

Raptor migration across the Strait of Messina, southern Italy

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94. Peloritani Mountains and the Strait of Messina, southern Italy.

ABSTRACT The Strait of Messina, at the foot of Italy, is a major migration flyway for many raptors and other species, yet very little has been published on the numbers of birds passing through the area each year. The results of spring counts over the five years 1996-2000 indicate that the Strait is of international importance for seven species of raptor and two species of stork *Ciconia*. The area is also of great interest for its varied avifauna in general, which includes several distinctive Sicilian subspecies.

One of the most important migration flyways for raptors and storks *Ciconia* in Europe is across the Strait of Messina, the narrow channel separating the mainland of southern Italy from Sicily (fig.1). Despite this, there is relatively little published material concerning the birds of

the area (Corso *et al.* 1999; Dimarca & Iapichino 1984; Giordano 1991), and that which does exist is now either out of date or involves only limited counts. The site is famed for its raptor and stork passage, but is also notorious as a result of the bird-protection problems encountered there (Agostini

et al. 1994; Dimarca & Iapichino 1984; Giordano 1991). Sadly, the Strait of Messina is now well known throughout Europe for the levels of raptor-shooting that occur during migration times. In contrast, comparatively little is known of the considerable and varied passage of other migrant birds through the area.

Since 1984, protection surveys have been organised each spring by the World Wide Fund for Nature (WWF) and the Lega Italiana Protezione Uccelli (LIPU). These have been conducted on both sides of the Strait, with the aim of preventing the illegal slaughter of migrating birds, particularly raptors (Giordano 1991; Malara & Iapichino 1987). During these surveys, detailed field observations and counts are also carried out, but there have been no recent publications containing these data. The author has taken part in the surveys since 1990, and since 1996 has acted as scientific supervisor and co-ordinator, as well as being one of the main counters.

The results of counts made since 1996 are presented here. In addition, a number of other papers are currently in preparation. It is hoped that these will encourage further ornithological research in this relatively poorly studied but important part of southern Italy.

The site

The Strait of Messina separates the Calabria region of southern Italy from Sicily (fig. 1), and at the narrowest point, to the north, is approximately 3 km wide. Many raptors cross the Strait at this point, but some may start their crossing a little or even much farther south, depending on climatic conditions. Two mountain chains form the immediate backdrop to the Strait: the Peloritani Mountains in Sicily and the Aspromonte in Calabria. The observation sites on the Sicilian side, from which all the counts presented in this paper are derived, are located in the Peloritani range, in medium-high to high



Fig. 1. The Strait of Messina, southern Italy, and the raptor migration flyway.

mountain passes or at peaks (up to 1,127 m above sea level). The landscape here is breathtakingly beautiful, with woodlands and mountains descending steeply to sea level. From the higher peaks, where observations are most frequently carried out when the weather is clear, there is a most impressive panorama. The whole of the northernmost part of Sicily is visible, with the Tyrrhenian Sea to the west and the Ionian Sea to the east. In the far distance are the Eolian Islands, while the landscape to the south of the observer is dominated by the largest volcano in Europe, Mount Etna. The latter is often covered by snow during the spring, and it is against this backdrop that the north-bound raptors typically arrive and begin soaring. In strong southerly winds, however, observations are carried out from the most easterly point of Sicily, down on the coast.

Methods

The data presented here (table 1 on page 199) are derived from systematic counts made during spring in each year 1996-2000, on the Sicilian side of the Strait. Observations were carried out daily from 1st April to 27th or 28th May, from sunrise until dusk (approximately 7.00 am to 7.00 pm local time). Counts were made in all weather conditions, since raptor passage may be heavy even in strong rain and mist. In clear, sunny conditions, many raptors take advantage of strong



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95. White Stork *Ciconia ciconia*, Strait of Messina, southern Italy.

thermals and cross the Strait at high altitude, or even make a longer sea-crossing, well to the south of the main observation point, when they are more difficult to observe. During cold weather or rain, they cross the Strait at the shortest point and at a lower altitude.

The surveys are supported by WWF, and most of the observations were carried out by the author and four other main counters (C. Cardelli, G. Chiofalo, A. Giordano and D. Ricciardi).

Raptors

Since 1984, 39 species of raptor have been recorded at Messina (Corso *et al.* in prep. a). In addition, two distinctive subspecies have also been seen: Common Buzzard *Buteo buteo* of the north Palearctic race *vulpinus*, commonly referred to as 'Steppe Buzzard' (Corso 1999 and in press); and Peregrine Falcon *Falco peregrinus* of the migratory north Eurasian race *calidus* (Corso in prep. a). Twelve of these raptors are vagrants to this part of Europe, and a further two are only irregular passage migrants. There are also recent unconfirmed reports of Oriental Honey-buzzard *Pernis ptilorhynchus*.

One significant aspect of the raptor passage through the area is the occurrence of species which are rare at other migration

sites, or even unique to Messina, such as Amur Falcon *F. amurensis* (Corso & Clark 1998; Corso & Dennis 1998). The vagrants include, among others, Black-shouldered Kite *Elanus caeruleus*, Levant Sparrowhawk *Accipiter brevipes*, Steppe Eagle *Aquila nipalensis*, Eastern Imperial Eagle *A. heliaca*, Lammergeier *Gypaetus barbatus* and Barbary Falcon *F. pelegrioides*. With regard to the more regular species, the Strait of Messina is the most important European migration flyway for raptors such as Pallid Harrier *Circus macrourus*, Montagu's Harrier *C.*

pygargus, Eleonora's Falcon *F. eleonorae* and Long-legged Buzzard *B. rufinus*, while for three others, the Marsh Harrier *C. aeruginosus*, Common Kestrel *F. tinnunculus* and Hobby *F. subbuteo*, the site is the most heavily used flyway within the Western Palearctic (Corso *et al.* in prep. a,b,c.; see also Borioni 1993, Corbi *et al.* 1999, Hein & Kisling 1991, 1992; cf. Bernis 1980, Kjellén 1992, Palma & Beja 1994, Programa Migres 2000, Sagot & Tanguy Le Gac 1984, Shirihai & Christie 1992, Shirihai *et al.* 2000, Sutherland & Brooks 1981, Welch & Welch 1988). Yet another highlight of Messina is the chance to encounter migrating and breeding Lanner Falcons *F. biarmicus* of the subspecies *feldeggii*, a distinctive race of which few birdwatchers in Europe have field experience (Corso 2000).

The number of raptors crossing the Strait is much higher in spring than in autumn (Agostini & Logozzo 1997). Consequently, owing to financial pressures, regular surveys are undertaken only during spring, when the illegal poaching and shooting is most prevalent. Data for the autumn migration period are therefore quite scarce. In spring (table 1), the most numerous species are European Honey-buzzard *P. apivorus* (minimum spring total 16,700, maximum 27,297 and mean of 20,473 during the five-year period consid-

Table 1. Totals of each species of raptor counted at the Strait of Messina, southern Italy, during spring migration 1996-2000.

	1996	1997	1998	1999	2000	Totals
European Honey-buzzard <i>Pernis apivorus</i>	16,907	16,700	19,744	21,717	27,297	102,365
Black Kite <i>Milvus migrans</i>	653	712	546	678	1,008	3,597
Red Kite <i>Milvus milvus</i>	4	2	8	4	6	24
Egyptian Vulture <i>Neophron percnopterus</i>	3	4	8	12	9	36
Short-toed Eagle <i>Circaetus gallicus</i>	3	4	4	1	2	14
Marsh Harrier <i>Circus aeruginosus</i>	1,850	2,971	1,621	2,134	3,074	11,650
Hen Harrier <i>Circus cyaneus</i>	81	84	27	25	3	220
Pallid Harrier <i>Circus macrourus</i>	35	25	58	37	83	238
Montagu's Harrier <i>Circus pygargus</i>	582	418	295	155	866	2,316
Pallid/Montagu's Harrier	159	91	53	33	33	369
Unidentified harriers	82	37	19	28	28	194
Northern Goshawk <i>Accipiter gentilis</i>	/	1	/	/	2	3
Eurasian Sparrowhawk <i>Accipiter nisus</i>	2	8	5	14	11	40
Common Buzzard <i>Buteo buteo buteo</i>	18	70	56	74	67	285
'Steppe Buzzard' <i>B. b. vulpinus</i>	12	22	22	19	36	111
Long-legged Buzzard <i>Buteo rufinus</i>	6	12	8	9	11	46
Unidentified hawks/buzzards	352	337	149	232	176	1,246
Lesser Spotted Eagle <i>Aquila pomarina</i>	1	5	1	/	4	11
Spotted Eagle <i>Aquila clanga</i>	2	/	/	/	/	2
Eastern Imperial Eagle <i>Aquila heliaca</i>	/	/	/	/	1	1
Golden Eagle <i>Aquila chrysaetos</i>	1	6	6	5	4	22
Unidentified <i>Aquila</i>	2	1	2	2	/	7
Booted Eagle <i>Hieraaetus pennatus</i>	9	5	18	19	16	67
Bonelli's Eagle <i>Hieraaetus fasciatus</i>	/	/	/	1	2	3
Osprey <i>Pandion haliaetus</i>	10	25	10	19	19	83
Lesser Kestrel <i>Falco naumanni</i>	18	46	22	24	24	134
Common Kestrel <i>Falco tinnunculus</i>	573	934	672	567	464	3,210
Lesser/Common Kestrel	110	96	59	127	48	440
Red-footed Falcon <i>Falco vespertinus</i>	151	303	135	397	1012	1,998
Amur Falcon <i>Falco amurensis</i>	/	1	2	2	/	5
Merlin <i>Falco columbarius</i>	1	4	3	1	3	11
Hobby <i>Falco subbuteo</i>	97	184	119	276	207	883
Eleonora's Falcon <i>Falco eleonorae</i>	4	21	24	24	28	101
Lanner Falcon <i>Falco biarmicus</i>	/	4	2	1	1	8
Saker Falcon <i>Falco cherrug</i>	1	2	2	2	2	9
Peregrine Falcon <i>Falco peregrinus</i>	9	10	11	19	25	74
Barbary Falcon <i>Falco pelegrinoides</i>	/	/	1	/	/	1
Unidentified falcons	147	114	66	84	70	481
TOTALS	21,885	23,259	23,778	26,742	35,197	130,310

ered here) and Marsh Harrier (minimum 1,621, maximum 3,074 and mean of 2,330). These are followed by Black Kite *Milvus migrans* (min. 653, max. 1,008, mean 719), Common Kestrel (min. 464, max. 934, mean 642) and Montagu's Harrier (min. 155, max. 866, mean 463).

Harriers are usually the first raptors to arrive over the Strait in spring, with migration of Marsh, Hen *C. cyaneus* and Pallid Har-

riers already underway in mid to late March. Marsh Harrier is usually the most common raptor recorded during the first half of April (with a peak count of 1,200+ on 4th April 1997), and may be observed until the end of May. Adult males are the first to appear, followed by adult females and finally second-calendar-year birds, which are the most abundant. Montagu's Harrier migrates later than the other species of harrier, and peak



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96. Adult female European Honey-buzzard *Pernis apivorus*, Strait of Messina, southern Italy.

passage is most commonly in late April. Black Kite is another species observed early in the season, with peak counts in mid April, although this species too may be encountered as late as the end of May. European Honey-buzzards appear in late April, with few records before 20th April. However, the numbers recorded increase very rapidly to a peak during early May, with often a secondary peak in mid May. Common Kestrel and Lesser Kestrel *F. naumanni* are recorded during the whole observation period, the

former from as early as mid March. Both species peak in late April or early May, often in association with the main movement of Red-footed Falcons *F. vespertinus*. Hobbies appear in early April, with the highest numbers usually encountered in late April, whereas Eleonora's Falcons typically peak a little later, in early to mid May. The rarer species, such as Egyptian Vulture *Neophron percnopterus*, Long-legged Buzzard, 'Steppe Buzzard' and Spotted Eagle *Aquila clanga*, are typically recorded in April, but since 1998 have often been recorded somewhat later, in early to mid May.

On the whole, there seems to have been an increasing number of raptors recorded annually during the study period. This may reflect a real trend for many of the species, but for some it may be a function of improved field-identification skills and knowledge of 'difficult' species (e.g. Pallid Harrier, Peregrine Falcon of the race *calidus* and Common Buzzard of the race *vulpinus*), together with better coverage of the area (which may have resulted in higher counts of the small falcons and the harriers).

Other species

In total, the check-list of the Strait of Messina comprises an impressive 315 species (Corso 1998), a figure which includes a number of extralimital vagrants. The area is nothing less than spectacular for British and north Euro-



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97. Black Kite *Milvus migrans*, Strait of Messina, southern Italy.



98. Mount Etna, Sicily, with European Honey-buzzard *Pernis apivorus*. Roberto Gildi.

pean birdwatchers. It is possible to see, in addition to the many raptors, a wide range of Mediterranean species, including, for example, the distinctive Sicilian race of the Rock Partridge *Alectoris graeca whitakeri* (Corso & Starnini in prep.), both the eastern and the western forms of Black-eared Wheatear *Oenanthe hispanica*, Spectacled *Sylvia conspicillata* and Subalpine Warblers *S. cantillans*, both Western Bonelli's *Phylloscopus bonelli* and Eastern Bonelli's Warblers *P. orientalis*, Collared *Ficedula albicollis* and Pied Flycatchers *F. hypoleuca*, and the endemic and unique Sicilian form of the Long-tailed Tit *Aegithalos caudatus siculus* (Corso in prep. c). The site is also one of the most important European flyways for Black *Ciconia nigra* and White Storks *C. ciconia* (Corso *et al.* 1999).

Visiting

The site may be reached easily, via Catania Airport in Sicily or Reggio Calabria Airport in Calabria, and then by bus to Messina town, in northernmost Sicily. Despite the image sometimes portrayed in certain sections of the media, there are absolutely no problems with the notorious 'Mafia', and the local inhabitants are very friendly and hospitable. To take part in the spring WWF survey (the surveys organised by LIPU have been discontinued on the Sicilian side), keen and competent

observers are encouraged to contact the author by writing to the address at the end of this paper. Volunteer observers may choose to take part either by helping to protect migrating raptors or by assisting in the co-ordinated observation programme (or, indeed, both). Help is always required for this rewarding work, and this offers perhaps the easiest and cheapest way to visit the area.

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99. Second-calendar-year male Montagu's Harrier *Circus pygargus*, Strait of Messina, southern Italy, May.



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100. Adult Booted Eagle *Hieraetus pennatus* of pale morph, Strait of Messina, southern Italy, April 2000.

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