutants into the wetland system from the following sources: sewage from the town of Afyon, waste water from sugar, meat and fish, beer and milk factories in Afyon, from the opium factory in Bolvadin (opened in 1981), and from a number of small industries in the Afyon and Bolvadin areas. Waste water is either insufficiently treated or left untreated, although a sewage treament plant is under construction near Afyon. The extent of the pollution is well documented and dramatically exceeds legal levels. This pollution has led to the severe eutrophication of Eber Gölü. Akşehir Gölü is less affected by the pollution which enters the lake through the Taşköprü stream but sewage from Akşehir town flows into the lake with minimal treatment. A small number of fruit-canning factories have been established on the shores of Akşehir Gölü and acidic waste is polluting the lake in places. Both lakes are further polluted by agricultural run-off.
- The lack of water and the heavy pollution that have occurred over the last two decades have had a disastrous effect on local fisheries. Over 20 villages formely depended on fisheries and 650 fishing boats were employed: during the period 1975-1990 Akşehir Gölü catches were maximum 480 tons/p.a., and Eber Gölü maximum 125 tons/p.a. After 1990, fisheries collapsed, but in Akşehir Gölü fishermen started to catch Bleak *Alburnus* sp., a species without commercial value until all other fish species had disappeared: up to 560 tons of Bleak are caught per annum.
- Reed was formerly a major source of income for local people, all reed being sold to the SEKA paper factory in Çay, which rents the lake during the period 1 December - 31 March (although reed harvesting also takes place outside that period). Up to 50,000 tons were harvested at Eber Gölü 20 years ago: in 1993 the total was less than 8000 tons. Reed is much scarcer at Akşehir Gölü and no old data is available, but only 377 tons were harvested during 1994.
- The consequences for the local avifauna resulting from gross changes in water regime and increased pollution can only be guessed, but some figures are self-explanatory: over 200,000 waterfowl were present in winter 1969, whilst recent winter counts only produced several thousands of birds.

ÇAVUŞÇU GÖLÜ

IBA no	34
Alternative name(s)	Ilgın Gölü
Province(s)	Konya
District(s)	Ilgın
Size	1200 ha
Coordinates	38°21'N 31°53'E
Altitude	1026 m

SITE DESCRIPTION

A freshwater lake, fed by the Battal and Çebişçi streams. Embankments constitute the northern and southern borders of the lake. Water leaves the lake through a controlled outlet in the south and is pumped out at a station on the west shore. Fringe vegetation is limited to small scattered reedbeds (mainly *Phragmites australis*). The lake is surrounded by sheep grazed arid hills with a single stone quarry. North and south of the lake there is arable land, willow stands, orchards and meadows used for cattle grazing.
Fishing is an important activity with 50 tons of Carp *Cyprinus carpio* and 80 tons of Crayfish *Astacus leptodactylus* caught during 1987.

BIRDS

The site qualifies as an IBA for its breeding population of Whiskered Tern (100 pairs) and the large numbers of wintering waterfowl (max. 32,586) including Red-crested Pochard (max. 1000).

Additional bird information.
Other breeding birds include Common Tern (350 pairs).
There is only scant information on the natural importance of the lake before manipulation of its water regime started, but an indication of its former importance is the record of 100,241 waterfowl in winter 1969.

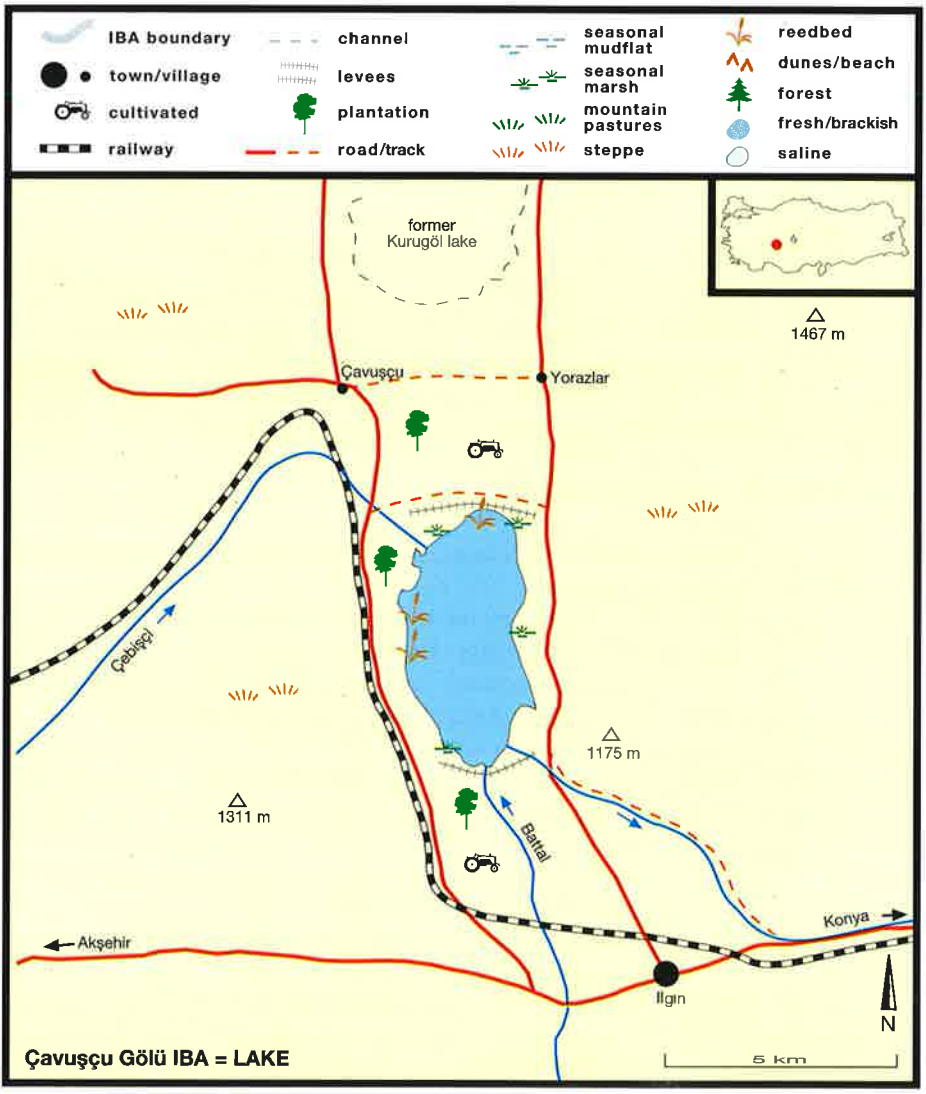
CONSERVATION ISSUES

- Çavuşçu Gölü was declared a SİT in 1992.
- In its natural state the lake was up to 5000 ha in extent, possessed extensive reedbeds and dried up during extended periods of drought. Only during periods of high water levels did the lake water drain away via a stream which carried it towards the Atlanti plain from where it subsequently flowed into the Sakarya river. During the late 1960s DSİ (State Water Works) constructed levees and diverted three streams south of Ilgın (Bulcuk, Eldes and Tekke, the annual flow of which have been or are to be further reduced by smaller scale diversion schemes on their individual courses) to the Battal stream which flows into the lake. As a result several thousands of hectares of wetland were converted to permanent arable land in the area south and north of the present lake including the area formerly known as Kurugöl. The high water level maintained within the embankments resulted in the complete loss of

lake vegetation, and effectively the lake now has the characteristics of a man-made reservoir. This is confirmed by DSİ who refer to the site as a "reservoir" and justify the project on environmental grounds by pointing to the fact that the lake no longer dries up. Approximately 22,000 ha in the Ilgın and Atlantı plains is irrigated with water from Çavuşçu Gölü, with an extension of several thousands of hectares planned at a location farther afield.

Some new marsh habitat may form as a result of silt accumulation in the lake provided these areas are protected against encroachment by farmers.

- During 1995, a feasibility study was instigated to investigate the planned construction of a coal-fired thermal plant at the location of the former Kurugöl lake. The coal will be extracted from open-cast mines.



ALTINTAŞ OVASI

IBA no	35
Province(s)	Kütahya
District(s)	Altıntaş, Aslanapa, Kütahya
Size	19,200 ha
Coordinates	39°07'N 30°07'E
Altitude	970-1698 m

SITE DESCRIPTION

The Altıntaş Ovası is an extensive agricultural and upland area south of Kütahya, bordered to the south by the Kokar stream, a tributary of the Sakarya river. The lower-lying part of the area is principally non-irrigated and hardly drained, nearly half of the area lies fallow in each year. There is a wide variety of crops and these are rotated. In places ground water reaches the surface and small marsh areas have developed (although some of these have been drained in recent years). The northern parts of the IBA mainly concern low mountains which support extensive areas of *Juniperus* forest and scrub.

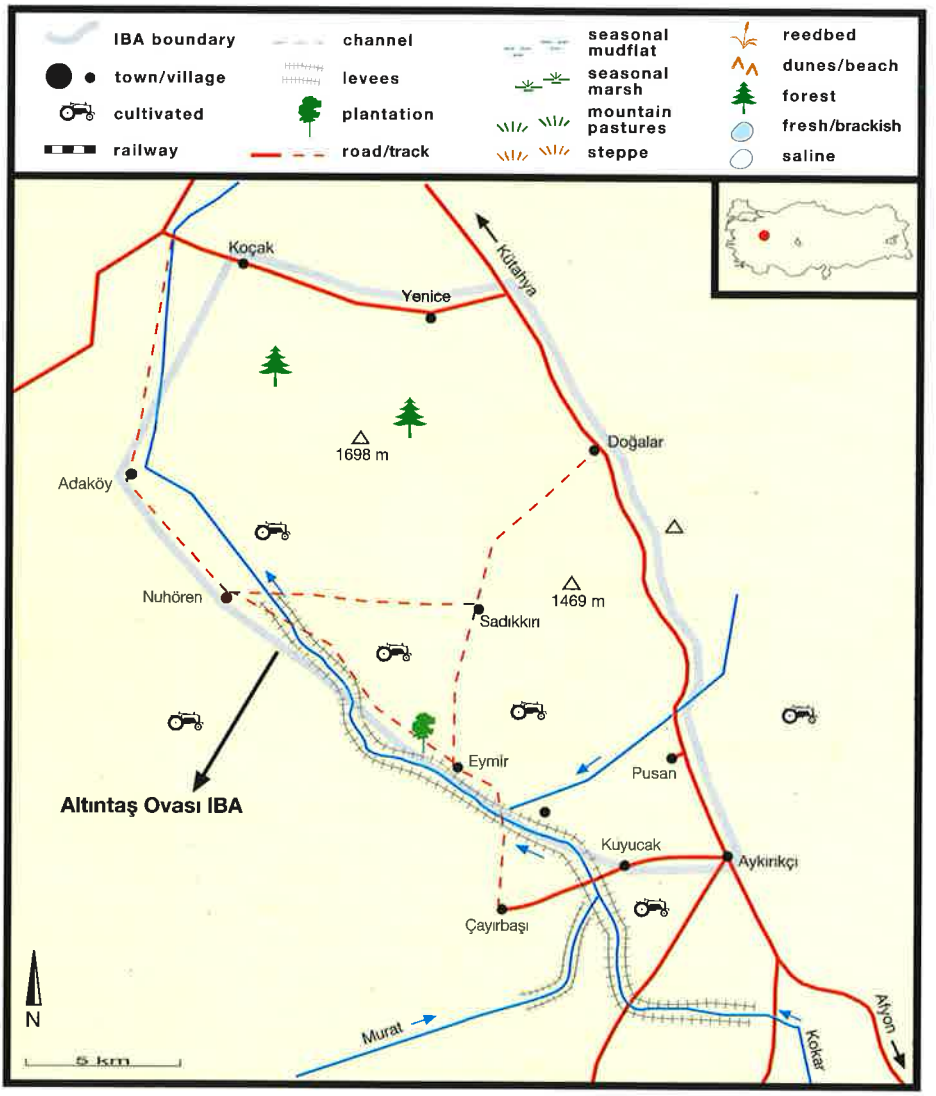
BIRDS

The availability of fallow land, absence of agricultural intensification schemes and relatively low human disturbance, have led to the site being one of the last Great Bustard strongholds in western Turkey. The population is estimated at 20 pairs. Breeding has been confirmed every year. The birds appear to be resident, even remaining during periods of prolonged snow cover.

CONSERVATION ISSUES

- The site was declared a Permanent Wildlife Reserve in 1993 and the IBA follows the reserve borders.
- Local hunters, backed by the Ankara based Game & Wildlife Conservation, Development and Promotion Foundation, successfully campaigned for the area to be granted protection, and the site is currently wardened by local hunters. Poaching has virtually been eliminated and the Great Bustards have quickly adapted to their safer environment: they are even seen flying over inhabited villages, a rare sight for a bird that has been hunted to near-extinction. Education of local farmers has been successful and Great Bustard chicks found in fields are taken to the reserve guards for subsequent release. Farmers have voluntarily planted small areas with Alfalfa *Medicago sativa*, a preferred food source for Great Bustards, especially during winter. Restoration of some of the marsh areas and a programme for winter feeding are also being discussed.
- The DSİ (State Water Works) Kütahya Altıntaş I. Phase irrigation project includes the construction of dams on the Kokar and Murat streams and the irrigation of 17,763 ha in the region, including the entire lower part of the IBA. Construction of the irrigation scheme is scheduled to start during 1996,

whilst irrigation is to start by 2001. A DHKD mission in 1996 revealed that DSİ was unaware of the fact that a large area of their planned irrigation scheme had received official protection status in 1993. Loss of fallow land, intensification of agriculture and an increase of human disturbance would undoubtedly affect the Great Bustard population and DSİ is urged to initiate a thorough study before undertaking further action.



TÜRKMENBABA DAĞI

IBA no	36
Province(s)	Kütahya, Eskişehir
District(s)	Eskişehir, Kütahya, Seyitgazi
Size	17,500 ha
Coordinates	39°26'N 30°23'E
Altitude	1200-1826 m

SITE DESCRIPTION

A small mountain range at the northern end of the forested Yazılıkaya range, between the Kütahya, Eskişehir and Afyon plains. In contrast to its surroundings which are mostly barren, the mountain is covered by extensive coniferous forest (including large stands of old growth forest) and meadows; at lower altitude, deciduous forests prevail. Some cliffs are found in the summit area. The longest valleys are those facing north-west which are steep-sided in parts and have small rocky outcrops. A fire-watch tower and TV relay station are situated at the summit, whilst a few summer settlements are found near the meadows. Large numbers of cows, horses and sheep are grazed on the grasslands but the Ministry of Forestry controls grazing and has fenced off parts of the forest. Forestry management is non-intensive, with selective felling in small areas of the forest.

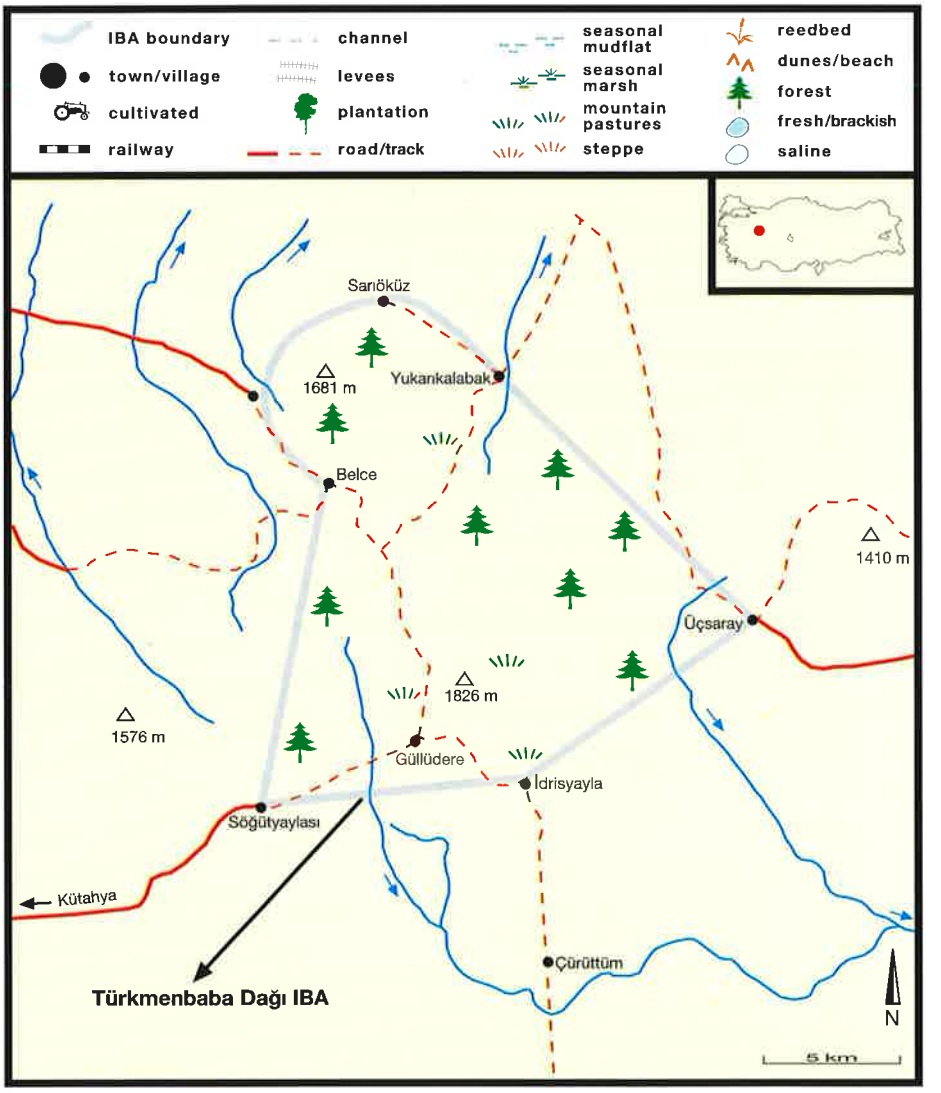
BIRDS

The undisturbed and remote nature of the site accounts for its impressive raptor population, and it holds one of the largest known populations of Black Vulture (10 pairs) in Turkey. The IBA also holds significant breeding populations of Black Stork (5 pairs), Lammergeier (1 pair) and Booted Eagle (5 pairs).

Additional bird information.
Suspected breeding birds include Honey Buzzard, Griffon Vulture, Short-toed Eagle, Sparrowhawk, Buzzard, Lesser Spotted Eagle, Imperial Eagle, Hobby and Peregrine.

CONSERVATION ISSUES

- In order to protect the local Red Deer *Cervus elaphus* population, in 1981 the Ministry of Forestry established a 5000 ha Permanent Wildlife Reserve. For its archeological importance the site was declared a SİT in 1980.
- Although forestry management is non-intensive, day workers are mainly active during the breeding season, a potential hazard to breeding raptors. Forest tracks have been opened throughout the area but the majority is not used. Forestry management should be timed in accordance with the breeding season and distribution of the raptors (leaving a no-activity buffer zone around each breeding valley) and old pines should not be felled.

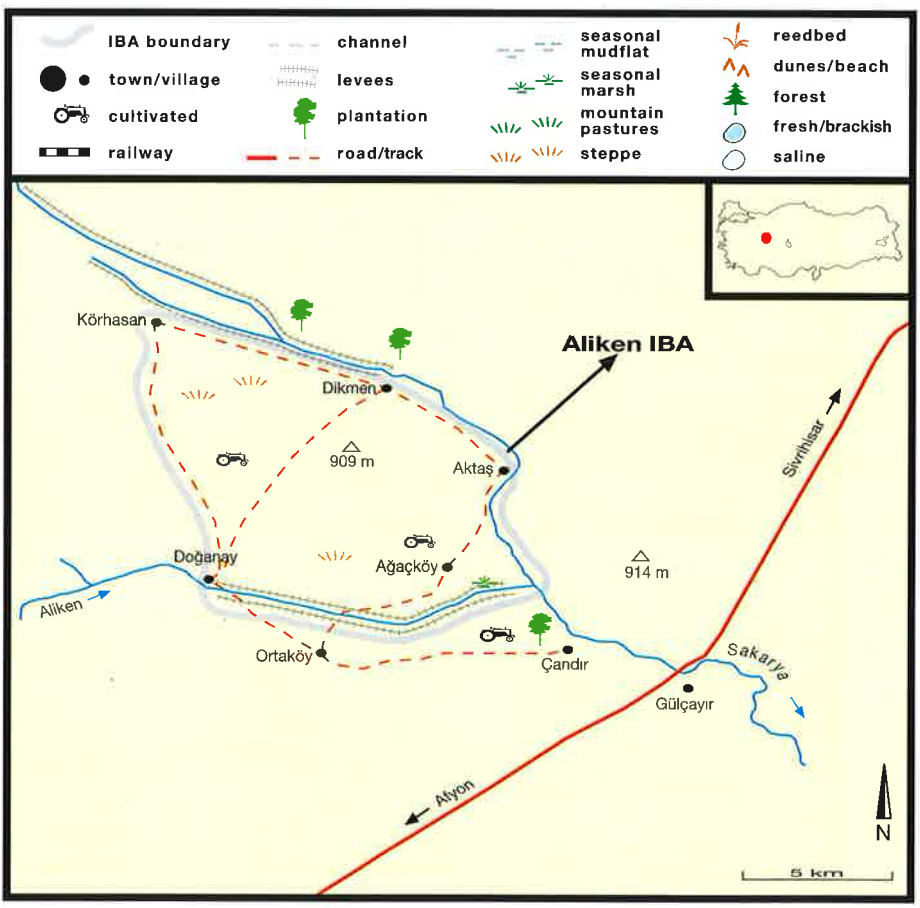

IBA boundary
town/village
cultivated
railway
channel
levees
plantation
road/track
seasonal mudflat
seasonal marsh
mountain pastures
steppe
reedbed
dunes/beach
forest
fresh/brackish
saline
Sarıöküz
Yukarıkalabak
1681 m
Belce
1410 m
Üçsaray
1826 m
1576 m
Güllüdere
İdrisyayla
Söğütyaylası
Kütahya
Çürüttüm
Türkmenbaba Dağı IBA
N
5 km

ALİKEN

IBA no	37
Province(s)	Eskişehir
District(s)	Çifteler, Sivrihisar
Size	11,500 ha
Coordinates	39°19'N 31°17'E
Altitude	875 - 909 m

SITE DESCRIPTION

Aliken is situated 30 km south-west of Sivrihisar. The southern border of the IBA is formed by the Aliken stream, a tributary of the Sakarya river. The higher parts of the plateau are barren and agriculture is extensive (with land being utilised in alternate years). Thus in a typical year, 50% of the area supports unirrigated wheat and barley fields, whilst 40% is fallow and 10% uncultivated rocky steppe. Human disturbance in the area is minimal. In contrast, the ca. 1 km wide strip of land along the Aliken stream has been largely converted and is more intensively farmed, although marsh areas are still found along the river.



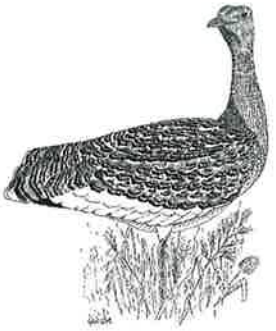
BIRDS

The area holds an estimated 20 pairs of Great Bustard with a maximum of 45 birds recorded.

Additional bird information.
The marshes south of Ağaçköy hold 6 pairs of Montagu's Harrier.

CONSERVATION ISSUES

- The site has no protection status.
- A large drainage channel was dug in 1948 and present construction works (largely completed but not yet fully operational due to water shortages) will result in the irrigation of 3970 ha of land in the Aliken valley. 2630 ha of marsh along the Aliken stream (partially outside the IBA) have been converted: the remaining marsh areas will also have disappeared when the project is completed.



Great Bustard (Sancar Barış)

BALIKDAMI

IBA no 38
Province(s) Eskişehir
District(s) Sivrihisar
Size 1470 ha
Coordinates 39°12'N 31°39'E
Altitude 799 m

SITE DESCRIPTION

Reclamation and flood control schemes have converted many tens of thousands of hectares of floodplain and marsh habitat along the Sakarya river (Turkey's second longest river) during the last three decades: Balıkdamı is one of the few remaining wetlands on this river. The IBA consists of two parts: the eastern site actually known as Balıkdamı, comprising 503 ha of extensive reedbeds and an area of open water (during winter and spring) and mudflats; and the western part, consisting of an extensive marsh and grassland between the villages of Kurtşeyh and Ahiler. A simple, low stone barrier on the river maintains a higher water level in the eastern part of the wetland.
Agriculture mainly consists of cereals (there is no irrigation); grazing by domestic stock takes place extensively within the site as well as across the large areas of dry grassland nearby. Poplar and willow trees have been planted along the river near the village of Balıkdamı.

BIRDS

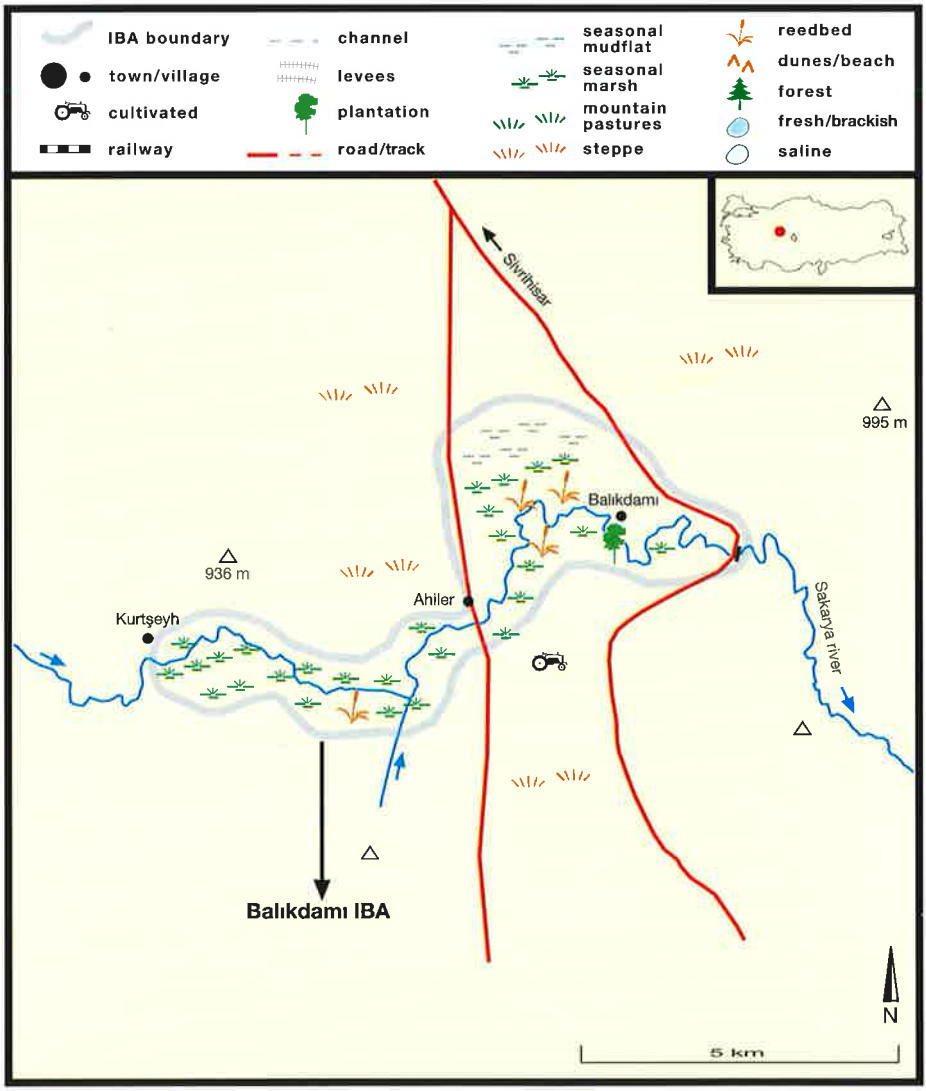
The site qualifies for its breeding population of Montagu's Harrier (15 pairs) and Lesser Kestrel (10 pairs, in Ahiler) and for its importance as a stop-over site for migrant White Storks (max. 17,915): it is also an important site for migrating waterfowl (max. 22,847), including Ruddy Shelduck (max. 302).

Additional bird information.
The trees near the Balıkdamı village hold a large mixed colony consisting of Little Egret (33 pairs), Night Heron (45 pairs), Squacco Heron (12 pairs) and Rook. A few pairs of Bittern also breed in the marsh and a few pairs of Pygmy Cormorant are suspected to breed.

CONSERVATION ISSUES

- The site was declared a SİT in 1988, and a Permanent Wildlife Reserve in 1994: the IBA follows the boundaries of the latter.
- DSİ (State Water Works) currently plans to irrigate the entire area along the upper reaches of the Sakarya river. One of the DSİ projects, the second phase of the "Upper Sakarya Irrigation Scheme", envisages the irrigation of 4736 ha area west and east of Balıkdamı. Irrigation water required by this project will be provided by four pumping stations on the Sakarya river and from the Göksu springs (immediately south of the IBA), which will be stored in a small

reservoir. The project will reclaim the entire western part of the IBA. Another component of the plan is to replace the stone barrier with a regulator, thus maintaining a higher water level throughout the year and creating a permanent lake of ca 500 ha in the eastern part of the IBA. DSİ claims this will not serve as a reservoir and will be maintained as a natural lake. In addition to the loss of valuable natural habitat in the western part, the creation of a permanent lake in the east will result in the loss of virtually all the sensitive and ecologically important marsh and mudflat areas.



UYUZ GÖLÜ

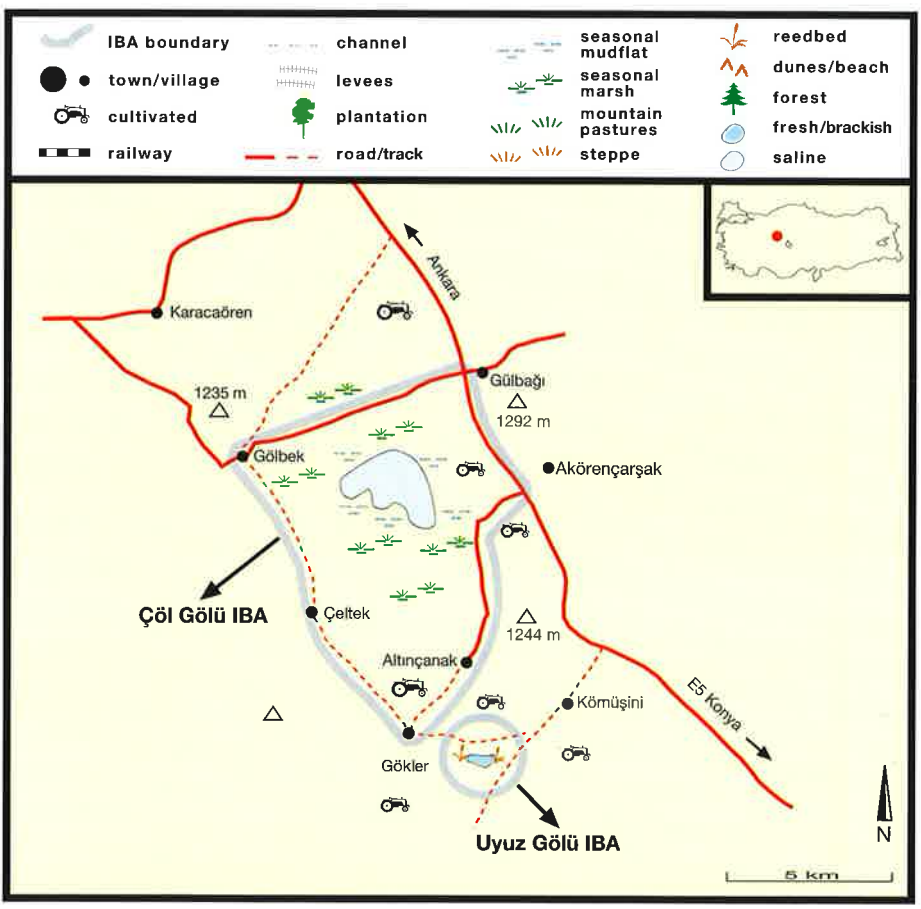
IBA no	39
Alternative name(s)	Kömüşini Gölü
Province(s)	Konya
District(s)	Kulu
Size	15 ha
Coordinates	39°15'N 32°57'E
Altitude	1185 m

SITE DESCRIPTION

A small freshwater lake (maximum depth 1.5 m) south of Çöl Gölü (IBA no. 40) fringed with *Phragmites* reedbeds and fed by groundwater. It is surrounded by wheatfields which reach the shoreline in places. Local people harvest reed.

BIRDS

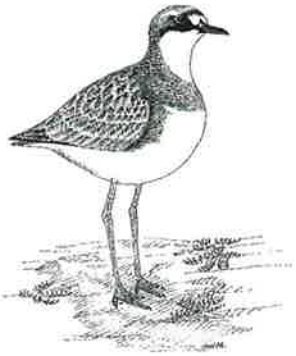
The site qualifies as an IBA for its breeding population of White-headed Duck (10 pairs).



Additional bird information.
Other breeding birds include Black-necked Grebe (10 pairs), Mallard, Ferruginous Duck and Coot. Little Crake may breed. Lesser Kestrel breed in Komüşini village, outside the IBA.

CONSERVATION ISSUES

- The site was declared a SİT in 1992.



Greater Sand Plover (Sancar Barış)

ÇÖL GÖLÜ

IBA no	40
Alternative name(s)	Altınçanak Gölü, Kuruçöl Gölü
Province(s)	Ankara
District(s)	Balâ, Haymana
Size	4700 ha
Coordinates	39°18'N 32°54'E
Altitude	1045 m

FOR MAP SEE IBA NO.39

SITE DESCRIPTION

A shallow saline lake (max. 1500 ha) lying in a closed basin (Çalıkdüzü) 75 km south of Ankara. The lake is fed by small streams and largely dries up during summer. Wet grazing marshes and extensive *Typha* beds are found at the southern and northern ends of the lake. In drier higher areas wheat, barley, lentil and chickpea are cultivated.

BIRDS

The site supports a significant breeding population of Greater Sand Plover. Large numbers of waterfowl winter (mainly pre-1989 data, max. 76,154), including White-fronted Goose (max. 14,000), Ruddy Shelduck (max. 6847) and Teal (max. 10,486). Greater Flamingo (max. 5500), White-headed Duck (max. 27) and Black-winged Stilt (max. 1000) principally occur during the post-breeding season.

Additional bird information.
Other breeding birds include Mallard, Black-winged Stilt, Avocet, Kentish Plover and Lapwing.

CONSERVATION ISSUES

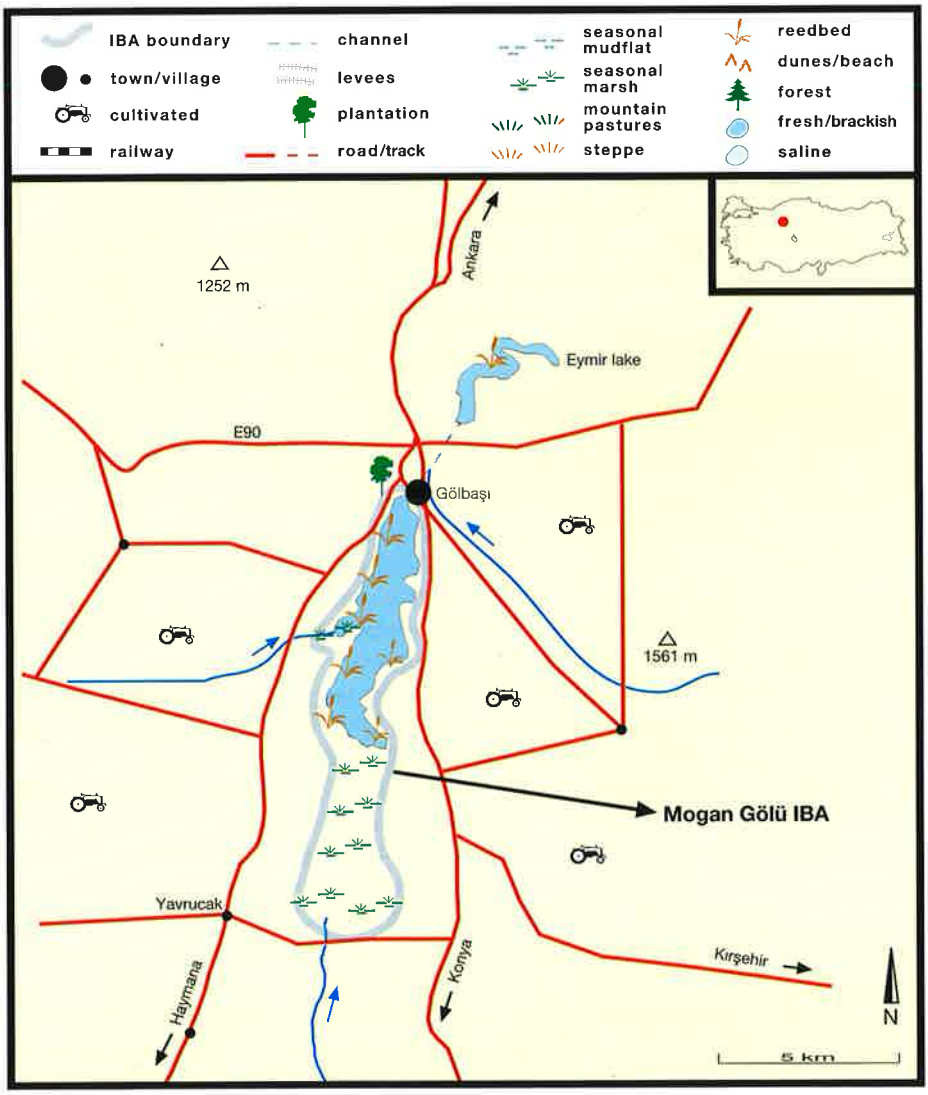
- The site has no protection status.

MOGAN GÖLÜ

IBA no	41
Alternative name(s)	Gölbaşı Gölü, Gökçe Gölü
Province(s)	Ankara
District(s)	Gölbaşı
Size	1500 ha
Coordinates	39°46'N 32°48'E
Altitude	973 m

SITE DESCRIPTION

A euthrophic freshwater lake (max. 759 ha) 20 km south of Ankara. The lake is up to 2.5 m deep and fed by the Yavrucak stream and other smaller streams.



The only outlet is through a regulator to Eymir lake, north-east of Mogan Gölü. Much of the lake shore is fringed with reedbeds up to 100 m wide. There is ca. 750 ha of extensive marshlands and wet meadows to the south (Çökek marshes and Gölcük marshes). The town of Gölbaşı (30,000 inhabitants) is situated on the north-east side of the lake. In addition, numerous holiday homes have been constructed overlooking the lake in recent years. There are a number of recreational facilities such as rowing and sailing centres and the number of speedboats using the lake at weekends is increasing.
There is only limited agricultural activity around the lake. Commercial fishing is not allowed any more (up to 100 tons/p.a. were caught previously) but at weekends the lake is popular with anglers.

BIRDS

The site qualifies as an IBA for its breeding populations of Squacco Heron (30 pairs), Red-crested Pochard (50 pairs), Ferruginous Duck (10 pairs) and White-headed Duck (2 pairs). Large numbers of waterfowl (max. 78,590) occur in late autumn and early spring (the lake freezes in winter), including Red-crested Pochard (max. 673), Ferruginous Duck (max. 200) and Coot (max. 70,100).

Additional bird information.
Other breeding species include Little Grebe, Great Crested Grebe, Red-necked Grebe (5 pairs), Black-necked Grebe (10 pairs), Little Bittern (10 pairs), Gadwall (5 pairs), Mallard (20 pairs), Marsh Harrier (5 pairs), Coot and Black-winged Stilt (20 pairs).

CONSERVATION ISSUES

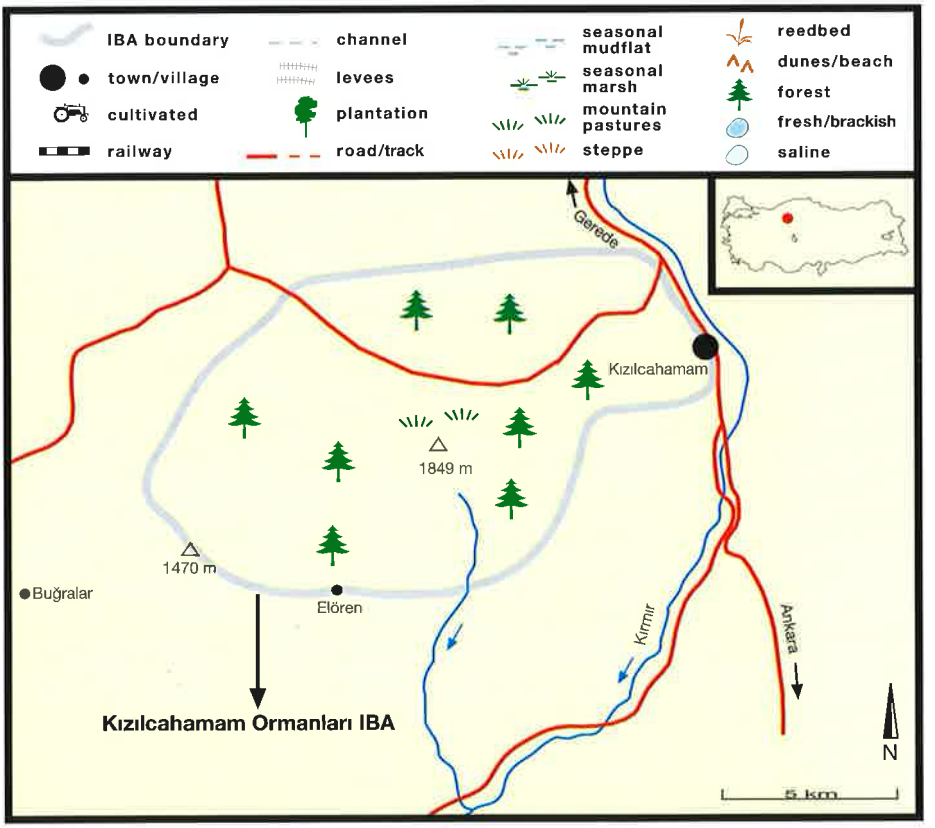
- The lake, together with Eymir lake and the catchment areas of both lakes, was declared a Specially Protected Area (24,500 ha) in 1990.
- Formerly the lake size varied between 500-1020 ha. As part of the Ankara flood protection scheme a regulator was built on the lake outlet (which was canalised) in 1972, maintaining the water level at 971-973 m. In addition 160 ha of floodplain near Gölbaşı were drained and two small reservoirs (total 12 hm^3) constructed on inflowing streams.
- Gölbaşı was a village with only 15 houses in 1955 but has grown to a town with 30,000 inhabitants as a result of the motorway construction. The rapid growth of Ankara led to Mogan Gölü becoming a favoured locality for holiday homes, casinos, restaurants and tea-gardens, increasing disturbance and pollution as a result of the untreated sewage that discharges into the lake. Some small industries also pollute the lake but sewage treatment plants and interceptors are now under construction. Legislation to regulate construction activities within the SPA came into force in 1991. The traffic on the two major motorways that run alongside the lake has increased significantly and both have been widened as a result.
- During 1993 the Gölbaşı municipality built a car park and paths on the northern side of the lake. This destroyed several hectares of reedbeds and with it a proven breeding site of Squacco Heron, Mallard and Red-crested Pochard.

KIZILCAHAMAM ORMANLARI

IBA no	42
Alternative name(s)	Soğuksu National Park
Province(s)	Ankara
District(s)	Çamlıdere, Kızılcahamam
Size	9500 ha
Coordinates	40°28'N 32°33'E
Altitude	900 - 1849 m

SITE DESCRIPTION

A mainly forested area situated at the northern edge of the barren Central Anatolian Plateau, dominated by *Pinus nigra* with *P. sylvestris* at higher altitudes. Pastures and areas with scrub (mainly *Quercus*) occur throughout. Little is known about the site's fauna other than birds but Hare *Lepus europeus*, Fox *Vulpes vulpes*, Wild Boar *Sus scrofa* and Wolf *Canis lupus* have been reported, whilst Brown Bear *Ursus arctos* may survive in small numbers. The forests are extensively managed except within the National Park, where most activities ceased upon its declaration in 1959. The picnic facilities of the National Park (for 8000 people) attract large numbers of visitors from Ankara during weekends.



BIRDS

The site qualifies as an IBA for its breeding populations of Black Stork (5 pairs), Lammergeier (2 pairs), Egyptian Vulture (15 pairs), Griffon Vulture (2 pairs), Black Vulture (6 pairs, principally breeding within the National Park) and Booted Eagle (3 pairs).
The slaughterhouse situated on the Kırmır stream south of Kızılcahamam attracts large numbers of vultures and storks.

CONSERVATION ISSUES

- A small part of the IBA was declared a National Park (Soğuksu National Park) in 1959 (1050 ha).
- There is a dense network of roads and tracks both within and outside the National Park resulting in increased disturbance from tourists and foresters. It is recommended that the number of tracks be reduced.
- The reduction in forestry management activities (and hence the availability of tall nesting trees) within the National Park is thought to be the main reason for the flourishing Black Vulture population. Elsewhere in the IBA, forest management practices should be timed in accordance with the breeding season and distribution of the raptors, and old pines should not be felled.

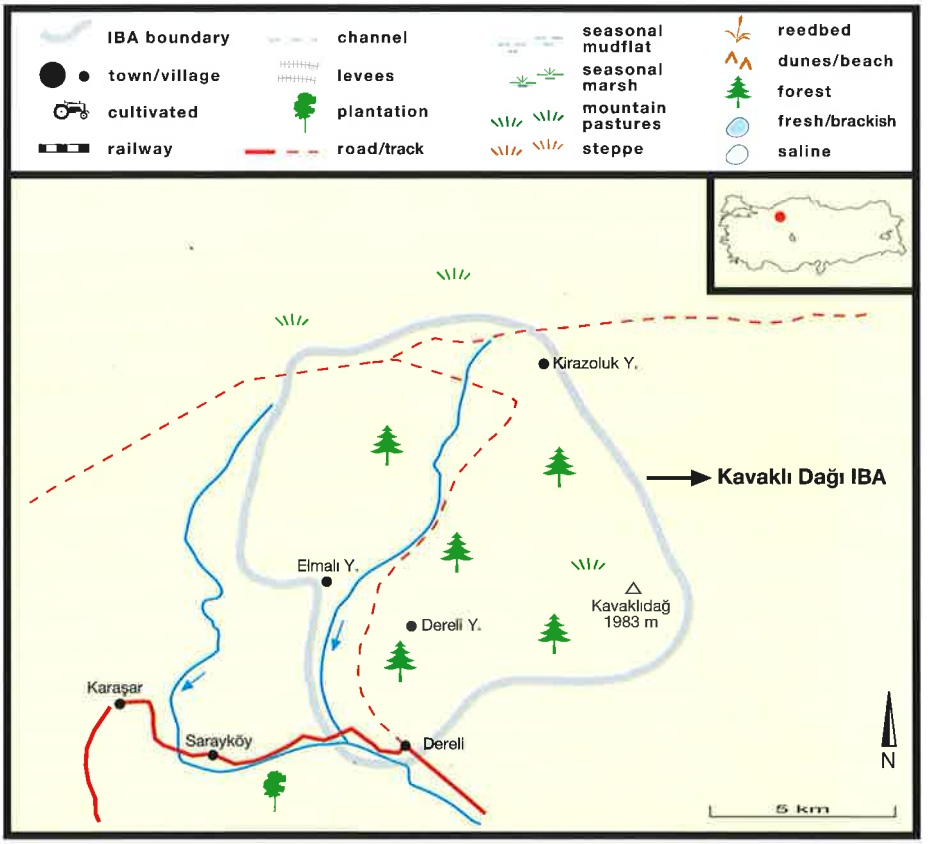
KAVAKLI DAĞI

IBA no	43
Province(s)	Ankara, Bolu
District(s)	Güdül, Dörtdivan
Size	8100 ha
Coordinates	40°21'N 32°08'E
Altitude	1000-1983 m

SITE DESCRIPTION

Kavaklı Dağı constitutes the southern extremity of the vast Köroğlu mountain range 100 km north-west of Ankara. The lower parts consist of barren hills with *Quercus* scrub whilst the upper slopes are covered with conifer forests. The Black Vulture breeding site is a 10 km-long south-facing steep-sided valley formed by the Süvari stream which flows into the Kırmır stream, a tributary of the Sakarya river.

The forests are managed in the accessible parts.



BIRDS

The site qualifies for its breeding population of Black Vulture (5 pairs).

CONSERVATION ISSUES

- The site largely overlaps with a Permanent Wildlife Reserve (8200 ha) declared in 1974.
- Forestry management should be timed in accordance with the breeding season and distribution of the raptors (leaving a non-intervention buffer zone around each breeding valley) and old pines should not be felled.

The last remaining natural forests in Central Anatolia are threatened by government-regulated clear felling practices (Gernant Magnin)

İNÖZÜ VADİSİ

IBA no	44
Province(s)	Ankara
District(s)	Beypazarı
Size	50 ha
Coordinates	40°11'N 31°55'E
Altitude	675-750 m

NO MAP

SITE DESCRIPTION

The site comprises a range of rocky cliffs, ca. 100 m in height and stretching for nearly 1 km along a narrow gorge north of Beypazarı. Orchards are found along the river, as well as a road that is used solely by local traffic.

BIRDS

The site qualifies for its breeding population of Black Stork (5 pairs) and Lanner (1 pair) that breed on ledges in the cliff face.

Additional bird information.
Other breeding birds of note include Ruddy Shelduck, Egyptian Vulture (1 pair) and Raven.

CONSERVATION ISSUES

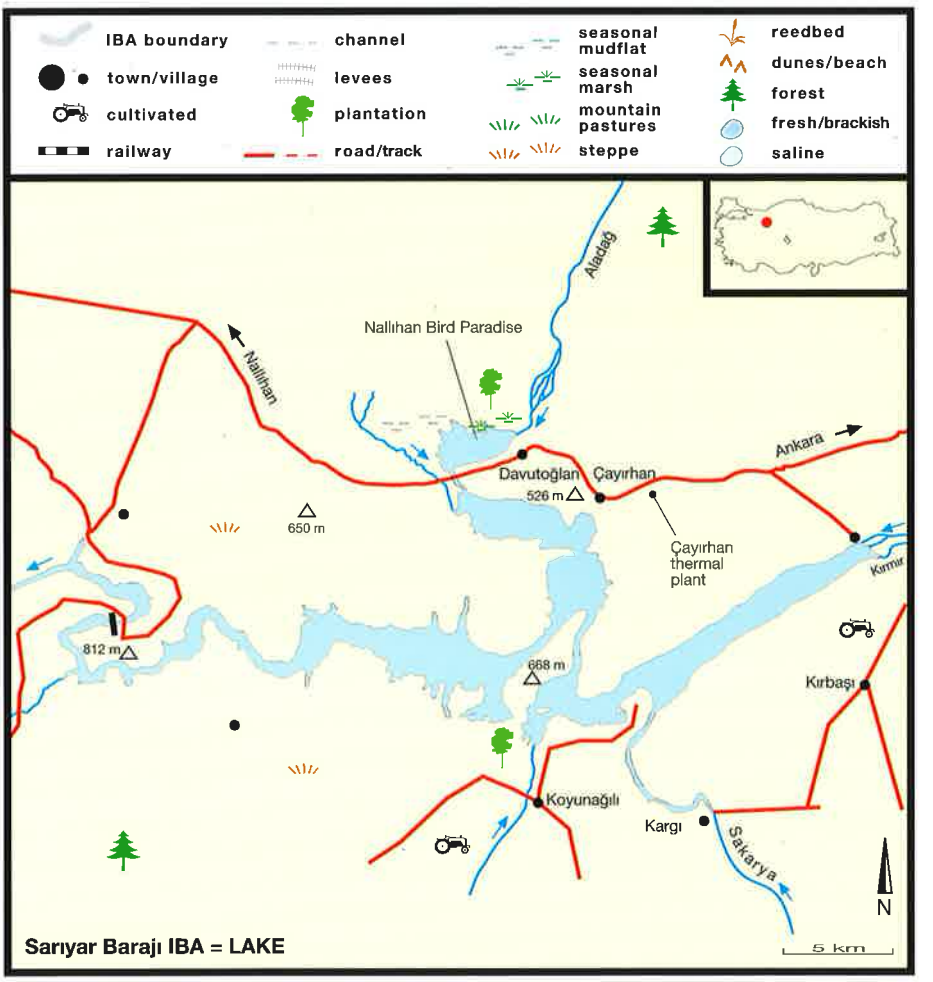
- The site has no protection status.

SARIYAR BARAJI

IBA no	45
Province(s)	Ankara, Eskişehir
District(s)	Beypazarı, Nallıhan, Mihalıççık
Size	8400 ha
Coordinates	40°02'N 31°38'E
Altitude	475m

SITE DESCRIPTION

This IBA includes the Sarıyar Barajı, the temporary wetlands at its inflows and the cliff-faces north of the reservoir. It lies between the Hamam Dağı (IBA no. 46) to the south and the Kapıkırı mountains to the north. The Sarıyar Barajı is one of the oldest (completed 1956) large dams in Turkey and is fed by three rivers (the Sakarya, Kırmır and Aladağ); maximum depth is 79 m. The reservoir



is used solely for the production of hydro-electric power (400 GWh/p.a.). Where the Aladağ stream flows into the lake a small shallow seasonal wetland (dry by late summer) has formed which is popularly known as the Nallıhan Bird Paradise. There are poplar and willow plantations here, as well as some arable land.

BIRDS

The site holds significant breeding populations of Night Heron (120 pairs), which breed in a poplar plantation on the southern shores, whilst Black Stork (20 pairs), Egyptian Vulture (10 pairs) and Lanner (1 pair) breed on the cliffs. The "Nallıhan Bird Paradise" holds large numbers of roosting White Storks on migration (max. 11,300) and Ruddy Shelduck (max. 2400).

Additional bird information.
Little Egret (20 pairs) and Grey Heron (150 pairs) breed in a mixed colony with the Night Herons. Black Kite (tens of pairs) and Peregrine also breed, whilst White-tailed Eagle is frequently observed and suspected to breed in the site's close surroundings.

CONSERVATION ISSUES

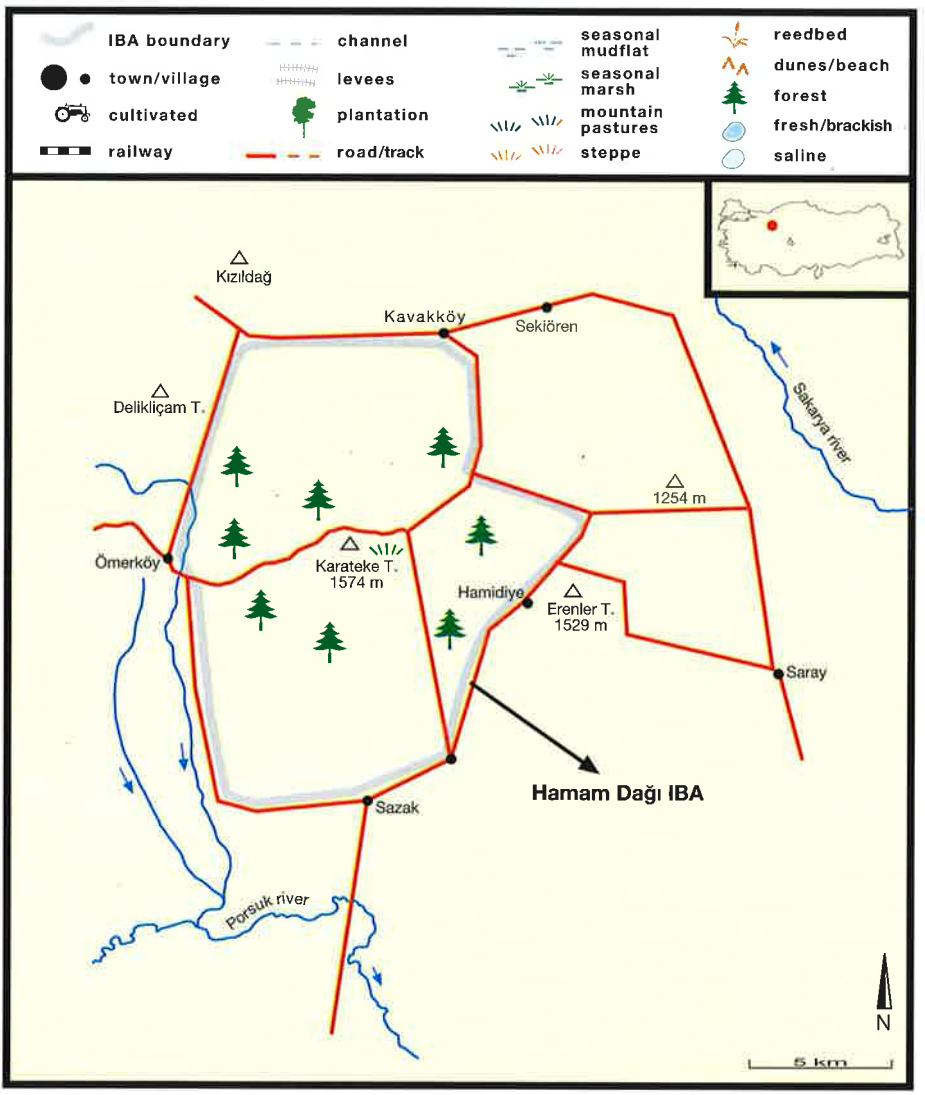
- The "Nallıhan Bird Paradise" was declared a Permanent Wildlife Reserve in 1994 (425 ha).
- The felling of the (privately owned) poplar stands is a threat to the breeding species: a management plan could guarantee a rotation scheme whereby different sections of the stands are felled during succeeding years.
- The Sarıyar Barajı is heavily polluted, especially by largely untreated waste from Ankara which flows into the Sakarya river through the Ankara stream (treatment facilities in Ankara are presently being constructed). The effects of the pollution have not been studied.

HAMAM DAĞI

IBA no	46
Province(s)	Eskişehir
District(s)	Mihalıççık
Size	14,000 ha
Coordinates	39°52'N 31°36'E
Altitude	900-1574 m

SITE DESCRIPTION

This mountain lies at the easternmost extremity of the 130 km-long Sündiken mountain range (peak 1769 m), which lie on a east-west axis between the



Sakarya and Porsuk plains. Lower and flatter than the western part of the Sündiken mountains, Hamam Dağı is extensively forested with Black Pine *Pinus nigra* and intermixed with *Quercus/Juniperus* scrub with a few scattered villages and areas of open grasslands. The steeper northern slopes face the Sarıyar reservoir (IBA no. 45), whereas the more gently sloping south-facing valleys meet the semi-arid and intensively cultivated Central Anatolian plateau.

BIRDS

The site qualifies as an IBA for its breeding population of Black Vulture (5 pairs) and Booted Eagle (1 pair) which breed on the south-facing slopes. This area is unlike other Black Vulture breeding sites, where nests are normally located in steep and inaccessible valleys: the birds here are more vulnerable to disturbance than at any other known site.

CONSERVATION ISSUES

- The site has no protection status.
- The IBA is a managed forest with extensive clear-fell areas at its western end. Selective logging and extraction occurs throughout the forest and adjacent to the breeding valleys. A newly constructed forest road appears to have forced two pairs of Black Vulture to nest higher up the valley, and caution is urged with respect to the further construction and use of forest roads. Forestry management should be timed in accordance with the breeding season and distribution of raptors (leaving a no-activity buffer around each breeding valley) and old pines should not be felled.

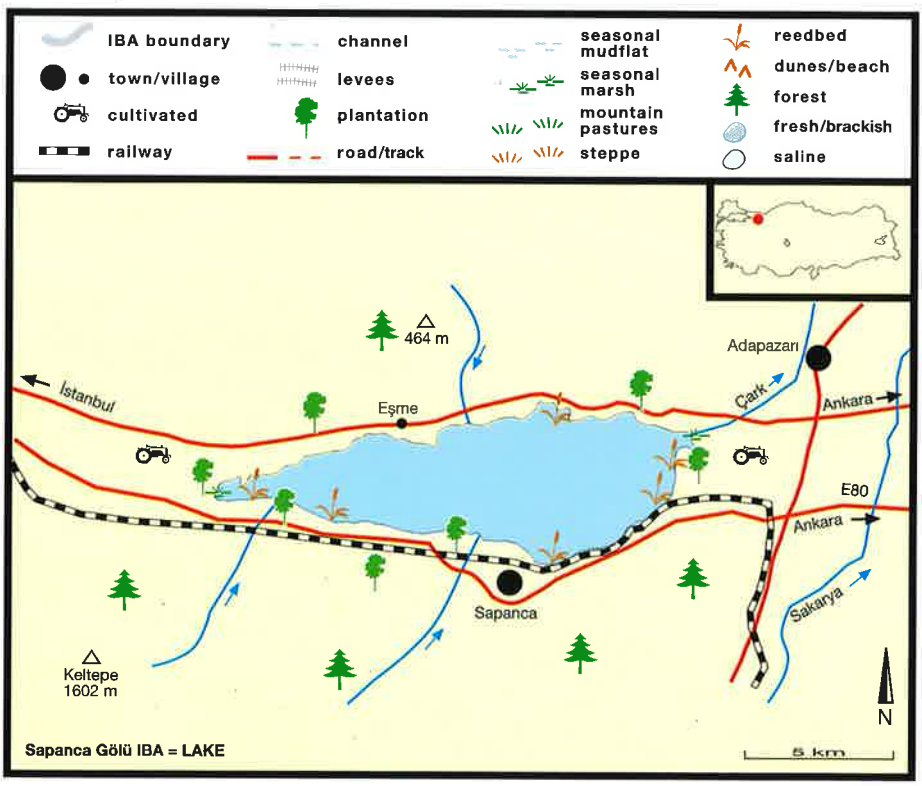
SAPANCA GÖLÜ

IBA no	47
Province(s)	Sakarya, Kocaeli
District(s)	İzmit, Sapanca, Adapazarı
Size	4700 ha
Coordinates	40°42'N 30°15'E
Altitude	31 m

SITE DESCRIPTION

A freshwater lake (max. 61 m deep) formerly connected to the Sea of Marmara and fed by the Sakarya river. River sediments isolated the lake from the sea and the Sakarya river subsequently changed its course and now flows into the Black Sea. The lake is fed by several small streams; the only outlet is the Çark stream which drains to the Sakarya river. Sapanca Gölü is entirely surrounded by arable land, fruit orchards and extensive poplar plantations. Narrow reedbeds fringe most of its shores, but only at the eastern end does substantial marsh vegetation occur. The northern and southern sides are bordered by major roads and a railway.

Crayfish *Astacus leptodactylus* was commercially fished until the Crayfish plague in 1985 which eliminated the population. Two species of sea fish which



adapted to the freshwater conditions occur, *Synynothus abaster* and Herring *Caspiolosa meotica*.

BIRDS

Although counted several times during mid-winter counts in the last three decades, only in 1995 and 1996 did the site hold significant numbers of waterfowl (max. 48,267), including Red-crested Pochard (max. 1002), Pochard (max. 10,400) and Coot (max. 30,700).

CONSERVATION ISSUES

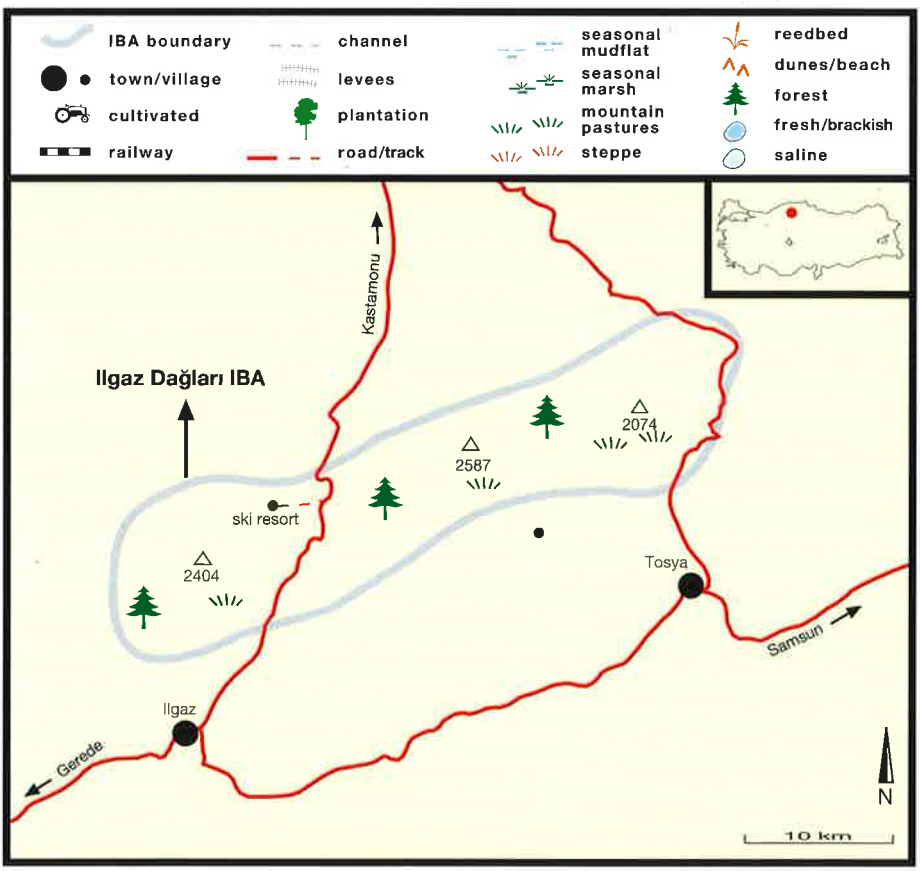
- Half of the site was declared a SİT in 1991 and the remainder in 1994. The lake has the official protection status of Drinking Water Reservoir, providing 60.3 hm^3 annually.
- A flood protection scheme completed in 1984 drained 120 ha of marsh east of the lake. Large areas of inundated forest in the south-west were converted into poplar plantations and corn fields during the last three decades. Lake water is not used for irrigation.
- Renowned for its good quality water (in 1995 up to 500 tankers took water to İstanbul daily), the lake is now facing severe pollution problems originating from the rapidly developing industries in its catchment and the inflow of untreated sewage and agricultural run-off. Lake water is also taken by industries for use in their production processes.
- During the last decade Sapanca has become popular as a second home resort; numerous resorts have been built, principally on the forested hillsides south of the lake and many more are under construction.

ILGAZ DAĞLARI

IBA no	48
Province(s)	Çankırı, Kastamonu
District(s)	Ilgaz, Tosya, İhsangazi
Size	35,000 ha
Coordinates	41°06'N 33°52'E
Altitude	2000-2587 m

SITE DESCRIPTION

The IBA is part of the large Ilgaz mountain range that stretches 160 km on a south-west/north-east axis, and forms the boundary between the wet Black Sea region and dry Central Anatolian plateau. A 35,000 ha area south of Kastamonu, which includes the two high peaks, the Ilgaz Dağı National Park and the two Ilgaz passes, has been chosen as the IBA, since this area is believed to encompass the highest and most intact parts of the range, holding important numbers of breeding raptors.



Large areas are covered by *Pinus* and *Abies nordmanniana* forests with areas of alpine grassland and rocky habitats at higher altitudes.

BIRDS

The site qualifies for its breeding Lammergeier (2 pairs), Griffon Vulture and Booted Eagle (5 pairs).

Additional bird information.
Several other species of raptor occur and are thought to breed, including Golden Eagle and Honey Buzzard. Other breeding species of interest include Ruddy Shelduck, Black Woodpecker, White-throated Robin, Krüper's Nuthatch and Red-fronted Serin.

CONSERVATION ISSUES

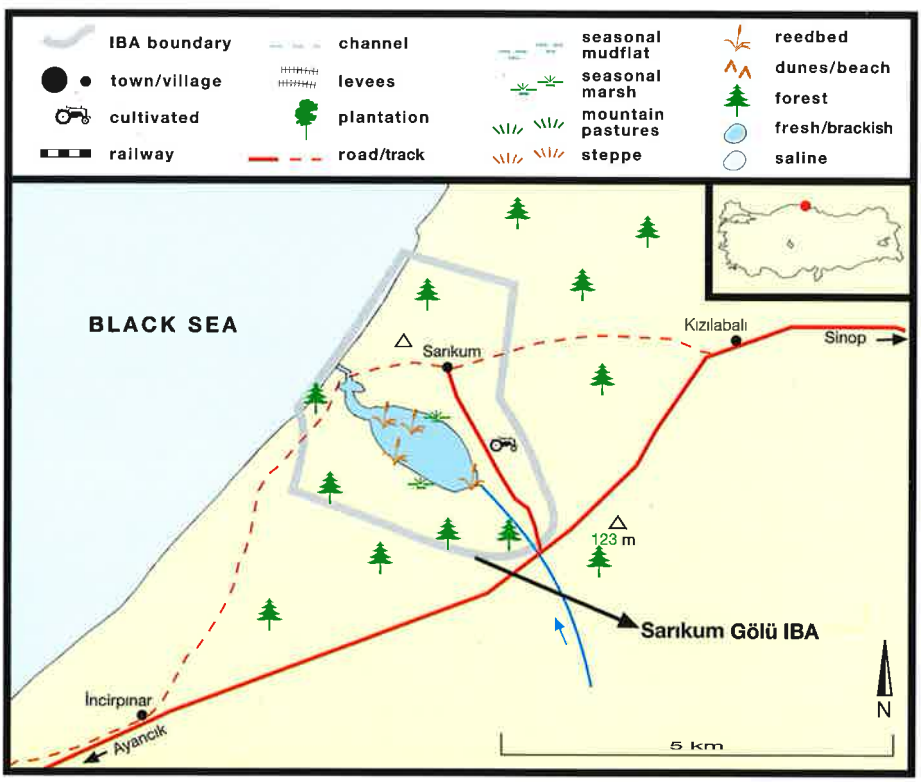
- The Ilgaz Dağı National Park (1090 ha) was established in 1976 and covers only part of the IBA.
- There is a ski-resort within the National Park and several hotels, the largest of which is owned and run by the National Park authorities. Other hotels belong to other state departments and only one ski-hotel (outside the National Park) is privately owned. The resort is slowly expanding and a new ski-slope was added in 1996.
- Both within and outside the National Park the forest is intensively managed.

SARIKUM GÖLÜ

IBA no	49
Province(s)	Sinop
District(s)	Sinop
Size	785 ha
Coordinates	42°01'N 34°55'E
Altitude	sea level

SITE DESCRIPTION

A complex of dune, lake and forest habitat in a broad valley at sea level. The natural interest of the site is centred on a shallow brackish coastal lake (184 ha) which is fed by several streams and discharges through a channel into the sea at periods of high water level. The bed of the lake is sandy: especially in the south-west corner large areas are densely vegetated with swamp and fen species including *Juncus* and *Phragmites australis*. South of the lake and extending several kilometres inland there is an extensive, seasonally flooded forest of *Fraxinus angustifola*. On drier ground extensive *Quercus* and *Carpinus* forests surround the lake, whilst part of the dunes have been forested with *Pinus*. Within the boundaries of the IBA lies a small village and arable fields. Cattle are grazed in and around the wetland. Several commercial fish species occur but fishing is banned according to Nature Reserve regulations.



BIRDS

The site qualifies as an IBA for its large numbers of wintering waterfowl (max. 20,266) including White-headed Duck (max. 55).

CONSERVATION ISSUES

- The IBA follows the borders of the Nature Reserve declared in 1987. The area was declared a SİT in 1991.
- Large numbers of visitors cause considerable disturbance during weekends.
- The lake is reportedly silting up rapidly and the area of reedbed is expanding as a result.
- Afforestation of the dunes will lead to further loss of important dune vegetation.

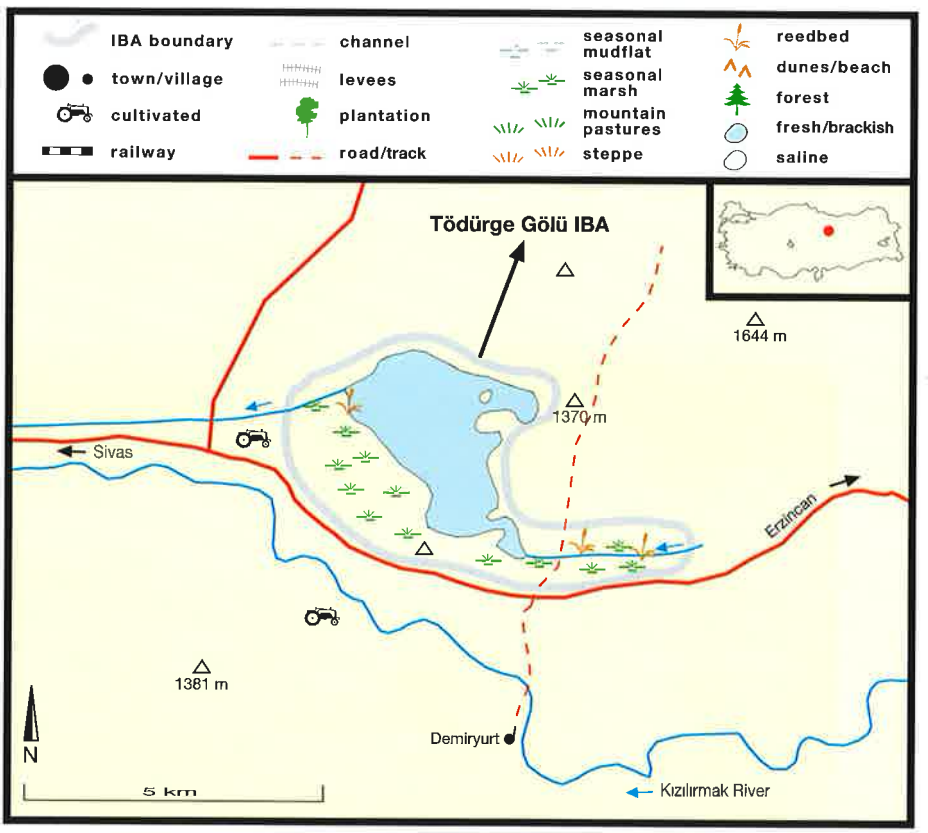
Sarikum Gölü (Gernant Magnin)

TÖDÜRGE GÖLÜ

IBA no	50
Alternative name(s)	Demiryurt Gölü
Province(s)	Sivas
District(s)	Hafik, Zara
Size	750 ha
Coordinates	39°53'N 37°36'E
Altitude	1295 m

SITE DESCRIPTION

A slightly brackish lake (326 ha) in the upper Kızılırmak basin. It is principally fed by springs and the Acısu stream; the outlet is in the west where it subsequently flows into the Kızılırmak river. The average depth of the lake is 4 m and there is one small island in the east (Keşan island). The lake is fringed by a narrow belt of reed. The surrounding land consists of arable or fallow land and pasture on low gypsum hills, except west of the lake where there are extensive wet grasslands used for cattle-grazing. There are some small marshy pools totalling 30 ha south-east of the main lake, on the Acısu stream.
The Sivas-Erzincan highway passes along the southern shore of the lake, and a



rarely used large restaurant building (belonging to the Sivas Cumhuriyet University) is located on a prominent rocky outcrop on the eastern shore.

BIRDS

The site qualifies as an IBA for its breeding population of Red-crested Pochard (40 pairs).

Additional bird information.
Other breeding species of note include Red-necked Grebe, Black-winged Stilt, Crane and Citrine Wagtail. A variety of waterfowl occur during migration seasons, including Coot (max. 11,500).

CONSERVATION ISSUES

- The site has no protection status.
- Previously the lake fed floodplains and marshland along the ca.10 km-long stream connecting the lake and the Kızılırmak river, until DSİ (State Water Works) connected the two with a 1.5 km-long channel.
- The ongoing construction of the DSİ İmranlı irrigation project foresees the irrigation of 11,220 ha along the Kızılırmak river (including land around the lake) between İmranlı and Sivas. DSİ claims that Tödürge Gölü will not be affected by this scheme.

PALAS GÖLÜ

IBA no	51
Alternative name(s)	Tuzla Gölü
Province(s)	Kayseri
District(s)	Sarıoğlan, Bünyan
Size	2720 ha
Coordinates	39°02'N 35°49'E
Altitude	1132 m

SITE DESCRIPTION

A saline lake (max. 2330 ha), north-east of Kayseri, separated from the Kızılırmak river by a low mountain range. The lake is a closed system fed mainly by surface run-off and the İğdecik stream. Extensive mudflats and saltmarsh are found along the eastern shore of the lake. A major freshwater marsh (Yertasın marsh) is found in the east, and south of Palas (Gölova) village are saltpans. The Yertasın marsh appears to be at least partially man-made: U-shaped dykes have been constructed to trap water creating a ca. 200 ha flooded area which serves as drinking place for cattle. Freshwater seepage occurs along the southern and south-eastern shores and the vegetation here is dominated by *Juncus effusus*. Most of the lake fringes are sparsely vegetated and the lake largely dries up during summer. Orchards, wheatfields, pastures and steppe surround most of the lake. A WIWO (Netherlands) study in 1988 found that very little invertebrate life exists in the saline parts of the wetland. The freshwater areas develop a rich amphibian and invertebrate life during the course of spring, providing good feeding opportunities for migrant waders and herons.
A road disects the north-eastern tip of the lake.

BIRDS

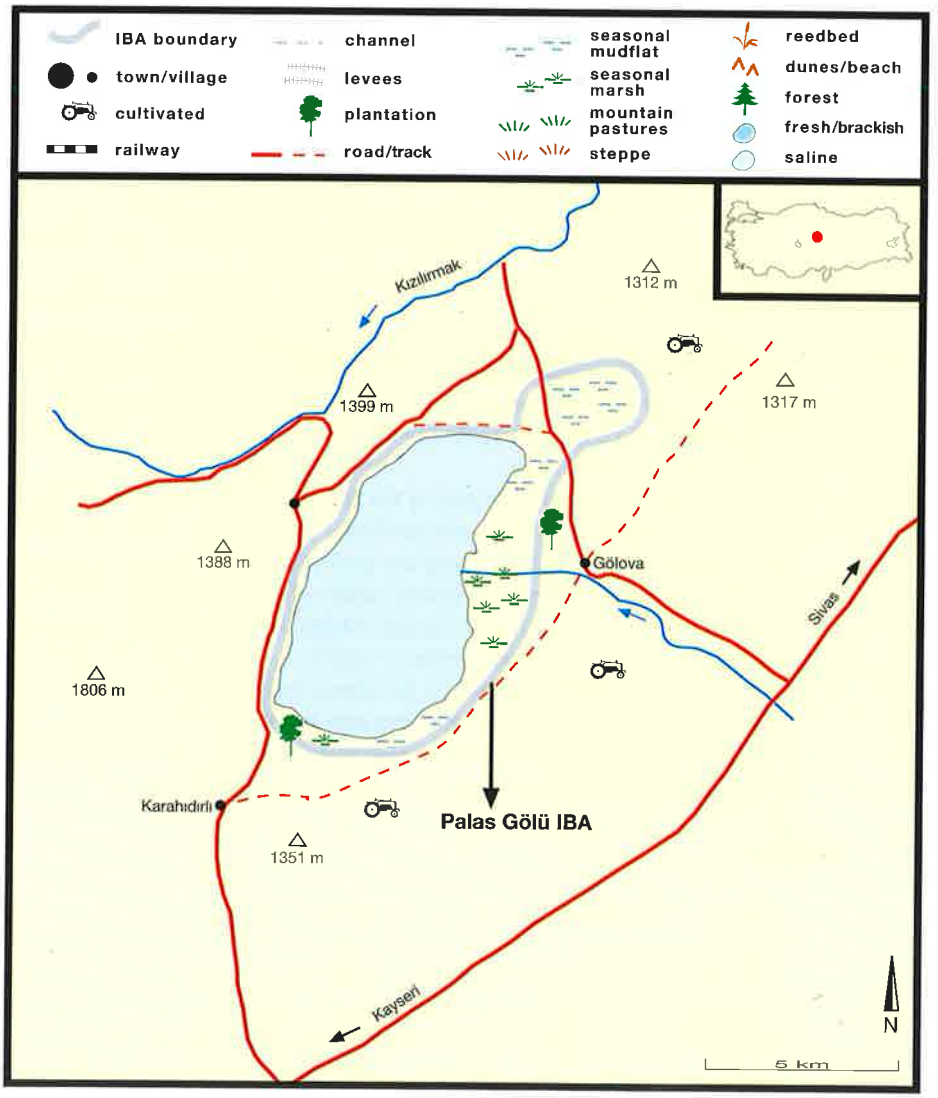
The site holds significant numbers of Ruddy Shelduck (max. 2930) in autumn and winter and Greater Sand Plovers breed around the lake.

Additional bird information.
A WIWO study undertaken in spring 1988 revealed that for several wader species Palas Gölü is an important stop-over site, where birds fatten up before proceeding to their breeding grounds.

CONSERVATION ISSUES

- The area was declared a SİT in 1993.
- In 1967 DSİ (State Water Works) drained 140 ha around the lake to protect Palas village from floods: in 1994 the scheme was improved.
- In 1995 DSİ started the construction of the Bahçelik reservoir on the Zamantı river, 55 km south-east of Palas Gölü. The reservoir will irrigate 37,000 ha east of Kayseri, including 10,000 ha around Palas Gölü. Land immediately around the lake is not included due to poor soil quality. DSİ claims it will build an

interceptor around the lake to channel polluted drainage water directly to the Kızılırmak river. It is unclear how DSİ will maintain the lake's water level once the interceptor is ready and the lake is cut-off from its natural water sources. Also, as many examples from elsewhere in Turkey have demonstrated, farmers tend to take water from drains and interceptors to irrigate marginal areas outside the irrigation scheme. At Palas Gölü, this could lead to the permanent loss of valuable marsh areas around the lake.



SULTANSAZLIĞI

IBA no	52
Alternative name(s)	Develi Ovası
Province(s)	Kayseri
District(s)	Develi, Yeşilhisar, İncesu
Size	39,000 ha
Coordinates	38°20'N 35°16'E
Altitude	1074 m

SITE DESCRIPTION

Sultansazlığı lies in the Develi closed basin (total catchment 319,000 ha) and is surrounded by hills and mountains. Most prominent is the 3916 m Erciyes mountain in the north-east, an extinct volcano that has shaped most of the region's landscape. The wetland comprises a series of salt, brackish and freshwater lakes, and extensive marshes. The main lakes (both salt lakes) are Yay lake (3650 ha, 1.5 m-deep with two islands) and Çöl lake (2600 ha, which largely dries up in summer). Two main marsh complexes, Sultansazlığı marshes (3300 ha, including Sarp, Eğri and Camız lakes) and Kepir marshes (originally 1900 ha, now largely destroyed) occupy the southern and northern parts of the IBA respectively. The total wetland area varies greatly according to water levels but is 20,000 ha at its maximum extent.

Originally the wetland was fed by groundwater, water from the Yahyalı, Develi, Ağçaşar and Yeşilhisar streams, and water from the springs at Soysallı, Çayırözü and Yerköy. The wetland has no natural outlet.

The salt lakes are surrounded by *Salicornia* steppe, whilst the southern marshes comprise vast complexes of *Phragmites* reedbeds interspersed with expanses of *Typha*, *Juncus* and *Carex*.

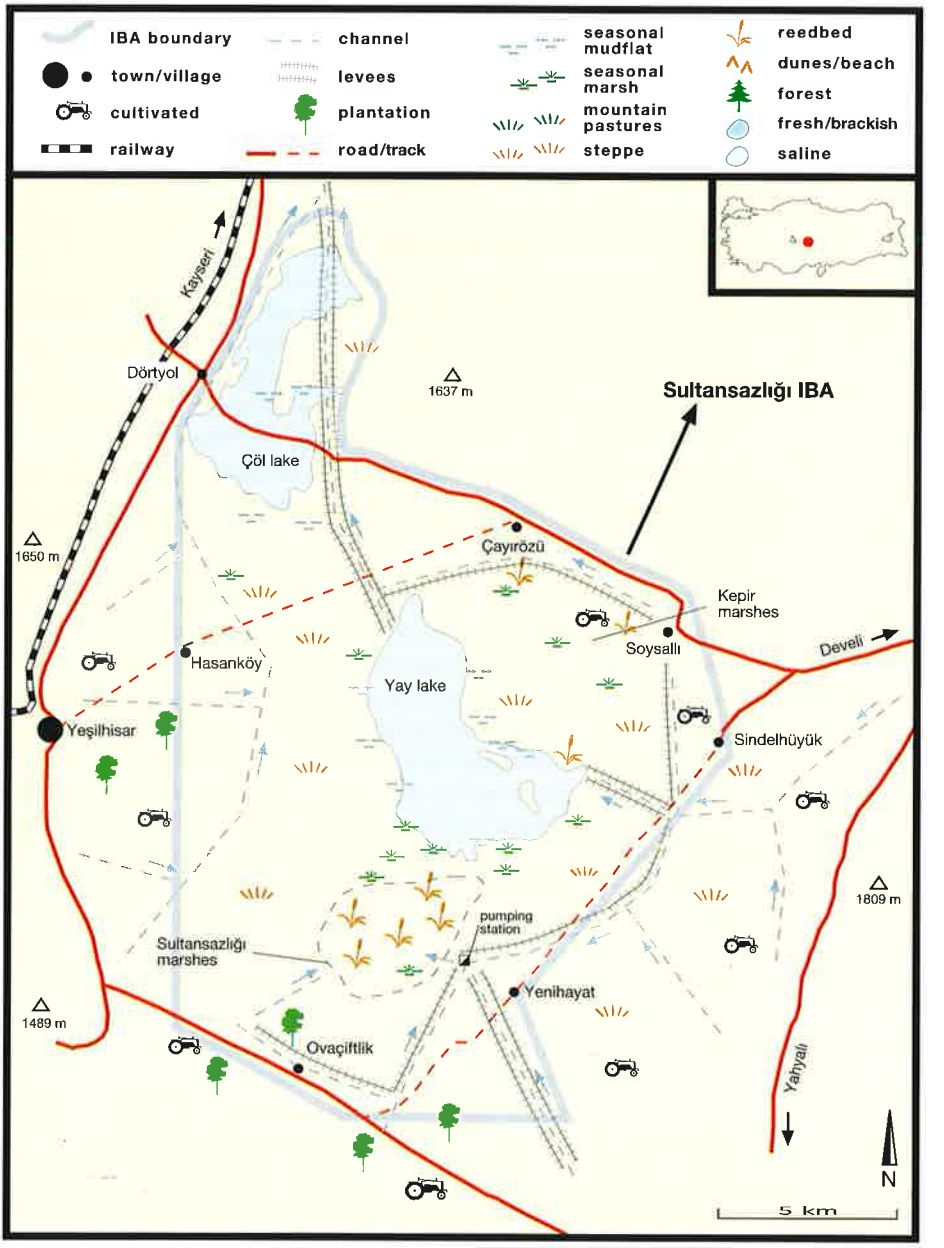
Marsh areas in the northern part of the IBA have been reclaimed for (partly irrigated) cereal, sugar beet and sunflower fields, whilst trees have been planted along the streams. Sheep are grazed on the surrounding steppe whilst cattle are grazed within the marshes. Seven villages with a total population of 10,400 people are located just outside the IBA. Reed cutting is an important activity with an annual production of 1500 tons, which is mainly exported to the Netherlands but also used locally for animal fodder and roof thatching. Four species of fish have been found in the area but there is no commercial fishing industry. There are facilities (including watch towers) for visiting birdwatchers at Ovaçiftlik and at the eastern side of the Sultansazlığı marshes.

BIRDS

The site holds significant breeding populations of Pygmy Cormorant (200 pairs), Squacco Heron (70 pairs), Glossy Ibis (75 pairs), Spoonbill (10 pairs), Gadwall (20 pairs), Marbled Teal (5 pairs), Red-crested Pochard (400 pairs), Ferruginous Duck (20 pairs), White-headed Duck (20 pairs), Crane (20 pairs), Avocet (150 pairs), Collared Pratincole (50 pairs), Kentish Plover (100 pairs), Greater Sand Plover, Spur-winged Plover (20 pairs), Gull-billed Tern (50 pairs), Little Tern (100 pairs) and Whiskered Tern (400 pairs). Ruddy Shelduck (max.

2283) occur in summer, whilst large numbers of Greater Flamingo (max. 59,150), Crane (max. 1200) and Avocet (max. 2115) use the wetland in autumn. Large numbers of waterfowl occur during migration and in winter (max. 129,801).

Additional bird information.
Other breeding birds of note include Great Crested Grebe, Little Bittern, Greylag Goose (15 pairs), Teal, Mallard, Garganey, Pochard, Coot, Black-winged Stilt (200 pairs), Black-headed Gull (90 pairs), Slender-billed Gull (100 pairs),



Common Tern (30 pairs) and Black-bellied Sandgrouse. Greater Flamingo is an irregular breeder, with the most recent confirmation from 1970 when an estimated 1500 pairs bred on islands in Yay lake. White-tailed Plover apparently bred in 1996.

CONSERVATION ISSUES

- Sultansazlığı is amongst the best protected sites in Turkey. In 1971 it was declared a Permanent Wildlife Reserve (45,000 ha); in 1988 it was granted Nature Reserve status, covering 17,200 ha; in 1993 it was declared a SİT and finally in 1994 it was designated as one of Turkey's first five protected sites under the Ramsar convention. The latter two follow the Nature Reserve boundaries which does not include Çöl lake and only a small part of the surrounding steppe. In spite of these many protection measures, Sultansazlığı is not a successful showcase for wetland conservation in Turkey. The main conservation problem is the agricultural intensification in the basin and the associated water management scheme.
- Several thousands of hectares of marsh south-east of the IBA were drained during the 1940s as part of an anti-malaria scheme. In the 1960s DSİ (State Water Works) prepared an irrigation plan which included the drainage of the entire wetland. However, these plans were modified after the government recognised the high environmental value of the area. The revised plans sought to irrigate 52,500 ha in the basin with water from three reservoirs, to be built on the feeder streams, and water from the Zamantı river east of the IBA, which had to be channelled through a 11 km-long tunnel. Polluted water and excess water would be intercepted and drained via a channel from the northern tip of Yay lake through Çöl lake before being pumped via a 3 km-long tunnel into the Karasu stream, a tributary of the Kızılırmak river. To date three reservoirs, the drainage system from Yay lake to the Karasu, and part of the interceptor and drainage system have been completed, and 18,500 ha are now irrigated (including a 3000 ha steppe area south-east of Yenihayat that requires many years of leaching before ready for cropping). Expansion of the irrigated area requires additional water from the Zamantı river but work on the tunnel had not started by 1996. The possibility of water shortages in the wetland was recognised and DSİ signed a protocol with the Ministry of Forestry in 1976 in which it guaranteed a minimum level of 1071.3 m, and a levee at that level was built north of Yay lake in the drainage channel. In spite of this, reduced water input and shortage of rainfall led to the entire wetland complex drying up in 1990 and 1991. Currently only the water from three drains, a significantly reduced input from the springs and precipitation feed the wetland. The drains carry polluted water into the wetland, moreover one (the Yahyalı drain in the east) carries freshwater straight into the salt lake whilst another carries salt water from leached lands in the south-east into the freshwater marshes. To prevent this, the interceptor would have to be completed but since this would lead to a further reduction in water levels, the construction of the interceptor was halted in 1993. The water problem is exacerbated by the fact that water from the springs is used (and diverted) at will by local farmers, whilst many tens of large pumps (installed by DSİ but

mainly operated by the farmers) pump up several tens of millions m^3 of ground water annually. Neither the economic feasibility (including environmental parameters) of pumping Zamantı river water through an 11 km tunnel, nor the possible dangers of importing water of a different chemical character into the wetland system, have been investigated. Moreover, question marks are often raised as to the quality of the soils to be irrigated: many thousands of hectares of steppe will need several years of leaching before the salt content is low enough to permit cropping and it is feared that soils are often too poor for sustained agricultural use. Realistically, Sultansazlığı can only be preserved when the government cancels further expansion of the irrigation scheme and reduces the present 18,500 ha of irrigated land by annulling the irrigation of the steppe area south-east of Yenihayat.

- In the 1950s tracts of the Kepir marshes in the north were transferred to local ownership by the government. The 1900 ha Kepir marshes, which fall within the borders of the Nature Reserve and are still shown on maps of the area, have been largely converted for agriculture and grazing in recent years; a maximum of 500 ha remains today. Restoration of the former Kepir marsh, or even preservation of the remainder, is only possible if the lands are expropriated.
- Tourism, in the form of birdwatchers who visit the southern marshes in boats available from the Nature Reserve station at Ovaçiftlik, has been reported as causing disturbance: four trips a day were taken into the marshes during the 1996 breeding season.
- Reedcutting takes place on a large scale. Although in principle this is an activity compatible with sustainable wetland management, the situation in Sultansazlığı requires control. A new reed stocking and cutting facility was established near Sindelhüyük in 1995, harvesting also takes place during the breeding season, reedbeds are burnt in order to rejuvenate them and many tens of tracks through the southern swamps are used throughout the year to transport reed by tractors.
- The Develi Saray Carpet factory is the main polluter of the wetland, although a sewage treatment plant is now under construction. Additionally, leather, flour, brick and felt factories drain waste into the wetland, none of these have sewage treatment plants. Agricultural run-off reaches the wetland via the drains, and urban waste water from all three major towns in the basin (Yahyalı, Yeşilhisar and Develi) is released untreated into the wetland.
- Wardening of the area by officials from the Ministry of Forestry has been insufficient in recent years due to them being inadequately equipped. In particular, insufficient action has been taken against the illegal hunting of falcons (mainly by foreign falconers) which occurs on the surrounding steppe.
- The Ministry of Forestry has prepared a new management plan for Sultansazlığı which includes the development of the eco-tourism potential of the site. This is possibly the best way to further the preservation of the area but it is crucial that no additions are made to the already extensive network of tracks (it is especially important that no roads should be constructed between Yay lake and the southern marshes). Observation towers and birdwatching hides should be positioned on the outer fringes of marshes, not within them.

SEYFE GÖLÜ

IBA no	53
Province(s)	Kırşehir
District(s)	Mucur, Boztepe
Size	14,000 ha
Coordinates	39°12'N 34°25'E
Altitude	1110 m

SITE DESCRIPTION

Seyfe Gölü is a shallow brackish lake (max. 9350 ha) situated at the southern end of the Seyfe (or Malya) closed basin (1522 km²). The lake is fed by a stream which enters the north end of lake, run-off and a few springs in the west near the village of Seyfe where a small marsh has formed. The lake is considerably smaller (min. 1560 ha) in summer. During winter the lake is on average 1 m deep. Most of the shores are muddy and flat, but there are steep banks, up to 5 m high, in parts of the north-east. Villagers store spring water in a small reservoir near Seyfe village and use it for irrigation; around the springs is a small complex of fruit gardens, fields and willow and poplar plantations.

The lake is bordered by (mainly non-irrigated) arable fields in the south and west, whilst in the north and north-east extensive steppe reaches the lake's edge. East of Kızıldağyeniyapan are 1500 ha of brackish-freshwater marsh which provide crucial feeding habitat for breeding birds. Several high grave mounds (höyük) on the lake shores are an integral part of the scenery, as are the low mountain tops (1700 m) south of the lake.

Another important feature of Seyfe Gölü are the dozen islands. The largest island is ca. 1 km-long and several metres high; some islands are covered with low scrub and grasses, others are barren. Most of the islands become part of the mainland when water levels fall in late summer.

Major agricultural products are cereals, leguminous plants, sunflower and sugar beet. Some of the larger islands are also cultivated when the water level is low and they are accessible. Suitable land around the lake is extensively used for sheep and cattle grazing. Two fish species occur (*Aphanius chantrei* and *Spirlinus* sp.) but there is no commercial fishing.

A large state farm (founded in 1942) located to the north-west of the lake owns and cultivates ca. 25,000 ha north of the lake.

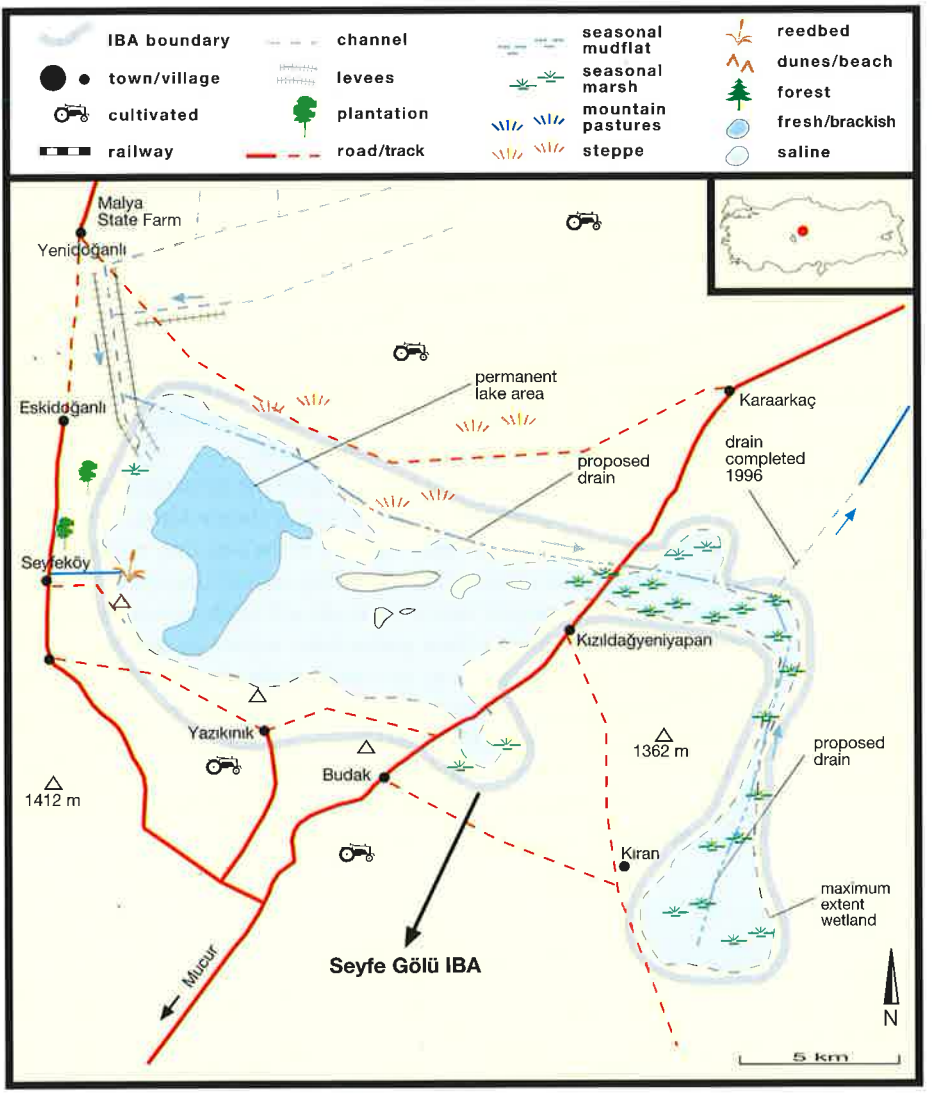
BIRDS

The site qualifies for its breeding populations of White Pelican (100 pairs), Spoonbill (50 pairs), Greater Flamingo (2000 pairs), Red-crested Pochard (15 pairs), Great Bustard, Avocet (500 pairs), Spur-winged Plover (10 pairs), Mediterranean Gull (500 pairs), Gull-billed Tern (500 pairs) and Little Tern (500 pairs). Large numbers of waterfowl occur in winter (max. 21,861) including White-fronted Goose (max. 7200) and Ruddy Shelduck (max. 978).

Additional bird information.
Other breedings birds of note include Little Egret (100 pairs), Black-winged Stilt (500 pairs), Black-headed Gull (100 pairs) and Slender-billed Gull (1000 pairs). Marbled Teal may breed.

CONSERVATION ISSUES

- Seyfe Gölü was declared a SİT in 1989 (23,585 ha), a Nature Reserve in 1990 (10,700 ha) and a Ramsar site in 1994 (10,700 ha). The area is not wardened.
- The lake was formerly smaller (max. 6000 ha) and more saline but during the late 1960s and 1970s the state farm commenced an irrigation programme and large drainage channels were connected to the lake; the incoming stream was embanked. As a result, the lake expanded in size (max. 9350 ha) and



remained much wetter during summer. Villagers complained that their lands were continuously inundated. According to DSİ (State Water Works) the lake expansion has resulted in the loss of 8000 ha of arable land. Original DSİ plans included the drainage of the entire lake by constructing a large interceptor to drain the area into a stream near Mucur in the south. Strong protests from ministries and NGOs alike forced DSİ to revise its plans in 1990. Currently the DSİ (with guidance from the Ministry of Environment) is engaged in the planning and implementation of the "Seyfe Gölü Ecological Conservation Project". This project principally aims to reduce the lake to its orginal size by diverting the flow from the drainage channels into the Kalaycık stream (north-east of the IBA) which subsequently drains into the Kızılırmak river. In order to achieve this 35 km of channel will be dug, partially through 30 m-high hills. As a result, 15,792 ha north and east of the lake will be reclaimed for agriculture, including the 8000 ha previously lost. Most of the breeding islands and all brackish-freshwater marsh in the east will disappear as a result of the DSİ scheme and many hectares of marsh have already been covered by a 20 m-high mound of earth excavated from the sites of the new channels. DSİ also plans to construct three sluices on the drainage channels from the state farm. These will allow water to be directed to the lake instead of the Kalaycık stream in times of drought: DSİ thus guarantees a more permanent lake (max. 6250 ha), and artificial breeding islands for birds will be created in the deeper parts. DSİ further states that the amount of available grazing land will be reduced by nearly 50% and that it will take 12-23 years before the salt content of the newly obtained arable land is low enough to permit crops. The project started in 1991 and is to be completed in 2000. In addition, DSİ plans to irrigate 64,000 ha (including semi-steppe areas north of the lake) elsewhere in the Seyfe basin with water from the Yamula reservoir, 75 km from the lake.

No study has been undertaken to investigate the consequences of this scheme on the lake's ecological character. The loss of steppe areas, natural breeding islands and brackish-freshwater marshes in the east may prove disastrous. Although the project intends to restore the natural situation, it is obvious that some parts of the project have little to do with such restoration but rather more with the provision of new arable land. In fact, as confirmed by a 1992 Hacettepe University (prepared on behalf of the Ministry of Environment) report, the revised DSİ project (funded by the Environmental Projects Budget of the State Planning Organisation) is only a slight modification of its original plans to drain the entire wetland. The ecological risks associated with the DSİ project are so great that it should be halted immediately and a thorough environmental impact assessment carried out.

HİRFANLI BARAJI

IBA no	54
Province(s)	Kırşehir, Ankara, Aksaray
District(s)	Kaman, Kırşehir, Evren, Şereflikoçhisar, Sarıyahşi
Size	26,300 ha
Coordinates	39°10'N 33°39'E
Altitude	851 m

SITE DESCRIPTION

A large reservoir (max. 70 m deep) on the Kızılırmak river, north-east of Tuz Gölü (IBA no.72). Completed in 1959, the dam generates 400 GWh/p.a. and also

serves for flood control: it is not used for irrigation purposes. The reservoir is surrounded by agricultural land, principally cereal production. During periods of low water levels up to 7000 ha of mudflat appears. There are some small islands.
The site's climate is distinctly milder in comparison to the rest of the region (due to its lower altitude and the presence of the lake) and waterfowl appear to gather at the lake during spells of severe winter weather when other wetlands freeze over.
The lake is rich in fish, with an annual catch of 260 tons (1995).

BIRDS

The reservoir has long been ignored by birdwatchers due to it being a deep artificial lake, devoid of substantial riparian habitat and therefore of little importance to most bird species. In 1992 its importance for wintering waterfowl was recognised when an incomplete count produced nearly 50,000 birds: counts in subsequent years revealed that up to 133,809 birds winter at Hirfanlı Barajı (actual numbers are thought to be even higher as the site has never been counted in its entirety in one day due to its size). Wintering birds include Red-crested Pochard (max. 3,560), Pochard (max. 13,430), Tufted Duck (max. 14,550), White-headed Duck (max. 122) and Coot (max. 68,350). In spring large numbers of Ruddy Shelduck occur (max. 2070).

Additional bird information.
Gull-billed Tern, Common Tern and Little Tern breed in small numbers on the islands.

CONSERVATION ISSUES

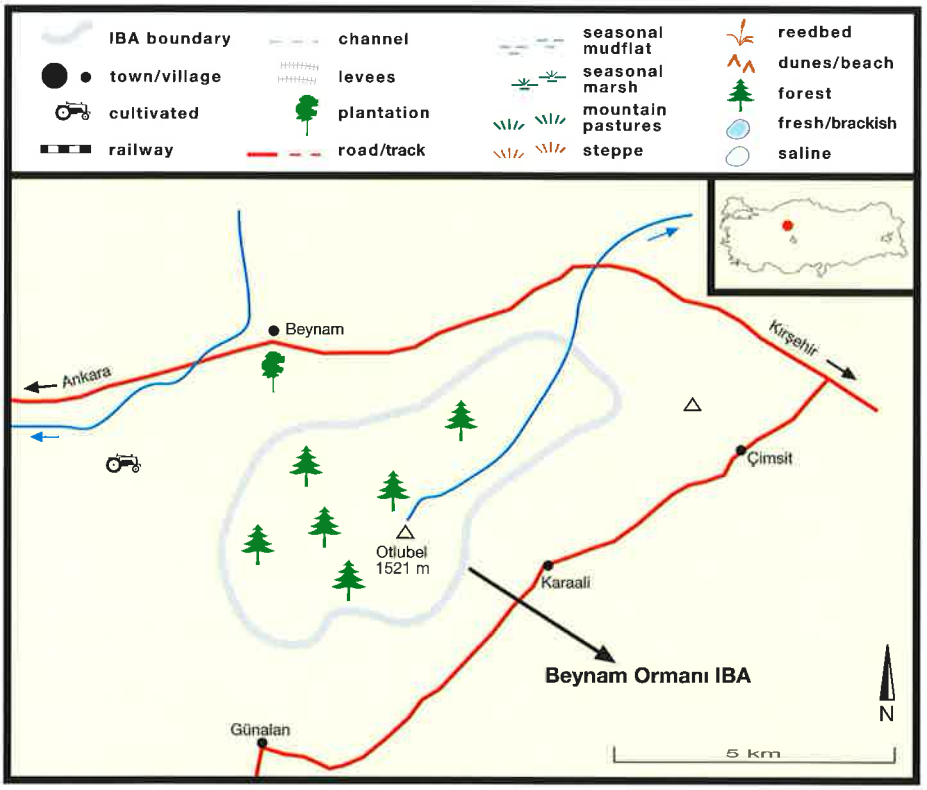
- The site has no protection status.
- Proposals are being developed to irrigate 13,500 ha adjacent to the site with water from the reservoir: agricultural run-off will flow back into the reservoir.

BEYNAM ORMANI

IBA no	55
Province(s)	Ankara
District(s)	Gölbaşı
Size	2100 ha
Coordinates	39°41'N 32°56'E
Altitude	1200-1521 m

SITE DESCRIPTION

A small isolated forest situated on the north side of the Kuyrukçu mountain 30 km south of Ankara. It is one of the few remnants of the forests which formerly covered parts of Central Anatolia. The higher parts consist of forest interspersed with steep valleys and dry river beds. 1248 ha of the IBA consists of Black Pine *Pinus nigra* and oak forests, whilst the remainder is more open with low vegetation. The entire forest is fenced off, mainly to prevent grazing. A small section of the forest is used as a recreation area and there are picnic facilities which are used chiefly at weekends: during 1991, 30,000 people visited the site. The network of forest paths is limited and remoter areas are inaccessible. No forestry activities are carried out although some reforestation has taken place on the south-west slopes.



BIRDS

The site qualifies for its two breeding pairs of Imperial Eagle.

CONSERVATION ISSUES

- The forest was declared a SİT in 1978. The IBA follows the borders of the 2100 ha Preservation Forest.
- The rapidly increasing population of Ankara could lead to unacceptable recreational pressure in the future and it is recommended that a tourist management plan (including limitations on the number of visitors) is developed for the site.

KIZILIRMAK DELTASI

IBA no	56
Alternative name(s)	Bafra Ovası, Bafra Balık Gölleri
Province(s)	Samsun
District(s)	Ondokuzmayıs, Bafra, Alaçam
Size	16,110 ha
Coordinates	41°36'N 36°05'E
Altitude	sea level

SITE DESCRIPTION

The largest and most intact wetland on the Turkish Black Sea coast, the Kızılırmak Deltası formed at the point where the 1182 km-long Kızılırmak river (catchment 78,000 km²) flows into the Black Sea. The entire delta covers 56,000 ha, of which 70% is now intensively used by people. The remaining 16,110 ha of natural habitat, as covered by the IBA, comprises the eastern part of 13,400 ha which has six lakes (Balık, Uzun, Cernek, Liman, Gıcı and Tatlı) and the western part of 2710 ha which includes Karaboğaz lake. Of the 16,110 ha, 2600 ha is open water, 5600 ha marsh vegetation, 2100 ha dunes and sand, 4500 ha farmland and 1310 ha woodland (the remnants of the once extensive forests which covered large parts of the delta). The lakes have many species of *Potamogeton*, whilst on the lake edges reed *Phragmites* and reedmace *Typha* grow. The marshes consist of vast reedbeds, reedmace and Bulrush *Scirpus lacustris*. The open dunes include significant areas of maquis-like vegetation, with shrubs or small trees in places. The woodland east of Uzun lake comprises *Alnus/Fraxinus* seasonally flooded forest.
Outside the natural areas, the delta is intensively used for agricultural production. The main crops are wheat, vegetables and rice. Ricefields are an increasingly common feature, sometimes within the IBA borders. Small forest pockets exist throughout the agricultural area.

Grazing is widely practised throughout the delta, including areas within the IBA. A 1993 DHKD study revealed that a total of 23,000 animals graze in the delta, of which 3000 are water buffaloes and 8000 are cattle. Another important economic use of the wetland is reed cutting: 40,000 stacks are cut p.a., representing 25% of the total reed area. A substantial part of this is exported, and reed is thus an important source of income for local people.

Fishing is an important economic activity: the 1995 catch was 125 tons. Three fishing cooperatives (total 358 members) are active in the eastern part of the delta, and one cooperative in the west (24 members).

BIRDS

The site qualifies as an IBA for its breeding populations of Dalmatian Pelican (6 pairs), Purple Heron (500 pairs), Black Stork (50 pairs), Spoonbill (75 pairs), Gadwall (200 pairs), Red-crested Pochard (75 pairs), Ferruginous Duck (150 pairs), Crane (50 pairs), Stone Curlew (50 pairs) and Collared Pratincole (100

pairs). Large numbers of waterfowl occur in winter (max. 91,708), including Shoveler (max. 4564), Red-crested Pochard (max. 630), Pochard (max. 14,952), Velvet Scoter (max. 97), White-headed Duck (max. 73) and Coot (max. 27,643). During migration significant numbers of Pygmy Cormorant (max. 88), Little Egret (max. 3200), Glossy Ibis (max. 590), White-headed Duck (max. 1246), Little Gull (max. 41,000) and White-winged Black Tern (max. 3000) occur.

Additional bird information.

Other breeding birds include Little Grebe (350 pairs), Great Crested Grebe (250 pairs), Bittern (up to 200 pairs), Little Bittern (30 pairs), Little Egret (230 pairs), Great White Egret (15 pairs), Grey Heron, White Stork (125 pairs), Teal, Mallard, Garganey, Pochard (300 pairs), Honey Buzzard (15 pairs), Marsh Harrier, Buzzard (20 pairs), Hobby (45 pairs), Water Rail, Coot, Oystercatcher (15 pairs),

Black-winged Stilt (250 pairs), Little Ringed Plover (250 pairs), Kentish Plover (30 pairs), Redshank, Common Tern (90 pairs) and Little Tern (45 pairs). In the forests 35 species of passerine breed. Over 10,000 waders migrate through the delta in spring. White-tailed Eagle and Osprey have bred in the past.

CONSERVATION ISSUES

- Cernek Gölü and its surroundings were declared a Permanent Wildlife Reserve in 1979 (4000 ha). In 1994 the majority of the eastern half of the delta was declared a SİT. A management plan for the delta was completed and enforced by the Ministry of Public Works in 1996. The plan regulates all land-use in the delta, and is especially important for the restriction it places on the construction of holiday homes.
- In 1948 the first drainage channels were built in the delta and a total of 55,000 ha (including low-lying areas south of Bafra) were protected from flooding: the river was embanked along most of its lower reaches. In 1990 the Altınkaya reservoir (35 km south of Bafra) and in 1992 the Derbent reservoir immediately north of it were completed (the two dams together store 6000 hm^3 and produce a total of 1889 GWh/p.a.). The Bafra irrigation project ultimately aims to irrigate 35,000 ha. Part of this plan concerns the reclamation of 12,119 ha in the lowest-lying part of the eastern half of the delta (i.e. the wetland). In 1992, as part of the scheme, DSİ (State Water Works) started to construct a 35 km-long interceptor channel which would have effectively cut off the eastern lake area from its main water supply. As a result of a lack of funds and concerns expressed by DHKD, this development was halted after 8 km had been dug. In 1994/95 DHKD, with funding from the Netherlands Ministry of Agriculture, Nature Management and Fisheries, organised a hydrological project in conjunction with both Dutch and Turkish universities. The project developed a computer model to calculate the relative sizes of wetland area which would be lost as a result of the original and alternative irrigation plans. DSİ is now modifying its plans.
- The wetland is polluted by agricultural run-off and untreated sewage from Bafra which flows into Cernek lake through the Badut channel, leading to eutrophication.
- A major and irreversible threat to the remaining wetland area in the Kızılırmak Deltası is the construction of holiday homes complexes. In 1987 there were just ten small houses north of the forest, by 1996 110 houses had been completed and many more were under construction, mainly to the east and north of the forest. Over the last 10 years, several tens of hectares of the forest (which is partially in private ownership) has been felled to accomodate such housing developments. Despite a court ruling that such action was illegal and houses should be taken down, no action was taken. Legal disputes regarding landownership, mainly as a result of speculation, also exist in other coastal areas of the delta. Government efforts in 1995/96 to implement the SİT status, in order to tackle building and landownership problems, met with fierce local resistance and by late 1996 it was still unclear whether the SİT status could be maintained. However, the recent declaration by the Ministry of Public Works is expected to solve, at least partially, the issue.

- Despite its protection status, hunting is still regularly reported from Cernek lake. Elsewhere in the delta, hunting is permitted in the hunting seasons but poaching is frequently observed. Nevertheless, hunting pressure has substantially decreased since the late 1980s when a BirdLife/DHKD study described in detail the annual (and largely illegal) massacre of wintering waterfowl.
- In the eastern half of the delta, fish catches have declined drastically in recent years, from 500 tons p.a. caught in the 1970s to only 125 tons in 1995. In the western half, fisheries have totally collapsed, possibly as a result of over-fishing and pollution. The Ministry of Agriculture is currently investigating the possibility of improving fisheries in the delta.
- Sand-extraction, although illegal, is common. Reed-burning occurs throughout the year in order to improve grazing conditions.
- Since 1992 DHKD has run a conservation project for the Kızılırmak Deltası, including an office and a public information centre in Bafra. Within the scope of the project a number of projects have been undertaken, including socio-economic, grazing, hydrological and ornithological studies, with public awareness and educational campaigns also forming a major component of the work. The project has also lobbied for suitable protection status to be granted to the area.

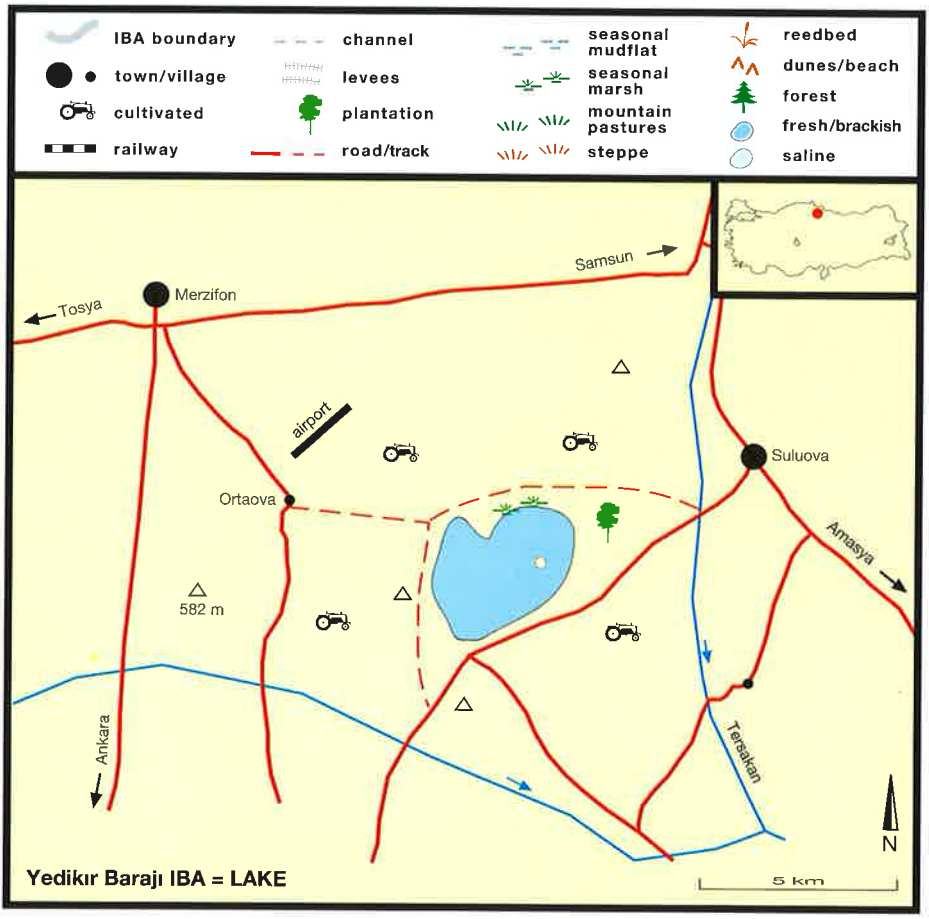
YEDİKIR BARAJI

IBA no	57
Alternative name(s)	Yedikuğular Bird Paradise
Province(s)	Amasya
District(s)	Suluova
Size	593 ha
Coordinates	40°48'N 35°34'E
Altitude	517 m

SITE DESCRIPTION

A small reservoir (60.3 hm³) north-west of Amasya, completed in 1985. The reservoir is fed by the Tersakan stream and its water is used to irrigate 7966 ha in the adjacent Suluova plain. A road circles the lake but is separated from it by a fence. North-east of the lake a large area has been forested, mainly with *Pinus*. There is virtually no shoreline vegetation.

DSİ (State Water Works) operates a small fish farm next to the dam and releases fish into the lake. Only angling is permitted.



BIRDS

The site qualifies as an IBA for its large number of Ruddy Shelduck (max. 1099) which roost there in the non-breeding season: early in the morning they disperse over a wide area to feed on arable land on the plain.

Additional bird information.
In winter the site regularly holds substantial numbers of waterfowl (max. 12,785) including Teal (max. 4210), Mallard (max. 6100) and Great Black-headed Gull (max. 168).

CONSERVATION ISSUES

- In 1989 the site was declared a Permanent Wildlife Reserve (817 ha) and a SİT. Following its designation as a Permanent Wildlife Reserve, the Amasya governor established the "Yedikuğular Bird Paradise".

YEŞİLIRMAK DELTASI

IBA no	58
Alternative name(s)	Çarşamba Ovası
Province(s)	Samsun
District(s)	Terme
Size	3000 ha
Coordinates	41°18'N 36°55'E
Altitude	sea level

SITE DESCRIPTION

The Yeşilırmak Deltası is the largest (90,000 ha) delta on the Turkish Black Sea coast. The greater part of the delta has been converted to agriculture (see below). The main part of the present IBA comprises the largest remaining wetland, the Simenlik-Akgöl lake complex: a 1900 ha area in the eastern part of the delta of which 200 ha is open water (max. 3 m deep), and the remainder is reed and swamp vegetation. Also included in the IBA are the dune areas and the *Cladium* fen communities that in places have developed behind them, and a large forested area. Other areas worthy of mention but not included in the IBA, are the small lakes and lagoons such as Gagalı, Dumanlı, Akçasaz and Ahubaba in the central and western parts of the delta.
Today the delta is a dense network of roads, villages and agriculture land (especially rice and hazelnut), noted for its high agricultural output. Large poplar plantations are found in the wetter parts of the delta.

Fishing is practised at the Simenlik-Akgöl lake complex; 6 tons of fish were caught in 1995. Reed cutting is an important source of income, with 400 tons harvested in 1994 and 500 tons in 1995. The bulk of the reed is exported to Germany.
The Terme sewage treatment plant falls within the IBA.

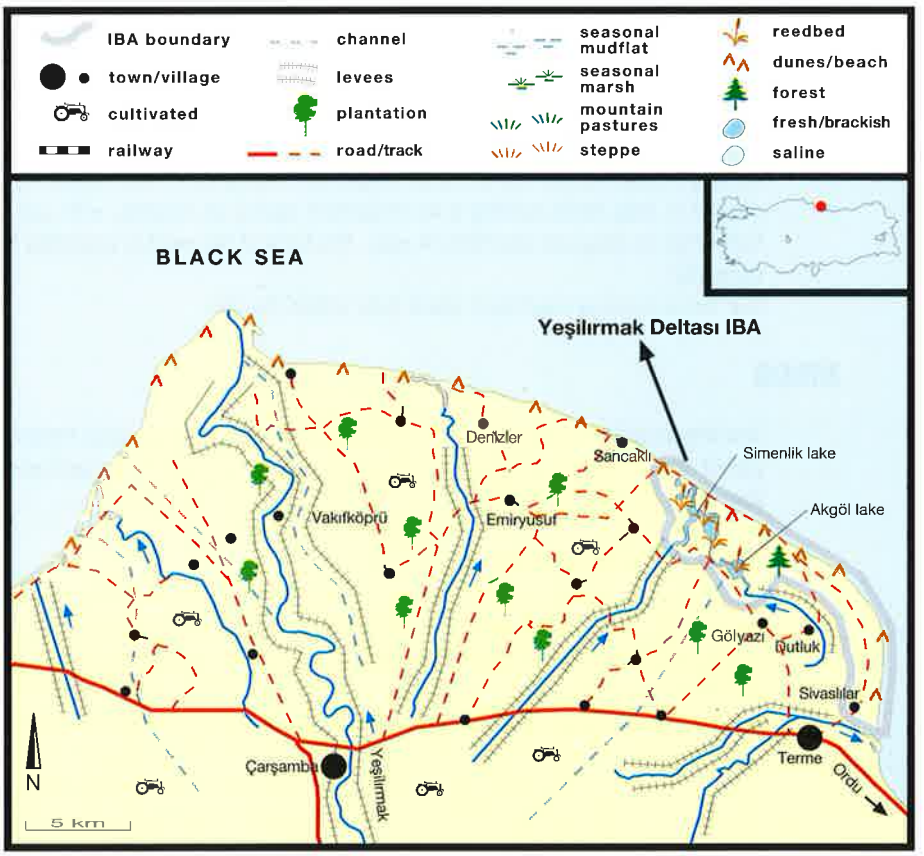
BIRDS

The site qualifies as an IBA for its breeding population of Squacco Heron (30 pairs) and wintering populations of Red-crested Pochard (max. 520) and Velvet Scoter (max. 870).

Additional bird information.
Other breeding birds of note include Night Heron (9 pairs), Little Egret (30 pairs) and Glossy Ibis (7 pairs). Cattle Egret is frequently observed and suspected to breed. Moderate numbers of waterfowl (including up to 7750 Mallard, 3000 Teal, 5400 Pochard and 1600 Pintail) occur in winter although most of the ducks are forced to spend the day at sea as a result of human disturbance in the wetlands: at night the birds feed in the delta.
No information on the natural importance of the Yeşilırmak Deltası prior to large scale drainage (see below) is available, but if the importance of the Kızılırmak Deltası (IBA no. 56) today is regarded as just an indication, the Yeşilırmak Deltası used to be one of Turkey's most important wetland areas.

CONSERVATION ISSUES

- The Simenlik-Akgöl lake complex and a large area around it, was declared a Permanent Wildlife Reserve in 1975 (16,043 ha).
- The Yeşilırmak river is embanked along its lower course and a number of dams have been built on its 519-km course since 1966: relevant to the IBA are two reservoirs just south of Çarsamba, the Hasan Uğurlu and Suat Uğurlu reservoirs (total storage capacity 1255 hm^3 and producing 1490 GWh/p.a.), completed in 1981. In 1968 a large flood protection scheme was initiated designed to protect 67,000 ha of floodplain. In 1970 DSİ (State Water Works) completed the reclamation of 16,000 ha of wetland principally to the south and east of Terme. During 1992-1996, DSİ improved the drainage of 20,000 ha. DSİ plans to irrigate 82,700 ha in the Yeşilırmak Deltası. Over the years, many thousands of hectares of wetland have been drained by other government institutions and local people.
  All told, over 70,000 ha of wetland in the Yeşilırmak Deltası has been converted to agriculture during the last four decades. All of the inland wetlands (including Dipsiz and Kuş ("Bird") lake) have disappeared. The



Karaboğaz stream which used to flow into Simenlik lake (which formerly had two islands) was diverted thus reducing the size of the lake and splitting it into two parts (Simenlik lake and Akgöl lake).

- Pine forests designed to stabilise the dunes threaten their original vegetation. *Salix* and *Alnus* have been planted in many wet places (e.g. in sedge fens) and will eventually destroy these sensitive habitats.
- The Simenlik-Akgöl lake complex is entirely fed by drains from irrigated areas which has led to severe eutrophication and the lakes becoming choked by reed. Although no quantitative data is available, fish catches are reported to have declined drastically as a result of the pollution of the lakes.
- An airport is planned north-west of Çarsamba, 25 km from the IBA.
- Although closed to hunters, the area is subject to heavy hunting pressure throughout the year.

AKKUŞ ADASI

IBA no	59
Province(s)	Ordu
District(s)	Perşembe
Size	2 ha
Coordinates	41°07'N 37°47'E
Altitude	0-20 m

NO MAP

SITE DESCRIPTION

A small, sparsely vegetated island in the Black Sea west of Ordu, less than 100 m from the shore.

BIRDS

The site qualifies as an IBA for its breeding population of Shag (90 pairs).

Additional bird information.
Whilst the Shags principally breed in barren crevices on the steep sides of the island, 250 pairs of Yellow-legged Gulls breed on the flatter grass areas. Cormorants also breed.

CONSERVATION ISSUES

- The site has no protection status.
- The IBA lies adjacent to a major freshwater outflow into the sea and has therefore become popular with anglers. This causes disturbance to the breeding birds, a situation exacerbated by the installation of night-time lighting.

DOĞU KARADENİZ DAĞLARI

IBA no	60
Alternative name(s)	Pontic Alps, Little Caucasus
Province(s)	Trabzon, Gümüşhane, Bayburt, Rize, Erzurum, Artvin
District(s)	the IBA is covered by 32 districts
Size	1,230,000 ha
Coordinates	40°50'N 41°10'E (Kaçkar mountain)
Altitude	0 - 3932 m

SITE DESCRIPTION

This IBA combines two former IBAs (Kaçkar Dağları [IBA no. 13] and North-east Turkey [IBA no. 16]) but also extends further west and east of these sites. The site includes a major bottleneck of migratory birds of prey (the Çoruh Valley and many other valleys that raptors use to cross the mountain range), as well as three major mountain ranges (Soğanlı, Kaçkar, and Karçal) noted for their extensive forests and extensive alpine habitats (representing a fine example of Eurasian high montane habitat). A number of newly discovered sites that would have qualified as IBAs in their own right have been included within this IBA, emphasizing the fact that the area is of uniform character and that conservation of the area requires a large scale approach.

A combination of varied geology, great altitudinal range and distinctive climate (the area has the highest precipitation in Turkey, in places over 2000 mm annually) has resulted in an exceptional vegetation and a wide range of habitats. The climax community at low altitudes is Colchic forest, varying from deciduous forest at low altitudes to fir *Abies* forest at higher altitudes. Above the tree line, extensive alpine grasslands (yayla) and slopes covered with *Rhododendron* and *Juniperus* scrub prevail, whilst the highest areas are characterised by massive cliffs, rocky scree and numerous lakes. The main mountain ridge marks the boundary between the wet Euxine vegetation on the Black Sea slopes and much drier vegetation in the rain shadow area to the south. To the south, *Pinus nigra* and *P. sylvestris* dominate the upper slopes, whilst *Quercus* scrub and open forest dominate the lower slopes. Extensive, largely unvegetated, rocky slopes occur, particularly in the gorge of the Çoruh river (noted for a very rich flora, with exceptionally high endemism).
The area has a very rich flora: ca. 2500 species of vascular plants occur, including 160 endemics to the region.

Large mammals are well represented, including Brown Bear *Ursus arctos*, Chamois *Rupicapra rupicapra*, Ibex *Capra aegagrus*, Wolf *Canis lupus*, Wild Cat *Felix silvestris* and Lynx *Lynx lynx*. The area is also important for a number of amphibians and reptiles, and at least three species of Viper are recorded, including the endemic *Vipera pontica* which is found only in the Çoruh Valley near Artvin. In addition the area is known for its wide range of butterfly taxa.

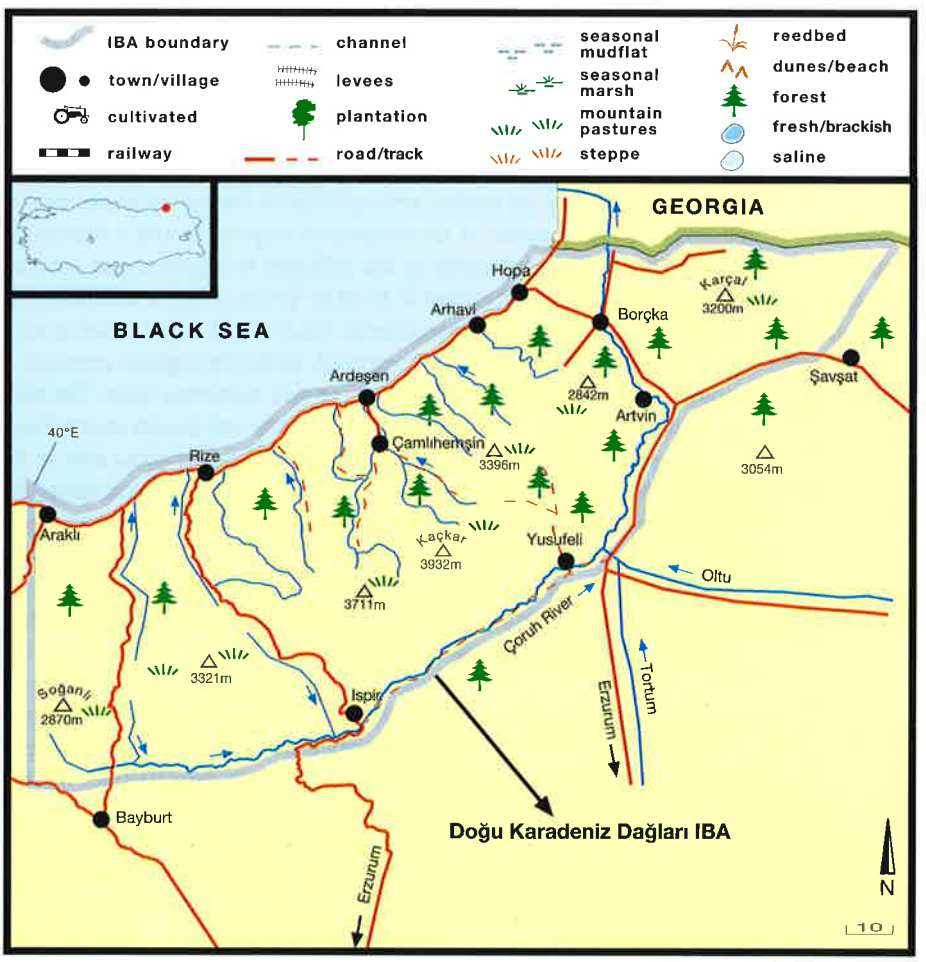
The thin coastal strip is densely populated, with tea, corn and hazelnuts being the main crops. The area is an increasingly popular holiday destination for

trekking, climbing and rafting, and several areas have been designated by the Ministry of Tourism as tourism development areas.

BIRDS

The area qualifies for its breeding populations of Lammergeier (20 pairs), Griffon Vulture (20 pairs), Black Vulture (10 pairs), Golden Eagle (10 pairs), Caucasian Black Grouse (the Turkish distribution of which is confined to this IBA) and Caspian Snowcock. During 1993 a survey revealed the presence of 134 lekking male Caucasian Black Grouse at six of the seven localities studied. Given the small area surveyed and the wide availability of suitable habitat (yaylas with *Rhododendron* or *Juniperus* scrub at 1800-3000 m), the entire population in the IBA may exceed one thousand pairs.

North-east Turkey is best known for the vast numbers of raptors that migrate through the area. The mountains and sea force them to follow the north-south oriented valleys, and staggering numbers of raptors have been observed at



these bottlenecks. The most complete autumn count (in 1976) produced 380,220 birds including Honey Buzzard (138,000), Black Kite (5775) and Buzzard (205,000), but the actual number of birds migrating through the IBA may actually be much higher as important new passage points have been discovered in recent years. Spring passage involves smaller numbers of birds (max. 205,131 during an 8 week count in 1994) including Honey Buzzard (25,183), Black Kite (9069) and Buzzard (136,327).
The Doğu Karadeniz Dağları is the only Turkish site that qualifies as a Eurasian High Montane (Alpine) biome.

CONSERVATION ISSUES

- A total of 133,109 ha of the IBA has protection status. Two National Parks (designated in 1994) are located within the IBA: Hatila Vadisi (17,104 ha) and Kaçkar Dağları (51,550 ha). Other protected areas are the Çamburnu Nature Reserve (180 ha, 1993), the Uzungöl Nature Park (1625 ha, 1989), the Çoruh Vadisi Permanent Wildlife Reserve (8700 ha, 1971), the Verçenik Permanent Wildlife Reserve (50,458 ha, 1980), the Şavşat Balıklı Permanent Wildlife Reserve (3492 ha, 1981), and the Kaçkar Permanent Wildlife Reserve (4143 ha, 1973) which falls within the Kaçkar Dağları National Park.
- The area is one of the few areas in Turkey where no major hydrological engineering schemes have been implemented. However, large dams are planned on the Çoruh river and construction of one of these (the giant, 2118 GWh/p.a. Deriner dam near Artvin) is set to commence very soon. Virtually every stream in the area has been subject to development plans. For example, the Fırtına valley (Çamlıhemşin) has no less than 6 regulators, 6 dams and 10 hydro-power stations planned on its course. Obviously large scale water manipulation schemes could have far-reaching consequences for the natural habitats in the area (flooding, climatic change, access roads, construction) and each project should be subject to criticial assessment before being given official permission.
- According to a 1995 study by DHKD (based on 1984 figures), of 913,000 ha of forest within the Trabzon and Artvin Forestry Regions, only 12% can be classified as "old growth forests" i.e. largely intact primary forests. The remainder has been degraded as a result of commercial patterns of felling and harvesting. DHKD has made detailed recommendations to the Ministry of Forestry for changes in management techniques that would lead to preservation of the remaining old growth forests.
- As a result of its rich geology, the area has long attracted mining companies. A number of mines have long been operational, such as the copper mine at Göktaş. Pollution is a very major problem in the vicinity of the mines, with severe effects on vegetation and wildlife: the Çoruh river is devoid of fish from the point where the Göktaş mining sewage enters its course. Preliminary work has started to mine gold near Artvin, just outside the Hatila Vadisi National Park.
- During 1987, DHKD and BirdLife International carried out a study into the local tradition of falconry. The raptors which follow the "eastern Black Sea Route" are subject to heavy persecution by local people. Trappers employ

Red-backed Shrikes to lure migrating Sparrowhawks into their nets, and the trapped Sparrowhawks are kept mainly as pets, whilst very few are trained and used to hunt migratory Quail. There is little trade in the Sparrowhawks. After a few weeks most of the birds are released but probably too late in the year for them to continue their migration and it is feared that most of the birds die during the course of the winter. In addition to the Sparrowhawks, a large number of other raptors die because they are shot and trapped, and then fed to the decoy birds. The total number of raptors that perish in the course of the event is estimated at 25,000 annually. DHKD has carried out a number of educational activities in the main trapping area, including an extensive school programme (funded by BirdLife Netherlands) during autumn 1994.

- DHKD has run a WWF International-funded conservation project in the area since 1993. The project aims to prepare recommendations for establishing a system of protected areas in the region and to integrate development with nature conservation. The project, which is operated in conjunction with the Ministry of Forestry and based at the Forestry Research Institute in Trabzon, identified the Fırtına valley as a suitable site for a pilot project on sustainable forest management practices.

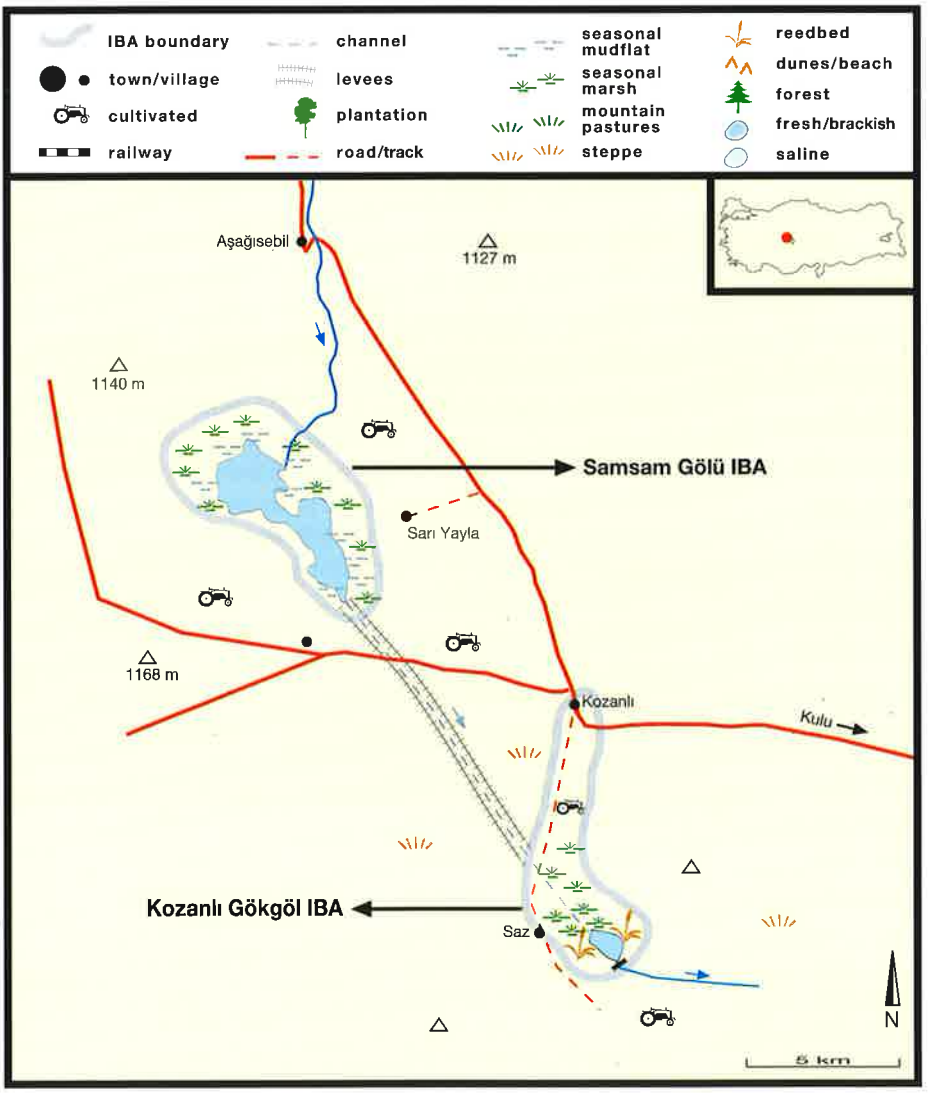
Black Vulture (Akif Aykurt)

SAMSAM GÖLÜ

IBA no	61
Province(s)	Konya
District(s)	Kulu
Size	830 ha
Coordinates	39°06'N 32°45'E
Altitude	980 m

SITE DESCRIPTION

A shallow freshwater lake fed by surface run-off plus some small streams and underground water. The immediate surroundings of the lake principally consist



of grassy plains and when the water level drops the whole lake gradually becomes colonised by temporary vegetation: in late summer it is practically dry. A channel in the south carries water from the lake to Kozanlı Gökgöl (IBA no. 62) after which the water flows south-east and eventually reaches Tuz Gölü (IBA no. 72).
The lake is surrounded by non-irrigated arable land, mainly under wheat. Large numbers of cattle are grazed on the grassy plains around the lake.

BIRDS

The site qualifies as an IBA for the large numbers of Avocet (max. 616) that occur during migration.

Additional bird information.
No information on the ornithological importance of the lake prior to drainage is available but considering that it was a salt lake with higher water levels than at present, it is likely that the site was of importance for breeding species associated with Central Anatolian salt lakes such as Slender-billed Gull, Mediterranean Gull and Gull-billed Tern. Several thousands of waterfowl and hundreds of Cranes are present at Samsam Gölü during winter.

CONSERVATION ISSUES

- Samsam Gölü was declared a SİT in 1992.
- Samsam Gölü was a salt lake until its (rarely flowing) southern outlet was deepened in 1971. This was part of DSİ (State Water Works) efforts to drain the entire lake (which then encompassed 830 ha) in order to provide flood control and new arable land. The channel lowered the maximum water level by several metres, the lake gradually became brackish and vegetation started to develop. At present its maximum size is less than 400 ha. After 25 years, the soils are still largely saline and not utilised by farmers, and it is unclear whether the soils will ever be of sufficient quality to justify the drainage scheme. Local people appear to regret the draining of the lake, as hunting was better in former years. Restoration of Samsam Gölü is technically easy (closing the artificial outlet whilst releasing some water to maintain Kozanlı Gökgöl) and would provide the Turkish government with an excellent opportunity to demonstrate its commitment to wetland preservation.
- Samsam Gölü is situated on a route frequently used by low-flying military jets. Considerable disturbance amongst the birds is caused when jets pass low over the wetland.

KOZANLI GÖKGÖL

IBA no	62
Province(s)	Konya
District(s)	Kulu
Size	650 ha
Coordinates	39°01'N 32°50'E
Altitude	925 m

FOR MAP SEE IBA NO. 61

SITE DESCRIPTION

The IBA includes a 50 ha freshwater lake and several hundreds of hectares of grazing marsh between the lake and Kozanlı village, 20 km west of Kulu. The lake is covered by reedbeds with patches of open water. It is fed by groundwater and a channel (constructed in the 1970s) designed to drain Samsam Gölü (IBA no. 61), 8 km to the north-west. At its outlet in the east the local people maintain a simple, low barrier to improve and maintain their grazing lands; without this the lake would probably be smaller and dry up during summer. The water from the lake eventually flows into Tuz Gölü (IBA no. 72).

Some higher areas just south of Kozanlı are used to grow cereals and large numbers of cattle graze in the marsh.

BIRDS

The site holds significant breeding populations of White-headed Duck (10 pairs) and Lesser Kestrel (10 pairs in Kozanlı village).

Additional bird information.

Other breeding species include Black-necked Grebe (80 pairs), Squacco Heron (10 pairs), Teal (10 pairs), Pochard (20 pairs), Coot (100 pairs) and Whiskered Tern (100 pairs). Up to 2000 Greater Flamingo from the Tuz Gölü colony regularly feed in the marsh.

CONSERVATION ISSUES

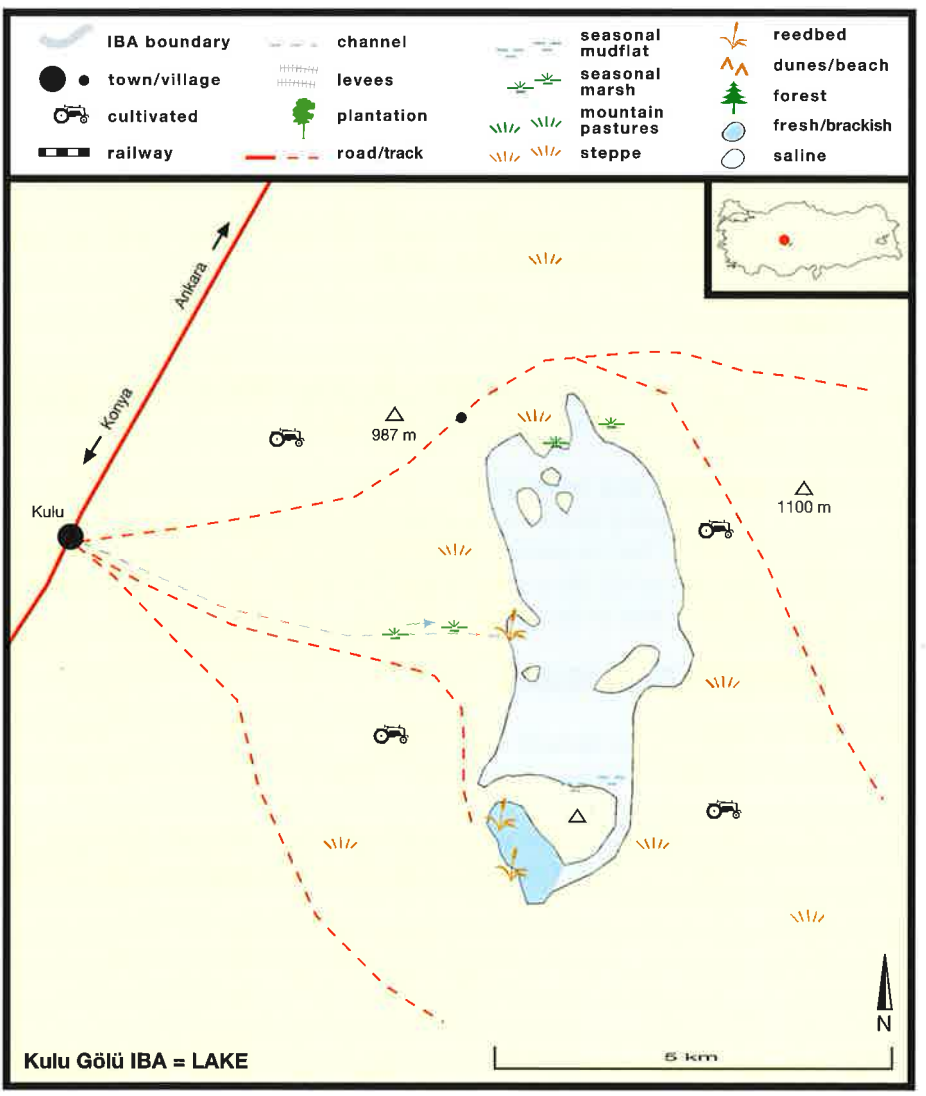
- The lake was declared a SİT in 1996.
- Grazing is intensive and should be limited both in extent and the number of animals.
- The IBA is situated on a frequently used low-flying route for military jets based in Ankara. Considerable disturbance is caused when jets pass low over the wetland.

KULU GÖLÜ

IBA no	63
Alternative name(s)	Düden Gölü, Küçük Göl
Province(s)	Konya
District(s)	Kulu
Size	860 ha
Coordinates	39°05'N 33°09'E
Altitude	950 m

SITE DESCRIPTION

Kulu Gölü is a shallow lake situated north-west of Tuz Gölü (IBA no. 72), 5 km east of the town of Kulu. Its water is brackish and is fed mainly by the Kulu



stream from the west: it has no outlet. It is largely devoid of fringe vegetation except where the Kulu stream or small springs enter the lake. A small area in the south contains freshwater and has lush vegetation along the shores. There are nine islands in the lake, most of which are covered with grass in spring and early summer.
The lake is largely surrounded by non-irrigated wheat fields and barren steppe, but along the northern shores are small grass plains used by grazing cattle.

BIRDS

The site holds significant numbers of breeding Marbled Teal (3 pairs), Red-crested Pochard (20 pairs), Ferruginous Duck (10 pairs), White-headed Duck (30 pairs), Avocet (250 pairs), Greater Sand Plover, Mediterranean Gull (400 pairs) and Gull-billed Tern (450 pairs). During the pre- and post-breeding seasons large numbers of Black-necked Grebe (max. 2055), Ruddy Shelduck (max. 10,000), White-headed Duck (max. 319), Black-winged Stilt (max. 4000), Avocet (max. 1000) and Kentish Plover (max. 300) occur. In winter the lake normally freezes but occasionally holds significant numbers of White-fronted Goose (max. 9718).

Additional bird information.
Other breeding species include Black-necked Grebe (220 pairs), Collared Pratincole (10 pairs), Black-winged Stilt (60 pairs), Slender-billed Gull (325 pairs) and Black-headed Gull (750 pairs).
The ducks mainly breed in the freshwater part of the lake, whilst the gulls and terns breed in dense colonies on the islands.

CONSERVATION ISSUES

- Kulu Gölü was declared a SİT in 1992.
- Untreated waste water from Kulu enters the lake and the town's rubbish is dumped in the Kulu stream.
- There are plans to improve access to the lake and to build a road around it, as well as watch towers, in order to promote tourism. There is no doubt that this would seriously threaten the breeding gulls and terns on the islands (which are close to the shore), and breeding duck in the freshwater part of the lake. Hunting pressure would also increase unacceptably.

EREĞLİ SAZLIĞI

IBA no	64
Alternative name(s)	Akgöl
Province(s)	Konya, Karaman
District(s)	Ereğli, Karapınar, Ayrancı
Size	37,000 ha
Coordinates	37°32'N 33°45'E
Altitude	998 m

SITE DESCRIPTION

A complex of shallow marshes, reedbeds, freshwater lakes and salt steppe 30 km west of Ereğli, situated in the Ereğli plain and bordered to the north by Karacadağ (2025 m) and to the south by the Bolkar mountains (3524 m), part of the Taurus mountains. The wetland area covers 6400 ha at its maximum extent and is the deepest part of an indepedent closed basin, mainly fed by streams from the Bolkar mountains (principally the İvriz stream). The IBA includes a small lake on its south edge, locally known as Düden (swallow hole). The IBA also includes the surrounding salt steppe and agricultural land, parts of which (especially in the north-west) flood during winter.

Agriculture is the principal economic activity in the region with wheat, sugar beet and vegetables being the main crops. Sheep grazing is very common.

Reed cutting is a major activity of several villages adjacent to the wetland: it is cut and exported by two German firms. Some 80 families depend on reed cutting and during the harvesting period November 1995- March 1996 250,000 stacks (representing 50 ha) were cut, of which 170,000 were exported at 3 DM per stack.

Only a few species of small fish occur in the marshes, none of which are fished commercially.

A large military area bordering the north-west of the IBA is used as pilot training ground.

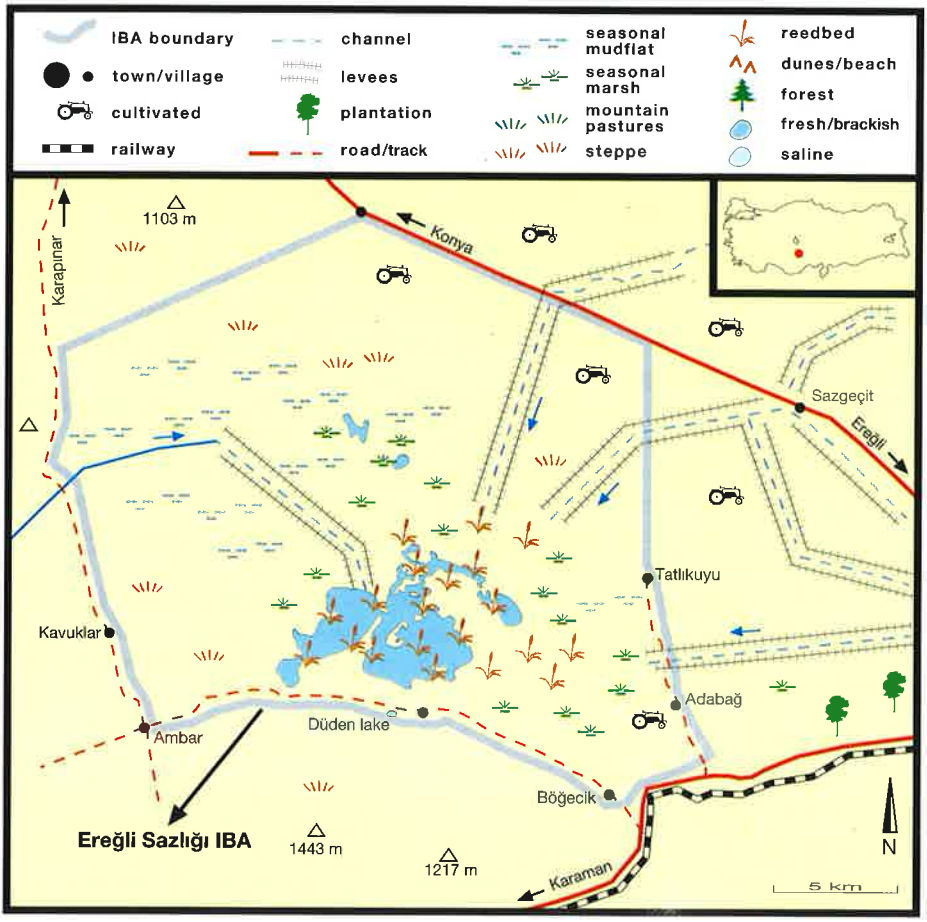
BIRDS

Ereğli Sazlığı holds significant breeding populations of Pygmy Cormorant (600 pairs), White Pelican (23 pairs), Dalmatian Pelican (irregular breeder), Squacco Heron (30 pairs), Purple Heron (50 pairs), Glossy Ibis (50 pairs), Spoonbill (20 pairs), Greater Flamingo (300 pairs), Gadwall (20 pairs), Marbled Teal (5 pairs), Red-crested Pochard (500 pairs), Ferruginous Duck (10 pairs), White-headed Duck (50 pairs), Lesser Kestrel (20 pairs), Avocet (75 pairs), Collared Pratincole (50 pairs), Greater Sand Plover, Spur-winged Plover (20 pairs) and Little Tern (60 pairs). It should be noted that these breeding estimates are based on surveys carried out during the period 1989-1993: breeding numbers of most species were lower in recent years as a result of low water levels (see below). White Pelican also occur in large numbers on migration (max. 1000), and large groups of White-headed Duck occur prior to the breeding season (max. 508). Wintering birds include Crane (max. 1000) and Ruddy Shelduck (max. 3016).

Additional bird information.
Other breeding species include Litte Egret (30 pairs), Great White Egret (5 pairs), Kentish Plover (10 pairs), Common Tern (60 pairs), Grey Heron and Greylag Goose. Winter counts have produced up to 30,000 waterfowl in the past but low water levels and severe winters (when the marshes are completely frozen) are the reason for negligible numbers during the last decade.

CONSERVATION ISSUES

- Ereğli Sazlığı was declared a SİT in 1992, and Nature Reserve in 1995 (6787 ha).
- Topographical maps from the beginning of the 20th century illustrate a wetland complex of 21,500 ha, situated to the north and west of the town of Ereğli. Three wetland areas could be distinguished: 12,000 ha north of the Konya-Adana road, north-east of Hortu, 3000 ha between the town of Ereğli and Adabağ, and the 6400 ha Akgöl area west of Adabağ. Three main drains (to drain the former two wetland areas, as well as to combat malaria in the areas north of Karaman, south-west of the IBA) were constructed, terminating



in the Akgöl area. As a result, all of the wetland (the last to be drained was 1200 ha north of Ereğli town in 1983) except Akgöl was drained. The latter, as a result of the extra input from the drains and a number of very wet years, increased in size and had become a large open lake with little standing reed by the late 1960s. Since 1982 the water level has dropped steadily, a process which has accelerated following the completion of the İvriz reservoir in 1984, which reduced the inflow into the wetland by 230 hm^3/p.a. A second natural inflow had previously been blocked with the construction of the Ayrancı reservoir in 1958. At present, the wetland is mainly fed by the three drainage channels, one of which also carries heavily polluted water from Ereğli town into the lake. The other two channels were only flowing during 7 of the last 15 years. The importance of the drain in the north-west was very much reduced following the completion of the Gödet reservoir south of Karaman in 1988, and input is expected to cease entirely once two other projected reservoirs (Deliçay and İbrala) have been completed.

As a result of the reduced water input the lake has retreated drastically and is now smaller than at any time in known history. Thousands of hectares of reedbeds, marshland and mudflats are dry, and have been partially converted into fields, whilst reed and rush areas are burnt to create grazing land. Although no exact figures are available, it is estimated that the present wetland is probably not more than 2000 ha in size.

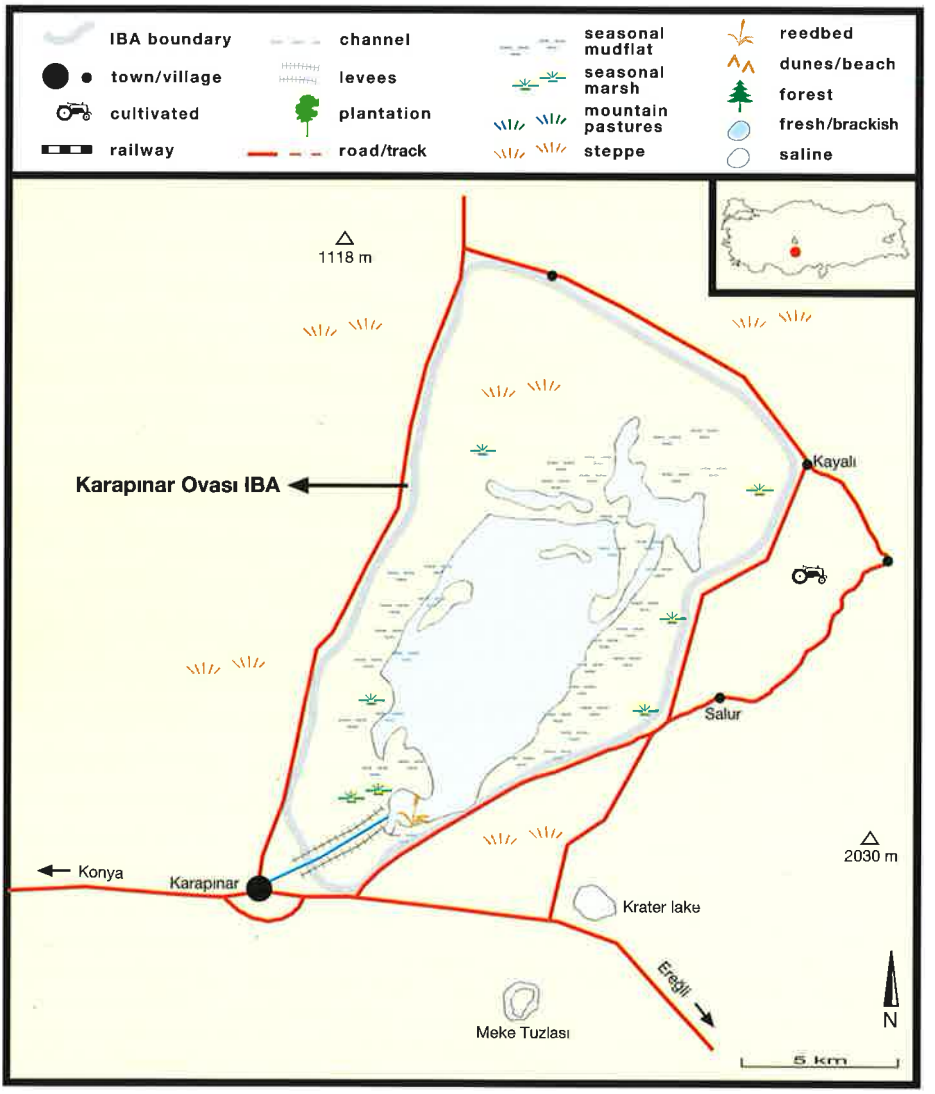
- The İvriz irrigation scheme aims to irrigate 42,225 ha of land, mainly using 200 hm^3/p.a. taken from the İvriz reservoir but also with additional water pumped from 100 wells (which are presently used to irrigate 7500 ha elsewhere). A large part of this irrigation scheme has been completed but the construction work on the Adabağ irrigation scheme (4100 ha) is still in progress whilst a new extension of 2230 ha is planned by DSİ (State Water Works). The Adabağ scheme will irrigate land around Adabağ village of which about 1500 ha lies within the IBA boundary. The effects this may have on the IBA are potentially serious, especially on the Lesser Kestrel population in Adabağ.
- Following the drying up of large parts of the area, villagers have started to extract peat for use as fuel.
- In addition to the agricultural run-off, waste water from a sugar factory, a textile factory, meat factories, a fruit-juice plant, several food production (mainly milk) plants and Ereğli city sewage enters the lake untreated through the drainage channels.
- Although old NATO plans to extend the pilot training area and to use it for intensive low altitude flying practice have apparently been shelved, an agreement between Turkey and Israel for the training of pilots will possibly include the use of the Ereğli plain.

KARAPINAR OVASI

IBA no	65
Alternative name(s)	Sultaniye Sazlığı
Province(s)	Konya
District(s)	Karapınar, Emirgazi
Size	15,200 ha
Coordinates	37°49'N 33°40'E
Altitude	960 m

SITE DESCRIPTION

A largely barren plain with a maximum 6000 ha shallow lake in its centre. The lake is principally fed by run-off from the Karacadağ (2025 m) mountain range



on the east side of the plain. A drain carries waste water from the township of Karapınar to the lake and a 200 ha fresh/brackish *Phragmites* marsh has developed where the drain enters the wetland.
The lake is surrounded by grasslands and mud plains, and is virtually inaccessible during wet periods. During summer the lake may dry up completely.
The plain is utilised by thousands of sheep. The only other human use of the site is for hunting.

BIRDS

The site qualifies as an IBA for its breeding population of Greater Sand Plover and for the significant numbers of White-fronted Goose (max. 14,000) and Ruddy Shelduck (max. 900) which occur in winter.

Additional bird information.
A breeding colony of White Pelican (30-50 pairs) was found in 1985 but have apparently not bred since.

CONSERVATION ISSUES

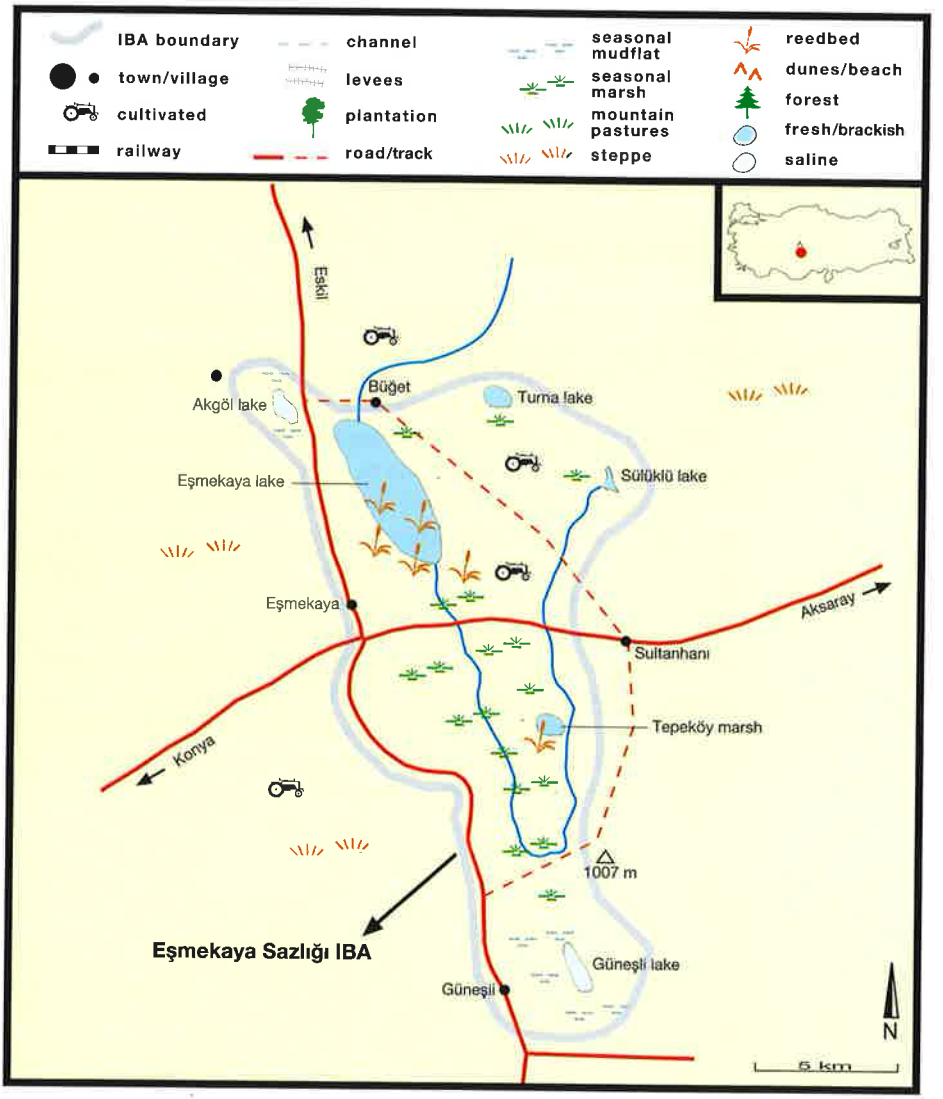
- Karapınar Ovası was declared a SİT in 1992.

EŞMEKAYA SAZLIĞI

IBA no	66
Province(s)	Aksaray
District(s)	Aksaray, Eskil
Size	11,250 ha
Coordinates	38°15'N 33°28'E
Altitude	945 m

SITE DESCRIPTION

The site consists of an open permanent freshwater lake (Eşmekaya lake which is groundwater fed), large expanses of marsh and rush pasture on both sides of



the main Konya-Aksaray road which bisects the site, two salt lakes (Akgöl lake and Bezirci (or Güneşli) lake) and a number of small satellite wetlands east of the main lake (Turna lake, Sülüklü lake and Tepeköy marshes). The site also includes Eşmekaya village for its breeding population of Lesser Kestrel. *Juncus* covers most of the dry and salty soils, especially in the southern part of the IBA. *Typha* and *Cladium mariscus*, are common to the north with *Phragmites* being the dominant species around the freshwater lake.

BIRDS

The site qualifies as an IBA for its breeding population of Red-crested Pochard (30 pairs), Montagu's Harrier (15 pairs), Lesser Kestrel (12 pairs) and Spur-winged Plover (10 pairs). Significant numbers of waterfowl occur in winter (max. 21,327) including White-fronted Goose (max. 19,400), whilst White Stork (max. 9550) and Collared Pratincole (max. 150) occur on passage.

Additional bird information.
Other breeding birds of note include Little Grebe, Great Crested Grebe, Marsh Harrier (3 pairs), Pallid Harrier (1 pair, the only known Turkish locality of this species), Crane (6 pairs) and Short-eared Owl (3 pairs).

CONSERVATION ISSUES

- The area was declared a Permanent Wildlife Reserve (4500 ha) in 1994. In addition it was declared a SİT in 1992.
- Current DSİ (State Water Works) plans involve turning Eşmekaya lake into a reservoir: a 14 m high dam wall (work on which commenced in 1995) is to be constructed at the northern end of the lake creating a reservoir holding 47.2 hm^3 water in order to irrigate 6700 ha of arable land to the east and south of the lake, including large parts of the present marsh area. The maximum water level will be 952 m, which is 7 metres above present maximum levels. Two pumps (one in the south-east and one in the south) will bring water from the dam into the irrigation system. It is unclear whether the irrigation scheme includes the drainage of the small wetlands east of Eşmekaya lake. It appears unquestionable that these plans will have disastrous consequences for the wetland as all the vegetation will disappear and its ecological character will be radically changed. Considering the great ecological risks involved, DSİ is urged to halt all activities and carry out an environmental impact assessment study before proceeding.

BEYŞEHİR GÖLÜ

IBA no	67
Province(s)	Konya, Isparta
District(s)	Beyşehir, Hüyük, Yenişarbademli, Şarkikaraağaç
Size	73,000 ha
Coordinates	37°45'N 31°30'E
Altitude	1123 m

SITE DESCRIPTION

The largest freshwater lake (max. 10 m deep) in Turkey, 75 km west of Konya. In the west and south it is bordered by forested mountains: the lower parts of the maquis-covered slopes are occupied by small areas of arable land and orchards. North of the lake is the indigenous cedar forest of Kızıldağ. On the eastern side of the lake the land is flat and mainly used for cereals. There are 30 islands of which the three largest are inhabited and farmed, whilst others are used for grazing goats but the majority are deserted.

Narrow reedbeds fringe large tracts of the shores with extensive reedbeds only in bays in the east and south-west. The main marshes are found in the south-western corner, near Yeşildağ, where 250 ha of reedbed is interspersed with areas of open water.

The lake is fed by 27 streams from the Anamas (or Dedegöl) mountains in the west and the Sultan mountains in the east, and by a number of springs. Naturally water levels fluctuate between 1121-1125.6 m, corresponding with a surface area of 60,000-73,000 ha. Natural outlet is from the south-east where water formerly flowed via the Beyşehir stream into Suğla Gölü (IBA no. 68), 40 km south-east of Beyşehir. A diversion scheme, begun in the early twentieth century, now carries the water to the Apa reservoir and subsequently to the Konya plain in the east. The catchment area of the lake is 4052 km^2.

Reedcutting is practised in places, but the most important asset of the lake to local villagers is its fish, with the 1995 catch totalling 872 tons. Over 1200 people from 22 settlements are involved in fisheries.

BIRDS

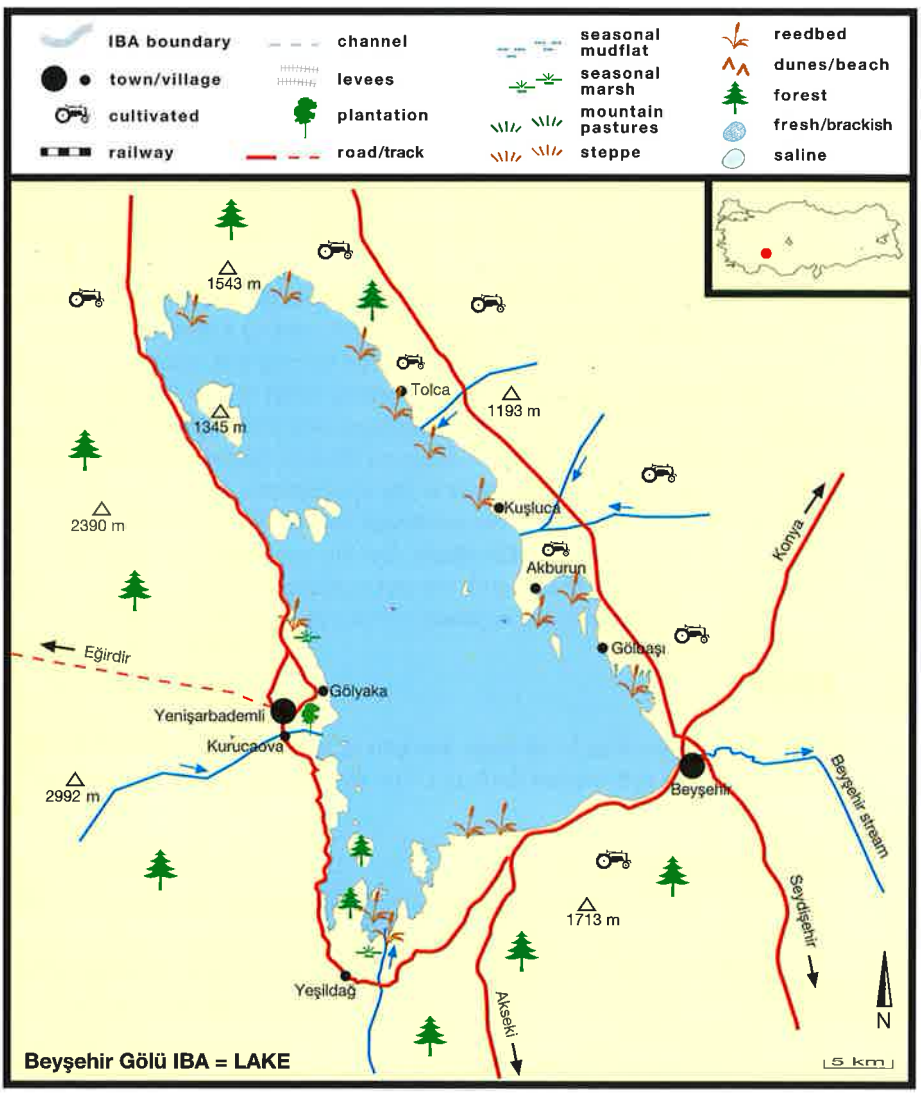
The site qualifies for its large numbers of wintering waterfowl (max. 213,824) including Red-crested Pochard (max. 603), Pochard (max. 47,883) and Coot (max. 163,378).

Additional bird information.

The islands of Beyşehir Gölü formerly held breeding colonies of Dalmatian Pelican (83 pairs in 1964), Cormorant (50 pairs), Night Heron (60 pairs) and Little Egret (50 pairs). Although a few pairs of herons have perhaps been overlooked, recent surveys indicate that these colonies have all but disappeared.

CONSERVATION ISSUES

- Beyşehir Gölü lies within two National Parks: the Beyşehir National Park (88,750 ha) and the Kızıldağ National Park (59,400 ha), declared during 1993. Beyşehir Gölü was declared a SİT in 1988 and 1991, and also has the status of Drinking Water Reservoir.
- Beyşehir Gölü water is used to irrigate arable land in the Konya-Çumra plain. This irrigation scheme is one of the oldest and largest in Turkey, for which DSİ (State Water Works) currently takes 213 hm^3 of water from the lake annually. In addition it takes water for, amongst others, its Yenişarbademli, Şarkikaraağaç and Gevrekli irrigation projects (totalling 10,000 ha). Beyşehir water is also used as drinking water supply for Beyşehir town and the surrounding villages; farmers irrigate arable land bordering the lake by



using simple pumps. In normal years Beyşehir Gölü receives 450 hm^3 of water. As a result of low precipitation in recent years, natural evaporation and possible leakage through faults, but especially as a result of the increasing water extraction, water levels have fallen considerably and the lake has been reduced to ca 50,000 ha. During winter 1990 DSİ left the regulators open (in order to fill reservoirs downstream) and the lake did not fill. In recent years the water level has several times fallen below 1120 m.
DSİ intends to increase the amount of water it takes from the lake for expansion of the various irrigation schemes (cf. Suğla Gölü IBA no.68). These plans are based on the assumption by DSİ to reduce the water level to 1117 m, thus reducing the lake to one third its original size. To cope with the shortage of water, DSİ now plans to add 130 hm^3/per annum of water to the lake by means of the Gemboz diversion scheme south to the lake. The construction of a 1600 ha resevoir near Derebucak is planned under this scheme, as well as the irrigation and drainage of 5350 ha of land between the reservoir and Beyşehir Gölü (it is unclear whether the marshes at Yeşildağ would be affected by this). In spite of its protection statuses, efforts on a ministerial level to secure a guaranteed minimum water level and widespread public concern, no concrete actions have been undertaken or agreements reached to tackle the problem of water shortage, and the future of Beyşehir Gölü remains highly uncertain.

- The number of fish species occurring in the lake declined after the 1978 introduction of the Pike Perch *Stizostedion lucioperca* which is now the main commercial species. Up to 107 tons of Crayfish *Astacus leptodactylus* were caught until its population was terminated by the Crayfish plague in 1986.
- The lake is polluted by untreated discharge from rifle factories south of the lake. Waste water from Beyşehir town does not affect the lake as it is pumped into the Beyşehir stream, but waste from surrounding villages and agricultural run-off possibly affect the lake. A chrome mine east of Yeşildağ formerly discharged its waste water directly into the lake but was closed a few years ago. Planned industrial developments that could affect the lake are a large fertilizer plant and the exploitation of the lignite reserves south of the lake. The latter includes the construction of a thermal plant.
- The construction of holiday homes, and the associated sand extraction from the lake's shores, have started on the shores west of Beyşehir.
- The islands used to be of importance for breeding birds (see under "birds") until the 1970s: it is unclear why these colonies have disappeared but it seems likely that increased human disturbance was the main reason. The number of fishing boats has increased rapidly during the last two decades and due to widespread out-of-season fishing, fishermen are present throughout the lake all year round.

SUĞLA GÖLÜ

IBA no	68
Alternative name	Karaviran Gölü
Province(s)	Konya
District(s)	Seydişehir, Yalıhüyük
Size	16,500 ha
Coordinates	37°20'N 32°00'E
Altitude	1095 m

SITE DESCRIPTION

The remnants of a 16,500 ha wetland, the present lake covers up to 2500 ha in winter: during exceptionally wet periods up to 8000 ha. The lake is fed by a number of streams, and it has no outlet, other than nine swallow holes in the south (only when the water rises above 1095 m does the lake drain into the Beyşehir stream, east of the lake; this has occurred twice during the last 40 years). Large parts of the former lake bed have been converted into arable land whilst to the north and east many orchards and poplar stands are located. Only in the northern part of the lake are some reedbeds. To the west the lake is bordered by forested mountains. Cattle are grazed throughout the area.

BIRDS

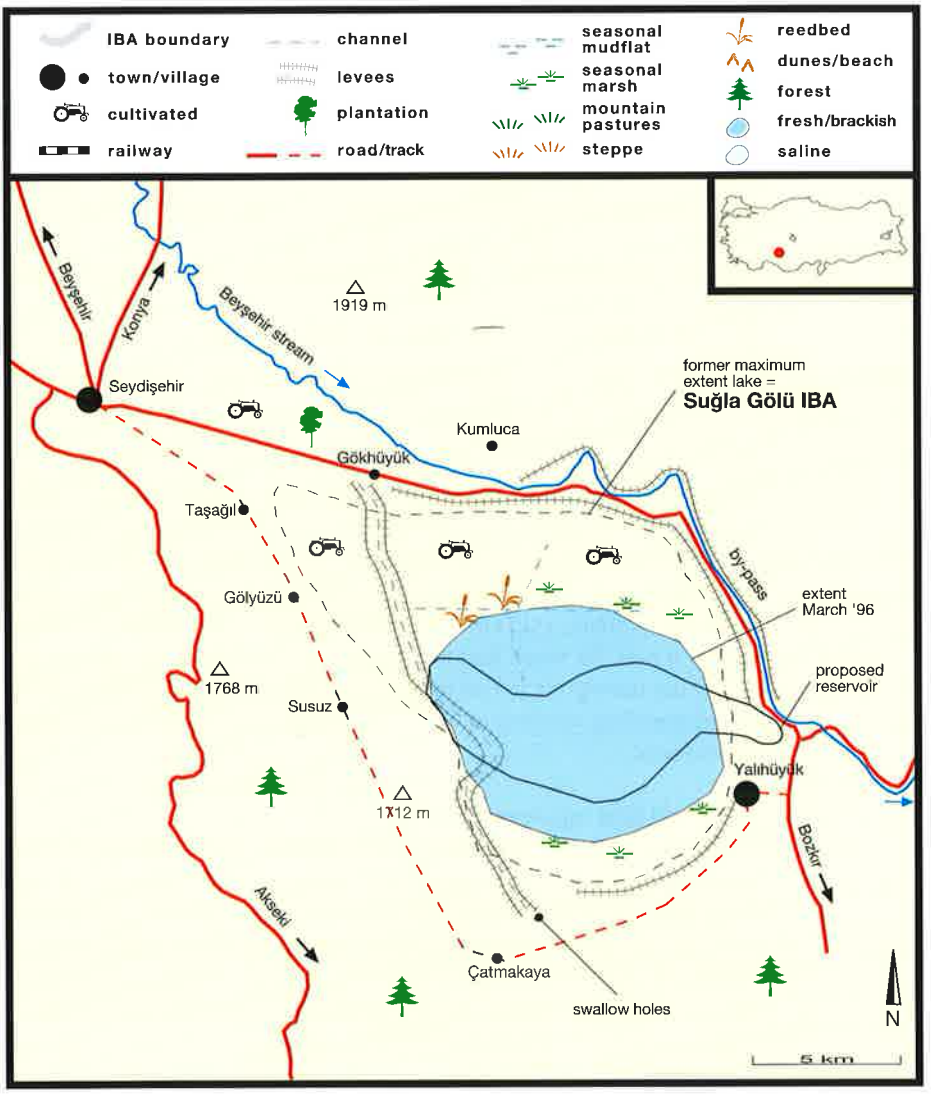
Winter counts carried out during 1967, 1971, 1972, 1973 and 1990 produced very low counts of waterfowl but, in March 1996, after an exceptionally wet winter, 24,852 waterfowl were counted, clearly indicating the potential of the site.

CONSERVATION ISSUES

- The site has no protection status.
- In 1914 a German firm designed and built the first diversion scheme for water that formerly flowed from Beyşehir Gölü (IBA no. 67) to Suğla Gölü, by constructing a by-pass north of Suğla Gölü and diverting the water directly to the Çumra irrigation scheme in the Konya plain through the Beyşehir stream (later called Çarşamba stream). Suğla Gölü was practically cut-off from its regular water supply. The lake still received water during periods of heavy flow and when excess water had to be stored, but this was reduced further in 1962 with the completion of the Apa reservoir and a large drain from Konya Plain to Tuz Gölü (IBA no. 72) in 1974. Further draining of the lake was achieved by widening the swallow holes. Since then the lake has rarely reached its full size of 16,500 ha except during excessively wet winters e.g. 1969 and 1980. Otherwise the lake covers a maximum of 2500 ha after normal winters but observations from the last ten years indicate that the lake is often practically dry. During March 1996, after an exceptionally wet winter, 8000 ha was again flooded. Although it seems likely that even before the diversion scheme was implemented Suğla Gölü partly dried up in some years, and whilst no information exists on its former biological importance, the wetland has unquestionably been seriously damaged as a result of the water

manipulation schemes.

Current and projected DSİ (State Water Works) schemes include taking water from the Beyşehir stream to irrigate 29,500 ha. However, during 1994 DSİ decided, as a result of a water shortage and commitments to maintain a high water level in Beyşehir Gölü, that only 13,350 ha would be irrigated at this stage with the remainder to follow once additional water sources (principally from the Göksu river, see IBA nos. 69, 73) will reduce the need for Beyşehir water for the Çumra irrigation scheme. One component of the revised DSİ plans is to convert Suğla Gölü into a 5150 ha, 258 hm^3 reservoir: surrounding land will then be fully drained and converted into arable land. During 1996 work on the reservoir started.



HOTAMIŞ SAZLIĞI

IBA no	69
Alternative name(s)	Bataklık Gölü
Province(s)	Konya
District(s)	Çumra, Karapınar
Size	16,500 ha
Coordinates	37°35'N 33°03'E
Altitude	999 m

SITE DESCRIPTION

A large freshwater marsh at the southern edge of the Konya plain, north of the extinct Karadağ volcano (2288 m). The wetland consists of a *Phragmites australis* marsh, interspersed with small areas of open water. It is mainly fed by surface run-off, excess water from the Çarşamba stream and by some springs in the south. Fishery is practised on a very limited scale, whilst reed-cutting is the main economic activity for three villages in the area: 350,000 kg was harvested in both 1994 and 1995.

The surrounding area mainly comprises extensive areas of steppe and wheat fields. The IBA includes Süleymanhacı (or Acı) lake, 6 km south of the main wetland. This 120 ha lake (997 m) is fed by groundwater but is saline as it has no outlet: accordingly this lake is poorly vegetated and is not utilised by man. One species of fish occurs, *Rutilis tricolor*. Although probably poor as a feeding site, Süleymanhacı lake is an important refuge for birds from Hotamış Sazlığı.

BIRDS

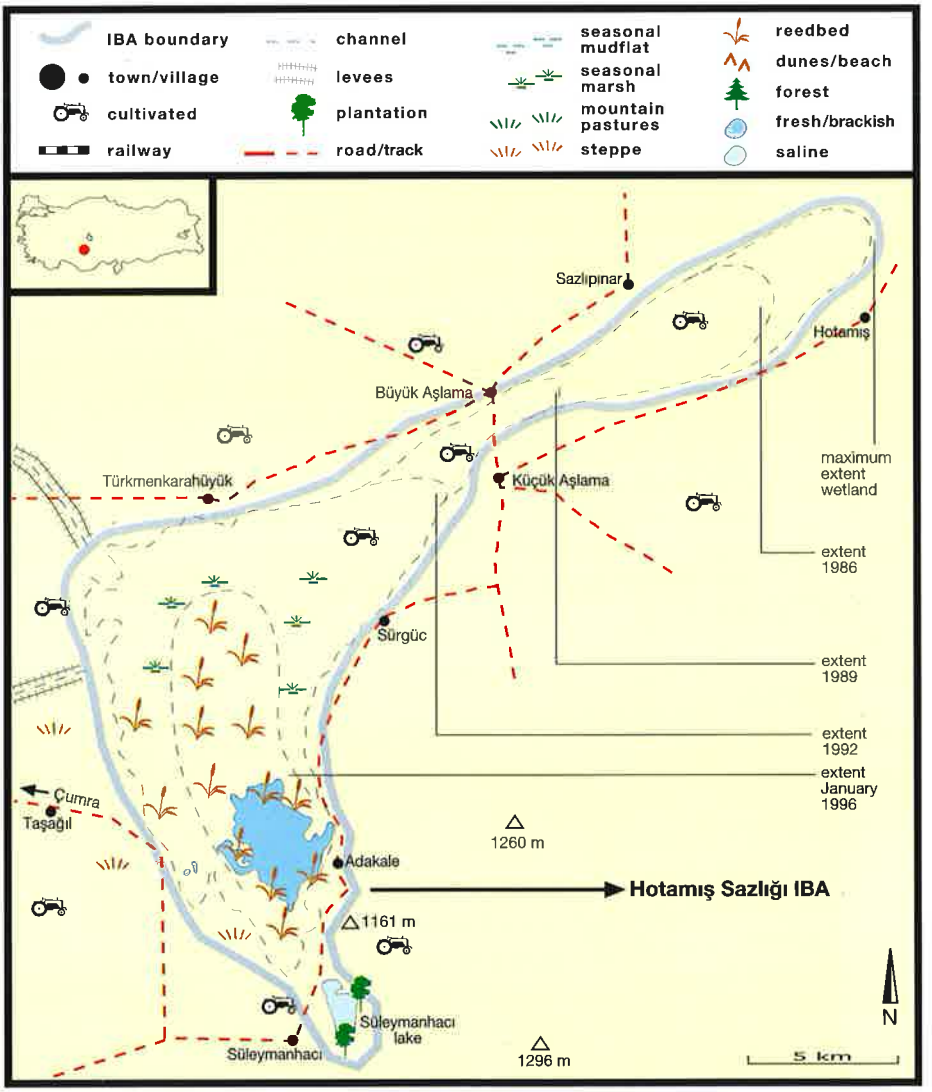
The site qualifies for its breeding populations of Pygmy Cormorant (25 pairs), Little Bittern (30 pairs), Squacco Heron (50 pairs), Glossy Ibis (75 pairs), Marbled Teal (20 pairs), Red-crested Pochard (30 pairs), White-headed Duck (40 pairs), Collared Pratincole (100 pairs), Greater Sand Plover and Spur-winged Plover (40 pairs). Significant numbers of Ferruginous Duck (max. 89), White-headed Duck (max. 354) and Black-winged Stilt occur outside the breeding season. It must be noted that these breeding estimates are based on surveys carried out during the period 1989-1991: as a result of low water levels (see below) breeding numbers of most species have been considerably lower in recent years.

Additional bird information.

Other breeding birds include Great Crested Grebe, Little Egret (175 pairs), Great White Egret (50 pairs), Grey Heron, Pochard (40 pairs) and Marsh Harrier (40 pairs). Dalmatian Pelican is suspected to have bred in small numbers until 1990. Until 1986 Hotamış Sazlığı was the best locality for White-tailed Plover in Turkey, which was normally observed near Hotamış village and had bred there. With the decrease in extent of the wetland (see below) the White-tailed Plover disappeared: it has not been recorded since 1986.

CONSERVATION ISSUES

- The northern half of Hotamış Sazlığı was declared a SİT in 1992 (ironically, this part had been converted into agricultural land three years before declaration).
- In 1914 a German firm designed and built the first diversion scheme for the water that formerly flowed from Beyşehir lake (IBA no. 67, 125 km west of Hotamış) to Suğla Gölü (IBA no. 68) and then, during periods of high flow, to the Konya plain, especially Hotamış Sazlığı. The water was diverted and used to irrigate land around Çumra, west of the IBA. The scheme was subsequently expanded through the construction of the Apa reservoir on the Çarşamba stream in 1962, which is now used to store Beyşehir water. Suğla Gölü largely disappeared during this process. The Çumra irrigation scheme was further



developed especially after 1966 and its drainage drastically improved after the completion of the main drainage channel from Çumra to Tuz Gölü (cf. IBA no. 72) in 1974. The different schemes all added to the reduced input of water into Hotamış Sazlığı. In addition, water was pumped directly from the marshes and underground sources, and used to irrigate lands to the north. Hotamış Sazlığı decreased in size from ca. 16,000 ha (in 1985) to 8000 ha in 1990, and in 1996 the actual size of wet marsh was only a few hundred hectares. The marshes are now 30 km away from the village that gave its name to the site, and large areas of reedbed were burnt. DSİ (State Water Works) claims that this situation is principally the result of the lack of precipitation and that under normal conditions the wetland would measure 8000 ha. However, metereological data from 1965-1994 indicate that precipitation in the catchment decreased at most 10% during the last 30 years.

- The Rural Affairs Directorate built its own pumping station at Adakale in 1991 and planned to take 1000 ltr/sec. from the deepest parts of the marsh complex. Due to the lack of water the pumping station never became operational.
- Plans to develop the area further include a scheme to store water from the Göksu river (cf. Göksu Deltası IBA no. 73) at three reservoirs on the Göksu river headwaters and subsequently diversion of this to the Çumra area through a 17 km-long tunnel for storage at Hotamış Sazlığı. The IBA will be converted into a reservoir: embankments will be constructed around the site, increasing its storage capacity to 540 hm^3 (the surface area of the reservoir was unknown at the time of writing), and the water level will be increased by maximum 15 m above its present level. Undoubtedly all the remaining natural wetland habitat will disappear as a result of the elevated water levels, but DSİ has declared that in order to mitigate the effects it will turn the area into a park (full details were unavailable at the time of writing). No environmental impact assessment of the planned scheme has been carried out. The total area to be irrigated when the Konya-Çumra scheme has been completed is well over 300,000 ha of which 70,000 ha is currently irrigated.

Burning reedbeds at Hotamış Sazlığı, 1991 (Gernant Magnin)

BOLLUK GÖLÜ

IBA no	70
Alternative name(s)	Bulak Gölü, Acıtuz Gölü
Province(s)	Konya
District(s)	Cihanbeyli
Size	1150 ha
Coordinates	38°32'N 32°56'E
Altitude	925 m

FOR MAP SEE IBA NO. 72

SITE DESCRIPTION

Bolluk Gölü is a highly saline lake west of Tuz Gölü (IBA no. 72), rich in sodium sulphate. The surrounding area consists entirely of arid hills and dry steppic grasslands. The lake is mainly fed by surface flow with additional input from sulphurous springs in the north. A new source of water derives from the "Konya drain", which was orginally constructed to bring drainage water from agricultural areas east of Konya but through which Konya city sewage is now also drained. The Konya drain is separated from the lake by a levee and principally by-passes it, but some water is now being fed into the lake, to prevent drying out of the saltpans.

Since 1963 the Alkim firm extracts 15,000 tons/p.a. of sodium sulphate and sodium chloride from two salines (one in the north and one on in the west, occupying an area of 200 ha) which were constructed for this purpose. In 1978 the firm built a plant to the north of the lake where salt from Bolluk Gölü and Tersakan Gölü (IBA no. 71) is being processed.

BIRDS

The site qualifies for its breeding Spoonbill (30 pairs), Avocet (55 pairs), Mediterranean Gull (2250 pairs) and Gull-billed Tern (400 pairs) which breed on the islands. Greater Sand Plover breeds in small numbers around the lake.

Additional bird information.

Slender-billed Gull (1250 pairs) and Black-headed Gull (150 pairs) also breed on the islands, whilst other breeding birds at the site include Shelduck (25 pairs), Spur-winged Plover, Black-winged Stilt (20 pairs) and Redshank (25 pairs). Greater Flamingo often occur in large numbers. Slender-billed Gulls are often seen feeding along the Konya drain.

CONSERVATION ISSUES

- The site was granted SİT status in 1992.
- Probably as a result of the inflow of nutrient-rich fresh water from the Konya drain, the halophytic vegetation at the southern end of the lake, as described in former inventories, is now rapidly transforming into a lush freshwater marsh. The possible long-term effects of the input of the Konya waste water should be investigated and necessary action taken.

- The lake's hydrology is managed to suit the needs of the Alkim saltpans. This, added to possible pollution of the lake with waste from the factory, may have a negative effect on the ecology of the lake.

TERSAKAN GÖLÜ

IBA no	71
Alternative name(s)	Kaz Gölü, Gez Gölü, Tersishan Gölü, Deveci Gölü
Province(s)	Konya
District(s)	Cihanbeyli
Size	6400 ha
Coordinates	38°35'N 33°06'E
Altitude	920 m

FOR MAP SEE IBA NO. 72

SITE DESCRIPTION

A satellite lake of Tuz Gölü (IBA no. 72) and situated to the west of the latter. The lake is fed by springs, surface run-off and drains; only when the lake's water level is very high does water flow into Tuz Gölü via the main Konya drainage channel which passes just south of the lake. The lake has very high concentrations of sodium sulphate mined at the Alkim saltpans (which occupy a 500 ha area, were established in 1963 and produce 35,000 tons/p.a.) to the north of the lake. Large mudflats are found between the channel and the lake. Some small areas of freshwater marsh occur in the south-west, otherwise the lake has virtually no fringe vegetation.

The lake is surrounded by non-irrigated arable fields under cereal production. Sheep graze the fallow land, steppe and small meadows along the lake shores.

BIRDS

The site qualifies as an IBA for its breeding population of Avocet. In winter significant numbers of waterfowl (max. 20,841) occur, including White-fronted Goose (max. 14,700).

CONSERVATION ISSUES

- Tersakan Gölü was declared a SİT in 1992.
- Previously the lake was probably less saline, as one source states that it was fringed with reedbeds. No information exists on the ornithological importance of the lake before its conversion to salt production.
- Recent reports suggest that salt production is negatively affected by the intake of water from the Konya drainage channel.

TUZ GÖLÜ

IBA no	72
Alternative name(s)	Koçhisar Gölü
Province(s)	Konya, Aksaray, Ankara
District(s)	Cihanbeyli, Kulu, Eskil, Aksaray, Şereflikoçhisar
Size	260,000 ha
Coordinates	38°45'N 33°23'E
Altitude	905 m

SITE DESCRIPTION

Tuz Gölü is the second largest lake in Turkey (max. 190,000 ha). Its extent varies greatly with a maximum depth in spring of 1.5 m and most of the lake drying up in summer (except some small areas, especially a 3,500 ha area south of Şereflikoçhisar). The east-west track at the bottleneck (reinforced with stones in the 16th century) is only passable in summer. The area receives the lowest annual precipitation in Turkey, less than 400 mm/p.a. The lake is fed by two major streams, groundwater and surface water. An unnaturally constant input is the waste water which reaches the lake through the 150 km-long Konya drain (see below). Brackish marshes have formed where channels and streams enter the lake, and the lake is surrounded by (only partially irrigated) cereal fields in the north, east and west, whilst extensive seasonally-flooded salt-steppe occur, particularly to the south-west.

Tuz Gölü is extremely saline with a salt ratio of 32%. The lake bottom is covered with a 1-30 cm thick salt layer, which has given rise to a local salt industry providing 55% of all Turkish salt. On average 750,000 tons is produced annually at three (state-owned) salines covering 1200 ha.

BIRDS

Tuz Gölü holds the main Turkish breeding colony of Greater Flamingo (14,000 pairs, counted during an aerial survey in 1992) which breed on a group of islands in the southern part of the lake. Lesser Kestrel is a common breeder in villages around the lake. Avocet and Greater Sand Plover also breed. During winter White-fronted Geese (max. 12,500) occur.

CONSERVATION ISSUES

- Tuz Gölü was declared a SİT in 1992.
- The main channel (completed in 1974) which drains the entire Konya irrigation area (cf. IBA nos. 67, 68 and 69) is 150 km-long and runs north from the irrigation area by-passing two other IBAs (Bolluk Gölü [IBA no. 70] and Tersakan Gölü [IBA no. 71]) before flowing into Tuz Gölü just 10 km from the flamingo breeding islands. All untreated sewage from Konya city (ca. 1 million inhabitants) and several hundreds of industries are released into the channel. Agricultural waste which flows through the channel includes the residues of 1105 tons of pesticides and 446 tons of fertilisers used annually in the Konya basin. Industrial waste includes that from diary farms, aluminium

and copper plants, leather processing units and a LPG bottling plant. Large amounts of, amongst others, nitrogen, oil, phosphorus, sulphur and organic wastes, as well as heavy metals including borax, zinc, iron, lead, arsenic, cadmium and mercury reach the lake through the channel. During 1992, 78 hm^3 of fresh and polluted water flowed into Tuz Gölü through the channel. Prevailing currents mean that most pollutants and sediment are deposited in the southern part of the lake, and the salines have not yet reported major pollution problems. However, high water levels will eventually disperse the waste across the lake. No investigation of the effects of the input of so much extra freshwater into the saltwater lake system has been conducted, although one saline reported a declining salt concentration (from 95% to 85%). Increasing pollution from rapidly growing Konya, its expanding industries

and the increase in agricultural waste as more land in the Konya plain is irrigated, will place huge strains on Tuz Gölü.

- Exacerbating the effects of the pollution is the reduced input of clean water as a result of the construction of the 165.8 hm^3 Mamasın reservoir (completed in 1962) and the 8.5 hm^3 Cihanbeyli reservoir (completed in 1992) on the main inflows.
- Due to poor soils and a lack of water, no immediate plans for large scale intensification of agriculture in the direct surroundings of Tuz Gölü exist. However, DSİ (State Water Works) has drained 380 ha of land near Gölyazı, and flood protection schemes have been implemented near Tuzyaka in the north-west and elsewhere. Eşmekaya Sazlığı (IBA no. 66) just south of Tuz Gölü is directly threatened by a DSİ development scheme. Even without irrigation and drainage schemes, large tracts of (salt) steppe have been converted by individual farmers to arable land, principally for cereal production, over the years. To preserve the remaining steppe areas around Tuz Gölü, it is recommended that further agricultural intensification is immediately halted.
- Plans exist to triple the size of the salines, increasing their output to three million tons per annum.

Greater Flamingo breeding islands on Tuz Gölü (Gernant Magnin)

GÖKSU DELTASI

IBA no	73
Province(s)	İçel
District(s)	Silifke
Size	14,480 ha
Coordinates	36°18'N 33°58'E
Altitude	sea level

SITE DESCRIPTION

A delta formed where the Göksu river (catchment 10,069 km²) flows into the Mediterranean. Most of the delta is now intensively used by man and consists

of irrigated and non-irrigated agricultural land, settlements, wetlands, dunes and beaches (total 2000 ha). Wetlands include Akgöl lake, a 1245 ha freshwater lake (max. 40 cm deep), Paradeniz lake, a 402 ha lagoon (max. 1.75 m deep), a number of smaller shallow and principally seasonal lakes totalling 540 ha, and several thousands of hectares of saltmarsh surrounding the major lakes. Akgöl lake was formerly a seasonal salt lake where salt was mined (until 1945), but after irrigation of the delta began in the early 1960s it has become a permanent eutrophic freshwater lake with a very rich marsh vegetation (including extensive *Potamogeton, Scirpus, Typha* and *Phragmites* beds), especially in the north. Paradeniz is virtually barren, whilst the dunes have been identified as of particular conservation interest due to to their intact and dynamic character. The 35 km of beaches form one of the most important nesting areas in Turkey for two species of sea turtle, Loggerhead Turtle *Caretta caretta* and Green Turtle *Chelonia mydas*. As a result of counts in 1992, the total number of nests is estimated at 89 and 14 respectively.

Several decades ago the ca. 1200 ha Tekfur marshes in the eastern half of the delta were reclaimed for agricultural purposes, and large parts of the delta here have been built up with thousands of summer houses, principally for the domestic market. In the western half, tourist development is concentrated around Denizkent and in the town of Taşucu.

Over 80% of the 14,500 people living in the delta work in agriculture. A total of 10,180 ha of the delta is used for agriculture of which 3280 ha is saltmarsh frequently used for rice production. Citrus orchards dominate the higher areas in the delta, whilst wheat production occupies 2790 ha in the lower parts. Makeshift greenhouses are used to grow tomatoes, whilst strawberries and flowers are increasingly grown.

Fishing is a major economic activity involving 140 fishermen and is practised with traditional techniques such as traps, lines and nets. The principal fishing areas are the coastal waters, the lagoons and lakes, the river, drainage canals and inland ponds. A total of 56 tons was caught during 1991 and 30 tons in Akgöl lake alone in 1995.

The Göksu river is one of the few "intact" rivers in Turkey, with only a single small hydro-power station on one of its tributaries.

BIRDS

The Göksu Deltası is indisputably one of the most intensively studied IBAs in Turkey, and 332 bird species have been recorded, of which 70 are proven to breed and another 20 suspected to do so. With regards to globally threatened species, the site qualifies for the significant numbers of Pygmy Cormorant (max. 180) and Dalmatian Pelican (max. 56) that occur outside the breeding season, its breeding populations of Marbled Teal (50 pairs, the largest known in Turkey) and Ferruginous Duck (30 pairs), and its wintering populations of Greater Spotted Eagle (max. 20) and Imperial Eagle (max. 6). In addition, significant breeding populations occur of Little Bittern (25 pairs), Night Heron (150 pairs), Squacco Heron (70 pairs), Purple Heron (50 pairs), Black Francolin (50 pairs), Purple Gallinule (300 pairs), Stone Curlew (60 pairs), Collared Pratincole (300 pairs), Kentish Plover (200 pairs), Spur-winged Plover (300

pairs) and Little Tern (150 pairs). During migration large numbers of Glossy Ibis (max. 2500) and White Stork (max. 22,000) stop-over, whilst large numbers of waterfowl winter (max. 91,097), including Greylag Goose (max. 1450), Wigeon (max. 11,648), Teal (max. 14,952), Shoveler (max. 4,325) and Coot (max. 36,240).

Additional bird information.
Glossy Ibis (10 pairs), Great White Egret (5 pairs), Little Egret (15 pairs), Grey Heron (10 pairs), Cattle Egret (25 pairs), Little Crake and White-breasted Kingfisher (10 pairs) also breed. Migrant White Pelicans occur in large numbers, and there is a small wintering population of Crane (max. 400). Several species of raptor winter in the delta, including White-tailed Eagle. Audouin's Gulls are regularly seen near Tasucu harbour.

CONSERVATION ISSUES

- In 1989 the main wetland areas were declared a Permanent Wildlife Reserve (4350 ha). The Göksu Deltası was declared a Specially Protected Area (23,600 ha, including offshore areas) in 1990 and ultimate planning control therefore lies with the Authority for the Protection of Special Areas (APSA), Ministry of Environment. A fully equipped APSA office was opened in the delta during 1993, which is currently in the process of drawing up a detailed management plan for the delta. In 1991 APSA declared the main wetland area a Sensitive Zone and in 1994 the Göksu Deltası was declared one of the first five Turkish Ramsar sites, totalling 8650 ha. During 1996 the area was also declared a SİT: this (theoratically) makes the Göksu Deltası one of the best protected sites in Turkey.
- Phase I of the DSİ (State Water Works) irrigation scheme was completed in 1972 and now irrigate and drains 5500 ha of land above 2 m a.s.l. An extension of this scheme, known as Phase II, includes the draining and irrigation of an additional 4060 ha below 2 m a.s.l., and improved drainage of existing farmland. Land below 2 m a.s.l. is already widely utilised, often with practical assistance from DSİ, even within the SPA sensitive zone, and large areas of dune and marsh have been illegally converted to agriculture. Phase II and the associated intensification of agriculture, especially the further increase in rice cultivation, is likely to conflict with the conservation interests of the delta. The conversion of marsh and other natural habitats into arable land, increased input of nutrients, agro-chemicals and sediments, as well as increased human presence, the loss of pasture and consequent changes in grazing patterns, and the hitherto uninvestigated effects of changes in the hydrological regime, may all adversely affect the wetland's ecosystems. DSİ did not include Phase II in its 1996 workplan, but it is unclear whether it has definitely shelved the project.
- To compensate for the shortcomings of the Konya-Çumra irrigation scheme (cf. Hotamış Sazlığı IBA no. 69), DSİ plans to divert Göksu river water to the Konya plain. Three (both for irrigation and hydro-power production) dams are planned (Bozkır, Bağbaşı and Avşar) which in total will store 917 hm^3 and use 543 hm^3/p.a. of Göksu river water. No environmental impact assessment

studies have been carried out for these projects. The construction of a 17 km-long tunnel that will redirect water north was put to tender in April 1996.

- The largest development planned in the region is the construction of the USD 550 million Kayraktepe dam, 10 km upstream of Silifke. The dam will generate 991 GWh/p.a. The reservoir behind the dam will be 150 km long and ca. 10,000 people will be forced to relocate. A major impact of the dam will be the total cessation of sediment inputs to the delta and the coastal zone; in the long term this will possibly lead to coastal erosion and subsequent loss of agricultural land in the delta. Fisheries will be seriously affected, as the river will cease to carry nutrients to the coastal zone. No satisfactory environmental assessment has thus far been undertaken. A 1994 study (co-sponsored by DHKD) demonstrated that the project is economically unfeasible once external costs (environmental and social) are accounted for. The World Bank, originally the main potential sponsor of the dam project, has withdrawn its funding based on the low benefit/cost ratio of the project, and because of environmental and social concerns. The Turkish government is presently seeking funding from alternative sources and is re-designing the dam project including proposals with lower dam walls. In addition to the Kayraktepe project, eight other hydro-power projects (either dams or run-of-the-river hydro-power plants) are planned on the Göksu river or its tributaries.
- During 1996 there were attempts to pass legislation that would allow the "selling" of river water. Four rivers were mentioned as candidates, including the Göksu river, and negotiations commenced to sell water from the Manavgat river (near Antalya) to Israel.
- The continuous input of nutrient-rich water, added to the silting up of the lake as a result of erosion and the transportation of silts with drainage water, may eventually lead to Akgöl being entirely covered by vegetation.
- The importance of fisheries has declined during the last decade. Illegal trawling in the coastal waters is common. A projected large shrimp-farm that would have occupied 30 ha on the İncekum sandspit was halted in 1989 following campaigning by DHKD. Presently the Ministry of Agriculture is investigating the possibilities of improving the fisheries in the delta.
- The SEKA paper factory does not directly affect the wetland system but it is feared that its effluents (discharged in the sea near the İncekum sandspit) may adversely affect fisheries.
- An airport has been planned near Boğazağzı, but the airport and associated infrastructure (totalling 60 ha) are likely to conflict with conservation interests, as the area is of great importance for roosting birds. No environmental impact assessment has been carried out. At the time of writing plans for the airport had been shelved.
- In 1989 the construction of a large housing complex between Akgöl lake and Paradeniz lake was halted after campaigning by DHKD, but seven years later the owners of the complex are still trying to gain building permission. At present over 6000 summer houses (2000 of which are in Denizkent) and 19 holiday complexes have been constructed in the delta, and 25% of the coastline is now built-up. Nevertheless, the construction of summer houses is continuing, at the expense of valuable agricultural and natural areas.
- Plans to construct a 7 ha botanical garden east of the river mouth have met

with resistance from conservationists as it would be built on the site of exceptional riverine habitat and a possible breeding site of the globally threatened Marbled Teal.

- The DHKD Göksu Delta Project was launched in December 1990 and aimed to develop an integrated management plan. A protocol between APSA and DHKD formalised the project in September 1991. The project has been funded and supported by the Netherlands Ministry of Agriculture, Nature Management and Fisheries, Tour du Valat Biological Station (France), BirdLife International and the GEF Small Grants Programme: at present it is funded by the European Commission, DGI. In October 1992 an international seminar was organised in the delta, with additional funding from the Turkish Ministry of Environment, the World Bank, the Ramsar Bureau, WWF and local authorities. A feasibility report was presented and discussed at the meeting, and the proceedings of the seminar were published in March 1993. In 1996 the DHKD project had three full-time staff, a Nature Information Centre (run in conjunction with a local society) and a fully equipped working office.

Over-use of water resources, mainly for irrigation, has led to large-scale loss of wetland habitat across Turkey (Gernant Magnin)

AYDINCIK ADALARI

IBA no 74
Province(s) İçel
District(s) Aydıncık
Size 2 ha
Coordinates 36°09'N 33°21'E
Altitude 0-30 m

NO MAP

SITE DESCRIPTION

Two small islands near Aydıncık on the Mediterranean coast. The larger island is up to 30 m high and has steep barren cliffs on the east and west side, whilst the north and south sides are gently sloping and vegetated. The smaller island is up to 5 m high and fully vegetated.

BIRDS

The site qualifies for its breeding population (on the small island) of Audouin's Gull, with 28 and 30 pairs in 1974 and 1987 respectively. In 1996 only 6 pairs bred. The recent decline is presumably a result of the increase of the Yellow-legged Gull breeding population on the small island (none in 1974, 40 pairs in 1996).

Additional bird information.
The larger island holds 200 pairs of Yellow-legged Gull.

CONSERVATION ISSUES

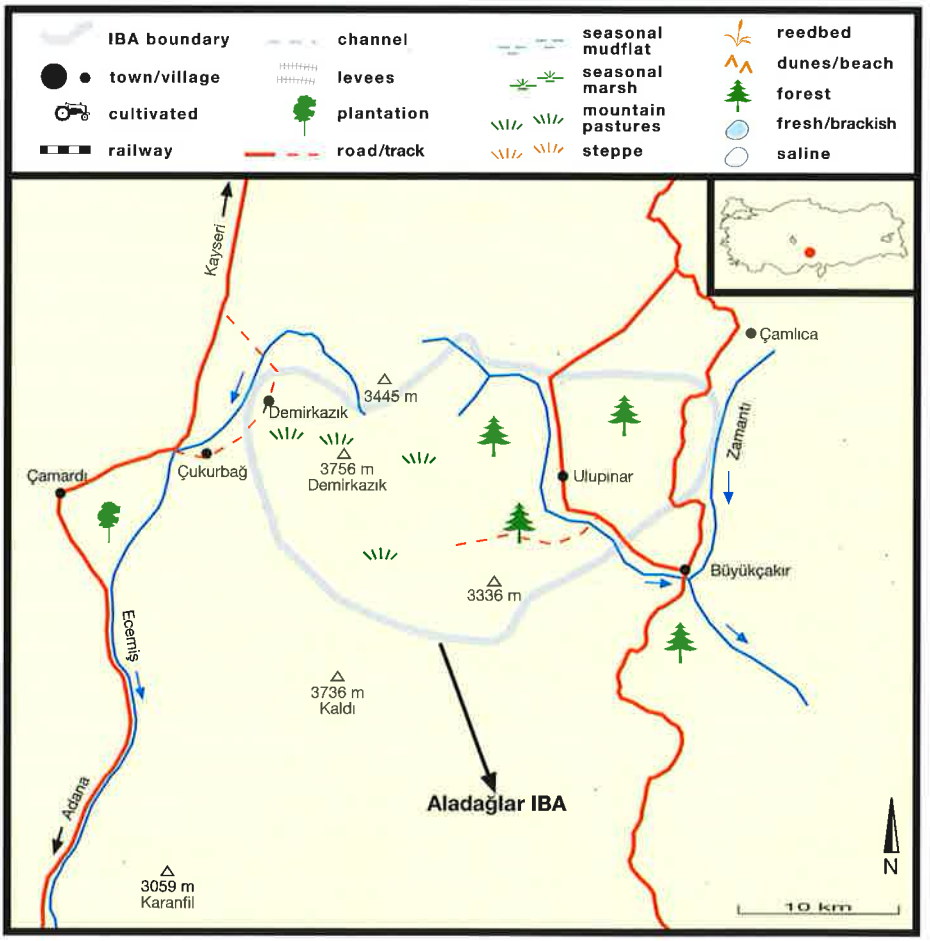
- The site has no protection status.
- Goats are put on the islands during winter to graze until April. Fishermen and shepherds land frequently on the island creating disturbance. The collection of gull eggs was considered to be a major threat in the past but recent reports indicate that this practice has now stopped.

ALADAĞLAR

IBA no	75
Province(s)	Adana, Niğde, Kayseri
District(s)	Aladağ, Çamardı, Yahyalı
Size	54,514 ha
Coordinates	37°50'N 35°09'E
Altitude	1250-3756 m

SITE DESCRIPTION

An extensive mountainous area situated in the eastern part of the Taurus mountain range. The west side of the IBA is barren and rocky, whilst the eastern side is covered with forests (principally consisting of *Pinus nigra, Abies cilicia, Cedrus libani* and *Juniperus excelsa).* Alpine zones with pastures and exposed stony fell occupy the higher parts of the site. The subalpine zone is characterised by thorn-cushion vegetation.



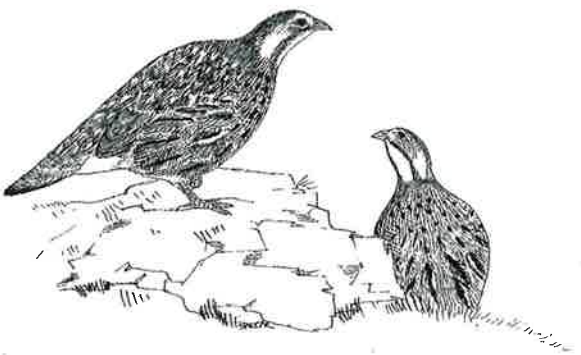
The site is popular with trekkers and mountain climbers.

BIRDS

The site qualifies for its breeding population of Lammergeier (5 pairs), Griffon Vulture (10 pairs), Golden Eagle (4 pairs) and Caspian Snowcock.

CONSERVATION ISSUES

- The site was declared a National Park in 1995 (54,514 ha) and the IBA follows the National Park boundaries. Two Permanent Wildlife Reserves (totalling 66,854 ha, declared in 1978 and 1988) overlap largely with the IBA.



Caspian Snowcocks (Sancar Barış)

INTRODUCTION TO THE ÇUKUROVA DELTA

Due to its strategic position at the crossroads of the Middle East and Anatolia, the Çukurova region has been important since early times. The Çukurova delta started to form 2000 years ago, when the three main rivers (Berdan, Seyhan and Ceyhan) began to silt up the bays, leaving former seaport cities like Tarsus far from the sea. The rivers frequently altered their courses forming a huge plain with large lagoons, marshes, swamps and meanders. Historically, only a few settlements were established in the delta, as it was known to be an inhospitable place subject to frequent flooding and plagued by malaria.

Development of the delta and its fertile soils started in the 1830s when Armenian entrepreneurs and Egyptian labour turned the area into a major cotton-producing area. During the 1950s, as a result of the Marshall Plan and a boom in cotton prices (a result of the Korean war), development of the area accelerated: the three rivers were canalised, the Seyhan dam north of Adana constructed and a large port built at Mersin. DSİ (State Water Works) developed three large projects: the Seyhan, Ceyhan and Berdan irrigation projects. An additional reason for the rapid implementation of these schemes was to eradicate malaria. The total area covered by the DSİ irrigation projects is ca. 425,000 ha, of which ca. 235,000 ha is in the lower plain between the sea and the Mersin-Adana-Ceyhan highway. The irrigation of 261,000 ha has been completed to date.

Many tens of thousands of hectares of wetland (mostly seasonal) disappeared as a result of the irrigation projects. Although much of it vanished without trace (exact locations and natural importance have never been described), a few wetlands were known to be of ornithological importance. These included three wetlands south of Tarsus, (the Regma, Akçasaz and Aynaz marshes), which would have qualified today as Wetlands of International Importance (Ramsar) for

their breeding Marbled Teal (a globally threatened species) and large number of wintering waterfowl (cf. appendix 7).

In only a few decades the character of the Çukurova plain has been dramatically altered. Today it is one of the most heavily populated regions of Turkey and subject to intensive agriculture. The bulk of the Turkish cotton crop is produced here (although it is planned to transfer production to the GAP region in south-east Turkey), with rice, melon, strawberry, cereals and citrus fruits all being important subsidiary crops. Cotton is still harvested by hand and there has been a large influx of permanent and seasonal workers mainly from south-eastern Turkey. These migrant workers have often started their own small farms in unoccupied parts of the delta with the result that human pressure has increased enormously. Crop production, irrigated or non-irrigated, is now practised on virtually all available land, including the shores of the lagoons. Seasonally flooded lands are also cultivated after they dry up in summer. Further agricultural intensification is planned and more damage to the remaining natural areas seems unavoidable: the drainage of Yemişli lake (a part of Akyatan Gölü) during 1995 and 1996 is a poignant example of the relentless demand for arable land. Part of the overall development scheme sought to stabilise the dunes which form the border between the delta and the sea in many parts: 3687 ha have been forested since 1955.

In the 1980s industrial development of the region accelerated. Today up to 10,000 ha of former agricultural land in the western half of the delta has been built on by industries and associated urban areas.

Today, a narrow strip between the arable land and the sea holds the remnants of the once extensive wetlands of the Çukurova delta. This comprises lagoons, marshes, mudflats, dunes and beaches. The area is divided into four IBAs: Tuzla, Akyatan, Ağyatan and Yumurtalık.

TUZLA GÖLÜ

IBA no	76
Province(s)	Adana
District(s)	Karataş
Size	2800 ha
Coordinates	36°42'N 35°03'E
Altitude	sea level

FOR MAP SEE IBA NO. 79

SITE DESCRIPTION

Tuzla Gölü (max. 800 ha) is the westernmost lake in the Çukurova delta, situated east of the Seyhan river mouth. The lake is brackish for most of the year but becomes more fresh (and the water level rises) as a result of the winter rains. Mudflats and saltmarsh occur, especially in the eastern part of the lake. A low and narrow line of dunes separates the lake from the sea. Along the lake's northern shore a 500 m-wide strip of non-irrigated arable land and meadows is found. Small numbers of cattle graze around the lake. The lake is bisected in the east by a road that provides access to the beach where basic tourist facilities are found. It is connected to the sea through a short channel.
There is a privately owned fish trap at the sea opening: 30 tons were caught in 1995 (a recent report suggested that Tuzla Gölü is the only site in the Çukurova delta where fisheries have not declined in recent years).
The IBA includes the complex of densely vegetated freshwater marshes, saltmarshes, and natural ponds formed by parts of the former river, south-east of the lake. In summer, water is pumped from some of the pools to irrigate the arable areas. Large parts of the wetland dry out completely during summer.

BIRDS

The site qualifies as an IBA for its breeding populations of Marbled Teal (30 pairs), Black Francolin (5 pairs), Stone Curlew (20 pairs), Kentish Plover (1000 pairs), Spur-winged Plover (50 pairs) and Little Tern (200 pairs). Wintering waterfowl (max. 28,901) include Teal (max. 13,000).

Additional bird information.
Other breeding species include Black-winged Stilt (10 pairs) and Avocet (5 pairs). A 1990 study by WIWO (Netherlands) revealed that during spring large numbers of waders use Tuzla Gölü as a stop-over but that birds only remain for relatively short periods due to the poor feeding conditions.

CONSERVATION ISSUES

- The whole of Tuzla Gölü IBA lies within a 5769 ha Permanent Wildlife Reserve declared in 1995. A management plan for the site was completed and enforced by the Ministry of Public Works in 1996. The plan regulates all land-use in the delta, and is especially important for the restriction it places on the construction of holiday homes.

- Until the construction of levees in 1980 the lake was fed by Seyhan river water during periods of high water levels. 10,000 ha north of the lake falls within the fourth phase of the DSİ (State Water Works) Lower Seyhan Irrigation project. Drainage water will largely be led to the sea via the YD4 drainage channel but two subdrains will flow into the lake.
- Large areas of the state-owned dunes north of the IBA (and to a lesser extent the dunes south-west of it) have been flattened and converted into arable land by local farmers, in order to grow drought-resistant melons: groundwater is pumped up for irrigation. This illegal development has been noticed by the authorities but no action has been taken.
- The impact of the road which bisects the lake has not been established. The number of holiday facilities on the beach should not be allowed to increase or expand, and a management plan to accomodate the thousands of beach visitors in summer should aim to reduce the amount of rubbish scattered throughout the area and damage (in the form of erosion) to the dune systems.
- The two subdrains that will flow into the lake will reduce salinity and it is planned to increase the annual fish catch to 110 tons. No environmental impact assessment has been carried out.
- As a result of immigration from other regions in Turkey, the populations of the existing settlements around Tuzla are growing at an alarming rate, and new permanent and temporary settlements spring up everywhere, increasing the pressure on the natural areas.

AKYATAN GÖLÜ

IBA no	77
Province(s)	Adana
District(s)	Karataş
Size	14,000 ha
Coordinates	36°37'N 35°16'E
Altitude	sea level

FOR MAP SEE IBA NO. 79

SITE DESCRIPTION

Akyatan Gölü, a former oxbow of the Seyhan river, is the largest lagoon in the Çukurova delta and fed by surface run-off, two streams and drainage water; there is one outlet to the sea. It measures a maximum of 7500 ha and is maximum 4 m deep. During summer the lake reduces significantly in size and extensive mudflats appear, especially at the western end. It is principally a salt lake, but its salinity fluctuates greatly as a result of the large amounts of run-off which enter during the wet season, and the input of drainage water during the irrigation season. One major channel (the YD3 channel, built in 1968) drains the run-off of 60,000 ha agricultural land directly into the lake.
A narrow belt of reed and rush is found along the lake shores due to freshwater seepage. There are several freshwater ponds in the west where the IBA borders Tuzla Gölü (IBA no. 76).
Between the lake and the beach is an extensive area of dunes but substantial areas have been severely modified following the planting of *Acacia, Eucalyptus* and *Pinus* (for dune stabilisation purposes). Large dune hollows support small areas of dune marsh vegetation. The pristine sand beaches of Akyatan are 22 km long and hold a major proportion of the remaining nesting population of the Green Turtle *Chelonia mydas* in the Mediterranean with 500 nests counted along a 12 km stretch during 1994; 25 nests of the Loggerhead Turtle *Caretta caretta* were counted during the same survey.

The lake is surrounded by arable land. Cotton is the principal crop but other important crops include cereals, fruit, vegetables and rice. Irrigation water comes from the Seyhan dam on the Seyhan river (north of Adana). Recently, strawberry, cucumber and melon fields have started to appear in the dune slack areas; these fields are irrigated with groundwater.

This IBA includes Yemişli lake in the north-east. This lake is seasonal (fed by run-off) and reaches a maximum of 800 ha during wet winters: in summer it is partly covered by reed and farming is then practised on the higher parts. During 1995, drainage activities at Yemişli lake were intensified by DSİ (State Water Works) and large drainage channels now transect the lake; after heavy rain in spring 1996 the site was virtually dry and the lake may now be permanently drained.

Traditional fishery is one of the major economic activities in Akyatan Gölü. The fish trap installation at the outlet of the lagoon is privately owned and run by fishermen from Karataş. Fish fry is collected for use in fish farms.

BIRDS

The site qualifies for its breeding populations of Marbled Teal (5 pairs), Black Francolin (75 pairs), Purple Gallinule, Stone Curlew, Kentish Plover, Spur-winged Plover and Little Tern (100 pairs). Large numbers of waterfowl winter (max. 85,054) including significant numbers of Greater Flamingo (max. 9,579), Shelduck (max. 854), Wigeon (max. 13,900), Pochard (max. 16,801), White-headed Duck (max. 978) and Coot (max. 46,000). During migration the site is important for Pygmy Cormorant and especially waders, including Avocet (max. 1,589), Kentish Plover (max. 3,918) and Little Stint (max. 5,165).

Additional bird information.
Yemişli lake formerly possessed the only known breeding population of Purple Gallinule in Turkey outside the Göksu Deltası (IBA no. 73): following the *de facto* destruction of Yemişli lake the future of this rare bird looks bleak. Also large numbers of Glossy Ibis, White Stork, duck and waders formerly occurred in Yemişli during the spring migration season.
The dunes between Akyatan Gölü and the sea provide ample breeding and staging habitat for warblers. White-breasted Kingfisher breeds, whilst Pied Kingfisher overwinters.
A 1990 study by WIWO (Netherlands) revealed that during spring large numbers of waders use Akyatan Gölü as a stop-over but that individual birds stay for relatively short periods due to the poor feeding conditions.

CONSERVATION ISSUES

- Akyatan Gölü was declared a Permanent Wildlife Reserve (11,244 ha) in 1987. However implementation is insufficient and poaching is frequently reported. A management plan for the site was completed and enforced by the Ministry of Public Works in 1996. The plan regulates all land-use in the delta, and is especially important for the restriction it places on the construction of holiday homes.
- The fourth phase (which started in 1985) of the DSİ Lower Seyhan Irrigation Project) envisages the conversion of an additional 35,000 ha of land between the Seyhan and Ceyhan rivers, including that directly abutting Akyatan Gölü in the north (where 30% of the state-owned land cannot be used due to high water levels; when drainage is completed the land will be distributed amongst private farmers). A number of marsh and temporarily flooded areas will be drained during the course of this project: Yemişli lake was effectively drained during 1995 and 1996 by draining it into the Acıkulak stream, the easternmost extension of Akyatan Gölü. The YD3 canal carries a large proportion of the agricultural waste of the area into the lake, as well as waste from factories south of Adana and sediments. Recognising this problem, DSİ constructed a by-pass in 1974 and YD3 water can now be channelled directly into the sea when the drainage water is extremely polluted (principally in summer); however, farmers take water illegally from the by-pass for irrigation so that eventually it ends up in the lake. In addition to polluted water from YD3, surrounding villages discharge into the lake. Possibly as a

result of the pollution, dystrophic crises have occurred in recent years.

- Further agricultural intensification seems hard to justify but will duly increase pressure on the remaining natural habitats. Significant are the findings of a World Bank mission in 1993 that reviewed the DSİ project and questioned "the wisdom of proceeding with this phase", noting that "the environmental impacts of the Lower Seyhan IV Project were not considered" and suggesting "to preserve what natural habitat remains, and look at alternative ways to provide economic benefits to the local population".
- The rapid industrialisation of Adana has forced farmers to settle in less fertile areas in the region, such as those around Akyatan Gölü. In addition, the recent enormous influx of "seasonal" workers (mainly to pick cotton) and their families, especially from south-east Turkey, has resulted in the establishment of small permanent settlements throughout the area. Areas between the lake and the beach are also being rapidly colonised.
- The recent appearance of strawberry and melon fields in the dunes (the dunes are often flattened with machines first) is unplanned and the extraction of groundwater for their irrigation could result in the intrusion of sea water.
- A new large airport (to replace the existing Adana airport) is to be built soon, and the site considered most suitable is the former Yemişli lake and the area north of it.
- There are several tourism developments planned for the Karataş region, including an extensive series of holiday home complexes. Building development cannot expand westward into the IBA as long as no bridge is constructed over the outlet. At the western end of the IBA, a complex of 36 holiday homes (Doktorlar Sitesi) was completed in 1995 and in summer there is a large camp site on the beach. More development is planned and allegedly a number of governmental institutions and universities plan to build holiday home complexes. To preserve this large stretch of intact beach, it is recommended that no development of any kind is allowed in the coastal area of this IBA and of the adjacent Tuzla Gölü IBA.
- A three-storey "birdwatching hide" was constructed on the south side of the lake by the Karataş and Adana authorities. The height of the building and the planned construction of improved access roads and connection to the electricity network, seriously threaten this otherwise undisturbed part of Akyatan Gölü, as other developments may also be attracted to the area.
- Fish catches have decreased from ca. 500 tons/p.a. 25 years ago to 60 tons in 1995. Some fish ponds have been excavated next to the fish trap installation, but are reported to be unsuccessful so far. The Ministry of Agriculture plans to improve the lagoon fisheries.

AĞYATAN GÖLÜ

IBA no	78
Alternative name(s)	Ağyayan Gölü, Akyayan Gölü
Province(s)	Adana
District(s)	Karataş
Size	2200 ha
Coordinates	36°36'N 35°31'E
Altitude	sea level

FOR MAP SEE IBA NO. 79

SITE DESCRIPTION

A lagoon (1130 ha) west of the Ceyhan river mouth, largely fed by ground water, but augmented by river water during periods of high flood. The lake reaches a maximum depth of 3 m and is connected to the sea by a narrow strait called Hurma Boğazı. Extensive grasslands are found to the north of the lake whilst elsewhere small grassy plains have developed where freshwater prevails. The water level fluctuates to a lesser extent than the other lagoons in the Çukurova delta, resulting in smaller areas of mudflat and salt marsh; the latter are mainly found along the western shores. High dunes separate the lagoon from the sea. At its outlet is a traditional fish trap installation operated by a cooperative: 10 tons were caught during 1995.

BIRDS

The site is especially important for the large number of waterfowl, with 35,579 birds present in winter 1992, and Coot, Wigeon and White-headed Duck (max. 191) overwintering in significant numbers. Ağyatan Gölü further qualifies for its breeding populations of Black Francolin, Kentish Plover, Spur-winged Plover and Little Tern, and for its location on a major flyway for migratory White Storks (max. 12,439).

CONSERVATION ISSUES

- The site has no protection status. A management plan for the site was completed and enforced by the Ministry of Public Works in 1996. The plan regulates all land-use in the delta, and is especially important for the restriction it places on the construction of holiday homes.
- Land north of Ağyatan Gölü will be irrigated as part of the Lower Seyhan Irrigation Project (cf. Akyatan Gölü IBA no. 77). Drainage water from this project will flow to the sea via an existing drainage channel which passes just west from the lake.

YUMURTALIK LAGÜNLERİ

IBA no	79
Province(s)	Adana
District(s)	Yumurtalık
Size	16,430 ha
Coordinates	36°44'N 35°41'E
Altitude	sea level

SITE DESCRIPTION

A huge complex of lagoons, salt and freshwater marshes, tidal mudflats, pastures, reedbeds, dunes and pine forest, situated between the Ceyhan river mouth and Yumurtalık bay. The major wetlands are: Çamlik (or Yumurtalık) lagoon, Yelkoma lake (1150 ha), Ömer lake (350 ha), Yapı lake (300 ha) and Darboğaz lake (380 ha). The area is connected to the sea via several large inlets and has an irregular coastline, unlike the other wetland complexes in the Çukurova delta; the former Ceyhan riverbed runs through the IBA. Yelkoma lake (consisting of Avcıali and Esemen lakes) is a shallow lagoon surrounded by vast salt marshes. In late spring and summer the lagoon partly dries out, leaving large mudflats, especially in the north. Narrow reedbeds occur where freshwater from the dunes reaches the surface. Çamlık lagoon, Ömer lake, Yapı lake, Darboğaz lake and the smaller Kaldırım lake together form a vast complex of lagoons surrounded by saltmarsh and mudflats and during high water levels in winter form one large lake. Between Ömer lake and Çamlık lagoon is a peninsula with 59 ha of natural *Pinus halepensis* forest, one of the few such areas in Turkey. The saltmarshes surrounding the Yumurtalık Lagünleri have been converted into arable land in places.

There are extensive meadows in the western part of the IBA where large numbers of cattle graze. Fish traps are operated at Yelkoma lagoon bottleneck, the former Ceyhan river mouth and the Çamlık lagoon outflow into Yumurtalık bay (a 1300 m-long reed barrier). For 1995 a total catch of 43 tons was reported by the fishing cooperatives. Fish fry is also collected.

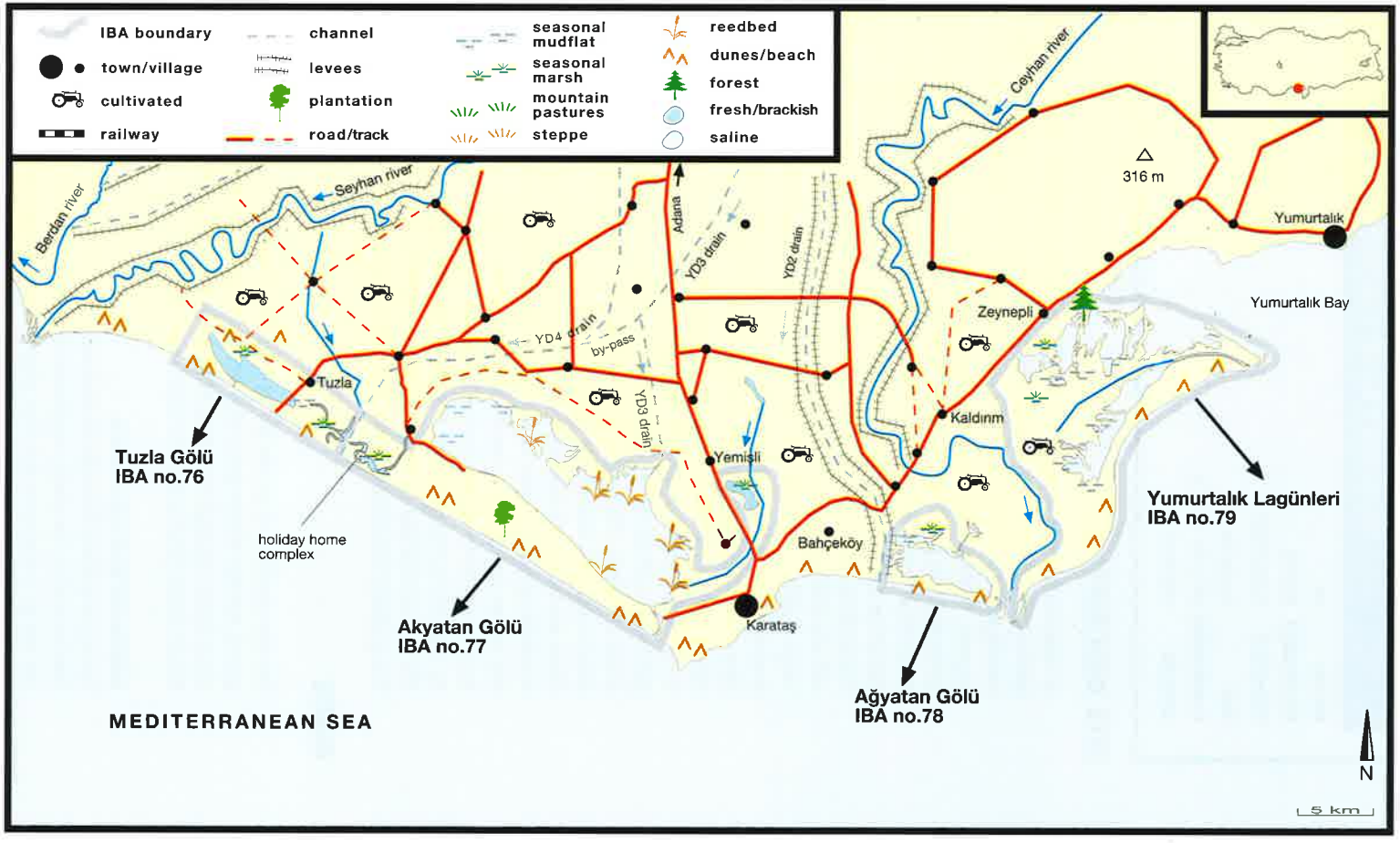
The Yumurtalık bay is the only known wintering area in the Mediterranean of the globally threatened Green Turtle *Chelonia mydas*.

BIRDS

The site qualifies as an IBA for its breeding populations of Black Francolin (5 pairs), Kentish Plover and Little Tern. During winter large numbers of waterfowl occur (max. 35,284) including Wigeon (max. 7189), Avocet (max. 440), Kentish Plover (max. 805) and Little Stint (max. 2200).

Additional bird information.

Spring migration through the area was studied in detail during 1987 by WIWO (Netherlands). The study confirmed that many tens of thousands of waders use the site as a stop-over but that, due to the relatively poor benthic fauna (and thus poor food availability), birds only use the area for very short periods.


IBA boundary
town/village
cultivated
railway
channel
levees
plantation
road/track
seasonal mudflat
seasonal marsh
mountain pastures
steppe
reedbed
dunes/beach
forest
fresh/brackish
saline
Ceyhan river
316 m
Yumurtalık
Yumurtalık Bay
Zeynepli
Kaldırım
Berdan river
Seyhan river
Adana
YD3 drain
YD2 drain
YD4 drain
by-pass
YD3 drain
Tuzla
Yemişli
Bahçeköy
Karataş
holiday home complex
Tuzla Gölü IBA no.76
Akyatan Gölü IBA no.77
Ağyatan Gölü IBA no.78
Yumurtalık Lagünleri IBA no.79
MEDITERRANEAN SEA
N
5 km

CONSERVATION ISSUES

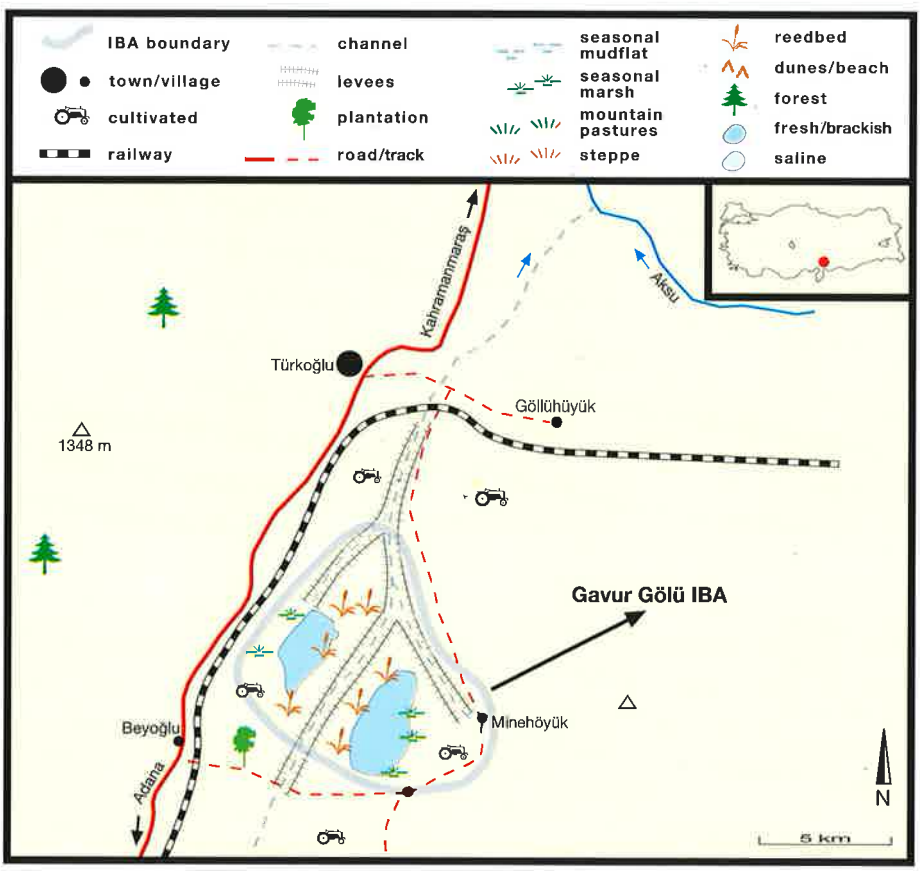
- The Yumurtalık Lagünleri were granted Nature Reserve status in 1994. The reserve measures 16,430 ha and the IBA follows the reserve boundaries. In 1993 the area was declared a SİT. A management plan for the site was completed and enforced by the Ministry of Public Works in 1996. The plan regulates all land-use in the delta, and is especially important for the restriction it places on the construction of holiday homes.
- DSİ (State Water Works) plans to irrigate 15,000 ha north and west of the lagoons. Another, partially completed, irrigation project aims to irrigate 9890 ha to the north and north-east of the IBA. All projects include provisions to prevent drainage water entering the IBA, yet no environmental impact study has been undertaken to study the effect of the reduced flow of surface water into the wetland.
- The Yumurtalık industrial region east of the IBA includes heavy metal plants and tanker filling facilities for oil from the Iraq pipeline. A large new port is planned to allow filling of tankers with oil from the proposed Central Asian pipeline but plans for a thermal power plant have been shelved indefinitely. Further east, across the İskenderun bay, are vast complexes of refineries, heavy metal plants and cement factories. No major pollution disaster (e.g. oil spills) has occurred to date but with prevailing westerly currents in the İskenderun bay industrial accidents could have catastrophic results.
- Unsustainable fishing practices are reported to have resulted in a drastic decline in fish stocks. A 1996 DHKD study revealed that hundreds of sea turtles are accidentally caught and subsequently killed by trawlers in the Yumurtalık bay.

GAVUR GÖLÜ

IBA no	80
Alternative name(s)	Türkoğlu Sazlığı, Büyükgöl & Küçükgöl
Province(s)	Kahramanmaraş
District(s)	Türkoğlu
Size	1500 ha
Coordinates	37°18'N 36°51'E
Altitude	490 m

SITE DESCRIPTION

One of southern Turkey's former outstanding wetlands lying just south of Türkoğlu in the Sağlık plain. Today the site comprises a complex of fields and small reedbeds inundated during the winter but largely dry and cultivated during the summer months. A levee runs north-south across the site, bisecting the area. Reedbeds are found along this bank. Ricefields are located adjacent to the north-east part of the lake. A railway and a motorway pass along its west side. The area is principally fed by spring water and some streams, but most water is now directly diverted to the Aksu river in the north.



BIRDS

The site qualifies for the significant numbers of Pygmy Cormorant (max. 121) that occur on passage.

Additional bird information.
Gavur Gölü, together with two other drained wetlands (Emen and Amik lake in the south) is at the extreme northern end of the African Rift Valley. Before drainage, the site held enormous numbers of waterfowl, with 900,000 birds counted in January 1968 and 101,100 birds in January 1969, indicative of its crucial position on waterfowl flyways.

CONSERVATION ISSUES

- The site has no protection status.
- The reclamation of Gavur Gölü was completed in 1966 by draining the area on the Aksu stream, a tributary of the Ceyhan river. Before drainage the site consisted of two lakes (Büyükgöl and Küçükgöl) with extensive reedbeds and marshland between and around them: in total they occupied 7125 ha. It was reportedly very rich in fish, and reed harvesting was an important economic activity. After the area was drained, farmers burnt and excavated the exposed peatland as a consequence of which part of the former lakes reflooded.
- Within its current Ceyhan Menzelet Scheme (total irrigated area 178,000 ha), DSİ (State Water Works) plans to complete reclamation and irrigation of the Sağlık plain (including the present wetland). Gavur Gölü, although largely destroyed, has good prospects for restoration and it is recommended to exclude it from the proposed DSİ scheme.

NUR DAĞLARI

IBA no	81
Alternative name(s)	Amanos Dağları
Province(s)	Hatay, Osmaniye
District(s)	Dörtyol, Hassa, İskenderun, Kırıkhan, Belen, Osmaniye
Size	21,500 ha
Coordinates	36°39'N 36°19'E
Altitude	1000-2262 m

SITE DESCRIPTION

The Nur Dağları comprises a high ridge of mountains that rise sharply from the Mediterranean shore, forming the boundary between Mediterranean Turkey and the Syrian Plateau. On the seaward side, the levels of annual precipitation are relatively high and this, combined with the extensive exposure of limestone and serpentine, has given rise to a diverse and rich vegetation and flora. The wetter areas at lower altitude are clothed with dense lush deciduous forests, whilst *Pinus brutia* forest dominates the lower serpentine slopes. At higher altitudes *Cedrus libani* is locally abundant. Additional habitats include extensive *Quercus* scrub on the drier landward slopes, and dry grasslands at higher elevations.

Human use of the area is limited to sheep grazing and forestry.

This site was included in the 1989 IBA inventory as the Belen Geçidi (Belen pass), a well-known bottleneck, especially for migrating raptors. However, available records suggest that raptors congregate not only at the Belen pass but cross the Nur Dağları in a number of places, and the present IBA therefore includes the higher parts of the mountain range.

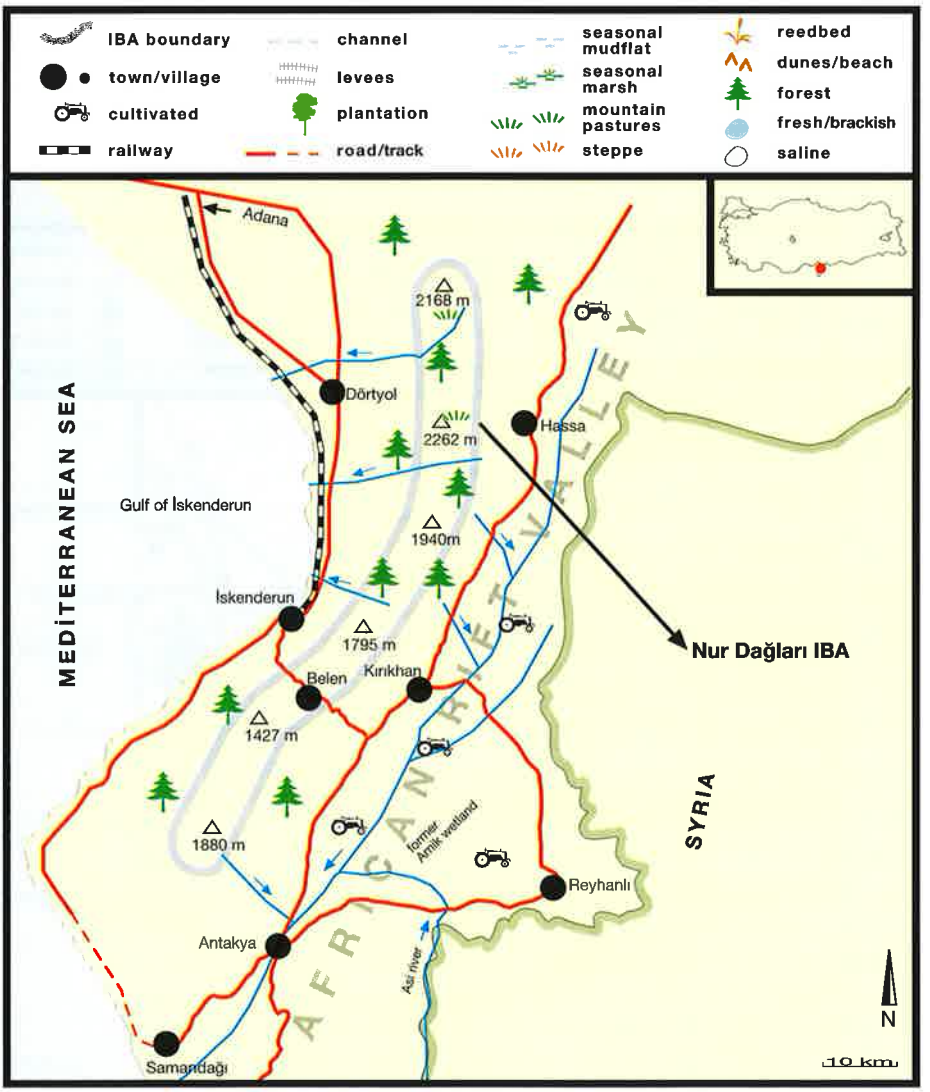
BIRDS

The majority of birds passing the Bosphorus (IBA no. 05) during autumn and spring, supplemented with Turkish breeding birds, cross the Nur Dağları. In autumn, soaring migrants skirt the Gulf of İskenderun, crossing the Nur Dağları at any suitable point after which they follow the African Rift Valley. Observations indicate that Spoonbills, White Pelicans, storks and smaller raptors usually directly overfly the Gulf of İskenderun.

The pattern of migration across Nur Dağları, as well as species of birds involved, appears very similar to that at the Bosphorus. The only comprehensive autumn count was performed at the Belen pass during five weeks in 1976 (the figures below refer to this study) and there are few spring records available. Autumn migration mainly takes place during the second half of August and September (with raptor migration presumably extending until mid-October, but this period has never been covered), with large numbers of White Storks (82,887), Black Storks (3,303), White Pelicans (6,203), and 26,756 raptors, mainly Honey Buzzard, Levant Sparrowhawk and Lesser Spotted Eagle. During one day in spring 1992, 9,950 White Storks were counted at the Belen Pass. No information is available on the importance of the forests as a roosting area for raptors.

CONSERVATION ISSUES

- The southern part of the IBA falls within the Kale Permanent Wildlife Reserve (120,000 ha, 1986).

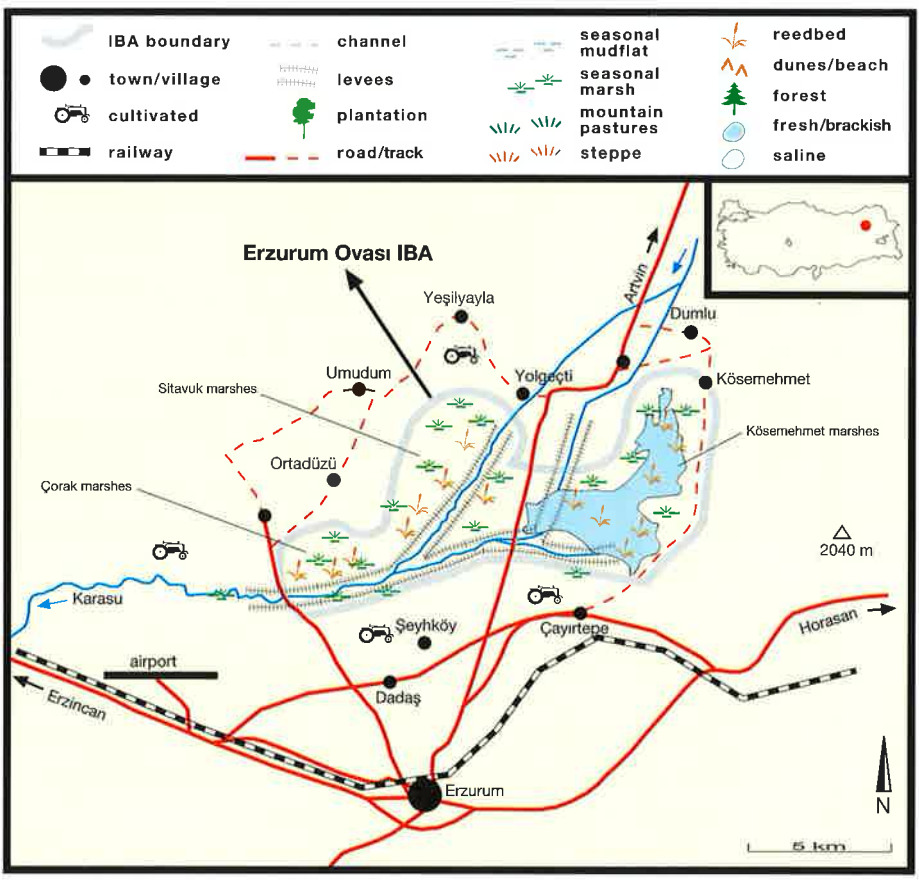


ERZURUM OVASI

IBA no	82
Province(s)	Erzurum
District(s)	Erzurum
Size	3300 ha
Coordinates	39°59'N 41°18'E
Altitude	1750 m

SITE DESCRIPTION

A complex of seasonally flooded grasslands and marshes situated on the Karasu stream (a tributary of the Fırat [Euphrates] river), a few km north of the provincial capital of Erzurum. The area is surrounded by high mountains on three sides, the highest of which is the Palandöken mountains (3176m) to the south. The IBA consists of three parts. The Kösemehmet marshes (1000 ha) in the eastern part of the IBA comprise extensive areas of brackish clay grasslands surrounding a series of small lakes and springheads. In addition, flower-rich hay meadows (cut by hand) occur near the settlements but many of these have



been ploughed in recent years. The western part of the IBA concerns the Sitavuk and Çorak marshes, temporary marshes amidst extensive arable and grasslands. During the wet season these marshes merge and form a wetland of max. 2300 ha.
The Erzurum plain is fertile but the long cold winter impedes further diversification of crops, and cereals, sugar beet and potato are the main harvest.
Many thousands of cattle graze the wetlands.

BIRDS

The site qualifies for its breeding population of Crane (15 pairs), and the significant numbers of Ruddy Shelduck (max. 1500) and White-winged Black Tern (15,000) during migration seasons.

CONSERVATION ISSUES

- The site has no protection status.
- At least 4350 ha of wetland in the Erzurum plain was drained in the 1950s and 1960s as part of the DSİ (State Water Works) Karasu reclamation scheme. Large drainage channels (now transecting the IBA) were dug but the lowest parts of the plain were inefficiently drained and form the present wetland area. DSİ, however, is improving drainage of the area and will irrigate it with water from the Kuzgun reservoir (276 hm^3, 30 km north-west to the IBA, completed in 1995).
- Erzurum city is one of the fastest growing centres of Eastern Anatolia. Increased industrial and agricultural activities, and urbanisation may increase the pressure on the natural area, which lies very close to the city.
- A new highway by-passing Erzurum is under construction and passes just south of the IBA.

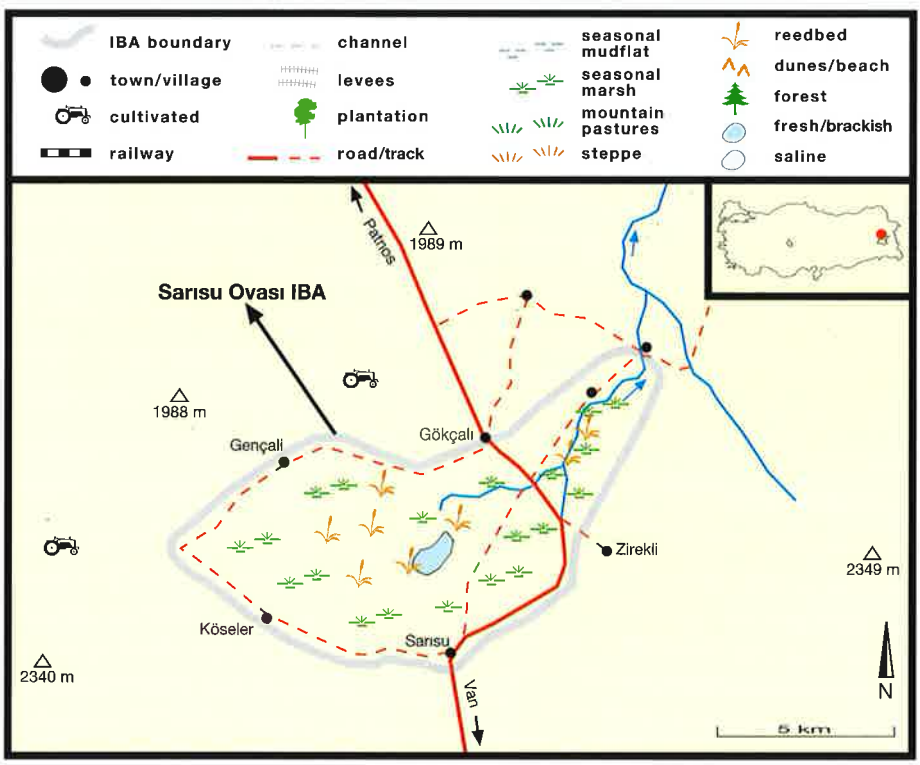
SARISU OVASI

IBA no	83
Alternative name(s)	Göri Sazlığı
Province(s)	Ağrı
District(s)	Patnos
Size	4800 ha
Coordinates	39°03'N 42°54'E
Altitude	1850 m

SITE DESCRIPTION

An extensive upland plain approximately 25 km north of Van Gölü (IBA no. 96) and just north of Süphan mountain (4058 m). It consists of extensive wet meadows, upland grassland, a series of freshwater lakes and large reedbeds. It is fed by small streams and groundwater, and drains via the Karasu stream into the Murat river. The largest part of the wetland (west of the Erciş-Patnos motorway) has a number of lakes, one of which, locally called Dipsiz lake, is covered by reed, whilst another lake has a large area of permanent open water. East of the motorway are extensive marshes on the Karasu stream.

The IBA is entirely surrounded by non-irrigated arable land (principally used to grow wheat) and pasture. There are several villages adjacent to the IBA and large herds of cows and water buffaloes are grazed in and around the wetland.



Reed cutting is an important source of income for the local people, up to 50% of all reed being cut annually.

BIRDS

The site qualifies as an IBA for its breeding population of Crane (10 pairs).

CONSERVATION ISSUES

- The site has no protection status.
- Parts of the wetland are privately owned.

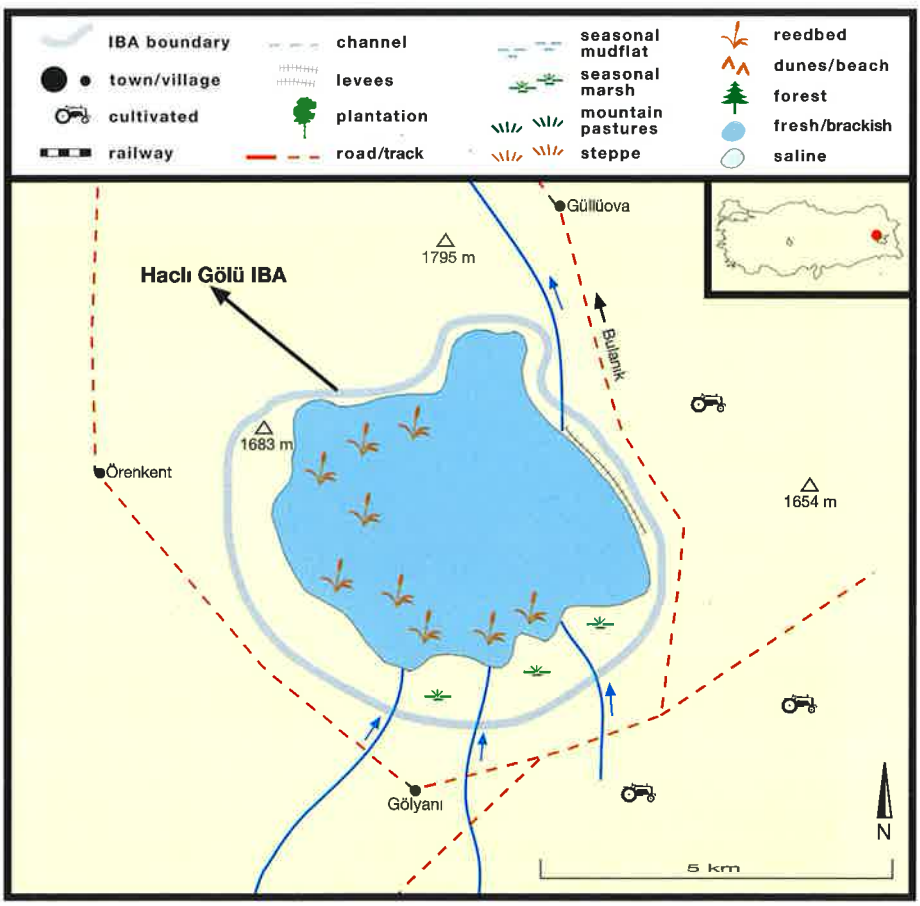
Sarısu Ovası with Siphan mountain in the background (Gemant Magnin)

HAÇLI GÖLÜ

IBA no	84
Alternative name(s)	Bulanık Gölü, Kazan Gölü
Province(s)	Muş
District(s)	Bulanık
Size	2500 ha
Coordinates	39°01'N 42°18'E
Altitude	1600 m

SITE DESCRIPTION

A freshwater lake (1680 ha) south of Bulanık, fed mainly by the Şeyhtokum stream which enters the lake from the south-west and drained by the Korsu stream which subsequently flows into the Murat river. The site is surrounded by hills except in the south and east where it borders the Kazan and Tohmanik plains. Extensive marshes are found in the south and south-west. Around the lake, especially on its south side, are extensive meadows which are still cut by hand. There are limited fishing activities.



BIRDS

The site qualifies for its breeding populations of Spoonbill (10 pairs) and Gadwall (10 pairs). Ruddy Shelduck occur in significant numbers. Very few birdwatchers visit the site and the available information most probably severely underestimates the importance of this IBA.

CONSERVATION ISSUES

- The site has no protection status.
- In 1972 a levee was constructed along the east shore of the lake and a regulator installed on the Korsu stream: water from Haçlı Gölü is now used to irrigate 4116 ha. Although no ornithological information exists from before the lake was converted, it seems likely that the artificially high water levels have altered the character of the wetland system.

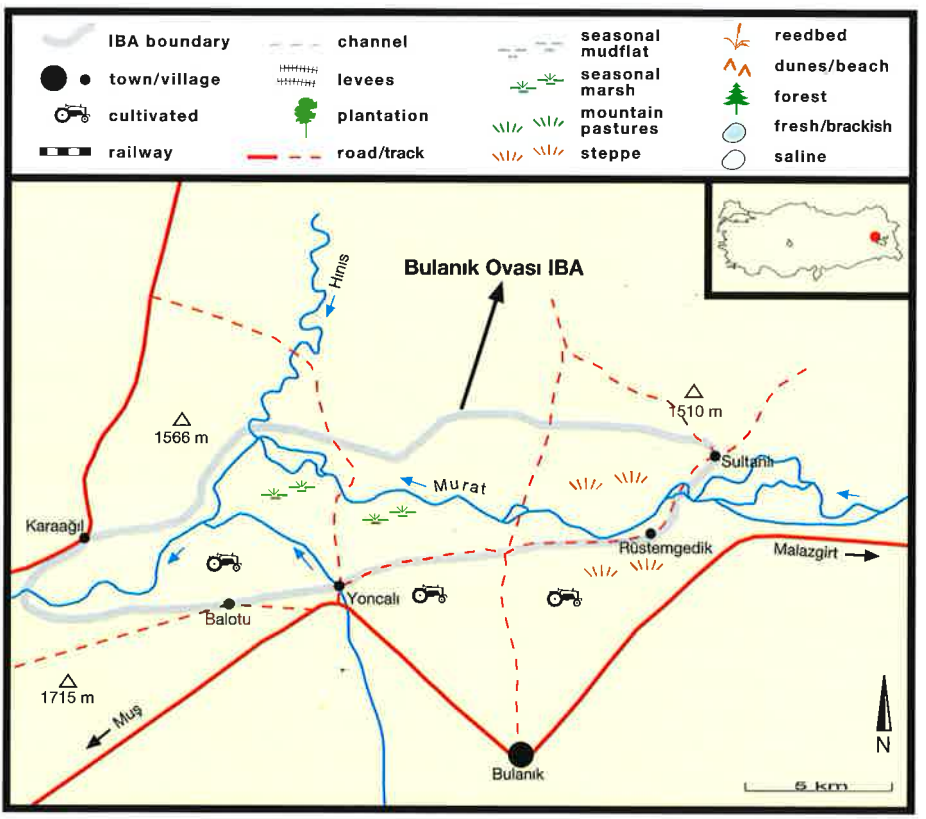
BULANIK OVASI

IBA no	85
Alternative name(s)	Yukarı Murat Vadisi
Province(s)	Muş
District(s)	Bulanık
Size	8000 ha
Coordinates	39°10'N 42°14'E
Altitude	1460 m

SITE DESCRIPTION

A valley with associated floodplains on the Murat river. To the north the plain is bordered by hills and south of the river there are large tracts of arable land and hay meadows. The river is fast-flowing with islands and gravel spits: one main complex of barren islands lies to the north of Bulanık, whilst one larger vegetated island is found to the west. The western border of the IBA is where the river enters a gorge.

The arable land is used for wheat, melon and sunflower production. Cattle graze on the floodplain.



BIRDS

The site qualifies as an IBA for its breeding Pygmy Cormorant (10 pairs), Crane (10 pairs), Gull-billed Tern (300 pairs) and Caspian Tern. Great Bustard occur regularly in significant numbers and are suspected to breed in the surrounding area.

Additional bird information.
The IBA is the best known locality for Demoiselle Crane (max. 21) in Turkey and the Western Palearctic: several pairs breed. Spoonbill (5 pairs), Marsh Harrier and Montagu's Harrier (10 pairs) also breed.

CONSERVATION ISSUES

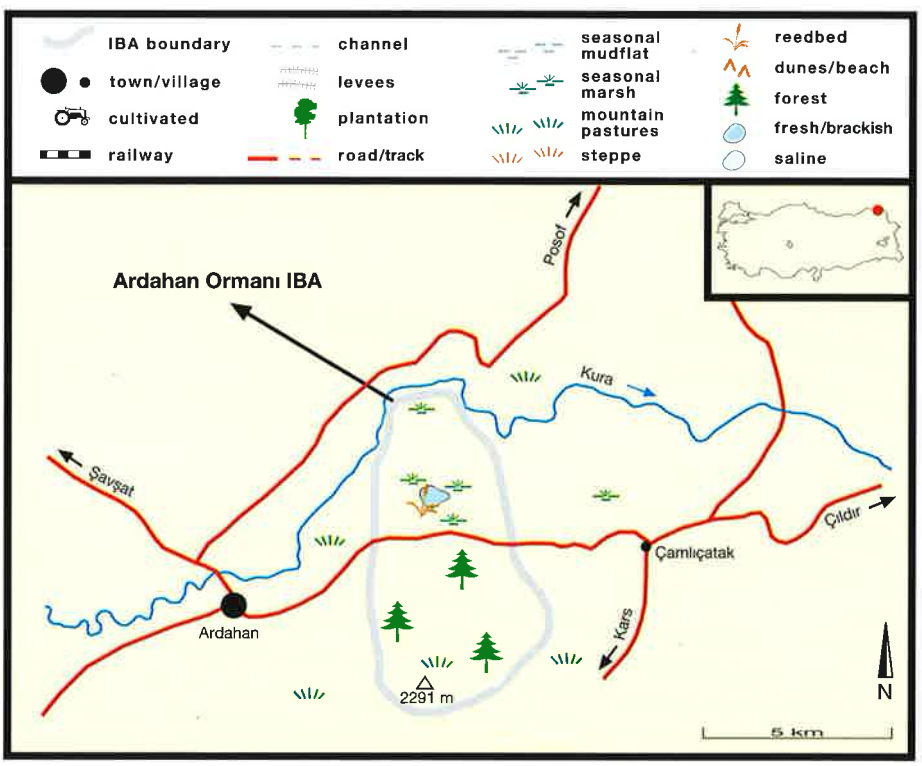
- The site has no protection status.
- DSİ (State Water Works) plans to construct a large reservoir (Alpaslan I) which will flood the western part of the IBA until the point where the Hınıs and Murat river unite. Agriculture in the remainder of the site will be intensified.

ARDAHAN ORMANI

IBA no	86
Province(s)	Ardahan
District(s)	Ardahan
Size	2500 ha
Coordinates	41°08'N 42°46'E
Altitude	1930-2291 m

SITE DESCRIPTION

An upland area north-east of Ardahan occupying the broad valley of the Kura stream. Due to its elevated situation, the site comprises extensive areas of grazed montane steppe together with areas of hay meadows (often cut by hand) and some arable land. Extensive high altitude forests of *Pinus sylvestris* forests occur within the IBA. A 15 ha circular marsh, Putka lake, is located next to the main road, and is largely covered by extensive stands of emergent Tussock sedge (*Carex* spp.) with very little open water. Its margins are heavily grazed.



BIRDS

The site meets IBA criteria for its 10 pairs of Montagu's Harrier that breed around the marsh.

Additional bird information.
The marsh hosts small numbers of other breeding species such as Red-necked Grebe, Gadwall, Teal, Mallard, Garganey, Pochard, Ferruginous Duck, Tufted Duck, Marsh Harrier, Crane and Citrine Wagtail.
Several species of raptors probably breed in the forests surrounding the marsh, including Black Kite, Buzzard, Long-legged Buzzard, Lesser Spotted Eagle and Hobby. Several species of vulture (including Black Vulture) and eagle have been recorded but breeding is presumed to take place outside the IBA.

CONSERVATION ISSUES

- The site has no protection status.

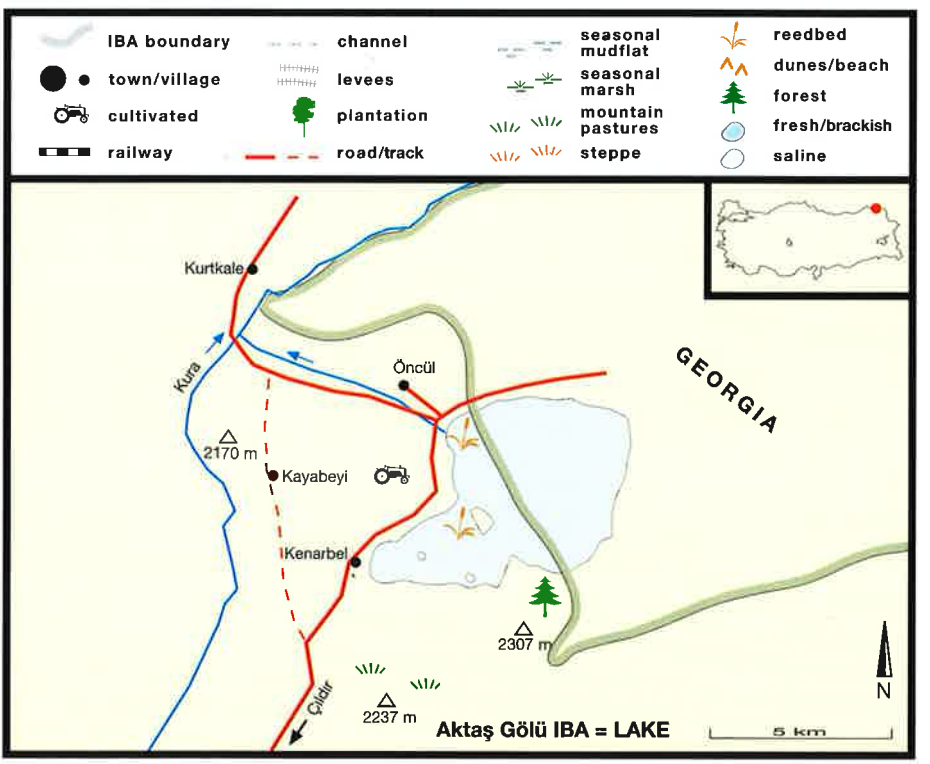
AKTAŞ GÖLÜ

IBA no	87
Alternative name(s)	Hozapin Gölü, Karsak Gölü, Azap Gölü.
Province(s)	Ardahan
District(s)	Çıldır
Size	2700 ha
Coordinates	41°12'N 43°12'E
Altitude	1798 m

SITE DESCRIPTION

A shallow tectonic lake on the high plateau of the Turkish-Georgian border area. 1400 ha of the lake's total of 2700 ha lie within Turkey, including the twelve uninhabited and sparsely vegetated islands. The lake is bordered by arable fields and grazing land; there are a few small reedbeds along the lake shores and some of the islands. The lake is fed by a few small streams and only in spring, when levels are high, does the lake drain into the Kura river. The lake water has a high concentration of soda.

Only three villages are found near the lake and, being situated in a military zone, access to the area is highly restricted. Human disturbance, therefore, is minimal. Fishing is solely land-based.



BIRDS

In 1995 it was established that Aktaş Gölü is one of the three Turkish breeding sites for White Pelican (50 pairs) and one of the seven breeding sites for Dalmatian Pelican (20 pairs). The site further qualifies for the large number of Velvet Scoter (max. 725, presumably breeding in Aktaş Gölü and other high lakes in Georgia and possibly in Turkey) and Ruddy Shelduck (max. 500).

CONSERVATION ISSUES

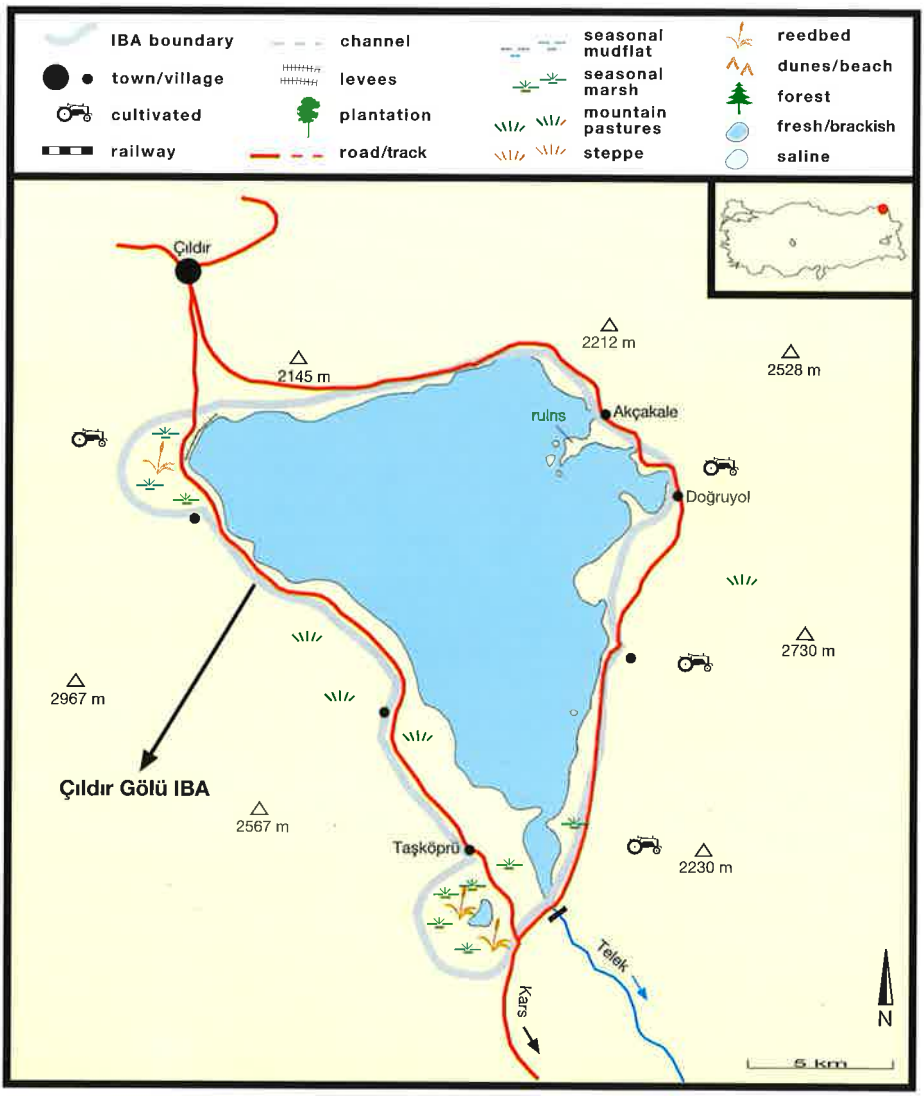
- The site has no protection status.
- The Aktaş border post is currently closed, however plans exist to open this route in order to improve the trade and transport between former USSR states and Turkey. This would increase traffic north of the lake.

ÇILDIR GÖLÜ

IBA no	88
Province(s)	Ardahan
District(s)	Çıldır
Size	14,000 ha
Coordinates	41°03'N 43°15'E
Altitude	1962 m

SITE DESCRIPTION

A freshwater lake (max. 12,350 ha, the second largest in eastern Turkey after Van Gölü, IBA no. 96) situated in a volcanic depression between Kısır mountain



and Akbaba mountain. It has a maximum depth of 22 m. A small satellite lake (Lavas lake) surrounded by wet meadows is located south-west of Çıldır Gölü. There are large marshlands and damp pastures bordering the lake in the north-west and separated from it by a levee, otherwise it is surrounded by hill pasture and has very little fringe vegetation. The lake is fed by run-off from surrounding hills and mountains. Water leaves the site in the south-east through the Telek stream, a main tributary of the Arpaçay river which subsequently forms the border between Armenia and Turkey.
There are four islands in the lake, the largest of which is close to the ruins at Akçakale: all islands are vegetated with low shrub.
Surrounding land is largely used for stock grazing: the short growing season precludes significant crop production. Fishing is common, principally for the local market. Fish are also caught during winter when the lake is frozen solid and holes are hacked in the ice.

BIRDS

The site qualifies for Ruddy Shelduck (max. 480) and Armenian Gull (max. 2400, with 1100 pairs breeding on the islands).

Additional bird information.
Pelican sp. formerly bred on the islands. There are recent records of White Pelicans, with occasional records of Dalmatian Pelicans, but breeding has not been proven for either species and these birds may originate from the recently discovered colony at Aktaş Gölü (IBA no. 87). Velvet Scoter is suspected to breed.

CONSERVATION ISSUES

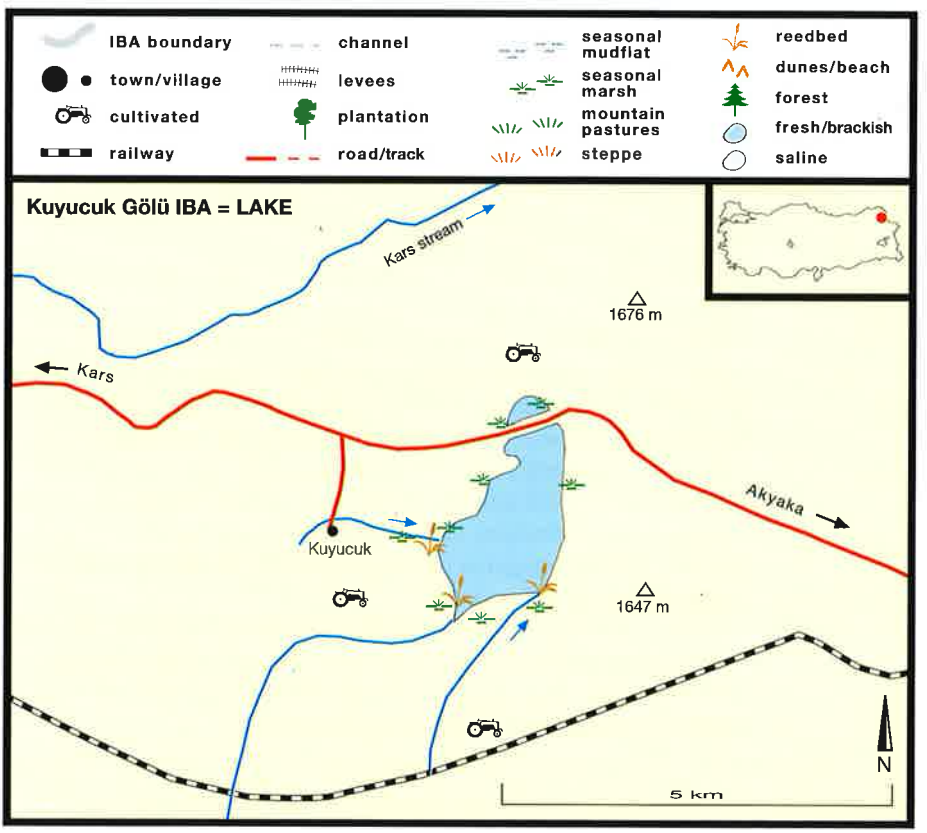
- The site has no protection status.
- During 1978 a small dam was completed just south of the lake on the Telek stream. This dam permits the continuous release of water to a hydro-power station (producing 50 GWh/p.a.) situated at the end of a 4.2 km-long tunnel: water is then passed through the Carcı regulator and used to irrigate 3000 ha of land in the Arpaçay plain to the south. DSİ (State Water Works) now plans to increase the lake volume by 73 hm^3 by diverting some streams into the lake. A second power station (to produce 23 GWh/p.a.) will then be constructed, and the area of irrigated land will be increased to 14,400 ha. It is unclear what implications these manipulations will have for the wetland system, and DSİ is urged to investigate possible impacts thoroughly before further developing the scheme.
- Disturbance by visitors to the breeding islands has been reported and this may account for the disappearance of the pelicans which formerly bred. Further tourism development of the Akçakale area (such as the hotel presently under construction) should be carefully planned.

KUYUCUK GÖLÜ

IBA no	89
Province(s)	Kars
District(s)	Arpaçay
Size	219 ha
Coordinates	40°45'N 43°27'E
Altitude	1627 m

SITE DESCRIPTION

A freshwater lake situated on the high Kars-Akyaka plateau, in the centre of an open, undulating landscape. It is fed by small springs and streams and has a maximum depth of 13 m. The aquatic flora is sparse, and dominated by a small range of *Potamogeton*. The emergent vegetation is limited but in more sheltered bays there are small stands of reed *Phragmites australis*. Cereal farming and stock grazing are the main land uses around the lake. The Kars-Akyaka road bisects the northern end of the lake. The construction of another road through the centre of the lake was halted as a result of an intervention by the Ministry of Forestry.



BIRDS

The site qualifies for its breeding population of White-headed Duck (2 pairs).

Additional bird information.
Other breeding species of note include Red-necked Grebe (20 pairs), Black-necked Grebe (330 pairs), Gadwall (5 pairs), Coot (several hundreds of pairs) and Black-winged Stilt.

CONSERVATION ISSUES

- The site was declared a Permanent Wildlife Reserve (219 ha) in 1990.
- In a 1963 report, DSİ (State Water Works) recommended the lake be drained and converted into agricultural land. Kuyucuk Gölü is, according to current DSİ plans, no longer an integral part of any major irrigation or drainage scheme. However, several thousands of hectares of land in the vicinity of Kuyucuk Gölü are to be irrigated with water from the Kars reservoir that is to be constructed on the Kars stream.

ÇALI GÖLÜ

IBA no	90
Province(s)	Kars
District(s)	Kars
Size	25 ha
Coordinates	40°31'N 43°16'E
Altitude	2235 m

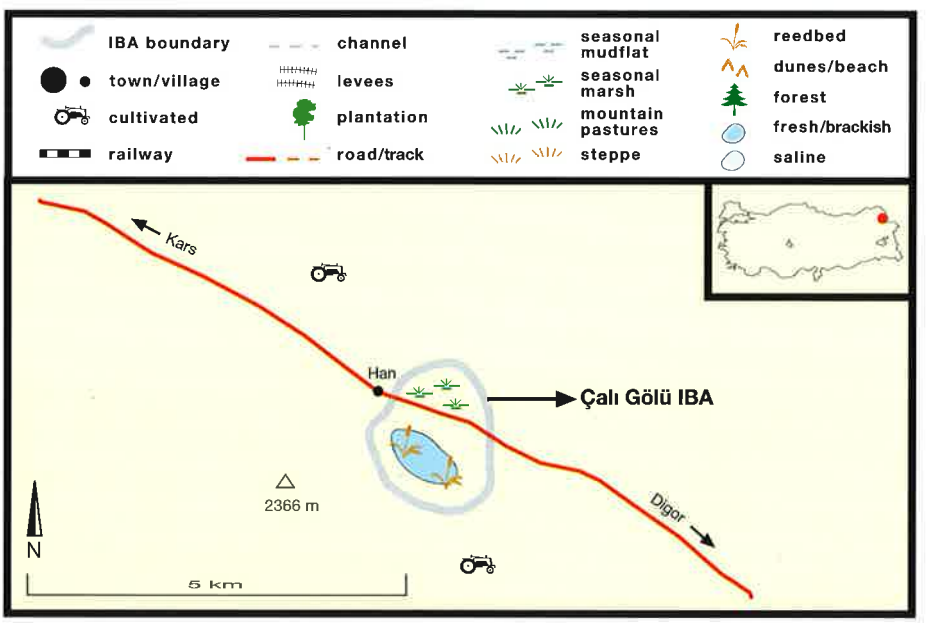
SITE DESCRIPTION

A small boggy freshwater lake situated 20 km east of Kars, adjacent to the road between Kars and Digor that bisects the site. To the south there is a 15 ha permanent lake with rich submerged flora (particularly *Potamogeton*) and a mosaic of emergent sedge beds. The area to the north of the road (ca. 10 ha) is largely seasonal. This small wetland lies in a vast elevated plateau, largely covered by extensively grazed steppe grassland. There is one small settlement on its shores.

BIRDS

The site qualifies for its 10 breeding pairs of White-headed Duck.

Additional bird information.
Other breeding birds of note include Black-necked Grebe (75 pairs), Gadwall (5 pairs), Teal (5 pairs), Mallard (10 pairs), Pochard (10 pairs), Tufted Duck (20 pairs), Coot (30 pairs), Crane (1 pair) and Black-headed Gull (400 pairs).



CONSERVATION ISSUES

- The site has no protection status.
- Drinking water for Kars is pumped from a nearby well but the wetland seems to be unaffected.

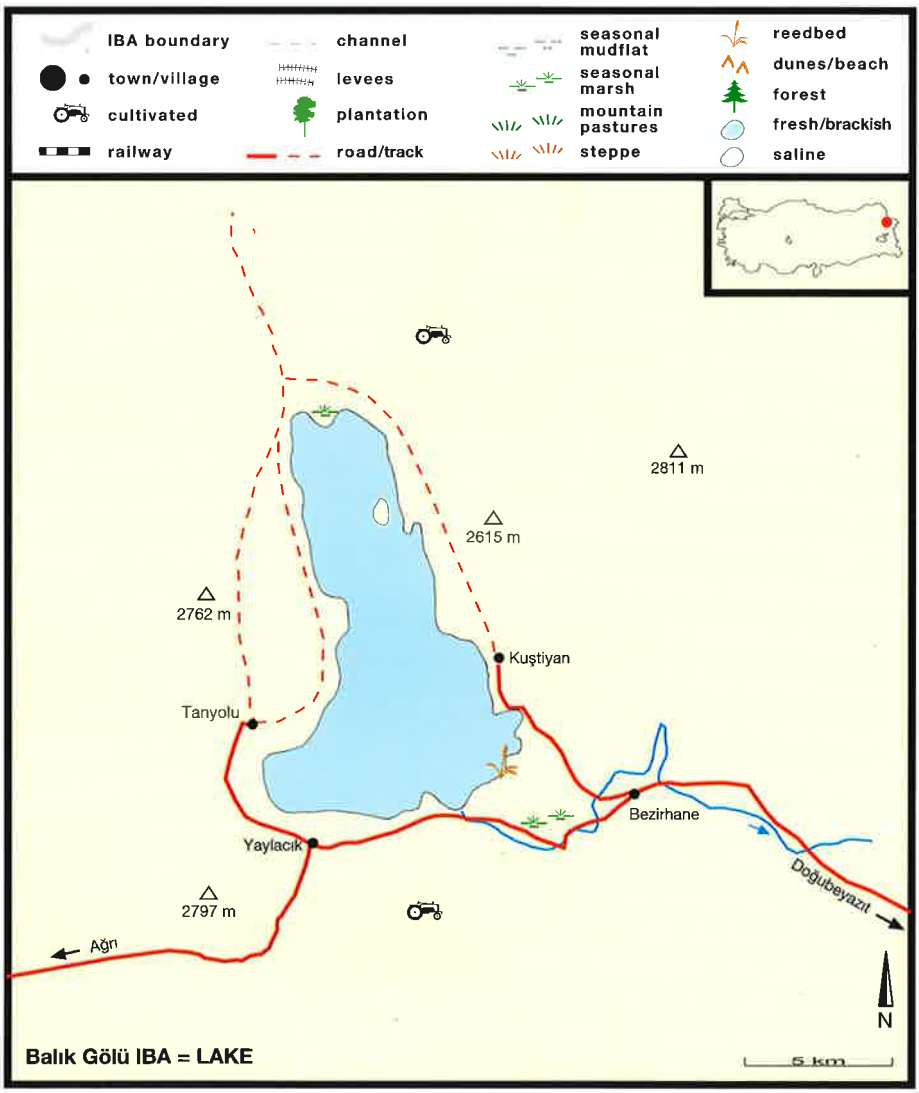
Crane (Sancar Barış)

BALIK GÖLÜ

IBA no	91
Province(s)	Ağrı
District(s)	Ağrı, Doğubeyazıt
Size	3400 ha
Coordinates	39°47'N 43°33'E
Altitude	2241 m

SITE DESCRIPTION

One of the highest large lakes in Turkey, up to 70 m deep and fed by small streams from the surrounding mountains, by shoreline springs and



groundwater. The outlet is the Balıkgölü stream that flows south-east and subsequently feeds the Doğubeyazıt Sazlığı wetland (IBA no. 92). The lake is normally frozen for five months of the year, except a small area in the north where a strong spring prevents freezing. Its shores are muddy and have small reed fringes, especially in the south-east. The immediate surroundings consist of grazed meadows and arable land.
The lake is a popular fishing ground with locals. Fishing continues in winter by drilling holes in the ice.

BIRDS

The site qualifies as an IBA for its breeding population of Velvet Scoter that nest on the 0.15 ha island.

CONSERVATION ISSUES

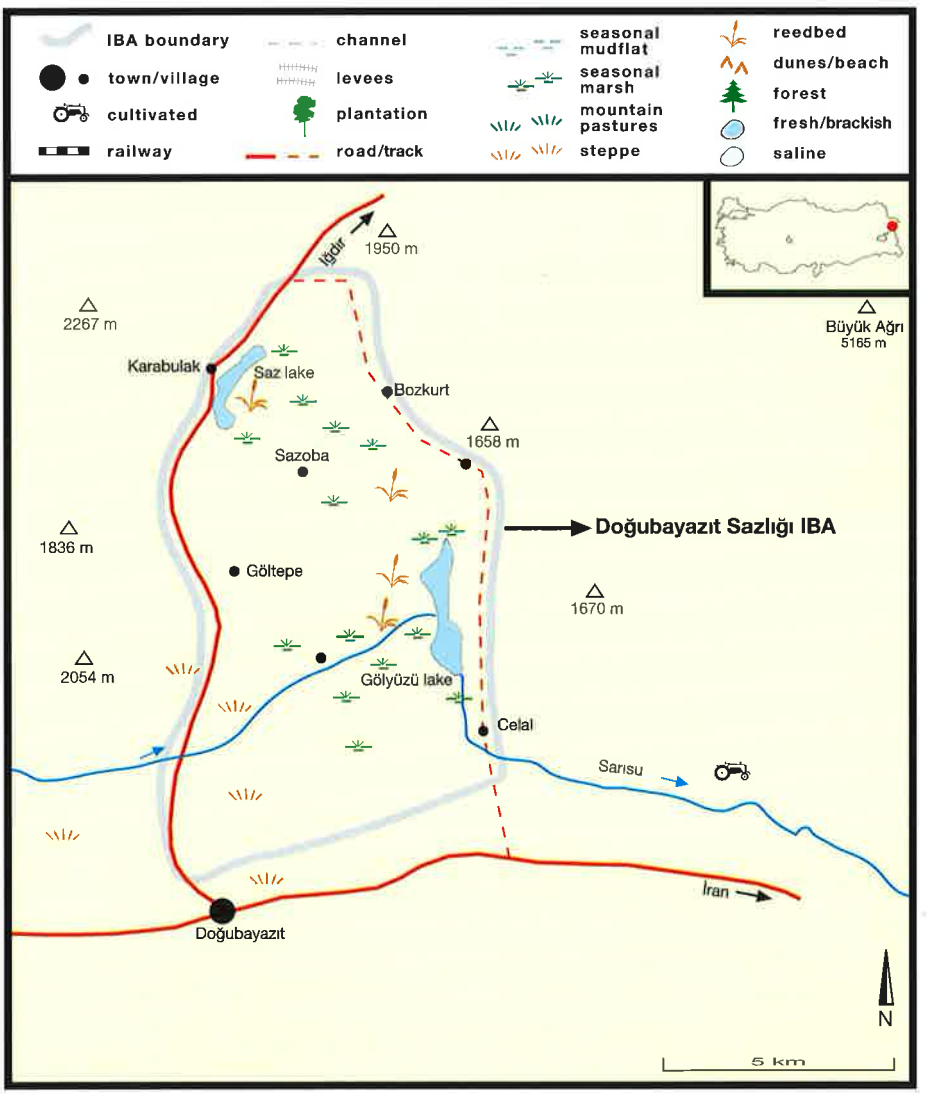
- The lake has the official protection status of Drinking Water Reservoir with an annual capacity of 80 hm^3.

DOĞUBEYAZIT SAZLIĞI

IBA no	92
Alternative name(s)	Saz Gölü & Gölyüzü Gölü
Province(s)	Ağrı
District(s)	Doğubeyazıt
Size	8750 ha
Coordinates	39°38'N 44°06'E
Altitude	1520 m

SITE DESCRIPTION

The IBA comprises two lakes with an extensive marsh lying between them, situated at the foot of the highest mountain in Turkey, the Büyük Ağrı mountain



(Mount Ararat, 5165 m). Saz lake (also called Kurtkapan lake) is fed mainly by surface run-off whilst Gölyüzü lake (also called Şeyhli lake) is fed by water from Balık Gölü (IBA no. 91) and streams from the Tendürek mountain south-west of the IBA: the wetland complex drains into the Sarısu river which subsequently flows into Iran. The two lakes are treated as one IBA because they are connected by a meandering stream which forms an uninterrupted complex of marshes with small pools, reedbeds and wet meadows. The lakes are largely covered by reed. Large parts of the wetland dry up in summer.
The plains surrounding the wetland are chiefly used for grazing. Reed-cutting takes place, mainly for animal fodder and heating material.

BIRDS

The site holds a significant number of breeding Montagu's Harrier (10 pairs).

Additional bird information.
Other breeding birds include Purple Heron, Gadwall, Ferruginous Duck, Crane, Avocet and Redshank. According to the limited information available, the site was ornithologically more important in the past e.g. Demoiselle Crane bred in the early 1970s.

CONSERVATION ISSUES

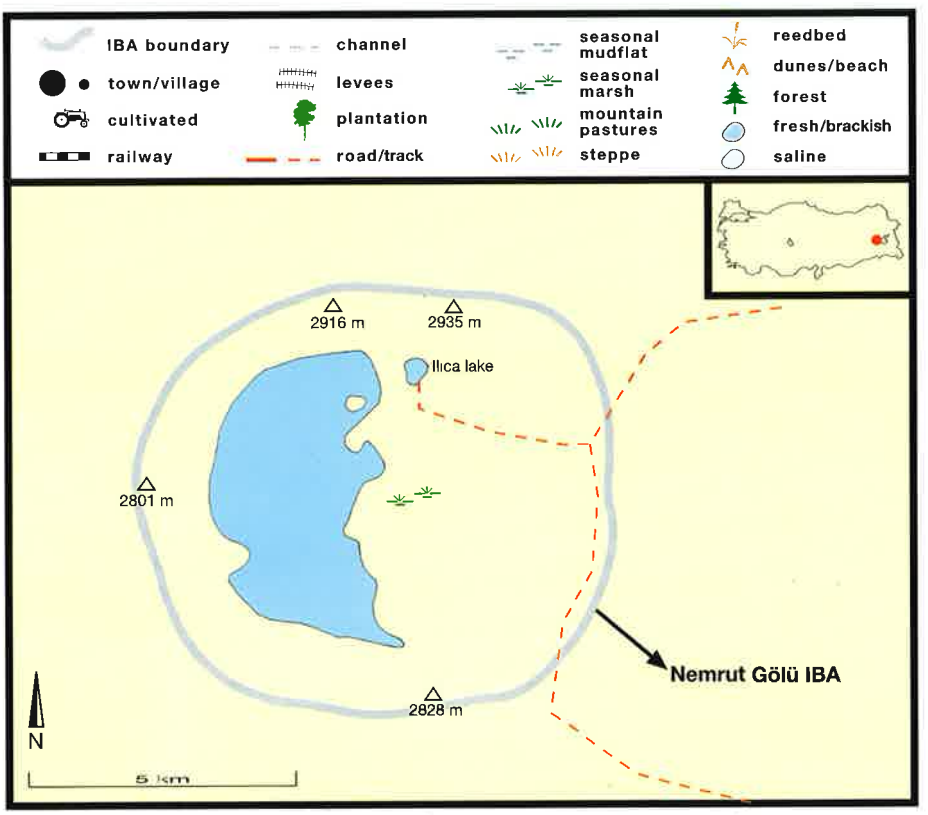
- The site has no protection status.
- The present wetland constitutes the remnants of a vast wetland (28,000 ha) which formerly reached the Turkish/Iranian border. Deepening of the Sarısu river caused the drainage of thousands of hectares of floodplain, and a reduction in the water level of the Doğubeyazıt Sazlığı.

NEMRUT GÖLÜ

IBA no	93
Province(s)	Bitlis
District(s)	Tatvan, Güroymak
Size	4500 ha
Coordinates	38°37'N 42°14'E
Altitude	2247 m

SITE DESCRIPTION

The crater of a volcano (last active 1441) west of Van Gölü (IBA no. 96). The crater is 10 km wide and is one of the largest in the world. There are three lakes in the crater, Nemrut Gölü (1250 ha, 150 m deep), Ilıca or Germav lake (30 ha, 8 m deep) and Küçük lake. Nemrut Gölü is fed by snow melt, springs and water from Ilıca lake. It has no outlet but water escapes from some faults. The largely unvegetated Nemrut Gölü freezes in winter, unlike Ilıca lake which is fed by hot springs and has some reedbeds. The lakes are surrounded by low scrub and the rocky cliffs of the crater walls which reach up to 690 m above the lakes. Domestic stock grazes in the flatter parts of the crater.



BIRDS

The site qualifies for its breeding population of Velvet Scoter (max. 20 pairs) and Golden Eagle (1 pair).

Additional bird information.
Griffon Vulture (1 pair) also breed.

CONSERVATION ISSUES

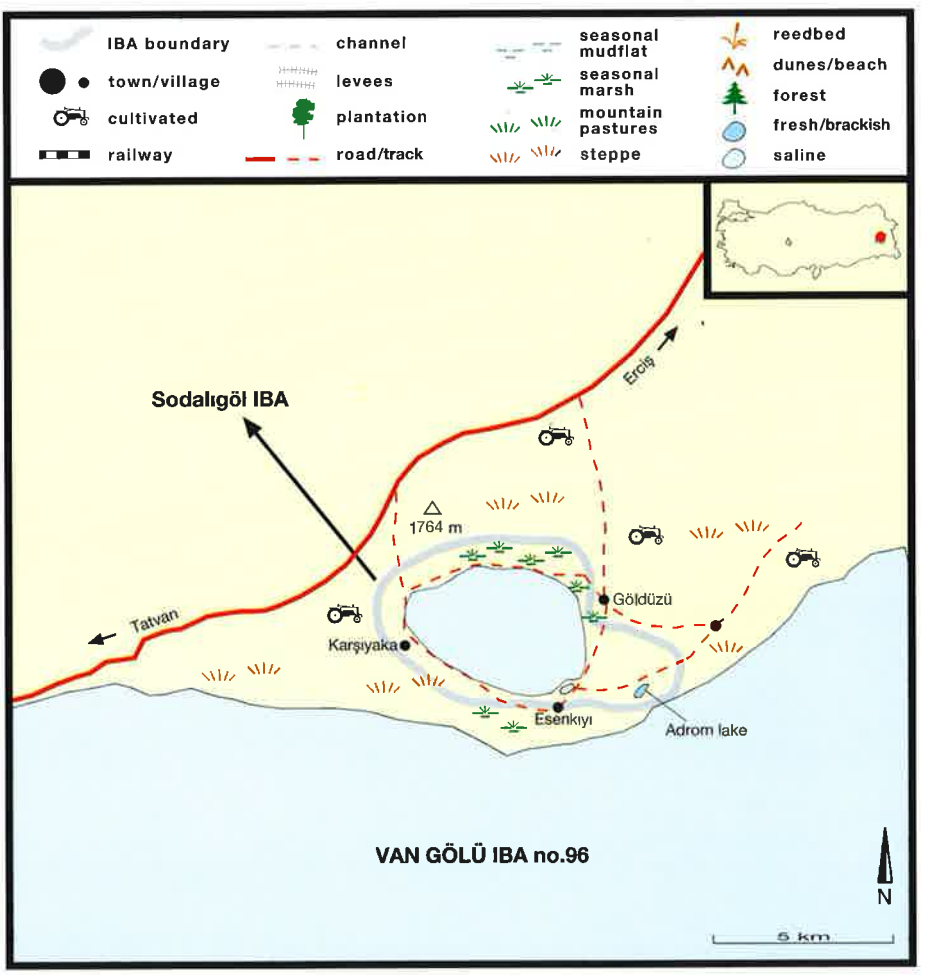
- The site has no protection status.

SODALIGÖL

IBA no	94
Alternative name(s)	Arin Gölü
Province(s)	Bitlis
District(s)	Adilcevaz
Size	1500 ha
Coordinates	38°49'N 42°59'E
Altitude	1650 m

SITE DESCRIPTION

A saline lake (1200 ha) separated from Van Gölü (IBA no. 96) to the south by an alluvial ridge. It is shallow, fed by springs, has no outlet and up to 50% dries out during summer. There is very little aquatic vegetation, only some marshland at the fringes where freshwater seepage occurs. Adrom lake (30 ha) lies south-east of Sodalıgöl. Low hills surround Sodalıgöl, but the snow-capped peaks of Süphan mountain, the third highest Turkish mountain (4058 m)



dominate the scene. No fish inhabit the lake.
The IBA is surrounded by non-irrigated land chiefly used for wheat growing. There is limited animal grazing along the lake shores.

BIRDS

The site qualifies as an IBA for its breeding population of Gadwall (10 pairs), Red-crested Pochard (30 pairs), and White-headed Duck (30 pairs). Up to 750 White-headed Duck occur during the post-breeding season.

CONSERVATION ISSUES

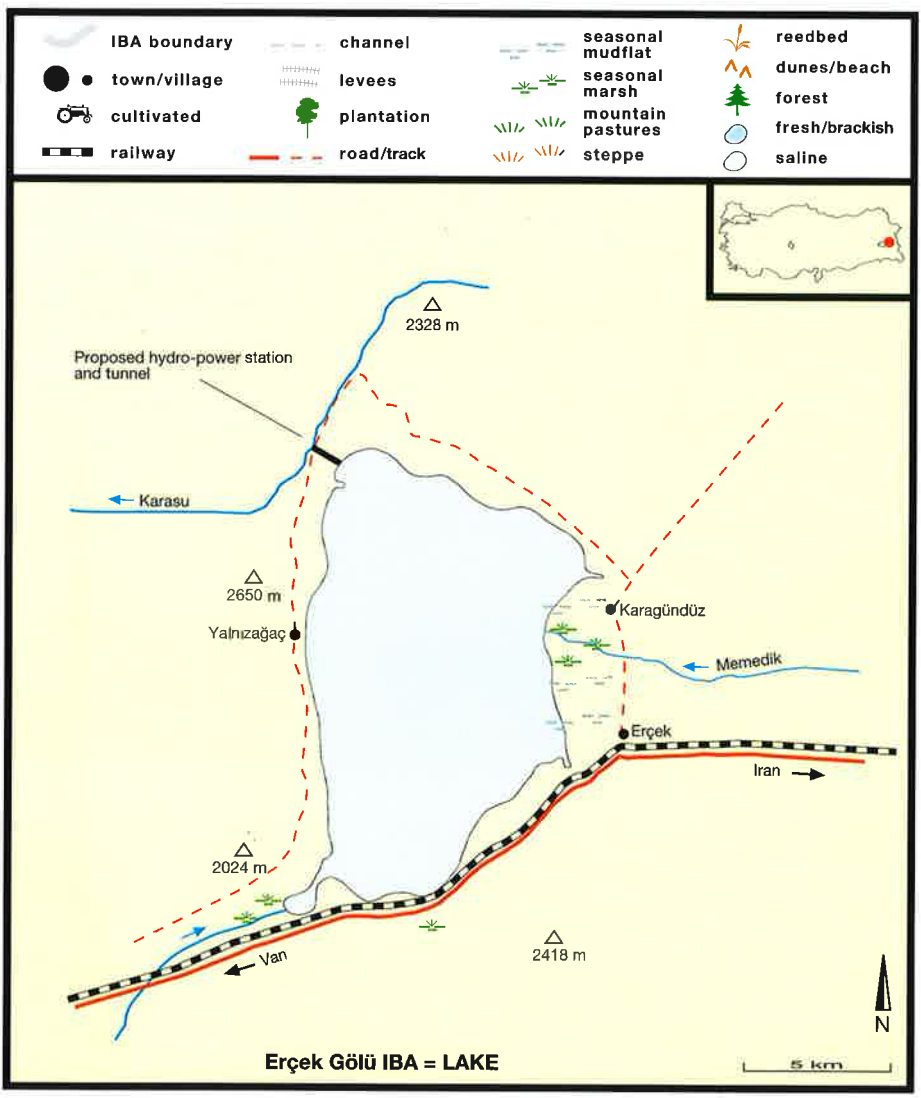
- The site has no protection status.

ERÇEK GÖLÜ

IBA no	95
Province(s)	Van
District(s)	Van
Size	9520 ha
Coordinates	38°40'N 43°35'E
Altitude	1803 m

SITE DESCRIPTION

A highly alkaline lake 20 km east of Van Gölü (IBA no. 96), formed in a tectonic depression and blocked by a lava stream in the north-west; it is maximum 30 m



deep and has no outlet. It has steep rocky shores on the northern and western sides, but in the east and south the shores are shallow and mudflats are found. The Memedik river flows into the lake in the east forming a small delta with some reedbeds and wet meadows. A small peat area is situated adjacent to the south-west tip of the lake. Stock grazing takes place in the marshes and meadows around the lake.

BIRDS

The site qualifies for its breeding Avocets (50 pairs) and Greater Sand Plover. Significant numbers of Black-necked Grebe (max. 4430) and Ruddy Shelduck (max. 5600) occur.

Additional bird information.
Breeding species include Red-necked Grebe, White-headed Duck (2 pairs), Kentish Plover (several tens of pairs), Redshank (100 pairs) and Paddyfield Warbler.

CONSERVATION ISSUES

- The site has no protection status.
- Like neighbouring Van Gölü, the water level of Erçek Gölü has risen dramatically in recent years. Over the last five years levels rose by 2.5 m, inundating a village, 1000 ha of arable land and meadows, and the Turkey-Iran railway.
- DSİ (State Water Works) plans to construct a hydro-power station west of the lake, using the lake water. The ecological impacts of this proposal have not been studied.

VAN GÖLÜ'S RAPID RISE: THE DEMISE OF SIX IBAs

In the 1989 IBA inventory six IBAs were described in and adjacent to Van lake: Ahtamar island, Horkum, Edremit, Van, Bendimahi and Çelebibağı marshes. Çelebibağı marshes (350 ha) and the Bendimahi delta (230 ha) were the largest of these, with the others all between 5-80 ha. Narrow sandbars separated the marshes from the main lake and maintained their freshwater nature. The marshes formerly held important populations of several globally threatened species such as Marbled Teal, White-headed Duck and Ferruginous Duck.

As a result of a recent water level rise, these wetlands have been inundated by the saltwater of Van Gölü. The small wetlands are virtually gone, and at Bendimahi and Çelebibağı the saltwater has intruded up to 1 km inland and the vegetation is withering away. During summer 1995, a DHKD mission found that all these former IBAs were virtually devoid of any breeding waterbirds.

There is no evidence to assume that the water level will cease to rise or start to fall. If the water level stabilizes, new wetlands will be created where freshwater and/or silt enters the lake: the deltas on the Bendimahi and Çelebibağı rivers will possibly reform further upriver. This process may take a long time. Under current circumstances the remains of the former IBAs do not meet IBA criteria. Instead one large, composite IBA has been identified: Van Gölü.

Sodalıgöl close to the northern shores of Van Gölü, has not been affected by the water level increase and is treated as a separate IBA (no. 94).

VAN GÖLÜ

IBA no	96
Province(s)	Van, Bitlis
District(s)	Van, Edremit, Gevaş, Tatvan, Ahlat, Adilcevaz, Erciş, Muradiye
Size	390,000 ha
Coordinates	38°40'N 42°55'E
Altitude	1650 m

SITE DESCRIPTION

Van Gölü is a soda lake of tectonic origin and the largest lake (371,700 ha) in Turkey. It was formed during an eruption of the Nemrut volcano (west of the

lake, cf. IBA no. 93) when debris blocked the former outlet towards the Muş plain. The lake has no outlet and is fed by several streams including the Karasu, Güzelsu, Bendimahi, Zilan and Yeniköprü streams. It drains an area of 15,254 km². Because the annual inflow is higher than evaporation, the lake level is continuously rising. Several peninsulas have become islands during the 19th and 20th centuries and some settlements were forced to move inland. The increase in water level has been more or less continuous since 1900, however since 1986 the rate has accelerated: 2.16 m during 1986-1995. As a result the Tatvan-Van railway had to be discontinued, the Van airport runway was partially inundated, and several villages and roads, as well as most of the IBAs located on the shores of Van Gölü disappeared under water. The reasons for this increase in water levels have yet to be fully established, but it is speculated that increasing precipitation and possibly geological processes may be factors. Notable is that the present water level increase in Van Gölü coincides with rises in the Caspian Sea and Uromiyeh lake in Iran (Iranian IBA no. 006).
The maximum depth of the lake is 451 m. The water has very high soda and salt concentrations (24 gr/ltr) and a pH level of 9.9. It remains ice free, and strongly influences the local climate (making the surrounding area distinctly milder). Large climate differences with the surrounding mountains can sometimes cause very strong storms on the lake.

The lake is surrounded by high mountains, among them the Süphan mountain (4058 m) to the north. Flat areas with extensive meadows and arable land are found between the lake and the mountains. Most of the arable land is non-irrigated and under cereal production. Only in the north-east, near Erciş and Muradiye, and in the north-west near Ahlat is a total of 19,000 ha of land irrigated with water from streams. The hills and mountains around the lake are largely barren, with scattered willow and poplar stands found near settlements. There are four islands in the lake (all previously connected to the mainland): Ahtamar, Kuşadası, Çarpanak and Adir (Yaka). The ruins on some of the islands make them popular tourist destinations. The Tatvan-Van train crosses the lake by ferry.
There is only one fish species *Chalcalburnus tarichi* which principally occurs where streams enter the lake and is consumed locally. The marshes, pastures and islands are all intensively used for grazing.

In addition to the former IBAs, areas of ornithological interest on Van Gölü are Çarpanak island (breeding gulls), the marshes near Ahlat, Dönemeç delta, Karasu delta and Nurşun (or Heybeli) lake (a small reed covered freshwater lake north of Van Gölü). All these areas, except Çarpanak island and Nurşun lake, are affected by the rising water level.

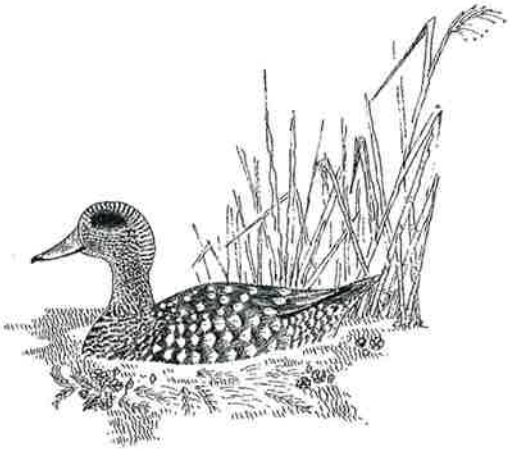
BIRDS

The site qualifies for its breeding population of Marbled Teal (5 pairs) at Van marshes, its breeding population of Great Bustard on the peninsula east of Sodalıgöl (IBA no. 94), where up to 32 birds have been seen during the breeding season and breeding confirmed, and for the large number of

Armenian Gulls (max. 3285) that breed on Ahtamar island (80 pairs), Çarpanak island (500 pairs in 1995) and possibly other islands. White-winged Black Tern occurs on migration.

CONSERVATION ISSUES

- All islands were declared a SİT in 1990 for their archeologial importance; the rest of the IBA is unprotected.
- There are regular reports of disturbance to breeding birds by visitors to Çarpanak and Ahtamar islands, including the collection of gulls' eggs in some instances.
- Çarpanak island is owned by the Van University which plans to construct a small permanent holiday resort. It is advised that the island continues to be used for day trips only.
- The untreated waste of several towns and cities, and large amounts of agricultural run-off enters the lake. The city of Van had only one (inadequate) treatment facility that has since been inundated.



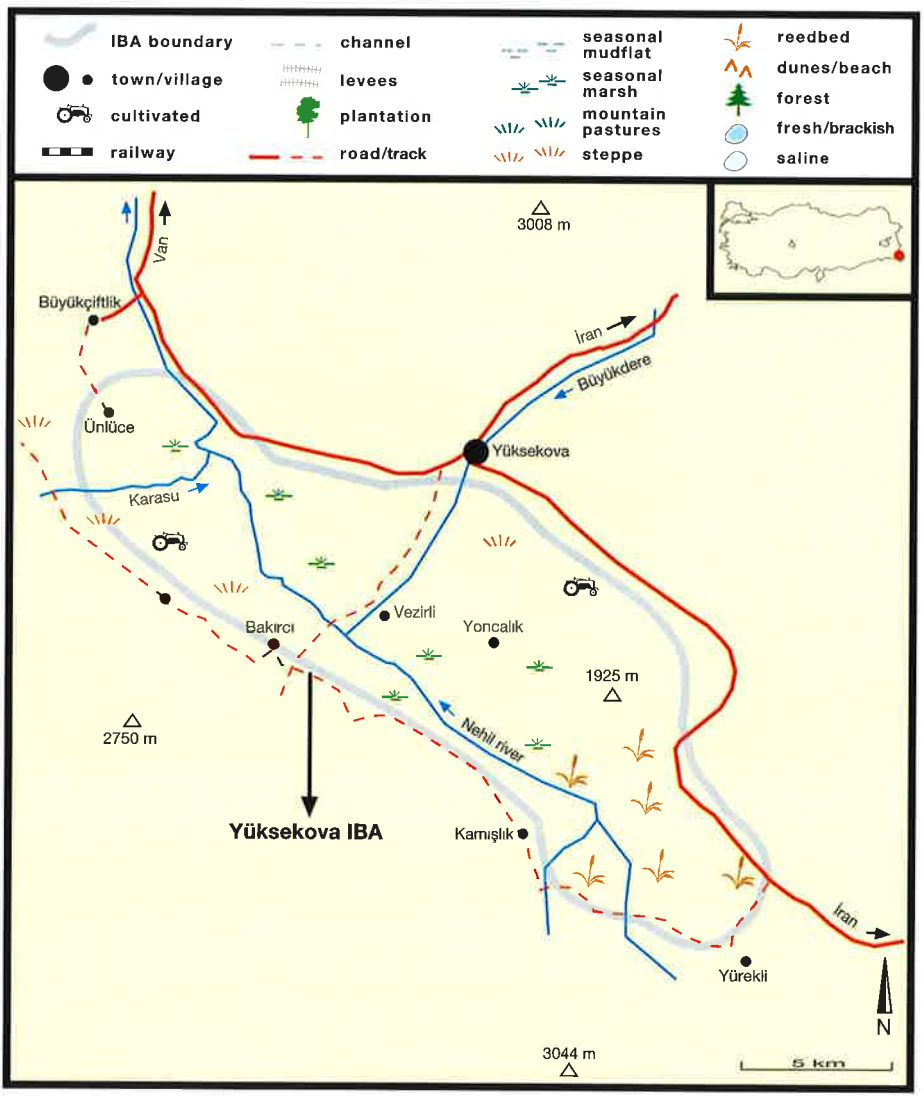
Marbled Teal (Sancar Barış)

YÜKSEKOVA

IBA no	97
Alternative name(s)	Nehil Ovası
Province(s)	Hakkari
District(s)	Yüksekova
Size	24,900 ha
Coordinates	37°30'N 44°18'E
Altitude	1925 m

SITE DESCRIPTION

A large plain enclosed by high mountain ranges (max. 4135 m), crossed by the Nehil stream which subsequently joins the Zapsuyu river, a tributary of the Dicle



(Tigris) river. Several streams flow into the plain where they join the Nehil stream. A large permanent marsh (3195 ha) is located in the south-east, whilst temporary marshes and grasslands are found along the river. Large parts of the plain are subject to seasonal flooding in spring. There is extensive grazing and reed cutting. Sugar beet and cereals are the main cultivated crops.

BIRDS

The site qualifies for its breeding population of Montagu's Harrier (15 pairs).

Additional bird information.
The IBA has rarely been visited by birdwatchers in recent years and the most recent records available (from 1989) confirm the occurrence of Montagu's Harrier. Pre-1989 data indicate that Purple Heron, Marsh Harrier, Crane and Great Bustard bred, and it is likely that they continue to do so.

CONSERVATION ISSUES

- The site has no protection status.
- In 1993 DSİ (State Water Works) completed a flood protection scheme by draining 2095 ha. As a result, the marshes and wet grasslands along the river in the western and central part of the plain were largely destroyed. At present the Dilimli reservoir (65.5 hm^3, designed to irrigate 9142 ha of land in the plain) is under construction on one of the incoming streams. This project may result in the loss of several thousand hectares of natural habitat.
- The influx of new settlers into Yüksekova has accelerated in recent years, resulting in increased pressure on the wetland. The town of Yüksekova is expanding south towards the wetland. Parts of the plain are privately owned.

APPENDIX 1

IMPORTANT BIRD AREAS: SUMMARY OF CATEGORIES AND CRITERIA

CATEGORY	CRITERION
A1. Globally threatened species	The site regularly holds significant numbers of a globally threatened species, or other species of global conservation concern.
A2. Restricted-range species	The site is known or thought to hold a significant proportion of the restricted-range species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA).
A3. Biome-restricted assemblage	The site is known or thought to hold a significant proportion of the group of species whose distributions are largely or wholly confined to one biome.
A4. Congregations	**(i)** The site is known, or thought, to hold, on a regular basis, ≥1 % of a biogeographic population of a congregatory waterbird species. *or* **(ii)** The site is known, or thought, to hold, on a regular basis, ≥1 % of the global population of a congregatory seabird or terrestrial species. *or* **(iii)** The site is known, or thought, to hold, on a regular basis, ≥20,000 waterbirds or ≥10,000 pairs of seabirds of one or more species. *or* **(iv)** The site is known, or thought, to exceed the thresholds set for migratory species at bottleneck sites.
B1. Congregations	**(i)** The site is known, or thought, to hold ≥1 % of a flyway or other distinct population of a waterbird species. *or* **(ii)** The site is known, or thought, to hold ≥1 % of a distinct population of a seabird species. *or* **(iii)** The site is known, or thought, to hold ≥1 % of a flyway or other distinct population of other congregatory species. *or* **(iv)** The site is a "bottleneck site" where over 5,000 storks, or over 3,000 raptors, pelicans or cranes regularly pass on spring or autumn migration.
B2. Species with an Unfavourable Conservation Status	The site is one of the "n" most important in the country for a species with an Unfavourable Conservation Status (SPEC 1, 2, 3) and for which the site based approach is thought to be appropriate.
B3. Species with a Favourable Conservation Status but concentrated in the region	The site is one of the "n" most important in the country for a species with a Favourable Conservation Status but concentrated in Europe (SPEC 4) and for which the site based approach is thought to be appropriate.

Source: BirdLife International

REMARKS

1) The globally threatened species (and their threat status) occuring in Turkey (Criterion A1) are:

		threat status:	
Pygmy Cormorant	*Phalacrocorax pygmeus*	NT	
Dalmatian Pelican	*Pelecanus crispus*	VU	
Lesser White-fronted Goose	*Anser erythropus*	VU	
Red-breasted Goose	*Branta ruficollis*	VU	
Marbled Teal	*Marmaronetta angustirostris*	VU	
Ferruginous Duck	*Aythya nyroca*	VU	
White-headed Duck	*Oxyura leucocephala*	VU	
White-tailed Eagle	*Haliaeetus albicilla*	NT	
Black Vulture	*Aegypius monachus*	NT	
Pallid Harrier	*Circus macrourus*	NT	
Greater Spotted Eagle	*Aquila clanga*	VU	
Imperial Eagle	*Aquila heliaca*	VU	
Lesser Kestrel	*Falco naumanni*	VU	
Caucasian Black Grouse	*Tetrao mlokosiewiczi*	NT	
Corncrake	*Crex crex*	VU	
Little Bustard	*Tetrax tetrax*	NT	
Great Bustard	*Otis tarda*	VU	
Black-winged Pratincole	*Glareola nordmanni*	NT	
Sociable Plover	*Chettusia gregaria*	VU	
Great Snipe	*Gallinago media*	NT	*
Slender-billed Curlew	*Numenius tenuirostris*	CR	
Audouin's Gull	*Larus audouinii*	CD	
Aquatic Warbler	*Acrocephalus paludicola*	VU	*
Cinereous Bunting	*Emberiza cineracea*	NT	*

* species not used for IBA selection because:
a) the species has an insignificant population in Turkey or
b) the species has a very wide and scattered distribution in Turkey.

Globally Threatened Species status follows Collar et al. (1994):

CR	Critical
VU	Vulnerable
CD	Conservation Dependent
NT	Near Threatened

2) There is no EBA or SA lying wholly within Turkey (cf. criterion A2), although Doğu Karadeniz Dağları (IBA no. 60) falls partly within the Caucasus EBA.

3) A biome (cf. criterion A3) may be defined as a major regional ecological community characterised by distinctive life forms and principal plant species. There are two biomes which concern Turkey, viz. the Mediterranean and Eurasian High Montane (Alpine) biomes, of which only the latter one has been applied to the Doğu Karadeniz Dağları (IBA no. 60). This IBA holds large breeding populations of six of the ten bird species whose breeding distributions are largely or wholly confined to the Eurasian High Montane (Alpine) Biome.

4) In Europe the A4 (iv) criteria is applied when a site is a "bottleneck site" where over 20,000 storks (Ciconiidae), pelicans (Pelecanidae), raptors (Accipitridae) or cranes (Gruidae) regularly pass during spring or autumn migration.

5) Sites qualifying under the criteria A4 (i), A4 (iii) and B1(i) principally meet the Ramsar criteria for "Wetlands of International Importance" (the thresholds are presently under revision and minor modifications may occur). A full list of these sites is presented in appendix 6.

6) Criteria B2 and B3 are based on the Species of European Conservation Concern (SPEC) categories 1, 2, 3 and 4 (cf. Tucker and Heath, 1994). The number of Turkish IBAs that may be declared under the B2 and B3 criteria is determined by the proportionial size of the Turkish populations:

Proportion of national population relative to European one (%)	Maximum number of sites that can be declared
1-5	5
6-15	10
16-25	20
26-35	30
36-45	40
46-55	50
56-65	60
66-75	70
76-85	80
86-95	90
96-100	100

Any site to be selected under B2 and B3 criteria should also hold ≥1 % of the national population.

APPENDIX 2

IBA CRITERIA CATEGORIES: TURKEY POPULATION THRESHOLDS

Numbers refer to individuals unless otherwise stated

SPECIES	A1		A3	A4i	A4ii	B1i	B1ii	B1iii	B2&B3	
		pairs							min.no.of pairs	no.of sites
Little Grebe				1,000		1,000				
Great Crested Grebe				10,000		5,000				
Red-necked Grebe				1,250		1,000				
Black-necked Grebe				1,000		1,000				
Yelkouan Shearwater					675		90			
Cormorant				4,250		1,000				
Shag				2,700		150			5	5
Pygmy Cormorant	30	10		210		210			20	30
White Pelican				800		800			3	10
Dalmatian Pelican	30	10		25		25			1	10
Little Bittern									10	5
Night Heron				1,500		1,500			10	5
Squacco Heron				360		360			30	20
Cattle Egret				2,100		100				
Little Egret				1,000		250				
Great White Egret				120		120				
Grey Heron				3,900		3,900				
Purple Heron									20	5
Black Stork				200		200			5	10
White Stork				4,500		4,000				
Glossy Ibis				450		450			5	5
Spoonbill				160		130			5	10
Greater Flamingo				5,000		5,000			140	50
Mute Swan				3,750		450				
Bewick's Swan				170		170				
Whooper Swan				660		170				
Lesser White-fronted Goose	15	5								
White-fronted Goose				12,800		6,500				
Greylag Goose				3,500		250				

SPECIES	A1		A3	A4i	A4ii	B1i	B1ii	B1iii	B2&B3	
		pairs							min.no.of pairs	no.of sites
Red-breasted Goose	60			700		700				
Ruddy Shelduck				225		200				
Shelduck				3,750		750				
Wigeon				18,000		5,500				
Gadwall				1,300		1,000			5	5
Teal				14,000		10,000				
Mallard				83,000		22,500				
Pintail				12,600		12,000				
Garganey				20,000		20,000				
Shoveler				4,650		4,250				
Marbled Teal	15	5		30		10			2	70
Red-crested Pochard				750		500			10	10
Pochard				13,500		10,000				
Ferruginous Duck	60	20		600		500			10	10
Tufted Duck				16,000		6,000				
Scaup				3,600		500				
Velvet Scoter				10,000		15				
Goldeneye				3,900		200				
Smew				900		650				
Red-breasted Merganser				1,850		500				
Goosander				2,200		100				
White-headed Duck	15	5		140		130			2	70
White-tailed Eagle	15	5								
Lammergeier									1	50
Egyptian Vulture					110prs			30prs	10	40
Griffon Vulture					180prs			90prs	1	5
Black Vulture	15	5			50prs			10prs	1	10
Short-toed Eagle									10	20
Montagu's harrier									2	5
Pallid Harrier	30	10								
Long-legged Buzzard									10	50
Greater Spotted Eagle	6	2								
Imperial Eagle	6	2							1	5
Golden Eagle									1	5

SPECIES	A1		A3	A4i	A4ii	B1i	B1ii	B1iii	B2&B3	
		pairs							min.no.of pairs	no.of sites
Booted Eagle									1	5
Lesser Kestrel	30	10			200prs			100prs	40	40
Kestrel									50	5
Eleonora's Falcon					50prs			40prs		
Lanner									1	5
Caucasian Black Grouse	60	20	E04						2	100
Caspian Snowcock			E04						2	100
Corncrake	60	20								
Black Francolin									3	20
Moorhen				10,000		10,000				
Purple Gallinule									1	5
Coot				40,000		25,000				
Crane				2,000		1,000			10	5
Little Bustard	60	20								
Great Bustard	30	10							1	5
Oystercatcher				11,000		30				
Black-winged Stilt				700		300				
Avocet				1,100		400			50	20
Stone Curlew									10	5
Collared Pratincole				200		100			5	10
Black-winged Pratincole	30	10		100		100				
Little Ringed Plover				3,200		3,200				
Kentish Plover				950		250			50	20
Greater Sand Plover									1	100
Golden Plover				18,000						
Grey Plover				1,700						
Spur-winged Plover				100		100			10	100
Sociable Plover	30	10								
Lapwing				70,000		70,000				
Little Stint				2,100		2,100				
Temminck's Stint				3,000		3,000				
Curlew Sandpiper				4,500		4,500				
Dunlin				22,000		14,000				
Broad-billed Sandpiper				400		400				

SPECIES	A1		A3	A4i	A4ii	B1i	B1ii	B1iii	B2&B3	
		pairs							min.no.of pairs	no.of sites
Ruff				33,000		33,000				
Jack Snipe				660		660				
Snipe				54,000		47,000				
Black-tailed Godwit				4,200						
Bar-tailed Godwit				8,000		1,000				
Whimbrel				5,300		5,300				
Slender-billed Curlew	1	1								
Curlew				3,500		3,500				
Spotted Redshank				720		720				
Redshank				3,000						
Marsh Sandpiper				300		300				
Greenshank				1,800		1,800				
Green Sandpiper				10,000		10,000				
Wood Sandpiper				11,000		11,000				
Common Sandpiper				15,000		15,000				
Turnstone				700		700				
Great Black-headed Gull				950		950				
Mediterranean Gull				5,500		5,500			30	5
Little Gull				680		680				
Black-headed Gull				65,000		5,000				
Slender-billed Gull				1,200		1,200				
Audouin's Gull	60	20		390		390				
Common Gull				16,000						
Lesser Black-backed Gull				6,000						
Yellow-legged Gull				4,500		1000 Bl.Sea				
						3500 Med.				
Armenian Gull				300		300				
Gull-billed Tern				270		150			20	30
Caspian Tern				150		50 Europe			1	5
						100 Casp.				
Sandwich Tern				2,800		1,300				
Common Tern				7,800		6,000				
Little Tern				900		600			50	20
Whiskered Tern				1,000		750			10	5

SPECIES	A1		A3	A4i	A4ii	B1i	B1ii	B1iii	B2&B3	
		pairs							min.no.of pairs	no.of sites
Black Tern				1,700		1,700				
White-winged Black Tern				2,300		2,300				
Bee-eater				40,000		13,000				
Sand Martin				120,000		60,000				
Alpine Accentor			E04							
Wallcreeper			E04							
Alpine Chough			E04							
Snowfinch			E04							

APPENDIX 3

QUALIFYING BIRD RECORDS USED TO SELECT IBAS

Numbers refer to individuals unless otherwise stated.
For categories B2 & B3, numbers refer to the estimated number of breeding pairs, based on information from the period 1989-1996, unless otherwise stated.
"+" indicates occasional breeding or unknown (breeding) number, but thought to meet the threshold.

SITE NAME	DATE	Euring	SPECIES	A1		A3	A4				B1				B2	B3
& IBA NUMBER		code			pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
Meriç Deltası	13/01/1994	00820	PHAPY	128												
IBA no. 01	17/01/1996	00820	PHAPY	325			325				325					
	22/02/1996	00820	PHAPY	1,450			1,450				1,450					
	24/01/1993	00890	PELCR	144			144				144					
	13/01/1994	00890	PELCR	291			291				291					
	17/01/1996	00890	PELCR	51			51				51					
		00970	IXOMI												50	
		01040	NYCNY												200	
		01080	ARDRA												300	
	11/05/1993	01190	EGRGA								377					
	01/06/1994	01190	EGRGA								470					
	24/01/1993	01210	EGRAL				260				260					
		01240	ARDPU												100	
		01360	PLEFA												100	
		01440	PLALE												40	
	24/01/1993	01520	CYGOL								1,244					
	17/01/1996	01520	CYGOL								2,030					
	22/02/1996	01540	CYGCY								214					
	17/01/1996	01980	AYTFE				15,528				15,528					
	01/06/1994	04550	HIMHI								350					
	01/06/1994	04650	GLAPR								195					
		04650	GLAPR												200	
		06240	STEAL												200	
	11/05/1993	06260	CHLHY				1,500				1,500					
		06260	CHLHY												500	
	17/01/1996		waterfowl						48,440							
İğneada Ormanları		01310	CICNI												5	
IBA no. 02	10/09/1996	01310	CICCI											8,366		
Büyükçekmece Gölü	13/01/1996	01980	AYTFE				14,036				14,036					
IBA no. 03	19/03/1995	05750	LARME				10,000				10,000					
	13/04/1991	05780	LARMI				1,740				1,740					
	11/01/1994	05925	LARCA				8,775				8,775					
	13/01/1996	05925	LARCA								1,250					
	13/01/1996		waterfowl						22,681							
Küçükçekmece Gölü	23/01/1993	00090	PODCR								5,750					
IBA no. 04	23/01/1993	00720	PHACA				10,200				10,200					
	22/03/1993	00820	PHAPY	160												
	17/12/1995	00820	PHAPY	126												
	23/01/1993	05925	LARCA								2,685					
	23/01/1993		waterfowl						21,273							
	14/01/1996		waterfowl						21,177							
Boğaziçi		00462	PUFYE					+				+				
IBA no. 05	sep 88		rapt/stor							21,642						
	sep 88		raptors											19,933		
	26/8/90		storks											16,000		
	sep 90		raptors											18,896		
	1/9/93		raptors											10,180		
	31/03/1996		storks											9,200		
Şile Adaları	17/06/1995	00800	PHAAR								535					
IBA no. 06		00800	PHAAR													175
İznik Gölü	01/06/1995	00820	PHAPY	40												
IBA no. 07		00820	PHAPY		30										30	
		01040	NYCNY												250	
Uludağ		02460	GYPBA												2	
IBA no. 08		02960	AQUCH												2	
Uluabat Gölü	27/01/1989	00820	PHAPY	170												
IBA no. 09	02/01/1990	00820	PHAPY	219			219				219					
	01/02/1992	00820	PHAPY	209												
	23/09/1992	00820	PHAPY	216			216				216					
	25/01/1993	00820	PHAPY	600			600				600					
	20/05/1993	00820	PHAPY	176												
	03/10/1993	00820	PHAPY	219			219				219					
	17/01/1995	00820	PHAPY	1,078			1,078				1,078					
	26/05/1995	00820	PHAPY	700			700				700					
	15/09/1995	00820	PHAPY	450			450				450					
	19/01/1996	00820	PHAPY	480			480				480					
		00820	PHAPY		300										300	
	29/10/1994	00890	PELCR	136			136				136					
		01080	ARDRA												30	

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SITE NAME & IBA NUMBER	DATE	Buring code	SPECIES	A1		A3	A4				B1				B2	B3
					pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
		01440	PLALE												75	
	02/01/1990	01980	AYTFE				22,420				22,420					
	25/01/1993	01980	AYTFE				14,700				14,700					
	19/01/1996	01980	AYTFE				42,500				42,500					
	19/01/1996	02030	AYTFU								13,600					
	17/01/1995	04290	FULAT				45,840				45,840					
	19/01/1996	04290	FULAT				321,550				321,550					
	19/01/1996	05820	LARRI								6,200					
	27/01/1989		waterfowl						27,136							
	02/01/1990		waterfowl						36,320							
	01/02/1992		waterfowl						20,987							
	25/01/1993		waterfowl						28,723							
	17/01/1995		waterfowl						76,499							
	19/01/1996		waterfowl						429,423							
Kuş Gölü	25/05/1995	00720	PHACA								2,650					
IBA no. 10	11/09/1992	00820	PHAPY	100												
	06/02/1993	00820	PHAPY	58												
	18/01/1995	00820	PHAPY	147												
	25/05/1995	00820	PHAPY	315			315				315					
	18/01/1996	00820	PHAPY	85												
		00820	PHAPY		150										150	
	30/08/1991	00880	PELON				1,500				1,500					
	04/06/1991	00890	PELCR	98			98				98					
	31/01/1992	00890	PELCR	58			58				58					
	06/02/1993	00890	PELCR	117			117				117					
	18/01/1995	00890	PELCR	52			52				52					
	25/05/1995	00890	PELCR	97			97				97					
	18/01/1996	00890	PELCR	115			115				115					
		00890	PELCR		35										35	
		01040	NYCNY												150	
		01080	ARDRA												100	
	25/05/1995	01190	EGRGA								305					
	25/05/1995	01440	PLALE				360				360					
		01440	PLALE												200	
	18/01/1995	02260	OXYLE	34	*											
	18/01/1996	02260	OXYLE	20												
Kocaçay Deltası	12/09/1992	00820	PHAPY	63												
IBA no. 11	18/09/1994	00820	PHAPY	150												
		00880	PELON				800				800					
		01310	CICNI												10	
		02020	AYTNY		70										70	
	20/01/1996	04290	FULAT				42,610				42,610					
		04650	GLAPR												80	
		04770	CHAAL												60	
	18/01/1995		waterfowl						27,986							
	20/01/1996		waterfowl						46,291							
Foça Adaları	win. 93/94	00800	PHAAR								169					
IBA no. 12		00800	PHAAR													59
Murat Dağı		02460	GYPBA												1	
IBA no. 13		02550	AEGMO												2	
		02960	AQUCH												2	
Demirköprü Barajı	28/01/1992	01710	TADFE				534				534					
IBA no. 14	18/01/1996	01710	TADFE				830				830					
	28/01/1992	01840	ANACR								10,410					
Marmara Gölü	03/01/1990	00820	PHAPY	100												
IBA no. 15	25/01/1989	00890	PELCR	40			40				40					
	30/01/1992	00890	PELCR				26				26					
	28/10/1994	00890	PELCR	73			73				73					
	04/06/1995	00890	PELCR	67			67				67					
	18/01/1996	00890	PELCR	51			51				51					
		00970	IXOMI												30	
		01080	ARDRA												200	
	12/05/1993	01190	EGRGA								250					
	30/01/1992	01210	EGRAL				194				194					
	18/01/1996	01210	EGRAL				428				428					
	25/01/1990	01710	TADFE				231				231					
	18/01/1996	01710	TADFE				290				290					
	03/01/1990	01790	ANAPE								8,500					
	28/10/1994	01980	AYTFE				24,000				24,000					
	18/01/1996	01980	AYTFE				18,690				18,690					
	25/01/1990	02020	AYTNY	860			860				860					
		02020	AYTNY												15	
	25/01/1989	02260	OXYLE	50												
	25/01/1990	02260	OXYLE	120												
	30/01/1992	04560	RECAV				1,402				1,402					

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SITE NAME & IBA NUMBER	DATE	Euring code	SPECIES	A1		A3	A4				B1				B2	B3
					pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
		04870	HOPSP												10	
		06260	CHLHY												100	
	25/01/1989		waterfowl						31,288							
	03/01/1990		waterfowl						24,473							
	27/01/1993		waterfowl						29,763							
	28/10/1994		waterfowl						45,278							
	18/01/1996		waterfowl						42,722							
Gediz Deltası	04/01/1990	00820	PHAPY	1,000			1,000				1,000					
IBA no. 16	29/01/1992	00820	PHAPY	85												
	29/01/1993	00820	PHAPY	197												
	26/01/1989	00890	PELCR	35			35				35					
	04/01/1990	00890	PELCR	62			62				62					
	29/01/1992	00890	PELCR	148			148				148					
	29/01/1993	00890	PELCR	122			122				122					
	21/01/1995	00890	PELCR	196			196				196					
	09/11/1995	00890	PELCR	341			341				341					
	18/01/1996	00890	PELCR	57			57				57					
		00890	PELCR		35										35	
	04/01/1990	01470	PHORU				10,000				10,000					
	24/01/1990	01470	PHORU				7,179				7,179					
	21/12/1992	01470	PHORU				21,300				21,300					
	29/01/1993	01470	PHORU				12,936				12,936					
	05/02/1995	01470	PHORU				5,000				5,000					
	18/01/1996	01470	PHORU				7,725				7,725					
		01470	PHORU												1,450	
	05/02/1995	01710	TADFE				250				250					
	18/01/1996	01710	TADFE				450				450					
		03030	FALNA		25											
	26/01/1989	04500	HAEOS								36					
		04560	RECAV												55	
		04590	BUROE												30	
		04650	GLAPR												35	
	29/01/1993	04770	CHAAL								532					
		04770	CHAAL												1,000	
		04870	HOPSP												50	
		05750	LARME													900
		06060	STECA												100	
		06240	STBAL												205	
	24/01/1990		waterfowl						20,099							
	29/01/1993		waterfowl						25,239							
	18/01/1996		waterfowl						20,949							
Ildır Körfezi Adaları	11/04/1996	00800	PHAAR								217					
IBA no. 17		00800	PHAAR													84
Küçük Menderes D.	22/03/1993	00820	PHAPY	160												
IBA no. 18	17/12/1995	00820	PHAPY	126												
Akdağ		02460	GYPBA												1	
IBA no. 19		02510	GYPFU												3	
		02550	AEGMO												3	
		02980	HIEPE												4	
Işıklı Gölü	19/08/1987	00820	PHAPY	94												
IBA no. 20	22/01/1989	00820	PHAPY	130												
	18/01/1990	00820	PHAPY	131												
	29/01/1992	00820	PHAPY	141												
	29/01/1996	00820	PHAPY	40												
		01080	ARDRA												30	
	19/08/1987	01190	EGRGA								302					
	29/01/1993	01590	ANSAL								8,178					
	29/01/1992	01960	NETRU				1,060				1,060					
	29/01/1993	01960	NETRU				931				931					
	29/01/1993	01980	AYTFE				18,370				18,370					
	29/01/1996	01980	AYTFE				13,740				13,740					
	29/01/1992	02020	AYTNY	97												
	29/01/1992	04290	FULAT								25,500					
	29/01/1993	04290	FULAT								27,790					
	29/01/1996	04290	FULAT				190,690				190,690					
		06050	GELNI												+	
		06260	CHLHY												110	
	22/01/1989		waterfowl						21,853							
	29/01/1992		waterfowl						74,015							
	29/01/1993		waterfowl						78,286							
	29/01/1996		waterfowl						211,482							

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SITE NAME & IBA NUMBER	DATE	Euring code	SPECIES	A1		A3	A4				B1				B2	B3
					pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
Bafa Gölü	23/01/1989	00070	TACRU				1,800				1,800					
IBA no. 21	22/01/1990	00070	TACRU				1,805				1,805					
	21/01/1996	00090	PODCR								6,240					
	27/01/1992	00120	PODNI				1,136				1,136					
	27/01/1992	00720	PHACA								1,172					
	03/02/1993	00720	PHACA								2,000					
	23/01/1989	00820	PHAPY	140												
	23/01/1989	00890	PELCR	30			30				30					
	22/01/1990	00890	PELCR	33			33				33					
	10/03/1992	00890	PELCR				25				25					
	03/02/1993	00890	PELCR	74			74				74					
	23/01/1989	01820	ANAST								1,250					
	21/01/1996	01980	AYTFE				27,085				27,085					
	23/01/1989	04290	FULAT				43,100				43,100					
	27/01/1992	04290	FULAT				68,500				68,500					
	21/01/1996	04290	FULAT				51,000				51,000					
		04650	GLAPR												50	
		04870	HOPSP												30	
	23/01/1989		waterfowl						51,296							
	22/01/1990		waterfowl						25,005							
	27/01/1992		waterfowl						75,184							
	21/01/1996		waterfowl						91,507							
Büyük Menderes D.	22/11/1988	00720	PHACA								3,005					
IBA no. 22	01/02/1993	00720	PHACA								1,160					
	20/01/1996	00720	PHACA								1,000					
	01/12/1988	00820	PHAPY	350			350				350					
	24/01/1989	00820	PHAPY	130												
	24/01/1989	00890	PELCR	220			220				220					
	20/02/1989	00890	PELCR	434			434				434					
	23/01/1990	00890	PELCR	154			154				154					
	26/01/1992	00890	PELCR	387			387				387					
	19/03/1993	00890	PELCR	39			39				39					
	01/02/1993	00890	PELCR	137			137				137					
	20/01/1996	00890	PELCR	308			308				308					
		00890	PELCR		42										42	
	22/11/1988	01210	EGRAL				312				312					
	23/01/1990	01210	EGRAL				138				138					
	26/01/1992	01210	EGRAL				146				146					
	20/01/1996	01210	EGRAL				252				252					
	01/12/1988	01470	PHORU				6,290				6,290					
	20/01/1996	01470	PHORU				8,650				8,650					
	11/03/1992	01710	TADFE								200					
	26/01/1992	01790	ANAPE								5,623					
	11/02/1989	04500	HABOS								35					
	11/11/1988	04560	RECAV								1,000					
	24/01/1989	04560	RECAV								550					
		04650	GLAPR												85	
		04770	CHAAL												150	
		05750	LARME													800
	30/01/1989	05850	LARGE				1,284				1,284					
	20/10/1988	06060	STECA								97					
		06060	STECA												6	
		06240	STEAL												300	
	20/01/1996		waterfowl						29,982							
Gülük Deltası	03/04/1994	00820	PHAPY	158												
IBA no. 23	15/03/1995	00820	PHAPY	221			221				221					
	24/03/1995	00820	PHAPY	217			217				217					
	21/01/1996	00820	PHAPY	65												
Köyceğiz Gölü	22/01/1996	00720	PHACA								1,525					
IBA no. 24	22/01/1996	00820	PHAPY	40												
	22/01/1996	01210	EGRAL				122				122					
	22/01/1996	01960	NETRU								528					
	22/01/1996	04290	FULAT								34,120					
	26/02/1995		waterfowl						27,142							
	22/01/1996		waterfowl						47,654							
Acıgöl	04/03/1994	01710	TADFE								211					
IBA no.25	22/01/1989	01710	TADFE				240				240					
		01470	PHORU												150	
		04460	OTITA												+	
		04560	RECAV													50
	04/04/1991	04770	CHAAL				1,010				1,010					
		04770	CHAAL												50	
		04870	HOPSP												+	
		06050	GELNI												+	

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SITE NAME & IBA NUMBER	DATE	Buring code	SPECIES	A1		A3	A4				B1				B2	B3
					pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
Çorak Gölü	15/01/1986	01840	ANACR				20,200				20,200					
IBA no.26	05/01/1969	01980	AYTFE				40,000				40,000					
	15/01/1970	02020	AYTNY	100												
	15/01/1971	02260	OXYLE	85												
	feb 74	02260	OXYLE	930			930				930					
	05/01/1969		waterfowl						45,900							
	15/01/1986		waterfowl						27,695							
Salda Gölü	19/01/1990	02020	AYTNY	400												
IBA no. 27	27/01/1992	02260	OXYLE	128												
	27/01/1993	02260	OXYLE	40												
Karataş Gölü	17/01/1990	01710	TADFE								212					
IBA no. 28	14/02/1995	02260	OXYLE	82												
	26/02/1995	02260	OXYLE	47												
Yarışlı Gölü	27/01/1992	01710	TADFE								206					
IBA no. 29	07/10/1993	01710	TADFE				328				328					
	01/12/1993	01710	TADFE				275				275					
	26/02/1995	01710	TADFE				1,736				1,736					
	27/03/1995	01710	TADFE				1,111				1,111					
	28/01/1996	01710	TADFE				580				580					
	20/01/1989	02260	OXYLE	46												
Burdur Gölü	01/04/1991	00120	PODNI				1,194				1,194					
IBA no. 30	27/10/1994	00120	PODNI				15,110				15,110					
	23/07/1995	00120	PODNI				5,163				5,163					
	26/08/1995	00120	PODNI				22,124				22,124					
	08/10/1995	00120	PODNI				25,280				25,280					
	28/01/1993	01710	TADFE				550				550					
	27/10/1994	01710	TADFE								220					
	24/12/1994	01710	TADFE				472				472					
	30/04/1995	01710	TADFE				235				235					
	23/07/1995	01710	TADFE				1,889				1,889					
	26/08/1995	01710	TADFE				540				540					
	08/10/1995	01710	TADFE				269				269					
	27/01/1996	01710	TADFE				235				235					
	26/01/1992	01960	NETRU				751				751					
	28/01/1993	01960	NETRU				1,212				1,212					
	24/12/1994	01960	NETRU				750				750					
	26/11/1995	01960	NETRU				2,814				2,814					
	19/01/1989	01980	AYTFE				15,000				15,000					
	26/01/1992	01980	AYTFE				37,083				37,083					
	27/10/1994	01980	AYTFE				27,530				27,530					
	24/12/1994	01980	AYTFE				21,660				21,660					
	23/07/1995	01980	AYTFE								11,160					
	26/08/1995	01980	AYTFE				16,876				16,876					
	08/10/1995	01980	AYTFE				57,555				57,555					
	26/11/1995	01980	AYTFE				41,070				41,070					
	05/12/1987	02030	AYTFU								6,000					
	19/01/1989	02260	OXYLE	6,700			6,700				6,700					
	16/01/1990	02260	OXYLE	6,483			6,483				6,483					
	04/02/1991	02260	OXYLE	10,927			10,927				10,927					
	01/04/1991	02260	OXYLE	2,054			2,054				2,054					
	26/01/1992	02260	OXYLE	3,264			3,264				3,264					
	14/02/1993	02260	OXYLE	3,010			3,010				3,010					
	08/02/1994	02260	OXYLE	3,337			3,337				3,337					
	27/10/1994	02260	OXYLE	876			876				876					
	24/12/1994	02260	OXYLE	1,636			1,636				1,636					
	29/01/1995	02260	OXYLE	2,805			2,805				2,805					
	25/02/1995	02260	OXYLE	1,655			1,655				1,655					
	23/07/1995	02260	OXYLE	342			342				342					
	26/08/1995	02260	OXYLE	494			494				494					
	08/10/1995	02260	OXYLE	499			499				499					
	26/11/1995	02260	OXYLE	1,463			1,463				1,463					
	29/01/1996	02260	OXYLE	1,273			1,273				1,273					
	19/01/1989	04290	FULAT				85,700				85,700					
	16/01/1990	04290	FULAT				42,933				42,933					
	27/10/1994	04290	FULAT				67,915				67,915					
	24/12/1994	04290	FULAT				62,460				62,460					
	29/01/1995	04290	FULAT				50,600				50,600					
	08/10/1995	04290	FULAT				89,155				89,155					
	26/11/1995	04290	FULAT				138,925				138,925					
	27/01/1996	04290	FULAT								34,067					
		04870	HOPSP												+	
	19/01/1989		waterfowl						126,559							
	16/01/1990		waterfowl						56,679							
	26/01/1992		waterfowl						47,037							
	27/10/1994		waterfowl						118,236							
	24/12/1994		waterfowl						130,105							

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SITE NAME & IBA NUMBER	DATE	Euring code	SPECIES	A1		A3	A4				B1				B2	B3
					pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
	29/01/1995		waterfowl						58,122							
	23/07/1995		waterfowl						23,955							
	26/08/1995		waterfowl						68,852							
	08/10/1995		waterfowl						188,615							
	26/11/1995		waterfowl						202,119							
	27/01/1996		waterfowl						37,233							
Eğirdir Gölü	15/01/1990	00820	PHAPY	81												
IBA no. 31	25/01/1992	01960	NETRU				1,503				1,503					
	26/01/1996	01960	NETRU								600					
	26/10/1994	01980	AYTFE								12,290					
	26/01/1996	01980	AYTFE				15,198				15,198					
	17/01/1989	02030	AYTFU								6,500					
	15/01/1990	02030	AYTFU								9,920					
	25/01/1992	02030	AYTFU								8,120					
	25/01/1993	02030	AYTFU								10,478					
	26/10/1994	02030	AYTFU								12,665					
	26/01/1996	02030	AYTFU								11,321					
	26/01/1996	04290	FULAT				64,419				64,419					
	17/01/1989		waterfowl						39,372							
	15/01/1990		waterfowl						39,021							
	25/01/1992		waterfowl						32,550							
	26/10/1994		waterfowl						48,567							
	26/01/1996		waterfowl						107,199							
Karamuk Sazlığı		00970	IXOMI												25	
IBA no. 32		02020	AYTNY												10	
Akşehir & Eber Gölü	19/4/88	00820	PHAPY	200												
IBA no. 33	13/10/1991	00820	PHAPY	47												
	29/05/1995	00820	PHAPY	46												
		00820	PHAPY		50										50	
	19/4/88	00880	PELON				2,000				2,000					
		00890	PELCR												+	
		01080	ARDRA												70	
	19/4/88	01190	EGRGA								393					
		01240	ARDPU												50	
	20/04/1988	01360	PLEFA				1,536				1,536					
	april 94	01360	PLEFA				680				680					
		01360	PLEFA												50	
		01440	PLALE												15	
	17/01/1989	01590	ANSAL				15,900				15,900					
	30/01/1990	01590	ANSAL								7,568					
		02020	AYTNY												10	
	19/06/1994	04550	HIMHI								307					
	29/05/1995	04550	HIMHI								311					
		04790	CHALE												+	
		06050	GELNI												20	
Çavuşçu Gölü	17/09/1995	01610	ANSAN								330					
IBA no. 34	02/12/1993	01960	NETRU				1,000				1,000					
		06260	CHLHI												100	
	02/12/1993		waterfowl						32,586							
Altıntaş Ovası		04460	OTITA		20										20	
IBA no. 35																
Türkmenbaba Dağı		01310	CICNI												5	
IBA no. 36		02460	GYPBA												1	
	08/05/1995	02550	AEGMO	25												
		02550	AEGMO		10								10		10	
		02980	HIRPE												5	
Akliken	30/04/1993	04460	OTITA	45												
IBA no. 37	16/05/1996	04460	OTITA	38												
		04460	OTITA		20										20	
Balıkdamı	23/03/1993	01340	CICCI				17,915				17,915					
IBA no. 38	22/01/1996	01710	TADFE				302				302					
		02630	CIRPY													15
		03030	FALNA		10											
	23/03/1993		waterfowl						22,847							
Uyuz Gölü	19/03/1994	02260	OXYLE	21												
IBA no. 39		02260	OXYLE		10										10	
Çöl Gölü	17/07/1986	01470	PHORU				5,500				5,500					
IBA no. 40	17/11/1969	01590	ANSAL								9,365					
	20/11/1970	01590	ANSAL				14,000				14,000					
	17/11/1969	01710	TADFE				6,847				6,847					
	06/01/1970	01710	TADFE				1,296				1,296					

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SITE NAME	DATE	Euring	SPECIES	A1		A3	A4				B1				B2	B3
& IBA NUMBER		code			pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
	18/06/1990	01710	TADFE				300				300					
	17/11/1969	01840	ANACR								10,486					
	26/05/1991	02260	OXYLE	27												
	17/07/1986	04550	HIMHI				1,000				1,000					
		04790	CHALE												+	
	17/11/1969		waterfowl						76,154							
	06/01/1970		waterfowl						26,835							
	20/11/1970		waterfowl						21,156							
Mogan Gölü		01080	ARDRA												30	
IBA no. 41	21/11/1993	01960	NETRU								673					
		01960	NETRU												50	
	wint. 93/94	02020	AYTNY	150												
	13/09/1994	02020	AYTNY	200												
		02020	AYTNY												10	
		02060	OXYLE												2	
	19/02/1994	04290	FULAT				43,010				43,010					
	13/09/1994	04290	FULAT								25,000					
	09/10/1994	04290	FULAT				70,100				70,100					
	21/11/1993		waterfowl						20,183							
	19/02/1994		waterfowl						53,440							
	13/09/1994		waterfowl						25,973							
	09/10/1994		waterfowl						78,590							
Kızılcahamam		01310	CICNI												5	
Ormanları		02460	GYPBA												2	
IBA no. 42		02470	NEOPE												15	
		02510	GYPFU												2	
		02550	AEGMO		6										6	
		02980	HIRPE												3	
Kavaklı Dağı		02550	AEGMO		5										5	
IBA no. 43																
Inözü Vadisi		01310	CICNI												5	
IBA no. 44		03140	FALBI												1	
Sarıyar Barajı		01040	NYCNY												120	
IBA no. 45		01310	CICNI												20	
	15/05/1994	01340	CICCI				11,300				11,300					
	18/09/1995	01710	TADFE				295				295					
	29/10/1995	01710	TADFE				2,400				2,400					
	09/12/1995	01710	TADFE				238				238					
		02470	NEOPE												10	
		03140	FALBI												1	
Hamam Dağı	11/05/1995	02550	AEGMO	15												
IBA no. 46		02550	AEGMO		5										5	
		02980	HIRPE												1	
Sapanca Gölü	16/01/1995	01960	NETRU				1,002				1,002					
IBA no. 47	16/01/1995	01980	AYTFE								10,400					
	16/01/1995	04290	FULAT								30,700					
	22/01/1996	04290	FULAT								30,150					
	16/01/1995		waterfowl						48,267							
	22/01/1996		waterfowl						40,357							
Ilgaz Dağları		02460	GYPBA												2	
IBA no. 48		02510	GYPFU												+	
		02980	HIRPE												5	
Sarıkum Gölü	18/12/1995	02260	OXYLE	55												
IBA no. 49	18/12/1995		waterfowl						20,266							
Tödürge Gölü		01960	NETRU												40	
IBA no. 50																
Palas Gölü	1985	01710	TADFE				2,930				2,930					
IBA no. 51	15/1/86	01710	TADFE				775				775					
	15/01/1987	01710	TADFE				660				660					
		04790	CHALE												+	
Sultansazlığı	04/05/1989	00820	PHAPY	350			350				350					
IBA no. 52	19/08/1992	00820	PHAPY	850			850				850					
	19/04/1993	00820	PHAPY	350			350				350					
	14/06/1993	00820	PHAPY	128												
	15/08/1993	00820	PHAPY	50												
	23/03/1994	00820	PHAPY	100												
	07/05/1994	00820	PHAPY	135												
	04/06/1994	00820	PHAPY	480			480				480					
	23/10/1994	00820	PHAPY	110												

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SITE NAME & IBA NUMBER	DATE	Buring code	SPECIES	A1		A3	A4				B1				B2	B3
					pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
	29/04/1996	00820	PHAPY	150												
		00820	PHAPY		200										200	
		01080	ARDRA												70	
	19/08/1992	01190	EGRGA								250					
	19/04/1993	01190	EGRGA								550					
		01360	PLEFA												75	
	23/04/1988	01440	PLALE								138					
		01440	PLALE												10	
	19/08/1992	01470	PHORU				10,000				10,000					
	23/03/1994	01470	PHORU				6,500				6,500					
	23/10/1994	01470	PHORU				59,150				59,150					
	23/10/1994	01610	ANSAN								250					
	25/01/1990	01710	TADFE				539				539					
	19/08/1992	01710	TADFE				640				640					
	23/03/1994	01710	TADFE				267				267					
	04/06/1994	01710	TADFE				2,283				2,283					
		01820	ANAST												20	
	17/06/1989	01950	MARAN								10					
		01950	MARAN		5										5	
	04/06/1994	01960	NETRU								620					
		01960	NETRU												400	
	21/08/1991	02020	AYTNY	140												
		02020	AYTNY		20										20	
	19/07/1987	02260	OXYLE	38												
	12/04/1991	02260	OXYLE	32												
		02260	OXYLE		20										20	
	23/10/1994	04330	GRUGR								1,200					
		04330	GRUGR												20	
	04/06/1994	04550	HIMHI								390					
	23/10/1994	04560	RECAV				2,115				2,115					
		04560	RECAV													150
		04650	GLAPR												50	
		04770	CHAAL												100	
		04790	CHALE												+	
		04870	HOPSP												20	
		06050	GELNI												50	
		06240	STEAL												100	
		06260	CHLHY												400	
	19/08/1992		waterfowl						27,258							
	23/10/1994		waterfowl						129,801							
Seyfe Gölü		00880	PELON												100	
IBA no. 53		01440	PLALE												50	
	27/07/1986	01470	PHORU				21,800				21,800					
	11/06/1994	01470	PHORU				9,600				9,600					
	30/04/1996	01470	PHORU				5,490				5,490					
	23/07/1996	01470	PHORU				16,000				16,000					
		01470	PHORU												2,000	
	05/01/1989	01590	ANSAL								7,200					
	20/01/1992	01710	TADFE				978				978					
	19/06/1992	01710	TADFE				500				500					
	13/06/1993	01710	TADFE				352				352					
	20/01/1996	01710	TADFE				610				610					
		01960	NETRU												15	
	30/04/1996	03030	FALNA	59												
		04460	OTITA												+	
	27/07/1986	04560	RECAV				1,700				1,700					
	16/04/1988	04560	RECAV								573					
		04560	RECAV													500
		04870	HOPSP												10	
		05750	LARME													500
	11/06/1994	06050	GELNI								266					
	30/04/1996	06050	GELNI				590				590					
		06050	GELNI												500	
		06240	STEAL												500	
	05/01/1989		waterfowl						21,861							
Hirfanlı Barajı	30/03/1996	01710	TADFE				2,070				2,070					
IBA no. 54	20/01/1992	01960	NETRU				824				824					
	17/01/1993	01960	NETRU				959				959					
	07/12/1993	01960	NETRU				1,095				1,095					
	21/01/1996	01960	NETRU				3,560				3,560					
	21/01/1996	01980	AYTPE								13,430					
	21/01/1996	02030	AYTFU								14,550					
	20/01/1992	02260	OXYLE	25												
	07/12/1993	02260	OXYLE	35												
	21/01/1996	02260	OXYLE	122												
	13/03/1996	02260	OXYLE	19												
	21/01/1996	04290	FULAT				68,350				68,350					
	20/01/1992		waterfowl						48,783							
	17/01/1993		waterfowl						24,803							

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SITE NAME	DATE	Buring	SPECIES	A1		A3	A4				B1				B2	B3
& IBA NUMBER		code			pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
	07/12/1993		waterfowl						66,424							
	13/02/1994		waterfowl						23,435							
	21/01/1996		waterfowl						133,809							
	16/02/1996		waterfowl						36,086							
Beynam Ormanı		02950	AQUHE		2										2	
IBA no. 55																
Kızılırmak Deltası	28/01/1995	00462	PUFYE					1,000				1,000				
IBA no. 56	02/04/1992	00820	PHAPY	88												
	29/01/1995	00820	PHAPY	67												
		00890	PELCR												6	
	28/08/1987	01190	EGRGA				3,200				3,200					
	05/05/1992	01190	EGRGA								460					
	01/01/1989	01210	EGRAL				210				210					
		01240	ARDPU												500	
		01310	CICNI												50	
	27/04/1992	01360	PLEFA				590				590					
		01440	PLALE												75	
	30/01/1993	01610	ANSAN								322					
		01820	ANAST												200	
	29/03/1992	01940	ANACL								4,500					
	30/01/1993	01940	ANACL								4,564					
	10/12/1995	01960	NETRU								630					
		01960	NETRU												75	
	14/01/1996	01980	AYTFE				14,952				14,952					
		02020	AYTNY		150										150	
	10/12/1995	02150	MELFU								75					
	14/01/1996	02150	MELFU								97					
	16/11/1991	02260	OXYLE	187			187				187					
	02/02/1992	02260	OXYLE	73												
	23/03/1992	02260	OXYLE	1,246			1,246				1,246					
	30/01/1993	02260	OXYLE	15												
	25/03/1993	02260	OXYLE	295			295				295					
	27/03/1993	02260	OXYLE	30												
	29/01/1995	02260	OXYLE	43												
	25/10/1995	02260	OXYLE	410			410				410					
	30/01/1993	04290	FULAT								27,643					
	14/01/1996	04290	FULAT								27,511					
		04330	GRUGR												50	
		04590	BUROE												50	
		04650	GLAPR												100	
	03/04/1992	05780	LARMI				41,000				41,000					
	26/03/1993	05780	LARMI				3,000				3,000					
	28/08/1987	06280	CHLLE				3,000				3,000					
	01/01/1989		waterfowl						26,102							
	02/02/1992		waterfowl						25,381							
	30/01/1993		waterfowl						61,660							
	29/01/1995		waterfowl						65,374							
	10/12/1995		waterfowl						34,306							
	14/01/1996		waterfowl						91,708							
Yedikır Barajı	16/01/1992	01710	TADFE								205					
IBA no. 57	24/09/1994	01710	TADFE				744				744					
	22/09/1995	01710	TADFE				1,099				1,099					
	19/12/1995	01710	TADFE				610				610					
Yeşilırmak Deltası	23/01/1995	00462	PUFYE									500				
IBA no. 58		01080	ARDRA												30	
	23/01/1995	01960	NETRU								520					
	23/01/1995	02150	MELFU								57					
	29/12/1995	02150	MELFU								870					
	12/01/1996	02150	MELFU								485					
Akkuş Adası	28/06/1994	00800	PHAAR								155					
IBA no. 59		00800	PHAAR													90
Doğu Karadeniz Dğl.		02460	GYPBA												20	
IBA no. 60		02510	GYPFU												20	
		02550	AEGMO		10								10		10	
		02960	AQUCH												10	
		03330	TETML		+										+	
		03500	TETCA												+	
			biome			EO4										
	autumn 76		raptors							380,220				380,220		
	autumn 90		raptors							25,900				25,900		
	spring 93		raptors							60,609				60,609		
	spring 94		raptors							205,131				205,131		
	autumn 94		raptors							96,077				96,077		

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SITE NAME	DATE	Euring	SPECIES	A1		A3	A4				B1				B2	B3
& IBA NUMBER		code			pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
Samsun Gölü	04/04/1995	04560	RECAV								616					
IBA no. 61																
Kozanlı Gökgöl	25/03/1996	02260	OXYLE	16												
IBA no. 62		02260	OXYLE		10										10	
		03030	FALNA		10											
Kulu Gölü	12/09/1994	00120	PODNI				2,055				2,055					
IBA no. 63	19/01/1992	01590	ANSAL								9,718					
	summer87	01710	TADFE				10,000				10,000					
	19/06/1993	01710	TADFE				268				268					
	03/10/1993	01710	TADFE				300				300					
	10/06/1994	01710	TADFE				567				567					
		01950	MARAN												3	
		01960	NETRU												20	
		02020	AYTNY												10	
	14/04/1988	02260	OXYLE	319			319				319					
	06/05/1990	02260	OXYLE	42												
	29/07/1990	02260	OXYLE	100												
	10/06/1991	02260	OXYLE	105												
	27/04/1992	02260	OXYLE	95												
	19/06/1993	02260	OXYLE	29												
	03/10/1993	02260	OXYLE	85												
	08/12/1993	02260	OXYLE	56												
	12/09/1994	02260	OXYLE	102												
	02/10/1994	02260	OXYLE	59												
	19/05/1995	02260	OXYLE	38												
	17/01/1996	02260	OXYLE	95												
		02260	OXYLE		30										30	
	17/07/1986	04550	HIMHI				4,000				4,000					
	19/07/1988	04550	HIMHI								400					
	summer 87	04560	RECAV								1,000					
	10/06/1994	04560	RECAV								585					
		04560	RECAV													250
	03/10/1993	04770	CHAAL								300					
		04790	CHALE												+	
		05750	LARME													400
	27/04/1992	06050	GELNI								220					
	01/07/1994	06050	GELNI				500				500					
		06050	GELNI												450	
Ereğli Sazlığı	26/11/1987	00820	PHAPY	280			280				280					
IBA no. 64	15/06/1989	00820	PHAPY	850			850				850					
	05/05/1990	00820	PHAPY	500			500				500					
	15/06/1990	00820	PHAPY	1,500			1,500				1,500					
	01/06/1991	00820	PHAPY	1,200			1,200				1,200					
	20/04/1993	00820	PHAPY	350			350				350					
	16/06/1993	00820	PHAPY	93												
		00820	PHAPY		600										600	
	27/09/1993	00880	PELON				1,000				1,000					
		00880	PELON												23	
	05/05/1990	00890	PELCR	62			62				62					
	15/08/1990	00890	PELCR	50			50				50					
	01/06/1991	00890	PELCR	38			38				38					
		00890	PELCR												+	
		01080	ARDRA												30	
		01240	ARDPU												50	
		01360	PLEFA												50	
	01/06/1991	01440	PLALE				250				250					
		01440	PLALE												20	
		01470	PHORU												300	
	26/11/1987	01710	TADFE				460				460					
	14/01/1996	01710	TADFE				3,016				3,016					
		01820	ANAST												20	
	12/07/1988	01950	MARAN	40							40					
	15/06/1989	01950	MARAN	22							22					
	16/06/1993	01950	MARAN								10					
		01950	MARAN		5										5	
	09/03/1990	01960	NETRU								569					
	01/06/1991	01960	NETRU				880				880					
	16/06/1993	01960	NETRU				1,340				1,340					
	14/03/1994	01960	NETRU				834				834					
	05/04/1995	01960	NETRU								600					
		01960	NETRU												500	
		02020	AYTNY												10	
	09/03/1990	02260	OXYLE	508			508				508					
	01/06/1991	02260	OXYLE	75												
	30/03/1993	02260	OXYLE	243			243				243					
	16/06/1993	02260	OXYLE	15												
	27/09/1993	02260	OXYLE	20												
	14/03/1994	02260	OXYLE	494			494				494					

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'+' indicates occasional breeding or unknown (breeding) number, but thought to meet the threshold.

SITE NAME	DATE	Buring	SPECIES	A1		A3	A4				B1				B2	B3
& IBA NUMBER		code			pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
	06/04/1995	02260	OXYLE	400			400				400					
	29/04/1996	02260	OXYLE	80												
		02260	OXYLE		50										50	
		03030	FALNA		20											
	08/11/1993	04330	GRUGR								1,000					
	01/06/1991	04550	HIMHI								600					
		04560	RECAV													75
		04650	GLAPR												50	
		04790	CHALE												+	
		04870	HOPSP												20	
		06240	STEAL												60	
Karapınar Ovası	25/11/1987	01590	ANSAL				14,000				14,000					
IBA no. 65	25/11/1987	01710	TADFE				600				600					
	07/01/1989	01710	TADFE				900				900					
	15/01/1996	01710	TADFE				477				477					
		04790	CHALE												+	
Eşmekaya Sazlığı	16/03/1994	01340	CICCI				9,550				9,550					
IBA no. 66	05/12/1993	01590	ANSAL				19,400				19,400					
		01960	NETRU												30	
		02630	CIRPY													15
	24/04/1993	03030	FALNA	46												
		03030	FALNA		12											
	10/07/1994	04650	GLAPR								150					
		04870	HOPSP												10	
	05/12/1993		waterfowl						21,327							
Beyşehir Gölü	24/01/1996	01960	NETRU								603					
IBA no. 67	04/12/1993	01980	AYTFE				15,700				15,700					
	24/01/1996	01980	AYTFE				47,883				47,883					
	04/12/1993	04290	FULAT				130,200				130,200					
	24/01/1996	04290	FULAT				163,378				163,378					
	04/12/1993		waterfowl						147,284							
	24/01/1996		waterfowl						213,824							
Suğla Gölü	22/03/1996		waterfowl						24,852							
IBA no. 68																
Hotamış Sazlığı		00820	PHAPY		25										25	
IBA no. 69		00970	IXOMI												30	
		01080	ARDRA												50	
		01360	PLEFA												75	
		01950	MARAN		20										20	
	22/01/1992	01960	NETRU								600					
		01960	NETRU												30	
	16/03/1994	02020	AYTNY	89												
	24/04/1991	02260	OXYLE	354			354				354					
	08/05/1992	02260	OXYLE	37												
	23/04/1993	02260	OXYLE	40												
	05/04/1995	02260	OXYLE	204			204				204					
		02260	OXYLE		40										40	
	06/07/1985	04550	HIMHI				950				950					
	20/08/1988	04650	GLAPR								150					
		04650	GLAPR												100	
		04790	CHALE												+	
		04870	HOPSP												40	
Bolluk Gölü	02/07/1994	01440	PLALE				400				400					
IBA no. 70		01440	PLALE												30	
	09/06/1994	01710	TADFE				310				310					
		04560	RECAV													55
		04790	CHALE												+	
		05750	LARME													2250
	20/06/1993	05850	LARGE				2,000				2,000					
	09/06/1994	05850	LARGE				1,942				1,942					
	20/06/1993	06050	GELNI								200					
	09/06/1994	06050	GELNI				342				342					
	02/07/1994	06050	GELNI				400				400					
		06050	GELNI												400	
Tersakan Gölü	05/12/1993	01590	ANSAL				14,700				14,700					
IBA no. 71		04560	RECAV													+
	05/12/1993		waterfowl						20,841							
Tuz Gölü		01470	PHORU												14,000	
IBA no. 72	19/11/1987	01590	ANSAL								12,500					
	19/01/1992	01590	ANSAL								6,618					
		03030	FALNA		+										+	
		04560	RECAV													+
		04790	CHALE												+	

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SITE NAME	DATE	Buring	SPECIES	A1		A3	A4				B1				B2	B3
& IBA NUMBER		code			pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
Göksu Deltası	14/12/1987	00820	PHAPY	135												
IBA no. 73	12/01/1990	00820	PHAPY	117												
	27/02/1990	00820	PHAPY	50												
	11/07/1991	00820	PHAPY	70												
	31/01/1992	00820	PHAPY	99												
	24/01/1993	00820	PHAPY	53												
	21/09/1994	00820	PHAPY	30												
	23/01/1995	00820	PHAPY	180												
	31/03/1995	00820	PHAPY	50												
	12/01/1996	00820	PHAPY	46												
	05/12/1991	00890	PELCR	56			56				56					
	05/10/1992	00890	PELCR				28				28					
		00970	IXOMI												25	
		01040	NYCNY												150	
		01080	ARDRA												70	
		01240	ARDPU												50	
	22/09/1993	01310	CICNI				268				268					
	03/09/1991	01340	CICCI				22,000				22,000					
	14/04/1991	01360	PLEFA				2,500				2,500					
	31/01/1992	01610	ANSAN								680					
	24/01/1993	01610	ANSAN								1,450					
	23/01/1995	01610	ANSAN								1,000					
	31/01/1992	01790	ANAPE								11,648					
	24/01/1993	01790	ANAPE								8,830					
	23/01/1995	01790	ANAPE								6,150					
	12/01/1996	01790	ANAPE								7,389					
	31/01/1992	01840	ANACR				14,952				14,952					
	31/01/1992	01940	ANACL								4,325					
	30/05/1989	01950	MARAN	16							16					
	26/08/1991	01950	MARAN	191			191				191					
	22/03/1993	01950	MARAN	63			63				63					
	21/09/1994	01950	MARAN								10					
	1995 study	01950	MARAN	116			116				116					
	1995 study	01950	MARAN		50										50	
	1995 study	02020	AYTNY	119												
	1995 study	02020	AYTNY		30										30	
	27/02/1990	02930	AQUCL	6												
	15/01/1993	02930	AQUCL	15												
	23/01/1995	02930	AQUCL	20												
	12/01/1993	02950	AQUHE	6												
		03640	FRAFA												50	
		04270	PORPO												300	
	31/01/1992	04290	FULAT								36,240					
	21/09/1994	04290	FULAT								25,000					
	23/01/1995	04290	FULAT								27,616					
		04590	BUROE												60	
	27/08/1988	04650	GLAPR				250				250					
	21/09/1994	04650	GLAPR								100					
		04650	GLAPR												300	
		04770	CHAAL												200	
	27/08/1988	04870	HOPSP				200				200					
		04870	HOPSP												300	
		06240	STBAL												150	
	09/01/1989		waterfowl						20,125							
	12/01/1990		waterfowl						21,125							
	31/01/1992		waterfowl						91,097							
	24/01/1993		waterfowl						41,140							
	21/09/1994		waterfowl						25,646							
	23/01/1995		waterfowl						69,691							
	12/01/1996		waterfowl						26,045							
Aydıncık Adaları	1987	05880	LARAU		30											
IBA no. 74																
Aladağlar		02460	GYPBA												5	
IBA no. 75		02510	GYPFU												10	
		02960	AQUCH												4	
		03500	TETCA												+	
Tuzla Gölü	08/01/1990	01840	ANACR								12,600					
IBA no. 76	15/12/1994	01840	ANACR								13,000					
	09/04/1990	01950	MARAN	106			106				106					
		01950	MARAN		30										30	
		03640	FRAFA												5	
		04590	BUROE												20	
	30/04/1990	04650	GLAPR								157					
	02/04/1990	04770	CHAAL				986				986					
	15/12/1994	04770	CHAAL								330					
	08/01/1996	04770	CHAAL								394					

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SITE NAME	DATE	Buring	SPECIES	A1		A3	A4				B1				B2	B3
& IBA NUMBER		code			pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
		04770	CHAAL												1,000	
		04870	HOPSP												50	
		06240	STEAL												200	
	11/01/1989		waterfowl						23,484							
	15/12/1994		waterfowl						28,901							
Akyatan Gölü	18/04/1990	00820	PHAPY	45												
IBA no. 77	29/01/1992	01210	EGRAL				416				416					
	09/01/1990	01470	PHORU				5,125				5,125					
	03/03/1990	01470	PHORU				6,338				6,338					
	29/01/1992	01470	PHORU				9,579				9,579					
	12/01/1989	01610	ANSAN								520					
	09/01/1990	01610	ANSAN								281					
	29/01/1992	01730	TADTA								854					
	12/01/1989	01790	ANAPE								13,900					
	29/01/1992	01790	ANAPE								13,445					
	23/01/1993	01790	ANAPE								10,073					
		01950	MARAN		5										5	
	12/01/1989	01980	AYTFE				14,500				14,500					
	29/01/1992	01980	AYTFE				16,801				16,801					
	12/01/1989	02260	OXYLE	230			230				230					
	09/01/1990	02260	OXYLE	901			901				901					
	03/03/1990	02260	OXYLE	540			540				540					
	29/01/1992	02260	OXYLE	978			978				978					
	23/01/1993	02260	OXYLE	283			283				283					
		03640	FRAFR												75	
		04270	PORPO												+	
	12/01/1989	04290	FULAT				46,000				46,000					
	09/01/1996	04290	FULAT								28,100					
	10/04/1993	04550	HIMHI								300					
	02/04/1990	04560	RECAV				1,589				1,589					
	23/01/1993	04560	RECAV								601					
		04590	BUROE												+	
	26/03/1990	04770	CHAAL				3,918				3,918					
	10/04/1993	04770	CHAAL								400					
		04770	CHAAL												+	
		04870	HOPSP												+	
	12/03/1990	05010	CALMI				5,165				5,165					
	23/04/1990	05010	CALMI				4,835				4,835					
		06240	STEAL												100	
	12/01/1989		waterfowl						85,054							
	09/01/1990		waterfowl						32,077							
	29/01/1992		waterfowl						74,909							
	23/01/1993		waterfowl						57,732							
	09/01/1996		waterfowl						68,114							
Ağyatan Gölü	22/01/1993	01210	EGRAL				147				147					
IBA no. 78	17/03/1990	01340	CICCI											12,439		
	22/01/1993	01790	ANAPE								14,320					
	22/01/1993	02260	OXYLE	191			191				191					
		03640	FRAFA												10	
	24/01/1992	04290	FULAT								26,000					
	18/05/1990	04650	GLAPR								115					
		04770	CHAAL												+	
		04870	HOPSP												+	
		06240	STEAL												+	
	11/01/1989		waterfowl						25,530							
	24/01/1992		waterfowl						35,579							
	22/01/1993		waterfowl						34,984							
Yumurtalık Lagünleri	11/01/1990	01610	ANSAN								301					
IBA no. 79	28/01/1992	01790	ANAPE								7,189					
		03640	FRAFR												5	
	13/01/1989	04560	RECAV								440					
	11/01/1990	04770	CHAAL								356					
	28/01/1992	04770	CHAAL								805					
		04770	CHAAL												+	
	10/01/1996	05010	CALMI				2,200				2,200					
		06240	STEAL												+	
	28/01/1992		waterfowl						35,284							
Gavur Gölü	04/04/1995	00820	PHAPY	36												
IBA no. 80	25/03/1996	00820	PHAPY	121												
	15/01/1968		waterfowl						900,000							
	15/01/1969		waterfowl						101,100							
Nur Dağları	24/03/1992	01340	CICCI											9,950		
IBA no. 81	autumn 76		raptors											26,756		
	sep 88		raptors											15,883		
	autumn 76		storks											86,190		
	autumn 76		pelicans											6,203		

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SITE NAME & IBA NUMBER	DATE	Euring code	SPECIES	A1		A3	A4				B1				B2	B3
					pairs		I	II	III	IV	I	II	III	IV	pairs	pairs
	autumn 76	rapt/stork/pel								119,149						
Erzurum Ovası	19/06/1994	01710	TADFE				1,500				1,500					
IBA no. 82	13/05/1993	06280	CHLLE				15,000				15,000					
		04330	GRUGR												15	
Sarısu Ovası		04330	GRUGR												10	
IBA no. 83																
Haçlı Gölü	09/10/1980	01710	TADFE				650				650					
IBA no. 84		01440	PLALE												10	
		01820	ANAST												10	
Bulanık Ovası	31/05/1989	00820	PHAPY	30												
IBA no. 85		00820	PHAPY		10											
		04330	GRUGR												10	
	10/05/1986	04460	OTITA	30												
	20/09/1989	04670	GLANO	1,000			1,000				1,000					
	27/05/1993	06050	GELNI				364				364					
		06050	GELNI												300	
		06060	STECA												+	
Ardahan Ormanı		02630	CIRPY													10
IBA no. 86																
Aktaş Gölü		00880	PELON												50	
IBA no. 87	14/07/1995	00890	PELCR	35			35				35					
		00890	PELCR		20										20	
	03/10/1982	01710	TADFE				500				500					
	14/07/1995	01710	TADFE								210					
	14/07/1995	02150	MELFU								725					
	14/07/1995	05921	LARAR				700				700					
Çıldır Gölü	17/09/1988	01710	TADFE				480				480					
IBA no. 88	08/07/1989	01710	TADFE				350				350					
	17/07/1992	05921	LARAR				1,500				1,500					
	05/06/1993	05921	LARAR				1,150				1,150					
	29/06/1995	05921	LARAR				2,400				2,400					
Kuyucuk Gölü		02260	OXYLE												2	
IBA no. 89																
Çalı Gölü	30/06/1995	02260	OXYLE	16												
IBA no. 90		02260	OXYLE		10										10	
Balık Gölü		02150	MELFU								+					
IBA no. 91																
Doğubeyazıt Sazlığı		02630	CIRPY													10
IBA no. 92																
Nemrut Gölü	25/05/1989	02150	MELFU								19					
IBA no. 93		02630	AQUCH												1	
Sodalıgöl		01820	ANAST												10	
IBA no. 94		01960	NETRU												30	
	29/08/1990	02260	OXYLE	750			750				750					
	13/07/1995	02260	OXYLE	101												
		02260	OXYLE		30										30	
	13/07/1995	04550	HIMHI								440					
	13/07/1995	05921	LARAR				310				310					
Erçek Gölü	27/09/1989	00120	PODNI				4,430				4,430					
IBA no. 95	20/07/1986	01710	TADFE				5,600				5,600					
	24/06/1991	01710	TADFE				2,000				2,000					
		04560	RECAV													50
		04790	CHALE												+	
Van Gölü		01950	MARAN		5										5	
IBA no.96	04/05/1990	04460	OTITA	32												
	26/06/1991	04460	OTITA	31												
		04460	OTITA		+										+	
	10/7/95	05921	LARAR				3,285				3,285					
	08/05/1989	06280	CHLLE				3,450				3,450					
Yüksekova		02630	CIRPY													15
IBA no. 97																

APPENDIX 4

EXAMPLE OF SITE RECORDING FORM

BIRDS OF TURKEY - site recording form

Please fill in a form for **each site** you visit. Return completed forms to :
DHKD Bird Section, PK 18, 80810 Bebek - Istanbul, Turkey

DHKD use	observer	site	form

Name _____ _____
initials Surname

Address _____

_____

_____ **Country** _____

Site name _____

Nearest large town _____

Coordinates for centre of site _____ ° 'N ° 'E

Date - from _____ **to** _____
(day / month / year) (day / month / year)

TIME SPENT BIRDWATCHING

Number of hours	**Period(s) of day** tick box(es)	dawn/early morning	mid morning/ afternoon	evening/ dusk	after dark/ overnight
☐		☐	☐	☐	☐

Weather summary _____

_____

_____

_____

Sketch map (an outline of the site with a clear indication of the area covered by these bird records; please mark positions of breeding colonies and add an arrow to indicate north)

Species names in bold in the list below are globally threatened species or species of great value for conservation work in Turkey. Detailed information on these species is especially appreciated.

Number

Use the first column to note the number of birds recorded **in the area marked on your sketch map.**
If you did not make an accurate count use the following codes:

✓ = Present, no count
A = 1 - 9
B = 10 - 99
C = 100 - 999
D = 1,000 - 9,999
E = 10,000 or more

Nesting (April - July only)

Use the second column to record evidence of breeding. Put a ✓ if any of the following were observed (if you wish you can indicate evidence of breeding more precisely by using the appropriate code letter T-Z):

T Bird in suitable habitat singing/apparently holding territory
U Courtship and display
V Used nest or nest building
W Agitated behaviour from adults indicating presence of nest or young
X Distraction display
Y Recently fledged young, or downy young unable to fly
Z Adult carrying faecal sac or food; nest with young

		Number	Nesting
00030	Gav. arctica		
00070	Tac. ruficollis		
00090	Pod. cristatus		
00100	Pod. grisegena		
00120	Pod. nigricollis		
00462	Puf. yelkouan		
00720	Pha. carbo		
00800	Pha. aristotelis		
• 00820	Pha. pygmeus		
• **00860**	**Pel. onocrotalus**		
• **00880**	**Pel. crispus**		
00950	**Bot. stellaris**		
00970	Ixo. minutus		
01040	Nyc. nycticorax		
01080	Ard. ralloides		
01110	Bub. ibis		
01190	Egr. garzetta		
01210	Egr. alba		
01220	Ard. cinerea		
01240	Ard. purpurea		
• **01310**	**Cic. nigra**		
01340	Cic. ciconia		
01360	Ple. falcinellus		
01400	Ger. eremita		
• **01440**	**Pla. leucorodia**		
01470	Pho. ruber		
01520	Cyg. olor		
01540	Cyg. cygnus		

		Number	Nesting
01580	Ans. albifrons		
01610	Ans. anser		
01710	Tad. ferruginea		
01730	Tad. tadorna		
01790	Ana. penelope		
01820	Ana. strepera		
01840	Ana. crecca		
01860	Ana. platyrhynchos		
01880	Ana. acuta		
01910	Ana. querquedula		
01940	Ana. clypeata		
• **01950**	**Mar. angustirostris**		
01960	Net. rufina		
01980	Ayt. ferina		
02020	Ayt. nyroca		
02030	Ayt. fuligula		
02150	Mel. fusca		
02180	Buc. clangula		
02200	Mer. albellus		
02210	Mer. serrator		
02230	Mer. merganser		
• **02260**	**Oxy. leucocephala**		
02310	Per. apivorus		
02360	Mil. migrans		
• **02430**	**Hal. albicilla**		
• **02460**	**Gyp. barbatus**		
02470	Neo. percnopterus		
02510	**Gyp. fulvus**		

		Number	Nesting
• **02550**	**Aeg. monachus**		
02560	Circae. gallicus		
02600	Circus aeruginosus		
02610	Circus cyaneus		
02620	Circus macrourus		
02630	Circus pygargus		
02670	Acc. gentilis		
02690	Acc. nisus		
02730	**Acc. brevipes**		
02870	But. buteo		
02880	But. rufinus		
02920	Aqu. pomarina		
02930	Aqu. clanga		
02945	Aqu. nipalensis		
02950	**Aqu. heliaca**		
02980	Aqu. chrysaetos		
02990	Hie. pennatus		
02990	**Hie. fasciatus**		
03010	**Pan. haliaetus**		
• **03030**	**Fal. naumanni**		
03040	Fal. tinnunculus		
03070	Fal. vespertinus		
03090	Fal. columbarius		
03100	Fal. subbuteo		
03110	**Fal. eleonorae**		
03140	Fal. biarmicus		
03160	**Fal. cherrug**		
03200	**Fal. peregrinus**		

		Number	Nesting
03330	Tet. mlokosiewiczi		
03500	Tet. caspius		
03550	Ale. chukar		
03620	Amm. griseogularis		
03640	**Fra. francolinus**		
03670	Per. perdix		
03700	Cot. coturnix		
04070	Ral. aquaticus		
04080	Por. porzana		
04240	Gal. chloropus		
04270	Por. porphyrio		
04290	Ful. atra		
• **04330**	**Gru. grus**		
• **04410**	**Ant. virgo**		
• **04460**	**Otis tarda**		
04500	Hae. ostralegus		
04550	Him. himantopus		
04580	Rec. avosetta		
04590	Bur.oedicnemus		
04650	Gla. pratincola		
04690	Cha. dubius		
04700	Cha. hiaticula		
04770	Cha. alexandrinus		
04790	Cha. leschenaultii		
04850	Plu. apricaria		
04860	Plu. squatarola		
04870	Hop. spinosus		
04900	Hop. indicus		

		Number	Nesting
04930	Van. vanellus		
04970	Cal. alba		
05010	Cal. minuta		
05020	Cal. temminckii		
05090	Cal. ferruginea		
05120	Cal. alpina		
05140	Lim. falcinellus		
05170	Phi. pugnax		
05180	Lym. minimus		
05190	Gal. gallinago		
05200	Gal. media		
05290	Sco. rusticola		
05320	Lim. limosa		
05380	Num. phaeopus		
05410	Num. arquata		
05450	Tri. erythropus		
05460	Tri. totanus		
05470	Tri. stagnatilis		
05480	Tri. nebularia		
05530	Tri. ochropus		
05540	Tri. glareola		
05550	Xen. cinereus		
05560	Act. hypoleucos		
05610	Are. interpres		
05640	Pha. lobatus		
05670	Ste. parasiticus		
05730	Lar. ichthyaetus		
05750	Lar. melanocephalus		
05780	Lar. minutus		
05820	Lar. ridibundus		
05850	Lar. genei		
05880	**Lar. audouinii**		
05900	Lar. canus		
05910	Lar. fuscus		
05921	Lar. armenicus		
05925	Lar. cachinnans		
06050	Gel. nilotica		
06060	Ste. caspia		
06110	Ste. sandvicensis		
06150	Ste. hirundo		
06240	Ste. albifrons		
06260	Chl. hybridus		
06270	Chl. niger		
06280	Chl. leucopterus		
06810	Pte. orientalis		
06820	Pte. alchata		
06850	Col. livia		
06880	Col. oenas		
06700	Col. palumbus		
06840	Str. decaocto		
06870	Str. turtur		
06900	Str. senegalensis		
07160	Cla. glandarius		
07240	Cuc. canorus		
07350	Tyt. alba		
07380	Otu. brucei		
07390	Otu. scops		
07440	Bub. bubo		
07570	Ath. noctua		

		Number	Nesting
07610	Str. aluco		
07670	Asi. otus		
07680	Asi. flammeus		
07780	Cap. europaeus		
07950	Apu. apus		
07960	Apu. pallidus		
07980	Apu. melba		
08000	Apu. affinis		
08270	**Hal. smyrnensis**		
08310	Alc. atthis		
08330	**Cer. rudis**		
08390	Mer. supercilliosus		
08400	Mer. apiaster		
08410	Cor. garrulus		
08480	Upu. epops		
08480	Jyn. torquilla		
08560	Pic. viridis		
08760	Den. major		
08780	Den. syriacus		
08830	Den. medius		
08870	Den. minor		
09550	Amm. deserti		
09910	Mel. calandra		
09620	Mel. bimaculata		
09870	Cal. brachydactyla		
09700	Cal. rufescens		
09720	Gal. cristata		
09740	Lul. arborea		
09760	Ala. arvensis		
09780	Ere. alpestris		
09810	Rip. riparia		
09910	Pty. rupestris		
09920	Hir. rustica		
09950	Hir. daurica		
10010	Del. urbica		
10040	Ant. campestris		
10090	Ant. trivialis		
10110	Ant. pratensis		
10120	Ant. cervinus		
10140	Ant. spinoletta		
10170	Mot. flava spp		
10180	Mot. citreola		
10190	Mot. cinerea		
10200	Mot. alba		
10360	Pyc. xanthophygos		
10500	Cin. cinclus		
10660	Tro. troglodytes		
10840	Pru. modularis		
10880	Pru. ocularis		
10940	Pru. collaris		
10950	Cer. galactotes		
10990	Eri. rubecula		
11040	Lus. megarhynchos		
11060	Lus. svecica		
11170	Ira. guttularis		
11210	Pho. ochruros		
11220	Pho. phoenicurus		
11370	Sax. rubetra		
11390	Sax. torquata		

		Number	Nesting
11440	Den. isabellina		
11460	Den. oenanthe		
11480	Den. hispanica		
11500	Den. finschii		
11520	Den. xanthoprymna		
11610	Mon. saxatilis		
11660	Mon. solitarius		
11860	Tur. torquatus		
11870	Tur. merula		
11960	Tur. pilaris		
12000	Tur. philomelos		
12010	Tur. iliacus		
12020	Tur. viscivorus		
12200	Cet. cetti		
12260	Cis. juncidis		
12270	Pri. gracilis		
12380	Loc. luscinioides		
12410	Acr. melanopogon		
12430	Acr. schoenobaenus		
12470	Acr. agricola		
12500	Acr. palustris		
12510	Acr. scirpaceus		
12530	Acr. arundinaceus		
12550	Hip. pallida		
12570	Hip. languida		
12580	Hip. olivetorum		
12650	Syl. cantillans		
12660	Syl. mystacea		
12670	Syl. melanocephala		
12690	Syl. rueppelli		
12720	Syl. hortensis		
12730	Syl. nisoria		
12740	Syl. curruca		
12750	Syl. communis		
12760	Syl. borin		
12770	Syl. atricapilla		
12910	Phy. nitidus		
13070	Phy. bonelli		
13080	Phy. sibilatrix		
13110	Phy. collybita		
13120	Phy. trochilus		
13140	Reg. regulus		
13150	Reg. ignicapillus		
13350	Mus. striata		
13430	Fic. parva		
13470	Fic. semitorquata		
13480	Fic. albicollis		
13490	Fic. hypoleuca		
13840	Pan. biarmicus		
14370	Aeg. caudatus		
14410	Par. lugubris		
14610	Par. ater		
14620	Par. caeruleus		
14640	Par. major		
14690	Sit. krueperi		
14790	Sit. europaea		
14800	Sit. tephronata		
14810	Sit. neumayer		
14820	Tic. muraria		

		Number	Nesting
14860	Cer. familiaris		
14870	Cer. brachydactyla		
14900	Rem. pendulinus		
15080	Ori. oriolus		
15150	Lan. collurio		
15190	Lan. minor		
15230	Lan. senator		
15240	Lan. nubicus		
15390	Gar. glandarius		
15480	Pic. pica		
15560	Pyr. graculus		
15590	Pyr. pyrrhocorax		
15600	Cor. monedula		
15630	Cor. frugilegus		
15673	Cor. corone		
15720	Cor. corax		
15820	Stu. vulgaris		
15840	Stu. roseus		
15910	Pas. domesticus		
15920	Pas. hispaniolensis		
15950	Pas. moabiticus		
15980	Pas. montanus		
16010	Pet. brachydactyla		
16020	Pet. xanthocollis		
16040	Pet. petronia		
16110	Mon. nivalis		
16360	Fri. coelebs		
16380	Fri. montifringilla		
16390	Ser. pusillus		
16400	Ser. serinus		
16490	Car. chloris		
16530	Car. carduelis		
16540	Car. spinus		
16600	Car. cannabina		
16620	Car. flavirostris		
16660	Lox. curvirostra		
16730	Rhodop. sanguinea		
16740	Rhodos. obsoleta		
16790	Car. erythrinus		
17100	Pyr. pyrrhula		
17170	Coc. coccothraustes		
18570	Emb. citrinella		
18580	Emb. cirlus		
18600	Emb. cia		
18650	Emb. cineracea		
18660	Emb. hortulana		
18670	Emb. buchanani		
18680	Emb. caesia		
18770	Emb. schoeniclus		
18810	Emb. melanocephala		
18820	Mil. calandra		

Comments (please attach extra sheets if necessary)

APPENDIX 5

LIST OF SCIENTIFIC, TURKISH AND ENGLISH BIRD NAMES

Scientific, Turkish and English bird names used in this publication. A standardised list of Turkish bird names was produced by a panel of scientists and birdwatchers in 1996, and is now widely accepted. This list is not intended to serve as a complete and up-to-date checklist of Turkish birds.

Euring code no	Scientific	Turkish	English
00020	*Gavia stellata*	**kızıl gerdanlı dalgıç**	Red-throated Diver
00030	*Gavia arctica*	**kara gerdanlı dalgıç**	Black-throated Diver
00040	*Gavia immer*	**buz dalgıcı**	Great Northern Diver
00070	*Tachybaptus ruficollis*	**küçük batağan**	Little Grebe
00090	*Podiceps cristatus*	**bahri**	Great Crested Grebe
00100	*Podiceps grisegena*	**kızıl boyunlu batağan**	Red-necked Grebe
00110	*Podiceps auritus*	**kulaklı batağan**	Slavonian Grebe
00120	*Podiceps nigricollis*	**kara boyunlu batağan**	Black-necked Grebe
00360	*Calonectris diomedea*	**boz yelkovan**	Cory's Shearwater
00462	*Puffinus yelkouan*	**yelkovan**	Yelkouan Shearwater
00520	*Hydrobates pelagicus*	**fırtınakuşu**	Storm Petrel
00670	*Sula bassana*	**sümsükkuşu**	Gannet
00720	*Phalacrocorax carbo*	**karabatak**	Cormorant
00800	*Phalacrocorax aristotelis*	**tepeli karabatak**	Shag
00820	*Phalacrocorax pygmeus*	**küçük karabatak**	Pygmy Cormorant
00861	*Anhinga rufa*	**yılanboyun**	Darter
00880	*Pelecanus onocrotalus*	**ak pelikan**	White Pelican
00890	*Pelecanus crispus*	**tepeli pelikan**	Dalmatian Pelican
00950	*Botaurus stellaris*	**balaban**	Bittern
00970	*Ixobrychus minutus*	**küçük balaban**	Little Bittern
01040	*Nycticorax nycticorax*	**gece balıkçılı**	Night Heron
01080	*Ardeola ralloides*	**alaca balıkçıl**	Squacco Heron
01110	*Bubulcus ibis*	**sığır balıkçılı**	Cattle Egret
01190	*Egretta garzetta*	**küçük ak balıkçıl**	Little Egret
01210	*Egretta alba*	**büyük ak balıkçıl**	Great White Egret
01220	*Ardea cinerea*	**gri balıkçıl**	Grey Heron
01240	*Ardea purpurea*	**erguvani balıkçıl**	Purple Heron
01290	*Mycteria ibis*	**sarı gagalı leylek**	Wood Ibis
01310	*Ciconia nigra*	**kara leylek**	Black Stork
01340	*Ciconia ciconia*	**leylek**	White Stork
01360	*Plegadis falcinellus*	**çeltikçi**	Glossy Ibis
01400	*Geronticus eremita*	**kelaynak**	Bald Ibis
01440	*Platalea leucorodia*	**kaşıkçı**	Spoonbill
01470	*Phoenicopterus ruber*	**flamingo**	Greater Flamingo
01520	*Cygnus olor*	**kuğu**	Mute Swan
01530	*Cygnus columbianus*	**küçük kuğu**	Bewick's Swan
01540	*Cygnus cygnus*	**ötücü kuğu**	Whooper Swan
01570	*Anser fabalis*	**tarla kazı**	Bean Goose
01580	*Anser brachyrhynchus*	**küçük tarla kazı**	Pink-footed Goose
01590	*Anser albifrons*	**sakarca**	White-fronted Goose
01600	*Anser erythropus*	**küçük sakarca**	Lesser white-fronted Goose
01610	*Anser anser*	**boz kaz**	Greylag Goose
01670	*Branta leucopsis*	**ak yanaklı kaz**	Barnacle Goose
01680	*Branta bernicla*	**yosun kazı**	Brent Goose
01690	*Branta ruficollis*	**Sibirya kazı**	Red-breasted Goose
01710	*Tadorna ferruginea*	**angıt**	Ruddy Shelduck
01730	*Tadorna tadorna*	**suna**	Shelduck
01790	*Anas penelope*	**fiyu**	Wigeon
01810	*Anas falcata*	**büyük çamurcun**	Falcated Teal
01820	*Anas strepera*	**boz ördek**	Gadwall
01840	*Anas crecca*	**çamurcun**	Teal

01860	*Anas platyrhynchos*	**yeşilbaş**	Mallard
01890	*Anas acuta*	**kılkuyruk**	Pintail
01910	*Anas querquedula*	**çıkrıkçın**	Garganey
01940	*Anas clypeata*	**kaşıkgaga**	Shoveler
01950	*Marmaronetta angustirostris*	**yaz ördeği**	Marbled Teal
01960	*Netta rufina*	**Macar ördeği**	Red-crested Pochard
01980	*Aythya ferina*	**elmabaş patka**	Pochard
02020	*Aythya nyroca*	**pasbaş patka**	Ferruginous Duck
02030	*Aythya fuligula*	**tepeli patka**	Tufted Duck
02040	*Aythya marila*	**karabaş patka**	Scaup
02060	*Somateria mollissima*	**pufla**	Eider
02120	*Clangula hyemalis*	**telkuyruk**	Long-tailed Duck
02130	*Melanitta nigra*	**kara ördek**	Common Scoter
02150	*Melanitta fusca*	**kadife ördek**	Velvet Scoter
02180	*Bucephala clangula*	**altıngöz**	Goldeneye
02200	*Mergus albellus*	**sütlabi**	Smew
02210	*Mergus serrator*	**tarakdiş**	Red-breasted Merganser
02230	*Mergus merganser*	**büyük tarakdiş**	Goosander
02260	*Oxyura leucocephala*	**dikkuyruk**	White-headed Duck
02310	*Pernis apivorus*	**arı şahini**	Honey Buzzard
02350	*Elanus caeruleus*	**ak çaylak**	Black-shouldered Kite
02380	*Milvus migrans*	**kara çaylak**	Black Kite
02390	*Milvus milvus*	**kızıl çaylak**	Red Kite
02430	*Haliaeetus albicilla*	**ak kuyruklu kartal**	White-tailed Eagle
02460	*Gypaetus barbatus*	**sakallı akbaba**	Lammergeier
02470	*Neophron percnopterus*	**küçük akbaba**	Egyptian Vulture
02510	*Gyps fulvus*	**kızıl akbaba**	Griffon Vulture
02550	*Aegypius monachus*	**kara akbaba**	Black Vulture
02560	*Circaetus gallicus*	**yılan kartalı**	Short-toed Eagle
02600	*Circus aeruginosus*	**saz delicesi**	Marsh Harrier
02610	*Circus cyaneus*	**gökçe delice**	Hen Harrier
02620	*Circus macrourus*	**bozkır delicesi**	Pallid Harrier
02630	*Circus pygargus*	**çayır delicesi**	Montagu's Harrier
02670	*Accipiter gentilis*	**çakırkuşu**	Goshawk
02690	*Accipiter nisus*	**atmaca**	Sparrowhawk
02730	*Accipiter brevipes*	**yoz atmaca**	Levant Sparrowhawk
02870	*Buteo buteo*	**şahin**	Buzzard
02880	*Buteo rufinus*	**kızıl şahin**	Long-legged Buzzard
02900	*Buteo lagopus*	**paçalı şahin**	Rough-legged Buzzard
02920	*Aquila pomarina*	**küçük orman kartalı**	Lesser Spotted Eagle
02930	*Aquila clanga*	**büyük orman kartalı**	Greater Spotted Eagle
02945	*Aquila nipalensis*	**bozkır kartalı**	Steppe Eagle
02950	*Aquila heliaca*	**şah kartal**	Imperial Eagle
02960	*Aquila chrysaetos*	**kaya kartalı**	Golden Eagle
02980	*Hieraaetus pennatus*	**küçük kartal**	Booted Eagle
02990	*Hieraaetus fasciatus*	**tavşancıl**	Bonelli's Eagle
03010	*Pandion haliaetus*	**balık kartalı**	Osprey
03030	*Falco naumanni*	**küçük kerkenez**	Lesser Kestrel
03040	*Falco tinnunculus*	**kerkenez**	Kestrel
03070	*Falco vespertinus*	**aladoğan**	Red-footed Falcon
03090	*Falco columbarius*	**boz doğan**	Merlin
03100	*Falco subbuteo*	**delice doğan**	Hobby
03110	*Falco eleonorae*	**ada doğanı**	Eleonorae's Falcon
03120	*Falco concolor*	**gri doğan**	Sooty Falcon
03140	*Falco biarmicus*	**bıyıklı doğan**	Lanner Falcon
03160	*Falco cherrug*	**ulu doğan**	Saker Falcon
03200	*Falco peregrinus*	**gökdoğan**	Peregrine
03320	*Tetrao tetrix*	**orman horozu**	Black Grouse
03330	*Tetrao mlokosiewiczi*	**huş tavuğu**	Caucasian Black Grouse
03500	*Tetraogallus caspius*	**urkeklik**	Caspian Snowcock

03550	*Alectoris chukar*	**kınalı keklik**	Chukar
03570	*Alectoris graeca*	**kaya kekliği**	Rock Partridge
03620	*Ammoperdix griseogularis*	**kum kekliği**	See-see Partridge
03640	*Francolinus francolinus*	**turaç**	Black Francolin
03670	*Perdix perdix*	**çilkeklik**	Grey Partridge
03700	*Coturnix coturnix*	**bıldırcın**	Quail
03970	*Phasianus colchicus*	**sülün**	Pheasant
04070	*Rallus aquaticus*	**sukılavuzu**	Water Rail
04080	*Porzana porzana*	**benekli sutavuğu**	Spotted Crake
04100	*Porzana parva*	**bataklık sutavuğu**	Little Crake
04110	*Porzana pusilla*	**küçük sutavuğu**	Baillon's Crake
04210	*Crex crex*	**bıldırcınkılavuzu**	Corncrake
04240	*Gallinula chloropus*	**saztavuğu**	Moorhen
04270	*Porphyrio porphyrio*	**sazhorozu**	Purple Gallinule
04290	*Fulica atra*	**sakarmeke**	Coot
04330	*Grus grus*	**turna**	Crane
04400	*Grus leucogeranus*	**ak turna**	Siberian Crane
04410	*Anthropoides virgo*	**telli turna**	Demoiselle Crane
04420	*Tetrax tetrax*	**mezgeldek**	Little Bustard
04440	*Chlamydotis undulata*	**yakalı toy**	Houbara Bustard
04460	*Otis tarda*	**toy**	Great Bustard
04500	*Haematopus ostralegus*	**poyrazkuşu**	Oystercatcher
04550	*Himantopus himantopus*	**uzunbacak**	Black-winged Stilt
04560	*Recurvirostra avosetta*	**kılıçgaga**	Avocet
04580	*Dromas ardeola*	**yengeç yağmurcunu**	Crab Plover
04590	*Burhinus oedicnemus*	**kocagöz**	Stone Curlew
04640	*Cursorius cursor*	**çölkoşarı**	Cream-coloured Courser
04650	*Glareola pratincola*	**bataklıkkırlangıcı**	Collared Pratincole
04670	*Glareola nordmanni*	**kara kanatlı bataklıkkırlangıcı**	Black-winged Pratincole
04690	*Charadrius dubius*	**halkalı küçük cılıbıt**	Little Ringed Plover
04700	*Charadrius hiaticula*	**halkalı cılıbıt**	Ringed Plover
04770	*Charadrius alexandrinus*	**akça cılıbıt**	Kentish Plover
04780	*Charadrius mongolus*	**Moğol cılıbıtı**	Mongolian Plover
04790	*Charadrius leschenaultii*	**büyük cılıbıt**	Greater Sand Plover
04800	*Charadrius asiaticus*	**doğu cılıbıtı**	Caspian Plover
04820	*Charadrius morinellus*	**dağ cılıbıtı**	Dotterel
04841	*Pluvialis fulva*	**küçük altın yağmurcun**	Pacific Golden Plover
04842	*Pluvialis dominica*	**Amerikan altın yağmurcunu**	Lesser Golden Plover
04850	*Pluvialis apricaria*	**altın yağmurcun**	Golden Plover
04860	*Pluvialis squatarola*	**gümüş yağmurcun**	Grey Plover
04870	*Hoplopterus spinosus*	**mahmuzlu kızkuşu**	Spur-winged Plover
04900	*Hoplopterus indicus*	**büyük kızkuşu**	Red-wattled Plover
04910	*Chettusia gregaria*	**sürmeli kızkuşu**	Sociable Plover
04920	*Chettusia leucura*	**ak kuyruklu kızkuşu**	White-tailed Plover
04930	*Vanellus vanellus*	**kızkuşu**	Lapwing
04960	*Calidris canutus*	**büyük kumkuşu**	Knot
04970	*Calidris alba*	**ak kumkuşu**	Sanderling
05010	*Calidris minuta*	**küçük kumkuşu**	Little Stint
05020	*Calidris temminckii*	**sarı bacaklı kumkuşu**	Temminck's Stint
05090	*Calidris ferruginea*	**kızıl kumkuşu**	Curlew Sandpiper
05120	*Calidris alpina*	**kara karınlı kumkuşu**	Dunlin
05140	*Limicola falcinellus*	**sürmeli kumkuşu**	Broad-billed Sandpiper
05170	*Philomachus pugnax*	**döğüşkenkuş**	Ruff
05180	*Lymnocryptes minimus*	**küçük suçulluğu**	Jack Snipe
05190	*Gallinago gallinago*	**suçulluğu**	Snipe
05200	*Gallinago media*	**büyük suçulluğu**	Great Snipe
05290	*Scolopax rusticola*	**çulluk**	Woodcock
05320	*Limosa limosa*	**çamurçulluğu**	Black-tailed Godwit

05340	*Limosa lapponica*	**kıyı çamurçulluğu**	Bar-tailed Godwit
05380	*Numenius phaeopus*	**sürmeli kervançulluğu**	Whimbrel
05400	*Numenius tenuirostris*	**ince gagalı kervançulluğu**	Slender-billed Curlew
05410	*Numenius arquata*	**kervançulluğu**	Curlew
05450	*Tringa erythropus*	**kara kızılbacak**	Spotted Redshank
05460	*Tringa totanus*	**kızılbacak**	Redshank
05470	*Tringa stagnatilis*	**bataklık düdükçünü**	Marsh Sandpiper
05480	*Tringa nebularia*	**yeşilbacak**	Greenshank
05530	*Tringa ochropus*	**yeşil düdükçün**	Green Sandpiper
05540	*Tringa glareola*	**orman düdükçünü**	Wood Sandpiper
05550	*Xenus cinereus*	**sarıbacak**	Terek Sandpiper
05560	*Actitis hypoleucos*	**dere düdükçünü**	Common Sandpiper
05570	*Actitis macularia*	**benekli düdükçün**	Spotted Sandpiper
05610	*Arenaria interpres*	**taşçeviren**	Turnstone
05630	*Phalaropus tricolor*	**büyük denizdüdükçünü**	Wilson's Phalarope
05640	*Phalaropus lobatus*	**denizdüdükçünü**	Red-necked Phalarope
05650	*Phalaropus fulicarius*	**kızıl denizdüdükçünü**	Grey Phalarope
05660	*Stercorarius pomarinus*	**küt kuyruklu korsanmartı**	Pomarine Skua
05670	*Stercorarius parasiticus*	**korsanmartı**	Arctic Skua
05680	*Stercorarius longicaudus*	**uzun kuyruklu korsanmartı**	Long-tailed Skua
05690	*Stercorarius skua*	**büyük korsanmartı**	Great Skua
05720	*Larus leucophthalmus*	**Kızıldeniz martısı**	White-eyed Gull
05730	*Larus ichthyaetus*	**büyük karabaş martı**	Great Black-headed Gull
05750	*Larus melanocephalus*	**Akdeniz martısı**	Mediterranean Gull
05780	*Larus minutus*	**küçük martı**	Little Gull
05820	*Larus ridibundus*	**karabaş martı**	Black-headed Gull
05850	*Larus genei*	**ince gagalı martı**	Slender-billed Gull
05880	*Larus audouinii*	**ada martısı**	Audouin's Gull
05900	*Larus canus*	**küçük gümüş martı**	Common Gull
05910	*Larus fuscus*	**kara sırtlı martı**	Lesser Black-backed Gull
05920	*Larus argentatus*	**kuzey gümüş martısı**	Herring Gull
05921	*Larus armenicus*	**Van Gölü martısı**	Armenian Gull
05925	*Larus cachinnans*	**gümüş martı**	Yellow-legged Gull
05990	*Larus hyperboreus*	**kutup martısı**	Glaucous Gull
06000	*Larus marinus*	**büyük kara sırtlı martı**	Great Black-backed Gull
06020	*Rissa tridactyla*	**kara ayaklı martı**	Kittiwake
06050	*Gelochelidon nilotica*	**gülen sumru**	Gull-billed Tern
06060	*Sterna caspia*	**Hazar sumrusu**	Caspian Tern
06090	*Sterna bengalensis*	**tepeli sumru**	Lesser Crested Tern
06110	*Sterna sandvicensis*	**kara gagalı sumru**	Sandwich Tern
06150	*Sterna hirundo*	**sumru**	Common Tern
06160	*Sterna paradisaea*	**kuzey sumrusu**	Arctic Tern
06240	*Sterna albifrons*	**küçük sümru**	Little Tern
06260	*Chlidonias hybridus*	**bıyıklı sumru**	Whiskered Tern
06270	*Chlidonias niger*	**kara sumru**	Black Tern
06280	*Chlidonias leucopterus*	**ak kanatlı sumru**	White-winged Black Tern
06590	*Pterocles senegallus*	**benekli bağırtlak**	Spotted Sandgrouse
06610	*Pterocles orientalis*	**bağırtlak**	Black-bellied Sandgrouse
06620	*Pterocles alchata*	**kılkuyruk bağırtlak**	Pin-tailed Sandgrouse
06630	*Syrrhaptes paradoxus*	**paçalı bağırtlak**	Pallas's Sandgrouse
06650	*Columba livia*	**kaya güvercini**	Rock Dove
06680	*Columba oenas*	**gökçe güvercin**	Stock Dove
06700	*Columba palumbus*	**tahtalı**	Woodpigeon
06840	*Streptopelia decaocto*	**kumru**	Collared Dove
06870	*Streptopelia turtur*	**üveyik**	Turtle Dove
06900	*Streptopelia senegalensis*	**küçük kumru**	Laughing Dove
07120	*Psittacula krameri*	**yeşil papağan**	Ring-necked Parakeet
07160	*Clamator glandarius*	**tepeli guguk**	Great Spotted Cuckoo
07240	*Cuculus canorus*	**guguk**	Cuckoo

07350	*Tyto alba*	**peçeli baykuş**	Barn Owl
07380	*Otus brucei*	**çizgili ishakkuşu**	Striated Scops Owl
07390	*Otus scops*	**ishakkuşu**	Scops Owl
07440	*Bubo bubo*	**puhu**	Eagle Owl
07470	*Ketupa zeylonensis*	**balık baykuşu**	Brown Fish Owl
07570	*Athena noctua*	**kukumav**	Little Owl
07610	*Strix aluco*	**alaca baykuş**	Tawny Owl
07670	*Asio otus*	**kulaklı orman baykuşu**	Long-eared Owl
07680	*Asio flammeus*	**kır baykuşu**	Short-eared Owl
07700	*Aegolius funereus*	**paçalı baykuş**	Tengmalm's Owl
07780	*Caprimulgus europaeus*	**çobanaldatan**	Nightjar
07950	*Apus apus*	**ebabil**	Swift
07960	*Apus pallidus*	**boz sağan**	Pallid Swift
07980	*Apus melba*	**ak karınlı sağan**	Alpine Swift
08000	*Apus affinis*	**küçük sağan**	Little Swift
08270	*Halcyon smyrnensis*	**İzmir yalıçapkını**	White-breasted Kingfisher
08310	*Alcedo atthis*	**yalıçapkını**	Kingfisher
08330	*Ceryle rudis*	**alaca yalıçapkını**	Pied Kingfisher
08390	*Merops superciliosus*	**yeşil arıkuşu**	Blue-cheeked Bee-eater
08400	*Merops apiaster*	**arıkuşu**	Bee-eater
08410	*Coracias garrulus*	**gökkuzgun**	Roller
08430	*Coracias benghalensis*	**Hint gökkuzgunu**	Indian Roller
08460	*Upupa epops*	**ibibik**	Hoopoe
08480	*Jynx torquilla*	**boyunçeviren**	Wryneck
08550	*Picus canus*	**küçük yeşil ağaçkakan**	Grey-headed Woodpecker
08560	*Picus viridis*	**yeşil ağaçkakan**	Green Woodpecker
08630	*Dryocopus martius*	**kara ağaçkakan**	Black Woodpecker
08760	*Dendrocopos major*	**orman alaca ağaçkakanı**	Great Spotted Woodpecker
08780	*Dendrocopos syriacus*	**alaca ağaçkakan**	Syrian Woodpecker
08830	*Dendrocopos medius*	**ortanca ağaçkakan**	Middle Spotted Woodpecker
08840	*Dendrocopos leucotos*	**ak sırtlı ağaçkakan**	White-backed Woodpecker
08870	*Dendrocopos minor*	**küçük ağaçkakan**	Lesser Spotted Woodpecker
09550	*Ammomanes deserti*	**çöl toygarı**	Desert Lark
09610	*Melanocorypha calandra*	**boğmaklı toygar**	Calandra Lark
09620	*Melanocorypha bimaculata*	**küçük boğmaklı toygar**	Bimaculated Lark
09640	*Melanocorypha leucoptera*	**ak kanatlı toygar**	White-winged Lark
09660	*Melanocorypha yeltoniensis*	**kara toygar**	Black Lark
09670	*Calandrella brachydactyla*	**bozkır toygarı**	Short-toed Lark
09700	*Calandrella rufescens*	**çorak toygarı**	Lesser Short-toed Lark
09720	*Galerida cristata*	**tepeli toygar**	Crested Lark
09740	*Lullula arborea*	**orman toygarı**	Woodlark
09760	*Alauda arvensis*	**tarlakuşu**	Skylark
09780	*Eremophila alpestris*	**kulaklı toygar**	Shore Lark
09810	*Riparia riparia*	**kum kırlangıcı**	Sand Martin
09910	*Ptyonoprogne rupestris*	**kaya kırlangıcı**	Crag Martin
09920	*Hirundo rustica*	**kır kırlangıcı**	Swallow
09950	*Hirundo daurica*	**kızıl kırlangıç**	Red-rumped Swallow
10010	*Delichon urbica*	**ev kırlangıcı**	House Martin
10020	*Anthus novaeseelandiae*	**mahmuzlu incirkuşu**	Richard's Pipit
10040	*Anthus campestris*	**kır incirkuşu**	Tawny Pipit
10080	*Anthus hodgsoni*	**yeşil sırtlı incirkuşu**	Olive-backed Pipit
10090	*Anthus trivialis*	**ağaç incirkuşu**	Tree Pipit
10110	*Anthus pratensis*	**çayır incirkuşu**	Meadow Pipit
10120	*Anthus cervinus*	**kızıl gerdanlı incirkuşu**	Red-throated Pipit
10140	*Anthus spinoletta*	**dağ incirkuşu**	Water Pipit
10170	*Motacilla flava*	**sarı kuyruksallayan**	Yellow Wagtail
10180	*Motacilla citreola*	**sarı başlı kuyruksallayan**	Citrine Wagtail
10190	*Motacilla cinerea*	**dağ kuyruksallayanı**	Grey Wagtail
10200	*Motacilla alba*	**ak kuyruksallayan**	Pied Wagtail

10360	*Pycnonotus xanthopygos*	**arapbülbülü**	Yellow-vented Bulbul
10480	*Bombycilla garrulus*	**ipekkuyruk**	Waxwing
10490	*Hypocolius ampelinus*	**tırtılyiyen**	Grey Hypocolius
10500	*Cinclus cinclus*	**derekuşu**	Dipper
10660	*Troglodytes troglodytes*	**çıtkuşu**	Wren
10840	*Prunella modularis*	**dağbülbülü**	Dunnock
10880	*Prunella ocularis*	**sürmeli dağbülbülü**	Radde's Accentor
10940	*Prunella collaris*	**büyük dağbülbülü**	Alpine Accentor
10950	*Cercotrichas galactotes*	**çalı bülbülü**	Rufous Bush Robin
10990	*Erithacus rubecula*	**kızılgerdan**	Robin
11030	*Luscinia luscinia*	**benekli bülbül**	Thrush Nightingale
11040	*Luscinia megarhynchos*	**bülbül**	Nightingale
11060	*Luscinia svecica*	**buğdaycıl**	Bluethroat
11170	*Irania gutturalis*	**taş bülbülü**	White-throated Robin
11180	*Phoenicurus erythronotus*	**kızıl sırtlı kızılkuyruk**	Eversmann's Redstart
11210	*Phoenicurus ochruros*	**kara kızılkuyruk**	Black Redstart
11220	*Phoenicurus phoenicurus*	**kızılkuyruk**	Redstart
11370	*Saxicola rubetra*	**çayır taşkuşu**	Whinchat
11390	*Saxicola torquata*	**taşkuşu**	Stonechat
11440	*Oenanthe isabellina*	**boz kuyrukkakan**	Isabelline Wheatear
11460	*Oenanthe oenanthe*	**kuyrukkakan**	Northern Wheatear
11470	*Oenanthe pleschanka*	**alaca kuyrukkakan**	Pied Wheatear
11475	*Oenanthe cypriaca*	**Kıbrıs kuyrukkakanı**	Cyprus Pied Wheatear
11480	*Oenanthe hispanica*	**kara kulaklı kuyrukkakan**	Black-eared Wheatear
11490	*Oenanthe deserti*	**çöl kuyrukkakanı**	Desert Wheatear
11500	*Oenanthe finschii*	**ak sırtlı kuyrukkakan**	Finsch's Wheatear
11510	*Oenanthe moesta*	**büyük kızılca kuyrukkakan**	Red-rumped Wheatear
11520	*Oenanthe xanthoprymna*	**kızılca kuyrukkakan**	Red-tailed Wheatear
11540	*Oenanthe lugens*	**kara sırtlı kuyrukkakan**	Mourning Wheatear
11570	*Oenanthe leucopyga*	**ak tepeli kuyrukkakan**	White-crowned Black Wheatear
11610	*Monticola saxatilis*	**taşkızılı**	Rock Thrush
11660	*Monticola solitarius*	**gökardıç**	Blue Rock Thrush
11860	*Turdus torquatus*	**boğmaklı ardıç**	Ring Ouzel
11870	*Turdus merula*	**karatavuk**	Blackbird
11980	*Turdus pilaris*	**tarla ardıcı**	Fieldfare
12000	*Turdus philomelos*	**öter ardıç**	Song Thrush
12010	*Turdus iliacus*	**kızıl ardıç**	Redwing
12020	*Turdus viscivorus*	**ökse ardıcı**	Mistle Thrush
12200	*Cettia cetti*	**kamış bülbülü**	Cetti's Warbler
12260	*Cisticola juncidis*	**yelpazekuyruk**	Fan-tailed Warbler
12270	*Prinia gracilis*	**dik kuyruklu ötleğen**	Graceful Warbler
12360	*Locustella naevia*	**çekirge kamışçını**	Grasshopper Warbler
12370	*Locustella fluviatilis*	**ağaç kamışçını**	River Warbler
12380	*Locustella luscinioides*	**bataklık kamışçını**	Savi's Warbler
12410	*Acrocephalus melanopogon*	**bıyıklı kamışçın**	Moustached Warbler
12420	*Acrocephalus paludicola*	**sarı kamışçın**	Aquatic Warbler
12430	*Acrocephalus schoenobaenus*	**kındıra kamışçını**	Sedge Warbler
12470	*Acrocephalus agricola*	**doğu kamışçını**	Paddyfield Warbler
12480	*Acrocephalus dumetorum*	**kuzey kamışçını**	Blyth's Reed Warbler
12500	*Acrocephalus palustris*	**çalı kamışçını**	Marsh Warbler
12510	*Acrocephalus scirpaceus*	**saz bülbülü**	Reed Warbler
12530	*Acrocephalus arundinaceus*	**büyük kamışçın**	Great Reed Warbler
12550	*Hippolais pallida*	**ak mukallit**	Olivaceous Warbler
12560	*Hippolais caligata*	**küçük mukallit**	Booted Warbler
12570	*Hippolais languida*	**dağ mukallidi**	Upcher's Warbler
12580	*Hippolais olivetorum*	**zeytin mukallidi**	Olive-tree Warbler
12590	*Hippolais icterina*	**sarı mukallit**	Icterine Warbler
12600	*Hippolais polyglotta*	**kısa kanatlı sarı mukallit**	Melodious Warbler

12640	*Sylvia conspicillata*	**bozkır ötleğeni**	Spectacled Warbler
12650	*Sylvia cantillans*	**bıyıklı ötleğen**	Subalpine Warbler
12660	*Sylvia mystacea*	**pembe göğüslü ötleğen**	Ménétries' Warbler
12670	*Sylvia melanocephala*	**maskeli ötleğen**	Sardinian Warbler
12680	*Sylvia melanothorax*	**Kıbrıs ötleğeni**	Cyprus Warbler
12690	*Sylvia rüppelli*	**kara boğazlı ötleğen**	Rüppel's Warbler
12700	*Sylvia nana*	**çöl ötleğeni**	Desert Warbler
12720	*Sylvia hortensis*	**ak gözlü ötleğen**	Orphean Warbler
12730	*Sylvia nisoria*	**çizgili ötleğen**	Barred Warbler
12740	*Sylvia curruca*	**küçük ak gerdanlı ötleğen**	Lesser Whitethroat
12750	*Sylvia communis*	**ak gerdanlı ötleğen**	Whitethroat
12760	*Sylvia borin*	**boz ötleğen**	Garden Warbler
12770	*Sylvia atricapilla*	**kara başlı ötleğen**	Blackcap
12930	*Phylloscopus throchiloides (nitidus)*	**yeşil söğütbülbülü**	Green Warbler
13000	*Phylloscopus inornatus*	**küçük söğütbülbülü**	Yellow-browed Warbler
13070	*Phylloscopus bonelli*	**boz söğütbülbülü**	Bonelli's Warbler
13080	*Phylloscopus sibilatrix*	**orman söğütbülbülü**	Wood Warbler
13100	*Phylloscopus sindianus*	**Kafkas çıvgını**	Mountain Chiffchaff
13110	*Phylloscopus collybita*	**çıvgın**	Chiffchaff
13120	*Phylloscopus trochilus*	**söğütbülbülü**	Willow Warbler
13140	*Regulus regulus*	**çalıkuşu**	Goldcrest
13150	*Regulus ignicapillus*	**sürmeli çalıkuşu**	Firecrest
13350	*Muscicapa striata*	**benekli sinekkapan**	Spotted Flycatcher
13430	*Ficedula parva*	**küçük sinekkapan**	Red-breasted Flycatcher
13470	*Ficedula semitorquata*	**alaca sinekkapan**	Semi-collared Flycather
13480	*Ficedula albicollis*	**halkalı sinekkapan**	Collared Flycather
13490	*Ficedula hypoleuca*	**kara sinekkapan**	Pied Flycather
13640	*Panurus biarmicus*	**bıyıklı baştankara**	Bearded Tit
14370	*Aegithalos caudatus*	**uzun kuyruklu baştankara**	Long-tailed Tit
14400	*Parus palustris*	**kayın baştankarası**	Marsh Tit
14410	*Parus lugubris*	**ak yanaklı baştankara**	Sombre Tit
14540	*Parus cristatus*	**tepeli baştankara**	Crested Tit
14610	*Parus ater*	**çam baştankarası**	Coal Tit
14620	*Parus caeruleus*	**mavi baştankara**	Blue Tit
14640	*Parus major*	**büyük baştankara**	Great Tit
14690	*Sitta krueperi*	**küçük sıvacıkuşu**	Krüper's Nuthatch
14790	*Sitta europaea*	**sıvacıkuşu**	Nuthatch
14800	*Sitta tephronota*	**büyük kaya sıvacıkuşu**	Eastern Rock Nuthatch
14810	*Sitta neumayer*	**kaya sıvacıkuşu**	Rock Nuthatch
14820	*Tichodroma muraria*	**duvar tırmaşıkkuşu**	Wallcreeper
14860	*Certhia familiaris*	**orman tırmaşıkkuşu**	Treecreeper
14870	*Certhia brachydactyla*	**bahçe tırmaşıkkuşu**	Short-toed Treecreeper
14900	*Remiz pendulinus*	**çulhakuşu**	Penduline Tit
15080	*Oriolus oriolus*	**sarıasma**	Golden Oriole
15140	*Lanius isabellinus*	**kızıl kuyruklu örümcekkuşu**	Isabelline Shrike
15150	*Lanius collurio*	**kızıl sırtlı örümcekkuşu**	Red-backed Shrike
15170	*Lanius schach*	**uzun kuyruklu örümcekkuşu**	Long-tailed shrike
15190	*Lanius minor*	**kara alınlı örümcekkuşu**	Lesser Grey Shrike
15200	*Lanius excubitor*	**büyük örümcekkuşu**	Great Grey Shrike
15230	*Lanius senator*	**kızıl başlı örümcekkuşu**	Woodchat Shrike
15240	*Lanius nubicus*	**maskeli örümcekkuşu**	Masked Shrike
15390	*Garrulus glandarius*	**alakarga**	Jay
15490	*Pica pica*	**saksağan**	Magpie
15570	*Nucifraga caryocatactes*	**köknar kargası**	Nutcracker
15580	*Pyrrhocorax graculus*	**sarı gagalı dağkargası**	Alpine Chough
15590	*Pyrrhocorax pyrrhocorax*	**kızıl gagalı dağkargası**	Chough
15600	*Corvus monedula*	**küçük karga**	Jackdaw

15630	*Corvus frugilegus*	**ekin kargası**	Rook
15670	*Corvus corone*	**leş kargası**	Hooded Crow
15710	*Corvus ruficollis*	**çöl kuzgunu**	Brown-necked Raven
15720	*Corvus corax*	**kuzgun**	Raven
15820	*Sturnus vulgaris*	**sığırcık**	Starling
15840	*Sturnus roseus*	**alasığırcık**	Rose-coloured Starling
15910	*Passer domesticus*	**serçe**	House Sparrow
15920	*Passer hispaniolensis*	**söğüt serçesi**	Spanish Sparrow
15950	*Passer moabiticus*	**küçük serçe**	Dead Sea Sparrow
15980	*Passer montanus*	**ağaç serçesi**	Tree Sparrow
16010	*Petronia brachydactyla*	**çöl serçesi**	Pale Rock Sparrow
16020	*Petronia xanthocollis*	**sarı boğazlı serçe**	Yellow-throated Sparrow
16040	*Petronia petronia*	**kaya serçesi**	Rock Sparrow
16110	*Montifringilla nivalis*	**kar serçesi**	Snow Finch
16360	*Fringilla coelebs*	**ispinoz**	Chaffinch
16380	*Fringilla montifringilla*	**dağ ispinozu**	Brambling
16390	*Serinus pusillus*	**kara iskete**	Red-fronted Serin
16400	*Serinus serinus*	**küçük iskete**	Serin
16440	*Serinus citrinella*	**Alp isketesi**	Citril Finch
16490	*Carduelis chloris*	**florya**	Greenfinch
16530	*Carduelis carduelis*	**saka**	Goldfinch
16540	*Carduelis spinus*	**kara başlı iskete**	Siskin
16600	*Carduelis cannabina*	**ketenkuşu**	Linnet
16620	*Carduelis flavirostris*	**sarı gagalı ketenkuşu**	Twite
16630	*Carduelis flammea*	**kuzey ketenkuşu**	Redpoll
16660	*Loxia curvirostra*	**çaprazgaga**	Crossbill
16730	*Rhodopechys sanguinea*	**alamecek**	Crimson-winged Finch
16740	*Rhodospiza obsoleta*	**boz alamecek**	Desert Finch
16750	*Bucanetes mongolicus*	**doğu alameceği**	Mongolian Trumpeter Finch
16760	*Bucanetes githagineus*	**küçük alamecek**	Trumpeter Finch
16790	*Carpodacus erythrinus*	**çütre**	Common Rosefinch
16960	*Carpodacus rubicilla*	**büyük çütre**	Great Rosefinch
17100	*Pyrrhula pyrrhula*	**şakrakkuşu**	Bullfinch
17170	*Coccothraustes coccothraustes*	**kocabaş**	Hawfinch
18500	*Plectrophenax nivalis*	**alaca kirazkuşu**	Snow Bunting
18560	*Emberiza leucocephalos*	**ak başlı kirazkuşu**	Pine Bunting
18570	*Emberiza citrinella*	**sarı kirazkuşu**	Yellowhammer
18580	*Emberiza cirlus*	**bahçe kirazkuşu**	Cirl Bunting
18600	*Emberiza cia*	**kaya kirazkuşu**	Rock Bunting
18630	*Emberiza striolata*	**gri başlı kirazkuşu**	House Bunting
18650	*Emberiza cineracea*	**boz kirazkuşu**	Cinereous Bunting
18660	*Emberiza hortulana*	**kirazkuşu**	Ortolan
18670	*Emberiza buchanani*	**doğu kirazkuşu**	Grey-necked Bunting
18680	*Emberiza caesia*	**kızıl kirazkuşu**	Cretzschmar's Bunting
18730	*Emberiza rustica*	**ak kaşlı kirazkuşu**	Rustic Bunting
18740	*Emberiza pusilla*	**küçük kirazkuşu**	Little Bunting
18770	*Emberiza schoeniclus*	**bataklık kirazkuşu**	Reed Bunting
18800	*Emberiza bruniceps*	**kızıl başlı kirazkuşu**	Red-headed Bunting
18810	*Emberiza melanocephala*	**kara başlı kirazkuşu**	Black-headed Bunting
18820	*Miliaria calandra*	**tarla kirazkuşu**	Corn Bunting

APPENDIX 6

LIST OF TURKISH WETLANDS QUALIFYING AS WETLAND OF INTERNATIONAL IMPORTANCE (RAMSAR CRITERIA)

At the time of writing, the Ramsar Bureau was still in the process of preparing the final waterfowl population estimates on which the "1% criterion" and thus site declaration would be based. For the following list the BirdLife-IBA thresholds as presented in appendix 2 were used, except the thresholds for Anatidae that follow Scott & Rose (1996). It is expected that final Ramsar thresholds will hardly, if at all, affect this list of 56 Turkish wetlands.

This list is based on post 1988 information.

Site name and IBA no.	highest waterfowl count exceeding 20,000 birds:	site meets 1% criterion for:
Meriç Deltası IBA no. 01	48,440 (1/1996)	Pygmy Cormorant Dalmatian Pelican Little Egret Great White Egret Squacco Heron Mute Swan Whooper Swan Pochard Black-winged Stilt Collared Pratincole Little Tern Whiskered Tern
Büyük Çekmece Gölü IBA no. 03	22,681 (1/1996)	Pochard Mediterranean Gull Little Gull Yellow-legged Gull
Küçük Çekmece Gölü IBA no. 04	21,273 (1/1993)	Great Crested Grebe Cormorant Yellow-legged Gull
Uluabat Gölü IBA no. 09	429,423 (1/1996)	Pygmy Cormorant Dalmatian Pelican Spoonbill Pochard Tufted Duck Coot Black-headed Gull
Kuş Gölü IBA no. 10	-	Cormorant Pygmy Cormorant White Pelican Dalmatian Pelican Little Egret Spoonbill
Kocaçay Deltası IBA no. 11	46,291 (1/1996)	White Pelican Coot Collared Pratincole
Demirköprü Barajı IBA no. 14	-	Ruddy Shelduck

Marmara Gölü IBA no. 15	45,278 (10/1994)	Dalmatian Pelican Squacco Heron Little Egret Great White Egret Ruddy Shelduck Wigeon Pochard Ferruginous Duck Avocet
Gediz Deltası IBA no. 16	25,239 (1/1993)	Pygmy Cormorant Dalmatian Pelican Greater Flamingo Ruddy Shelduck Oystercatcher Collared Pratincole Kentish Plover Spur-winged Plover Caspian Tern Little Tern
Işıklı Gölü IBA no. 20	211,482 (1/1996)	Red-crested Pochard Pochard Coot
Bafa Gölü IBA no. 21	91,507 (1/1996)	Little Grebe Great Crested Grebe Black-necked Grebe Cormorant Dalmatian Pelican Gadwall Pochard Coot Collared Pratincole
Büyük Menderes Deltası IBA no. 22	29,982 (1/1996)	Cormorant Pygmy Cormorant Dalmatian Pelican Great White Egret Greater Flamingo Ruddy Shelduck Wigeon Oystercatcher Avocet Collared Pratincole Kentish Plover Slender-billed Gull Caspian Tern Little Tern
Güllük Deltası IBA no. 23	-	Pygmy Cormorant
Köyceğiz Gölü IBA no. 24	47,654 (1/1996)	Cormorant Great White Egret Red-crested Pochard Coot
Acıgöl IBA no. 25	-	Ruddy Shelduck Kentish Plover

Karataş Gölü IBA no. 28	-	Ruddy Shelduck
Yarışlı Gölü IBA no. 29	-	Ruddy Shelduck
Burdur Gölü IBA. no. 30	202,119 (11/1995)	Black-necked Grebe Ruddy Shelduck Red-crested Pochard Pochard Tufted Duck White-headed Duck Coot
Eğirdir Gölü IBA no. 31	107,199 (1/1996)	Red-crested Pochard Pochard Tufted Duck Coot
Akşehir & Eber Gölü IBA no. 33	-	White Pelican Little Egret Glossy Ibis White-fronted Goose Black-winged Stilt
Çavuşçu Gölü IBA no. 34	32,586 (12/1993)	Greylag Goose Red-crested Pochard
Balıkdamı IBA no. 38	22,847 (3/1993)	White Stork Ruddy Shelduck
Mogan Gölü IBA no. 41	78,590 (10/1994)	Red-crested Pochard Coot
Sarıyar Barajı IBA no. 45	-	White Stork Ruddy Shelduck
Sapanca Gölü IBA no. 47	48,267 (1/1995)	Red-crested Pochard Pochard Coot
Sarıkum Gölü IBA no. 49	20,266 (12/1995)	-
Sultansazlığı IBA no. 52	129,801 (10/1994)	Pygmy Cormorant Little Egret Spoonbill Greater Flamingo Greylag Goose Ruddy Shelduck Marbled Teal Red-crested Pochard Crane Black-winged Stilt Avocet Collared Pratincole Kentish Plover Gull-billed Tern Whiskered Tern
Seyfe Gölü IBA no. 53	21,681 (1/1989)	Spoonbill Greater Flamingo White-fronted Goose Ruddy Shelduck Avocet →

Seyfe Gölü (cont.)		Gull-billed Tern Little Tern
Hirfanlı Barajı IBA no. 54	133,809 (1/1996)	Ruddy Shelduck Red-crested Pochard Pochard Tufted Duck Coot
Kızılırmak Deltası IBA no. 56	91,708 (1/1996)	Little Egret Glossy Ibis Spoonbill Greylag Goose Shoveler Red-crested Pochard Pochard Velvet Scoter White-headed Duck Coot Collared Pratincole Little Gull White-winged Black Tern
Yedikır Barajı IBA no. 57	-	Ruddy Shelduck
Yeşilırmak Deltası IBA no. 58	-	Red-crested Pochard Velvet Scoter
Samsam Gölü IBA no. 61	-	Avocet
Kulu Gölü IBA no. 63	-	Black-necked Grebe White-fronted Goose Ruddy Shelduck White-headed Duck Avocet Kentish Plover Gull-billed Tern
Ereğli Sazlığı IBA no. 64	-	Pygmy Cormorant White Pelican Dalmatian Pelican Spoonbill Ruddy Shelduck Marbled Teal Red-crested Pochard White-headed Duck Crane Black-winged Stilt Collared Pratincole
Karapınar Ovası IBA no. 65	-	Ruddy Shelduck
Eşmekaya Sazlığı IBA no. 66	21,327 (12/1993)	White Stork White-fronted Goose Collared Pratincole
Beyşehir Gölü IBA no. 67	213,824 (1/1996)	Red-crested Pochard Pochard Coot

Suğla Gölü IBA no. 68	24,852 (3/1996)	-
Hotamış Sazlığı IBA no. 69	-	Marbled Teal Red-crested Pochard White-headed Duck Collared Pratincole Spur-winged Plover
Bolluk Gölü IBA no. 70	-	Spoonbill Ruddy Shelduck Slender-billed Gull Mediterranean Gull Gull-billed Tern
Tersakan Gölü IBA no. 71	20,841 (12/1993)	White-fronted Goose
Tuz Gölü IBA no. 72	-	Greater Flamingo White-fronted Goose
Göksu Deltası IBA no. 73	91,097 (1/1992)	Dalmatian Pelican Black Stork White Stork Glossy Ibis Greylag Goose Wigeon Teal Marbled Teal Coot Collared Pratincole Kentish Plover Spur-winged Plover
Tuzla Gölü IBA no. 76	28,901 (12/1994)	Teal Marbled Teal Collared Pratincole Kentish Plover Spur-winged Plover Little Tern
Akyatan Gölü IBA no. 77	85,054 (1/1989)	Great White Egret Greater Flamingo Greylag Goose Shelduck Wigeon Marbled Teal Pochard White-headed Duck Coot Black-winged Stilt Avocet Kentish Plover Little Stint
Ağyatan Gölü IBA no. 78	35,579 (1/1992)	Great White Egret Wigeon White-headed Duck Coot Collared Pratincole

Yumurtalık Lagünleri IBA no. 79	35,284 (1/1992)	Greylag Goose Wigeon Avocet Kentish Plover Little Stint
Erzurum Ovası IBA no. 82	-	Ruddy Shelduck White-winged Black Tern
Bulanık Ovası IBA no. 85	-	Black-winged Pratincole Gull-billed Tern
Aktaş Gölü IBA no. 87	-	Dalmatian Pelican Ruddy Shelduck Velvet Scoter Armenian Gull
Çıldır Gölü IBA no. 88	-	Ruddy Shelduck Armenian Gull
Nemrut Gölü IBA no. 93	-	Velvet Scoter
Sodalıgöl IBA no. 94	-	White-headed Duck Black-winged Stilt Armenian Gull
Erçek Gölü IBA no. 95	-	Black-necked Grebe Armenian Gull
Van Gölü IBA no. 96	-	Marbled Teal Armenian Gull White-winged Black Tern

APPENDIX 7

WETLAND LOSS IN TURKEY

* The Ramsar Convention (to which Turkey is a contracting party) defines wetlands as: *"areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine waters, the depth of which at low tide does not exceed six metres".*
In the Mediterranean region, wetlands include estuaries, river deltas, coastal lagoons, lakes, marshes and oases, salt marshes, natural and artificial salines and reservoirs (Pearce & Crivelli, 1994).

* The Ramsar Convention defines the **ecological character** of a wetland as the structure and inter-relationships between the biological, chemical, and physical components of the wetland. These derive from the interactions of individual processes, functions, attributes and values of the ecosystem(s).

* **Change in ecological character of a wetland** is the impairment or imbalance in any of those processes and functions which maintain the wetland and its products, attributes and values (Hollis & Finlayson, 1996).

The main categories of processes inducing ecological change are:
- changes in wetland area;
- changes in the water regime;
- changes in the water quality;
- unsustainable exploitation of wetland products;
- introduction of alien species;
- management, neglect and restoration.

(Hollis & Finlayson, 1996).

1. The site accounts in this book describe 1,240,000 ha of wetland at 76 IBAs. It cannot be stated, however, that this is the total wetland area in Turkey as many hundreds of (smaller) wetlands have either not been identified as yet, or do not meet IBA criteria in their own right.

2. In Turkey, most wetlands have suffered changes in their ecological character: many have been reduced in size or have disappeared altogether e.g. as a result of flood protection and reclamation schemes (this kind of change can be quantified in hectarage lost). Others have been negatively affected (for example by pollution or the introduction of alien species), but this kind of change is difficult to quantify even though causing serious damage to a site. To provide a realistic idea of how much wetland habitat has been lost in Turkey, an attempt was made to calculate how much wetland habitat was lost as a result of flood protection, reclamation, damming, water diversion or other water manipulation schemes.
At least 1,300,000 ha of wetland habitat has been irreversibly lost during the 20th century, mainly since 1960:

A. As described in detail in the individual site accounts in this book, **433,000** ha of wetland habitat has been destroyed this century in or around IBAs.
B. In its official yearbooks, DSİ (State Water Works) distinguishes two different categories that result in direct and irreversible loss of wetland habitat: flood control and reclamation. Since the establishment of DSİ in 1953, **370,000** ha of wetland habitat (outside the IBAs) disappeared as a result of such schemes.

In addition, 375,000 ha of land has been subject to "small flood protection schemes" and "small-scale drainage and reclamation schemes". Of this, 30,000 ha lies within or adjacent to IBAs. It is also difficult to deduce from the DSİ information how much overlap there is between the two categories and how much wetland habitat has been irreversibly affected. It is estimated that **200,000** ha has suffered irreversible wetland loss.
C. The diversion or damming of streams can have drastic results for wetlands downstream but DSİ does not consider these and hence downstream losses are not included in its statistics (e.g. the disappearance of the 20,000 ha Arapçayırı plain and the 10,000 ha Yarma marshes, both east of Konya, was merely a secondary and indirect effect of a diversion scheme up to hundreds of kilometres away). Also, many thousands of hectares of riverine floodplains have disappeared under reservoirs, but have not been documented. Before the inception of DSİ in 1953, other governmental agencies undertook flood control and reclamation schemes. Also after 1953, many thousands of hectares of wetland habitat have been lost as a result of the activities of other governmental institutions, notably Rural Affairs, and local farmers and communities.
It is conservatively estimated that a minimum of **300,000** ha of wetland habitat has been lost as result of side-effects and activities by institutions other than DSİ.

3. The following table provides an example of wetland loss in Turkey, detailing the loss of over 100,000 ha at 23 former wetland (-complexes). The sites that would meet today's IBA criteria (based on incomplete data) are indicated *.

name wetland + province	**approximate size drained area**	**notes**
Amik lake (Hatay) *	27,000 ha	Amik lake was one of Turkey's most important wetlands with large populations of rare species, including Pygmy Cormorant and Darter (the only Turkish and the species' most northernly breeding site). Drainage started in the 1960s, and was largely completed in the 1970s. This wetland qualified as wetland of international importance by Ramsar criteria, e.g 162,100 waterfowl were counted on 15 January 1967. Today a 250 ha marsh near Gölbaşı is all that remains of Amik lake.
Asvan flood plain (Malatya) *	200 ha	Breeding Pied Kingfisher and possibly Great Bustard: inundated by the Keban reservoir in 1974.
Emen lake (Karamanmaraş) *	2750 ha	This lake was located south of Gavur Gölü (IBA no. 80), and wholly drained during 1971. This wetland qualified as wetland of international importance by Ramsar criteria, e.g. 43,000 waterfowl were counted on 15 January 1967.
Aynaz marshes (İçel) *	1000 ha	Purple Gallinule formerly bred. This wetland qualified as wetland of international importance by Ramsar criteria, e.g. 1200 Marbled Teal were recorded in 1968. Drainage completed in 1973.

Regma marshes (İçel)*	1000 ha	This wetland qualified as wetland of international importance by Ramsar criteria, e.g. 50,000 waterfowl were counted on 15 January 1970. Drainage started in 1930's and is now fully drained and forested with *Eucalyptus.*
Avlan lake (Antalya) *	800 ha	This wetland qualified as wetland of international importance by Ramsar criteria, e.g. 21,391 waterfowl were counted on 15 January 1970. Drainage completed in 1976.
Kara lake (Antalya) *	3280 ha	Up to 18,000 waterfowl and large numbers of Ruddy Shelduck in 1970 and 1971. Drained in 1976.
Gökçeli lake (Burdur) *	740 ha	This wetland qualified as wetland of international importance by Ramsar criteria, e.g. 21,200 waterfowl were counted on 15 January 1970. Drainage of Gökçeli lake was completed in 1975: in 1989 the Karakuyu reservoir was completed at the same location.
Güvenç lake (Konya)*	200 ha	Marbled Teal and White-headed Duck breeding confirmed in 1971. Drainage completed late 1980s.
Yarma marshes (Konya) *	10,000 ha	Sometimes referred to as Sakyatan lake and known as breeding site of the globally-threatened Marbled Teal, this site was entirely drained during the 1970s and 1980s as a result of the Konya-Çumra irrigation scheme.
Hamam lake (Afyon) *	500 ha	This wetland qualified as wetland of international importance by Ramsar criteria, e.g. up to 600 Ruddy Shelduck and possible breeding of Marbled Teal during 1968.
Alparslan lake (Isparta) *	500 ha	This wetland qualified as wetland of international importance by Ramsar criteria, e.g. 29,457 waterfowl were counted on 15 January 1970. Now largely drained, possibly as a result of diversion schemes.
Gencali lake (Burdur)	317 ha	Drainage completed in 1966.
Pınarbaşı lake (Burdur)	1000 ha	Drainage completed in 1963.
Söğüt lakes (Burdur&Antalya)	6500 ha	Complex of lakes and marshes. Drainage completed in 1958.
Ovagelemiş lake (Antalya)	1350 ha	Drainage completed in 1963.
Kestel Gölü (Antalya)	2300 ha	Drainage completed in 1965.

Arapçayırı, Çumra Plain (Konya)	20,000 ha	This wetland comprised extensive seasonal marshes between Çumra and Konya. Disappeared during the 1970s and 1980s as a result of the Konya-Çumra irrigation scheme. Cf. the site accounts for Hotamış Sazlığı, Suğla and Beyşehir Gölü.
Sakarya river flood plains	many tens of thousands of hectares	Most of the flood plains and marshes on the Sakarya river and its tributaries have been reclaimed during the last 50 years. Notable examples of former lake/marsh complexes on the river's course are Solman lake (6800 ha, north-east of Adapazarı, reclaimed in 1969) and Ak lake (2345 ha, north of Yunak, Konya, reclaimed in 1987 and currently being converted into a reservoir).
Gökçeören lake (Adapazarı)	2500 ha	Drainage completed in 1967.
Simav lake (Kütahya)	2065 ha	Drainage completed in 1982.
Cellat lake (İzmir)	1200 ha	The largest freshwater lake on the Küçük Menderes river. Drainage completed in 1937.
Efteni lake (Bolu)	480 ha	Largely drained in 1976, the lake is now being restored as a Permanent Wildlife Reserve and 80 ha of wetland has developed during only a few years.

4. It is important to note that of the total area of lost wetland, a very small portion concerns entire wetland complexes as treated in this book: by far most of the wetland loss concerns the thousands of (often smaller) areas with wetland habitat, especially river flood plains, that would unlikely qualify as IBA in their own right. The importance (especially for migratory birds) of these thousands of areas has never been documented but it seems without doubt that the collective value of these wetlands is as great as that of the larger wetland complexes covered by this inventory. There is an urgent need to prepare an inventory of the remaining ones and draw up comprehensive plans for their protection. In addition to the irreversibly lost wetlands, many existing wetlands have been degraded as a result of manipulation schemes, pollution, hunting, introduction of alien species and other men-induced changes. Only 19 of the 76 wetland IBAs could be considered to be hydrologically intact and maintaining their ecological character.

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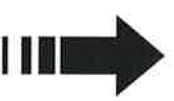
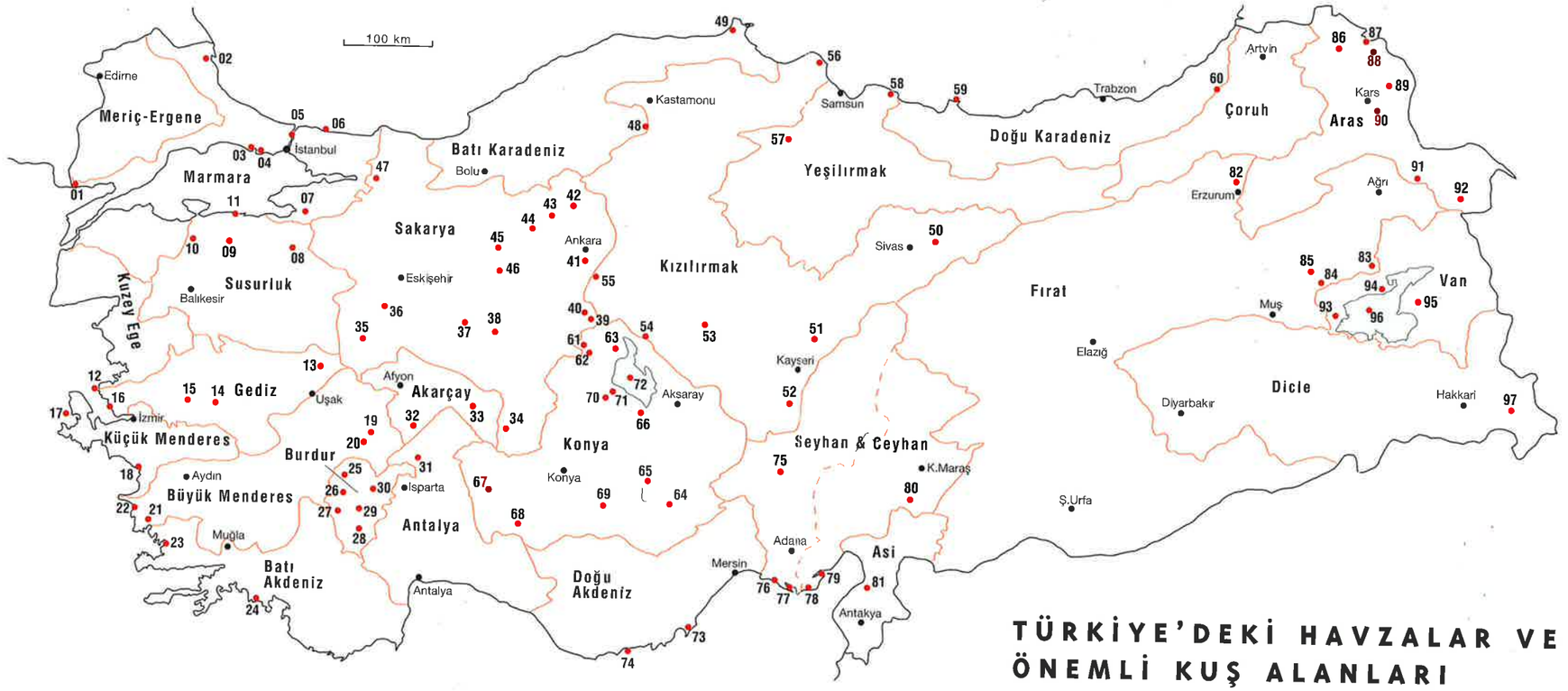
ALPHABETICAL LIST OF TURKISH IBA's

	Page
Acıgöl	89
Ağyatan Gölü	212
Akdağ	74
Akkuş Adası	166
Akşehir & Eber Gölü	109
Aktaş Gölü	230
Akyatan Gölü	209
Aladağlar	203
Aliken	118
Altıntaş Ovası	114
Ardahan Ormanı	228
Aydıncık Adaları	202
Bafa Gölü	78
Balıkdamı	120
Balık Gölü	238
Beynam Ormanı	155
Beyşehir Gölü	183
Boğaziçi	42
Bolluk Gölü	191
Burdur Gölü	100
Bulanık Ovası	226
Büyükçekmece Gölü	37
Büyük Menderes Deltası	81
Çalı Gölü	236
Çavuşçu Gölü	112
Çıldır Gölü	232
Çorak Gölü	92
Çöl Gölü	124
Demirköprü Barajı	63
Doğubeyazıt Sazlığı	240
Doğu Karadeniz Dağları	167
Eğirdir Gölü	104
Ereğli Sazlığı	176
Eşmekaya Sazlığı	181
Erzurum Ovası	220
Erçek Gölü	246
Foça Adaları	59
Gavur Gölü	216
Gediz Deltası	68
Göksu Deltası	197
Güllük Deltası	84
Haçlı Gölü	224
Hamam Dağı	134
Hirfanlı Barajı	153
Hotamış Sazlığı	188
Ildır Körfezi Adaları	71
Ilgaz Dağları	138
Işıklı Gölü	75

	Page
İğneada Ormanları	34
İnözü Vadisi	131
İznik Gölü	46
Karamık Sazlığı	107
Karapınar Ovası	179
Karataş Gölü	96
Kavaklı Dağı	129
Kızılcahamam Ormanları	127
Kızılırmak Deltası	157
Kocaçay Deltası	56
Kozanlı Gökgöl	173
Köyceğiz Gölü	86
Kulu Gölü	174
Kuş Gölü	53
Kuyucuk Gölü	234
Küçükçekmece Gölü	40
Küçük Menderes Deltası	72
Marmara Gölü	65
Meriç Deltası	31
Mogan Gölü	125
Murat Dağı	61
Nemrut Gölü	242
Nur Dağları	218
Palas Gölü	144
Salda Gölü	94
Samsam Gölü	171
Sapanca Gölü	136
Sarısu Ovası	222
Sarıkum Gölü	140
Sarıyar Barajı	132
Seyfe Gölü	150
Sodalıgöl	244
Suğla Gölü	186
Sultansazlığı	146
Şile Adaları	45
Tersakan Gölü	193
Tödürge Gölü	142
Tuz Gölü	194
Tuzla Gölü	207
Türkmenbaba Dağı	116
Uluabat Gölü	50
Uludağ	48
Uyuz Gölü	122
Van Gölü	249
Yarışlı Gölü	98
Yedikır Barajı	161
Yeşilırmak Deltası	163
Yumurtalık Lagünleri	213
Yüksekova	252



Fold-out map showing location of Turkey's IBA's



TÜRKİYE'DEKİ HAVZALAR VE ÖNEMLİ KUŞ ALANLARI

		Sayfa
01	Meriç Deltası	31
02	İğneada Ormanları	34
03	Büyükçekmece Gölü	37
04	Küçükçekmece Gölü	40
05	Boğaziçi	42
06	Şile Adaları	45
07	İznik Gölü	46
08	Uludağ	48
09	Uluabat Gölü	50
10	Kuş Gölü	53
11	Kocaçay Deltası	56
12	Foça Adaları	59
13	Murat Dağı	61
14	Demirköprü Barajı	63
15	Marmara Gölü	65
16	Gediz Deltası	68
17	Ildır Körfezi Adaları	71
18	Küçük Menderes Deltası	72
19	Akdağ	74
20	Işıklı Gölü	75
21	Bafa Gölü	78
22	Büyük Menderes Deltası	81
23	Güllük Deltası	84
24	Köyceğiz Gölü	86
25	Acıgöl	89

		Sayfa
26	Çorak Gölü	92
27	Salda Gölü	94
28	Karataş Gölü	96
29	Yarışlı Gölü	98
30	Burdur Gölü	100
31	Eğirdir Gölü	104
32	Karamık Sazlığı	107
33	Akşehir ve Eber Gölü	109
34	Çavuşçu Gölü	112
35	Altıntaş Ovası	114
36	Türkmenbaba Dağı	116
37	Aliken	118
38	Balıkdamı	120
39	Uyuz Gölü	122
40	Çöl Gölü	124
41	Mogan Gölü	125
42	Kızılcahamam Ormanları	127
43	Kavaklı Dağı	129
44	İnözü Vadisi	131
45	Sarıyar Barajı	132
46	Hamam Dağı	134
47	Sapanca Gölü	136
48	Ilgaz Dağları	138
49	Sarıkum Gölü	140
50	Tödürge Gölü	142

		Sayfa
51	Palas Gölü	144
52	Sultansazlığı	146
53	Seyfe Gölü	150
54	Hirfanlı Barajı	153
55	Beynam Ormanı	155
56	Kızılırmak Deltası	157
57	Yedikır Barajı	161
58	Yeşilırmak Deltası	163
59	Akkuş Adası	166
60	Doğu Karadeniz Dağları	167
61	Samsam Gölü	171
62	Kozanlı Gökgöl	173
63	Kulu Gölü	174
64	Ereğli Sazlığı	176
65	Karapınar Ovası	179
66	Eşmekaya Sazlığı	181
67	Beyşehir Gölü	183
68	Suğla Gölü	186
69	Hotamış Sazlığı	188
70	Bolluk Gölü	191
71	Tersakan Gölü	193
72	Tuz Gölü	194
73	Göksu Deltası	197
74	Aydıncık Adaları	202
75	Aladağlar	203

		Sayfa
76	Tuzla Gölü	207
77	Akyatan Gölü	209
78	Ağyatan Gölü	212
79	Yumurtalık Lagünleri	213
80	Gavur Gölü	216
81	Nur Dağları	218
82	Erzurum Ovası	220
83	Sarısu Ovası	222
84	Haçlı Gölü	224
85	Bulanık Ovası	226
86	Ardahan Ormanı	228
87	Aktaş Gölü	230
88	Çıldır Gölü	232
89	Kuyucuk Gölü	234
90	Çalı Gölü	236
91	Balık Gölü	238
92	Doğubeyazıt Sazlığı	240
93	Nemrut Gölü	242
94	Sodalıgöl	244
95	Erçek Gölü	246
96	Van Gölü	249
97	Yüksekova	252

Garanti Bank, in the belief that conservation of nature is the only acceptable basis for responsible and sustainable economic development, has supported DHKD since 1992 by funding their efforts to conserve Turkey's rich flora and fauna. The Important Bird Areas project which seeks to protect wetlands and other bird sanctuaries across Turkey, has been funded by Garanti Bank since 1993.

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In the long-run, mankind can only survive if it conserves the ecological balance and learns to share our planet with all living creatures. This book is published as part of the Important Bird Areas Project in the hope of contributing to a more balanced and joyful world in which people live in harmony with nature.

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