

## The island of Marettimo, a strategic point for surveying the migratory flow of Accipitriformes crossing the channel of Sicily

Ostrov Marettimo, strategický bod pro pozorování migračního toku Accipitriformes přes Sicilskou úžinu

AGOSTINI N.

Dr. Nicolantonio Agostini, Via Carlo Alberto n°4, 89046 Marina di Gioiosa Jonica (RC), Italy;  
e-mail nicolantonioa@tiscalinet.it

**ABSTRACT.** Observations on the spring migration of Accipitriformes over the island of Marettimo (southern Italy) were made from 26 March to 14 April 2000. This island is located at the narrowest point of the central Mediterranean between Sicily and Tunisia. A total of 921 birds were counted, nearly all Marsh Harriers and Black Kites. These results, and those of a previous study made on this island during spring 1998, agree with observations made at the Straits of Messina since 1984, while they disagree with those recorded at the Cap Bon promontory (Tunisia). In particular they confirm that the migratory flows of some species such as Buzzard, Short-toed Eagle and Long-legged Buzzard are virtually non-existent across the central Mediterranean.

### INTRODUCTION

During spring migration in the central Mediterranean, large numbers of Accipitriformes cross the sea at its narrowest point, between Tunisia and Sicily (approx. 150 km; CRAMP & SIMMONS 1980). To date, surveys of the migratory flow in this area have been made mostly on the Cap Bon promontory (Tunisia; DEJONGHE 1980, HEIN & KISLING 1991, THIOLLAY 1975, 1977). In 1998 observations were made for the first time on the island of Marettimo (Fig. 1), over which the greatest passage of raptors in the central Mediterranean occurs during post-reproductive movements (AGOSTINI et al. 2000). At this site, during the second half of March and the first half of May 1998, a total of 1664 raptors were counted, nearly all Honey Buzzards (*Pernis apivorus*), Marsh Harriers (*Circus aeruginosus*) and Black Kites (*Milvus migrans*) (AGOSTINI & LOGOZZO 1998). The aim of this study was to provide further data on the spring migration of Accipitriformes at this site.

### STUDY AREA AND METHODS

Marettimo is a small mountainous island (12 km<sup>2</sup>), oriented in a NNW-SSE direction, about 30 km off western Sicily and 20 km west of the islands of Levanzo and Favignana (Fig. 1). Monte Falcone is its highest relief, reaching 686 m. This island is located about 130 km NE from the Cap Bon promontory (Tunisia). Observations were made from 26 March to 14 April 2000, using a single post at an altitude of about 500 m. From this post it was possible to observe both western and eastern coasts of the island. A total of 160 hrs of observation were carried out using 10x40 binocular between the (solar) hours of 9.00-17.00.

### RESULTS AND DISCUSSION

A total of 921 birds were counted, comprising 577 Marsh Harriers, 284 Black Kites, 50

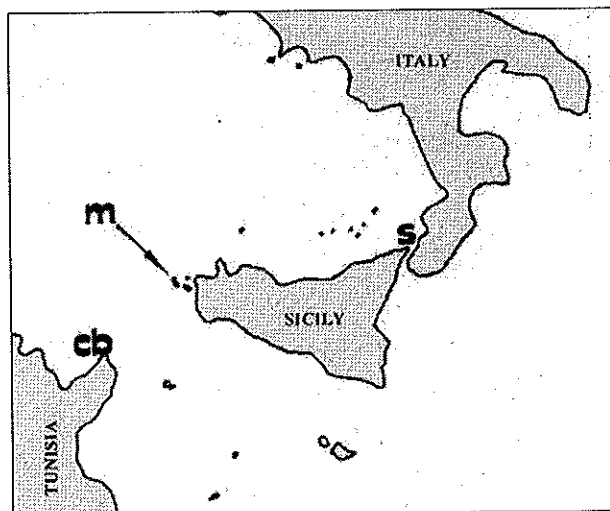


Fig. 1 - The study area (cb - Cap Bon promontory, m - Marettimo, s - Straits of Messina).  
 Obr. 1 - Studované území (cb - mys Cap Bon, m - Marettimo, s - úžina Messina).

Montagu's Harriers (*Circus pygargus*), 2 Hen Harriers (*Circus cyaneus*), 1 Pallid Harrier (*Circus macrourus*), 3 Sparrowhawks (*Accipiter nisus*), 1 Booted Eagle (*Hieraaetus pennatus*), 2 Honey Buzzards and 1 Egyptian Vulture (*Neophron percnopterus*). The maximum numbers of Black Kites and Marsh Harriers were recorded on 4 and 10 April when 100 and 244 individuals of these species were counted (Fig. 2). Species recorded on Marettimo during spring 1998 (Agostini & Logozzo 1998) and 2000, agree with those observed on the Straits of Messina since 1984 (DIMARCA & IAPICHINO 1984, GIORDANO 1991, AGOSTINI et al. 1995, AGOSTINI & MALARA 1997) while they disagree with those re-

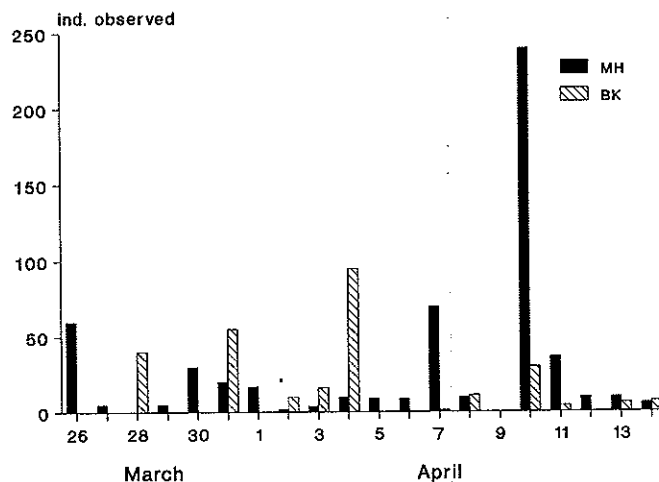
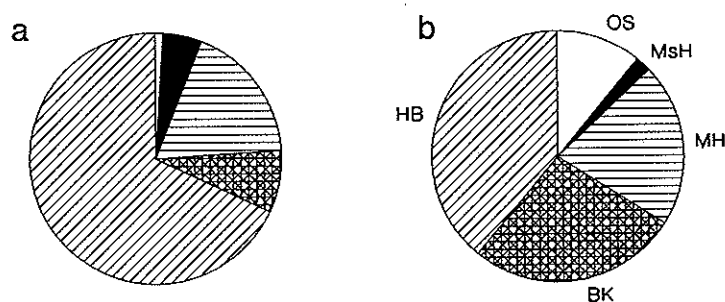


Fig. 2 - Seasonal occurrence of migrating Marsh Harriers (MH) and Black Kites (BK) over the island of Marettimo between 26 March and 14 April 2000.

Obr. 2 - Sezónní výskyt migrujících motáků pochopů (MH) a luňáků hnědých (BK) přes ostrov Marettimo v období 26.3.-14.4. 2000.

corded at the Cap Bon promontory by THIOLLAY (1975, 1977), DEJONGHE (1980) and HEIN & KISLING (1991). In particular, among Accipitriformes, at the Straits of Messina nearly all birds observed comprise Honey Buzzards, Marsh Harriers, Black Kites and Montagu's Harriers (Fig. 3a) while at Cap Bon notable concentrations of individuals belonging to other species are also recorded (Fig. 3b). Studies on the water-crossing behaviour of migrating raptors over the Tunisian promontory showed that the site is quite unsuitable even for partial surveying (AGOSTINI & DUCHI 1994, AGOSTINI et al. 1994a, 1994b). In fact, once raptors reach the coast near the promontory they rarely start the crossing, showing a complex series of movements with individuals, for instance, returning to the coast after disappearing over the sea and flying back inland. Because of this behaviour there is a risk of re-counting the birds. For this reason the island of Marettimo is a better strategic point for surveying the true migratory flow of Accipitriformes crossing the Channel of Sicily. In particular, counts made at the Straits of Messina and over Marettimo show that only rarely do some Buzzards (*Buteo buteo*), Booted Eagles, Short-toed Eagles (*Circaetus gallicus*) and Egyptian Vultures cross the central Mediterranean, while at the Cap Bon promontory notable concentrations of birds belonging to these species are recorded. In particular, THIOLLAY (1977) estimated the passage, respectively, of more than 2,800, 450, 400 and 620 birds per season. Moreover, at the Straits of Messina the Long-legged Buzzard (*Buteo rufinus*) and the Lesser Spotted Eagle (*Aquila pomarina*) are irregular migrants (ZALLES & BILDSTEIN 2000) while the former author (1977) estimated a regular passage of more than 200 and 150 individuals. The numbers recorded at Cap Bon are probably the result of a recount of birds belonging to the populations breeding and summering in Tunisia. These species do not have high aspect ratio (long) wings and, for this reason, they are unlikely to undertake long sea crossings (KERLINGER 1989). In the case of the Short-toed Eagle, the birds breeding in central Italy cross the Mediterranean Sea at the Straits of Gibraltar, concentrating over the Ligurian Apennines (northwest Italy, BAGHINO et al. 1987, AGOSTINI & MALARA 1997), while the small population breeding in southern Italy perhaps mostly winters in Sicily (MASCARA 1985, AGOSTINI & LOGOZZO 1997).



**Fig. 3** - Composition of species observed (a) at the Straits of Messina during spring 1994 (N = 5,300; AGOSTINI et al. 1995) and (b) at Cap Bon during spring 1990 (N = 8,928; HEIN & KISLING 1991, quoted by ZALLES & BILDSTEIN 2000). HB - Honey Buzzard, BK - Black Kite, MH - Marsh Harrier, MSH - Montagu's Harrier, OS - other species.

**Obr. 3** - Skladba druhů pozorovaných (a) v úžině Messina během jara 1994 (N = 5 300; AGOSTINI et al. 1995) a (b) na mysu Cap Bon během jara 1990 (N = 8 928; HEIN & KISLING 1991 ex. ZALLES & BILDSTEIN 2000). HB - včelojed lesní, BK - luňák hnědý, MH - moták pochop, MSH - moták lužní, OS - ostatní druhy.

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#### SOUHRN

Jarní migrace Accipitriformes byla sledována na ostrově Marettimo (jižní Itálie) od 26. března do 14. dubna 2000. Ostrov leží v místě, kde je střední Středozemní moře nejužší, tedy mezi Sicílií a Tuniskem, přibližně 130 km SV od mysu Cap Bon. Celkem bylo napočítáno 921 ptáků, včetně 577 motáků pochopů (*Circus aeruginosus*) a 284 luňáků hnědých (*Milvus migrans*). Druhy, zaznamenané na Marettimu v průběhu této studie i v průběhu předchozí studie odpovídají druhům zjištěným na Messinské úžině (jižní Itálie) od roku 1984, ale odlišují se od pozorování z mysu Cap Bon (Tunisko). Znamená to, že některé druhy, zejména káně lesní (*Buteo buteo*), orlík krátkoprstý (*Circaetus gallicus*) a káně bělochvostá (*Buteo rufinus*), přes střední část Středozemního moře prakticky vůbec netáhnou. Tyto druhy nemají relativně dlouhá a štíhlá křídla. Z tohoto důvodu je nepravděpodobné, že by podnikaly dlouhé cesty přes moře.

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