

## Birds and habitat conservation on Chios, Greece

JOHN CHOREMI\* and EVANGELOS SPINTHAKIS\*\*

\* Choremi St. - Chios 82100, Greece

\*\* Pegasou 62 St. - Corinth 20100, Greece

**Abstract** — In this attempt to describe birdlife in Chios Archipelago we recorded 211 species, most of which are migrants and visitors. Large concentrations of birds appear during migration and suffer a heavy hunting pressure (shooting and liming). The most important bird areas are Psara and Dotia with mainly bushy vegetation. The authors propose the establishment of a marine and island park in Psara-Antipsara archipelago for the protection of birds during migration.

### Introduction and methods

This is the first attempt to describe birdlife in the Chios Archipelago, based on authors' records from as far back as the 1940's. Observations were made regularly but without precise counts. Frequent inspection of the illegal but intensive bird trade on Chios market, involving millions of live and dead birds, has also provided useful information (Choremi *et al.*, 1993). Observations on seabirds, water-birds and diurnal birds of prey are probably incomplete, but does not seriously affect the general picture of the birds of Chios presented in this paper. 211 bird species have been observed, of which 94 were passage migrants, 71 can be classed as visitors, 20 as wintering, 22 as breeding and only 18 resident species (with some species in more than one category). The highest species diversity is to be found during migration seasons (Figure 1), especially in April (110 species), September (86) and October (88). This is due to the fact that all the autumn visitors also occur in spring, with the addition of certain species occurring in the only spring (e.g. herons). At the same time, 17 of the 22 breeding summer visitors have arrived in April.

### Results and discussion

#### Migration season (Autumn 15 Aug-15 Nov, and spring 1 Mar - 15 May)

The autumn passage takes place with light winds from the north and west, never with winds from the south. Shrikes *Lanius* are the only species requiring perfectly calm conditions. Important arrivals take place after rainy weather which coincides with light north winds. Small insectivorous passerines, Turtle

Doves *Streptopelia turtur* and Quails *Coturnix coturnix* arrive before dawn at around 4:00-5:00 a.m., while seed-eating passerines arrive and are mainly on between 9:00 or 10:00 and 14:00 hours. All passerines appear to arrive on the island of Chios from the south, while in fact they are heading south, and approach Chios flying against the north wind. The only exception to this rule is the Spanish Sparrow *Passer hispaniolensis*. Mass departure in flock are seen only in the case of insectivorous birds, such as swallows from towns. *Phylloscopus* warblers concentrate at rocky headlands (such as Dotia) in the evening at about 18:00-20.00 hours, and make one or two "test departures" before actually leaving. Quails depart from the hillside at Dotia and Gridia. The number of migrants during autumn is much greater than during spring, when on the other hand the variety of species is higher (62 species in April vs. 49 in September).

Several migrants are threatened, and are included in the Greek Red Data Book (Handrinos G., in press): e.g. the Glossy Ibis *Plegadis falcinellus*, the Purple Heron *Ardea purpurea*, the Lesser Kestrel *Falco naumanni*, the Collared Pratincole *Glareola pratincola*, the Black Tern *Chlidonias niger*, the Roller *Coracias garrulus*, and the Ring Ouzel *Turdus torquatus*.

#### Bird recoveries from Chios 1930-91

There are 63 ring recoveries from Chios and 1 from Psara, involving 23 different species (16 passerines) originating from 17 countries (Finno-Scandia and Central Europe). The most commonly recovered bird in Chios is the Red-backed Shrike *Lanius*

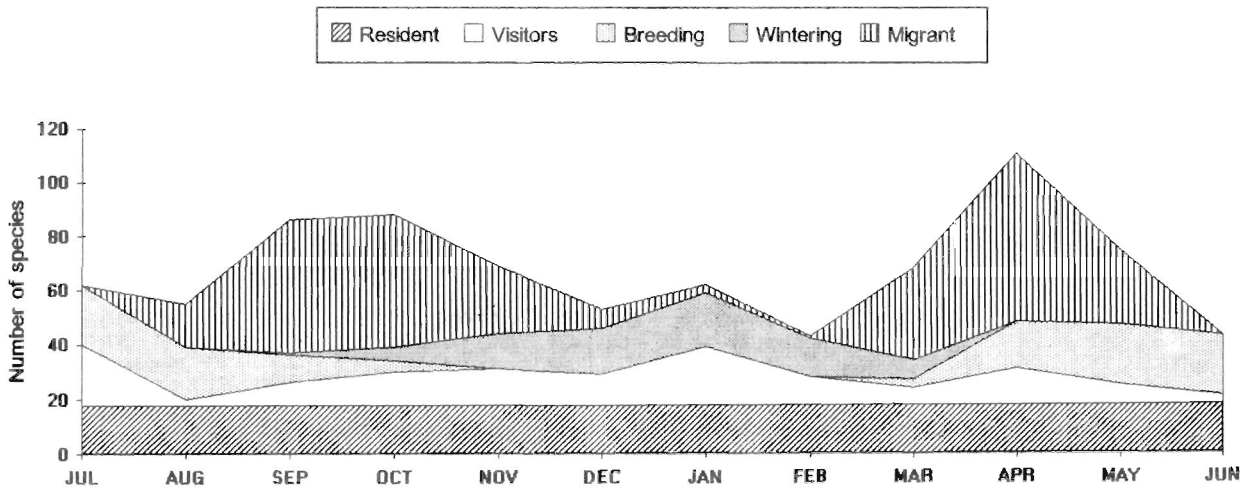


Figure 1 - Presence of birds on Chios by months.

*collurio* (n=13) ringed in Germany, Sweden, Czechoslovakia and Finland, followed by the Blackcap *Sylvia atricapilla* (n=8) ringed in Sweden, Czechoslovakia, Hungary, Poland and Romania.

#### Wintering period (20 Nov. - beginning of March)

Thrushes (*Turdus* spp) appear to arrive from the east, that is from coast of Asia. The minor number of birds that ultimately stay to winter on the island is high when there is a good crop of olives. The number of Woodcocks *Scolopax rusticola* increases when the tops of the mountains on the mainland opposite Chios are snowcovered.

#### Breeding season (beginning of March to October)

Some species nesting on Chios are of concern because of their restricted distribution in the rest of Europe, such as the Black-headed Bunting *Emberiza melanocephala*, the Rufous Bushchat *Cercotrichas galea cotes*, and especially the Masked Shrike *Lanius nubicus*, which is a threatened species included in the Greek Red Data Book

The special arrival pattern of Black-headed Buntings is worth mentioning: flocks of males arrive first and this continues for several days, then flocks of females begin to arrive.

The fact that no aquatic species nest on the island is certainly due to the presence on Chios of only small and degraded wetlands, which are subject to a high degree of disturbance and, especially, dry up from May-June onwards. The Moorhen *Gallinula chloropus* might be able to breed on the island were it not for disturbance. The nesting of a pair of White Storks *Ciconia ciconia* for the first time in 1989 was a great surprise, but the whole family was shot.

#### Resident species

The marked movements around the island of the local population of Great Tits *Parus major* in September-October are of interest. The Shag *Phalacrocorax aristotelis*, which breeds on the coast, is a threatened species included in the Red Data Book. Three sedentary species are in dramatic decline: the Raven *Corvus corax*, the Rock Dove *Columba livia* and the indigenous Chukar *Alectoris chukar cypriotes*. The Rock Sparrow *Petronia petronia* included in the Red Data Book is also threatened in Chios by liming. The Collared Dove *Streptopelia decaocto* colonized Chios in 1936.

#### Visitors

Water birds (wader, duck, geese) make their appearance only when there is a combination of severe cold, snow, strong, northerly winds and rough seas. They arrive in flocks at dawn, flying from a southerly direction and may continue to arrive all days. When lakes in Turkey are frozen, the number of such birds increases steeply, irrespective of weather conditions on Chios. It is worth noting the occurrence of certain species which are included in the Red Data Book, such as Greylag Geese *Anser anser* in small numbers, and also birds of prey, including the Buzzard *Buteo buteo*, the Long-legged Buzzard *Buteo rufinus* and Bonelli's Eagle *Hieraaëtus fasciatus*.

#### Threats to the birds of Chios

Shooting with firearms or air rifles, legally or illegally, is prevalent throughout the island. It regularly amounts to mass killing, especially of migrant species and threatens 102 out of the total

211 species on the Chios bird list. There are 4500 holders (1989) of a shooting licence on Chios, representing 8% of the total population of the island (Choremi *et al.*, 1993). This compares to the total number of shooting licences in Greece, which is 350 000 (3,5% of the total population),

Liming is a very old tradition on the island: Twigs covered with a sticky substance, containing the pulp of the Assyrian Plum *Cordia myxa* as the basic ingredient, are placed on suitable supporting structures to catch birds. This is a non selective mass destruction to which an enormous number of birds of 72 different species falls victim every year. It is especially common along the SE coast of Chios. Two areas are particularly important for birds in the Chios Archipelago (Figure 2).

Dotia is a hilly range (up to 600 m in altitude) and a valley at the southernmost tip of the island. It attracts large numbers of hunters in September. The following species recorded at Dotia, included in the Red Data Book, are worth mentioning: Stone Curlew *Burhinus oedicephalus*, Roller, and Night Heron. The Little Bittern, Wryneck *Jynx torquilla*, Sedge Warbler *Acrocephalus schoenobaenus*, Woodchat Shrike *Lanius senator*, White Stork, Short-toed Lark *Calandrella brachydactyla*, Thrush Nightingale *Luscinia luscinia*, and Stonechat *Saxicola torquata*.

Psara is an island (39 km<sup>2</sup>) with mainly bushy vegetation and few trees. Shooting pressure is high in the autumn because of large numbers of Golden Orioles *Oriolus oriolus*, and Bee-eaters *Merops apiaster*, and in the winter for waterfowl and

waders. Hunters camp on the island. There is a large lighthouse against which many migrants collide and are killed. The situation is aggravated by the lack of suitable areas where birds can take refuge, owing to the scanty vegetation and the small size of the island. The nearby small island of Antipsara is also visited by hunters and this results in heavy disturbance and stealing of young from the nests of Eleonora's Falcon *Falco eleonora*.

### Conservation

The control of hunting is urgently needed, especially on Psara and Dotia. A change of the first day of the hunting season from the present August 20 to the 5th of September would benefit those species in which the main body of the population has by then departed from Chios: the Redbacked Shrike, Lesser Grey Shrike *Lanius minor*, Willow warbler *Phylloscopus trochilus*, Chiffchaff *P. collybita* and the Wheatear *Oenanthe oenanthe*. The closing date of the hunting season should be also moved from the 10th of March to the 28th of February. This would benefit the breeding of the indigenous Chukar which starts at about this time. Environmental education efforts, which have already started on Chios, must continue.

A marine and island park should be established on Psara and Antipsara. The small population of five Monk Seals *Monachus monachus* would thus find protection (pers. comm. Anda Vlachoutsikou, 1990). Bird watching tourism would increase local income and gain support for the idea of the park among the inhabitants.

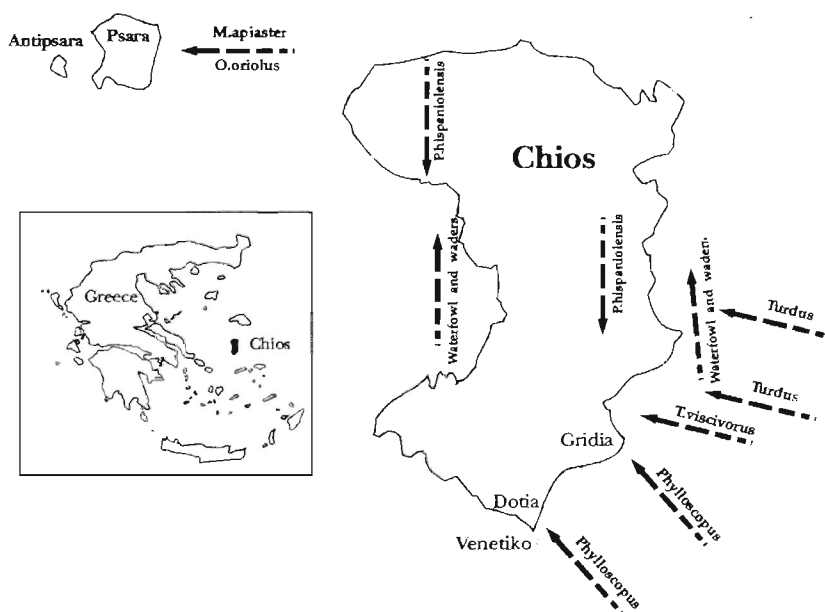


Figure 2 - Important bird areas of Chios.

**Acknowledgements** — We would like to express our thanks to Dimitri Choulis for his cooperation, to Nikos Mikros for his work on the figures, to Anda Vlachoutiscou for her information on the Monk Seals, to the ornithologists George Handrinos for the ringing information, his help and support, and Philios Akriotis for his suggestions and criticism.

## **References**

- Choremi J., Spinhakis E. and Choulis D. 1993. The birds of Chios. Greece, Municipality of the city of Homeroupolis Chios.
- Handrinos G. in press. Aves: In: Hellenic Zoological Society Red Data Book of Greece. *Hellenic Ornithological Society*.