

The Lagoon of Venice: a premigratory crossroads for Little Terns *Sterna albifrons*

SERRA L.*, PANZARIN F.**, CHERUBINI G.**, CESTER D.** and BACCETTI N.*

* Istituto Nazionale per la Fauna Selvatica, via Ca Fornacetta 9 - 40064 Ozzano Emilia (BO)

** C.O.R.V.O., Museo di Storia Naturale - 31044 Montebelluna (TV)

Regular mist-netting carried out during spring tides at a night roost in the Venice Lagoon, Italy (45.11 ÷ 45.35 N, 12.07 ÷ 12.38 E) has led to important catches of Little Terns, *Sterna albifrons*: 1,748 birds have been ringed in three years (1990-1992). Checks on ringed birds have allowed the detection of pre-migratory movements of a population much larger than the local one, probably covering all the North Adriatic breeding sites. The roost was located on an inshore tidal sand-bar ("Bacan"), near the Lido lagoon-mouth, 3 km to the east of Venice. Little Terns came to the area in small flocks (20-200 birds), from just before sunset till after dusk. The birds gathered in one dense flock on the shoreline, often together with migrant Black Terns, *Chlidonias niger*, and steadily moved as the tide came in.

Observations of thousands of birds were made in summer 1990 and 1991, while regular counts were only attempted in 1992: <100 birds during May and June, >3000 during July and on 12/8/92, >5000 on 26/8/92, >1500 on 9/9/92. These figures are only minimum estimates because of the extremely poor conditions of light during the surveys. However according to the available literature, no roosts of similar size seem to be known in Europe (Cramp 1985, Glutz and Bauer 1982).

Little Terns were caught between 12 May and 25 September. Data was pooled into 7-day periods numbered from the beginning of year. Considerable captures took place every year starting from period 28 (9/7 - 15/7), just at the end of the breeding season. In the same week the first juveniles were caught, although with a low percentage (av. 8,4%). The value increased over the following weeks, reaching maximum (av. 33,9%) in period 36 (3/9 - 9/9).

The mean body mass of Little Terns slightly differed among the three study years, both for adults and juveniles. Juveniles were significantly lighter than adults in each year. Every year mean body masses

of both age classes were nearly constant until period 32 (6/8 - 12/8): they varied between 49.1 g and 50.7 g in adults and between 47.7 g and 48.2 g in juveniles. A small increase (adults: 51.9 g; juveniles: 49.7 g) was recorded in period 34 (20/8 - 26/8) while in period 36 (3/9 - 9/9), a few days before the departure of most Little Terns towards winter quarters, the mean body mass increase was definitely more marked (adults: 57.6 g; juveniles: 56.2 g). Body mass variation of birds trapped more than once in the same season reflected the trend of the means.

Direct recoveries were obtained for 87 Little Terns ringed as chicks at the following sites: 76 in the Po Delta, 3 slightly upstream along the same river (Ficarolo-Ravalle), 6 in the Comacchio wetland complex, 1 in the southern Venice Lagoon, 1 in the Marano-Grado Lagoon (Table 1). The percentages of retraps compared to the number of chicks ringed in the Po Delta, along the Po river and in the Venice Lagoon are higher than the percentages from Comacchio and Marano-Grado. Recoveries of birds ringed in previous years also refer to other natal colonies (e.g. Cervia salt-pans, Po river near Pavia) and to stopover sites along the coast of Tuscany visited by migrating adults.

Table 1. Details of direct recoveries of Little Terns at Bacan, Venice Lagoon. Pooled data from the whole study period (1990-1992).

Natal site	Distance from Bacan (km)	Direction from Bacan (degrees)	Ringed chicks	Direct recoveries	%
Ficarolo	93	234	89	3	3.36
S. Venice Lagoon	25	209	36	1	2.78
Po Delta	60	177	3580	76	2.12
Comacchio	93	191	731	6	0.82
Marano	81	72	222	1	0.45
Cervia	133	182	151	0	0.00

References

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