

## Breeding population and distribution of the Oystercatcher (*Haematopus ostralegus*) in Italy

F. SCARTON<sup>1</sup>, R. VALLE<sup>1</sup>, S. BORELLA<sup>1</sup>, M. VETTOREL<sup>1</sup> and P. UTMAR<sup>2</sup>

<sup>1</sup> Via Seitz, 12 - 31100 Treviso

<sup>2</sup> Largo Mioni 3 - 34137 Trieste

**Abstract** — The whole Italian population of Oystercatcher (*Haematopus ostralegus*) breeds along the north-east coastline; 36 pairs were censused in 1991 and 42 in 1992. They are mostly restricted to the barrier islands of Po Delta and to the lagoon of Grado-Marano. In the favourable breeding areas, a mean density of 1.92 (1991) and 1.84 (1992) pairs per km was recorded, with a minimum distance between nests of 45 m. Nest site fidelity in the years 1991-1992 was 58.3%. Over the last ten years the Italian breeding population, one of the most important of the Mediterranean area, has shown irregular fluctuations.

### Introduction

Our knowledge of the distribution and status of the Oystercatcher *Haematopus ostralegus* breeding population in Italy is poorly known. Formerly breeding in several sites along the Tyrrhenian and Adriatic coasts, the species is now restricted to few areas of the north-eastern coastline (Tinarelli and Baccetti 1989). No confirmed breeding records have been reported outside these areas over the last ten years. In the same period several estimates have been done concerning the size of the breeding population (Pupillo and Boldregghini 1981, Tinarelli and Baccetti 1989), the most recent giving a figure of 20-25 pairs for the years 1987.

In 1991 the authors began systematic counts of breeding Oystercatchers along the north-eastern coastline (Scarton *et al.* 1993); the results of the years 1991-1992 are presented here, along with new additional information on the breeding biology of the species.

### Methods

The study area consists of two separate stretches of coastline; the first sector 1 (Figure 1) extends from the Po di Volano mouth (44°46'N-12°15'E) to the Piave river mouth (45°34'N-12°38'W), a distance of about 130 km. The whole of the Po Delta and the Lagoon of Venice are included in this area. Sector 2 (Figure 1) is the coastline from the mouth

of the river Tagliamento (45°42'N-13°04'E) and the mouth of river Isonzo (45°44'N-13°34'E), a distance of approximately 40 km. One of the main features of this particular stretch is the Grado-Marano lagoon.

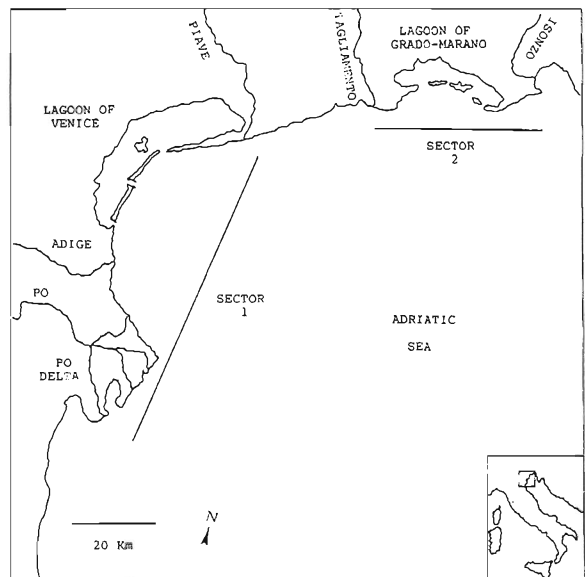


Figure 1 - Study area.

The breeding habitat consists mostly of small narrow sand barrier islands at distances ranging from several

hundreds meters to several kilometers from the mainland. Low dunes and sandy beaches covered with psammophilous vegetation *Cakile maritima*, *Eryngium maritimum* and *Ammophila arenaria* are the most characteristic vegetation types in this habitat. Between the islands and the mainland are large shallow lagoons with tidal mudflats used as feeding grounds by the Oystercatchers. Besides the Oystercatcher other breeding species in the barrier islands of sector 1 are: *Tadorna tadorna* (a few pairs), *Charadrius alexandrinus*, *Larus cachinnans* (more than 1000 pairs), *Sterna hirundo* and *Sterna albifrons* (1500 pairs; Passarella and Benà in press, and personal observations). In sector 2, in the same areas occupied by the Oystercatcher, the following species are breeding: *Charadrius alexandrinus* (50 pairs), *Larus cachinnans* (900 pairs) and *Sterna albifrons* (250 pairs).

In both years field visits to the breeding area began at the end of February and went on until the first week of July. Data for the censuses of the Oystercatchers collected over shorter periods, approximately 30 days and chosen according to our previous knowledge of the time of laying (Scarton *et al.* 1993).

In sector 1 censuses were made between the first half of April and the first half of May; two teams were working for a total of 10 days in 1991 and 12 days in 1992. Observations were made in the morning, from 08.00 to 14.00 hours; the coastline was surveyed by boat, landing whenever a bird or a pair were observed. Sites with breeding birds were reported on maps with a scale of 1:10,000 and 1:50,000.

In sector 2 the data were collected between the end of May and the end of June, using the same methodology; three days were spent in 1991 and the same number in 1992. The censuses were made within the framework of activities of the "Osservatori Faunistici di Gorizia e Udine".

Following the standard criteria, evidence of breeding was categorised in the following way; "Confirmed breeding" when nests were found empty, with eggs or with downy young. "Probable breeding" was recorded by noting the behaviour (display or distraction) of a bird or by a pair. "Possible breeding" was recorded by the presence of birds or pairs in suitable habitat during the breeding season. In this particular study the number of breeding pairs was the total of "confirmed" and "probable" breeders. This criteria is similar to censuses made in other coastal environments such as the Camargue Delta and elsewhere. One should however be very careful when observing and recording information; on several occasions no display or alarm signals were given by the birds, but on closer examination we found the nest and eggs.

## Results and discussion

In 1991, a total of 36 breeding pairs of Oystercatchers were located and 42 pairs in 1992, almost all in the barrier islands of the Po delta and the Grado-Marano lagoon (Table 1). One pair bred at the mouth of the Isonzo river in 1991; in the same year possible breeding was recorded at the mouth of the river Adige, 30 km south of Venice. In the lagoon of Venice Oystercatchers occur regularly on the barrier islands and in other areas, but breeding cannot be considered because of human disturbance and a lack of suitable breeding habitat.

Outside the census area Oystercatchers bred irregularly at the mouth of river Reno, 20 km south of Po di Volano. There were no breeding birds in 1992 (R. Tinarelli pers. comm.)

Table 1 - Distribution of breeding Oystercatchers in Italy: years 1991-1992 (C = confirmed breeding, Pr = probable breeding, Po = possible breeding).

	1991			1992		
	C	Pr	Po	C	Pr	Po
<b>Sector 1</b>						
Adige river			1			
Po Delta	16	16	6	26	12	3
<b>Sector 2</b>						
Lagoon of						
Grado-Marano	2	1		2	2	
Isonzo river		1				
<b>Total</b>	<b>19</b>	<b>17</b>	<b>7</b>	<b>28</b>	<b>14</b>	<b>3</b>

In sector 2 four pairs of Oystercatchers were found in 1991 and a similar number in 1992. In the lagoon of Grado-Marano Oystercatchers probably were breeding in the past, but the first confirmed breeding (one pair) was recorded in 1988 (Utmar 1989). In the Po delta (sector 1) 32 pairs were recorded in 1991 and 38 in 1992; the slight increase in 1992 is due probably to a better prospection of the area. The whole population can be considered as stable over the last two years.

Nevertheless a review of all the data, since 1980, concerning the Italian breeding population (Table 2) suggests that some fluctuations occurred on a longer period. In Camargue long term census figures show similar irregular variations over the years (Boutin *et al.* 1991). In this last area, the Salines of Aigue-Mortes (11,000 ha) have been monitored annually between 1980-1990, with an average of 42 pairs per year and evident variations (Walmsley pers. comm.).

Table 2 - Breeding population of Oystercatchers in Italy: years 1980-1992.

Year	No. of pairs	Reference
1980	20	(Pupillo and Boldreghini 1981)
1982	15	(Bogliani pers. comm.)
1983	40	(Tinarelli pers. comm.)
1987	20-45	(Tinarelli and Baccetti 1989)
1991	36	(this work)
1992	42	(this work)

Among the 36 sites of 1991, 21 (58.3%) were again occupied in 1992. Locally the percentage figures were much higher when we consider that on one 7 km stretch of beach we found 10 (90.9%) out of 11 pairs in 1991. A similar location of territories in subsequent years have been reported for other Mediterranean populations (Goutner and Goutner 1987, Martinez *et al.* 1983).

Breeding density in the Po delta was 1.84 pairs per km of shoreline (range: 0.5-6) in 1992, if only the islands supporting Oystercatchers are considered. This value is similar to that found in 1991 (1.92 per km), the difference is not statistically significant (Mann-Witney U-test). If the whole coastline is considered the density falls to 0.73 pairs per km (0.61 in 1991). For the Mediterranean, data is available only from the Ebro delta, where Martinez *et al.* (1983) reported a density of 0.6 nests per 10 ha, with a maximum of 3 nests per 10 ha. Cramp and Simmons (1983) report densities of over 20 pairs per km for northern Europe. On the most favourable breeding islands Oystercatcher nests were evenly spaced at 250-300 metres apart, which we assumed to be the optimal density. The minimum distance recorded between two nests was 45 m.

In both years in sector 1 the first clutches were laid in the first half on April, as we observed also for 1990 (Scarton *et al.* 1993); this is the same period reported for Spain (Martinez *et al.* 1983) and Greece (Goutner 1986). Our data would confirm an earlier laying by the Mediterranean populations of Oystercatchers compared to those of North Europe, which lay in May and June (Cramp 1983). Nevertheless the few pairs breeding in sector 2 usually start to lay after mid May; we suppose that some local conditions (in particular climate) may be responsible for this delay in the time of laying.

The major threats to the species are the same as those recorded in other Mediterranean countries: human disturbance, tourists, egg collectors and the capture of chicks by local fishermen. Nests are also lost each year during spring storms.

## Conclusions

Despite the absence of up to date information from

other Mediterranean breeding sites, the Italian population of over 40 pairs is an indication that it is one of the most important in southern Europe. Further researches are needed on the breeding biology of the species in Italy (i.e. reproductive success, nest site and habitat selection). We strongly recommend the total protection of these important breeding sites for the future conservation of the species.

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**Riassunto** — Si presentano i risultati di un censimento biennale della popolazione nidificante di Beccaccia di mare nel nord Adriatico, dove sono localizzate tutte le coppie attualmente note per l'Italia. La specie è risultata nidificare con certezza in entrambi gli anni in alcuni scanni (isolotti sabbiosi con scarsa vegetazione) del delta del Po e della laguna di Grado-Marano, mentre le foci dell'Isonzo sono state occupate solo nel 1991. Sono state registrate 19 nidificazioni certe e 17 probabili nel 1991, mentre nel 1992 si sono osservate rispettivamente 28 e 14 nidificazioni. La fedeltà al sito riproduttivo è risultata pari al 58.3%, con valori massimi del 90.9%. Sono state osservate densità ottimali pari a 3-4 coppie/km di costa, mentre i valori medi, nelle sole aree occupate dalla specie, risultano pari a circa 1.8 coppie/km. Un'analisi delle stime sulla popolazione nidificante degli ultimi anni sembra evidenziare fluttuazioni numeriche irregolari. La popolazione italiana rappresenta uno dei più importanti nuclei riproduttivi dell'intero bacino mediterraneo.

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