

THE MIGRATION OF BIRDS OF PREY AND STORKS IN THE STRAITS OF MESSINA

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INTRODUCTION

Since 1984, hundreds of volunteers have been counting and protecting the birds of prey migrating from Africa to Europe through the Straits of Messina.

Although Italian law has, since 1977, protected all birds of prey, thousands of poachers continue to shoot the raptors crossing this area in spring-time, according to an old tradition. It is surprising that only a few of the books on raptor migration mention the migratory route through southern Italy, with only short notes on the species and numbers crossing this area: in fact, few systematic observations were made prior to 1984 and then only for short periods of time.

This paper aims to fill some of the gaps with publication of the observations made during seven years by the author and other volunteers from Europe and North Africa.

LIMITATIONS TO OBSERVATIONS

The aim of the participants at the International Camp organized by the Italian League for Protection of Birds (LIPU) is to save the birds. Limitations to our studies were of different kinds. In cases where there were few protectionists in the field and poachers were active, priority was given to protection, so that observations had to be discontinued in order to call police or move to the poaching area to stop the illegal hunting. For this reason, numerous birds were neither counted nor identified.

The observation period every year was for only two months. In some years we started counting the birds late in the spring (2nd half of April), but more recently at the beginning of April. For this reason counts in the last three years have produced information at variance with that of the first four years. This makes a comparison difficult.

To date, not all the migration area is fully known and for the protectionists it has been imperative to concentrate mainly on the "hot spots" where hunters are present.

It was difficult to correlate all the weather conditions with the migration area; often two different winds were blowing in two contiguous areas or even at times in the same area at different altitudes. Sometimes in the Messina District the weather would be bad, whilst further south it was fine. This situation might direct the birds to secondary migration routes as shown on the map (Fig. 1). Probably also the secondary routes are used by an unknown percentage of birds (see Fig. 1), for which reason the number of raptors counted in the study area is an underestimate.

Not all the participants were able to identify every raptor: accordingly, if the identification was doubtful, the birds were classified as "non id". *Accipitridae* or "non id" *Falconidae*.

Fog was another considerable limitation to the counts: often the birds would be flying into the fog (especially Honey Buzzard) and only few localities were good for observation, although for most of the time they flew at high altitudes. The fog could persist all day or else only in the morning. In the case of fog, the birds could be easily counted on the Calabrian side of the Straits, where they usually arrive at low altitudes. In the absence of fog the count depended on the number of participants. The more observers were covering the area, the greater the possibility for counting the raptors.

In the first three years there were very few of us and our appraisal of the migration modalities was poor. Moreover the front at the Straits of Messina is a large one (about 70 km) and we could not cover more than 25 km every spring.

GEOGRAPHICAL CHARACTER OF THE AREA

The island of Sicily is 150 km distant from Cape Bon (Tunisia), from where most of the birds come (Fig. 1). It seems that a large part of migrants leave Africa from the southern coast of Tunisia and the northern coast of Libya; others cross over via Malta and arrive in the south-east part of Sicily.

The narrowest points of the Straits separating Sicily from Italy is about 3 km. The widest is about 35 km at the southern end.

The Straits of Messina are bounded by high mountains on both sides. In Sicily these are the Peloritani Mountains, their highest point being 1253 m above sea level, from which they decline slowly to the north, to reach about 200 m only at the end of the Straits. On the Calabrian side the Aspromonte chain rises very steeply along the coast.

In Sicily the distance from the highest mountain (Mt. Scuderi) to the coast is 7-10 km from both the Tyrrhenian and Ionian Seas; from the second highest (Dinnammare 1127 m.a.s.l.) it is 5-7 km, and only 2 km from Monte Ciccia (609 m) and 500 m from the lowest heights.

In Calabria all observation posts are along the coast and, because of the steep nature of the Aspromonte chain, their altitude ranges from sea level to 700 m.

LOCALITIES AND WINDS

With winds from the south (mainly SE from Africa), the migration follows the Tyrrhenian side. With winds from the north (mainly NW) the birds follow the mountain peaks, or from the Tyrrhenian coast fly over the mountains towards the Ionian side, using the thermals (see Fig. 2) Fog or other adverse weather conditions can modify the flight direction. The main localities in Figure 2 are: 1) Monte Scuderi 2) Dinnammare 3) Monte Ciccia 4) Castanea 5) Villa San Giovanni 6) Scilla

OBSERVATION PERIODS

Counts were made on both sides of the Straits. For most of the time the period of observation was the same, but usually the counts started earlier and ended later in Sicily than in Calabria, although with some exceptions.

At the end of the observation period the different counts were controlled and compared, hour by hour, species by species, day by day for different localities, in a very specialised manner. Figures for the total numbers of birds of prey migrating in each year refer to the following periods:

1984: April 20 to May 20 (Sicily only)

1985: April 20 to May 20 (Sicily & Calabria)

1986: all April but without continuity (Sicily); then, from 5 to 28 May (Sicily & Calabria)

1987: April 1 to May 28 (Sicily & Calabria)

1988: March 31 to May 28 (Sicily & Calabria)

1989: April 8 to May 28 (Sicily only)

1990: March 31 to June 3 (Sicily only)

SYSTEMATIC LIST

Neophron percnopterus: a scarce passage migrant with a few specimens every year, except in 1984 when 14 adults were observed in less than one month. The breeding population in Italy has decreased dramatically in the last ten years, the main population being now concentrated only in Sicily. This can be a reason for the few birds observed on migration. Some of them can be non-breeders or strays from a breeding area in Sicily close to the migration routes. Only two birds were subadult, the other 45 being adults.

First obs: 19/4, Last obs : 28/5

Aquila rapax orientalis: only one immature recorded, on 39/04/88, so it may be considered an accidental.

Aquila pomarina: a rare and irregular passage migrant, in some years unrecorded. One adult observed hunting during the migration. One sighting in the Lipari Islands on 30 March 1983 (first record for this area; pers. obs.).

First obs: 21/4, Last obs : 14/5

Aquila clanga: a rare and irregular migrant, unrecorded in some years. The few observations must also be due to non-control during its main migration period (March and early April). One interesting sighting of two adults together on 17 May 1988. Both *Aquila pomarina* and *A. clanga* can elude observation due to their flying at a high altitude, where they are difficult to see or recognise.

Aquila chrysaetos: a regular visitor, but non-migratory. Most individuals were immature and were observed returning south. Very likely some individuals cross the sea, but we have no information on this. The few records on the Calabrian side do not coincide with the observations made in Sicily (different days). Immatures observed could belong to the local population or a regional one. Unrecorded in some years (1989, 1990).

Aquila heliaca: an accidental visitor; one immature on 18/5/86 and one on 14/5/89 on the Calabrian side. One immature shot in Sicily on 23/9/90 and later released in Israel at the Houla Reserve on 28 December 1990.

Hieraetus pennatus: never observed or recognised during the first two years, then a regular but uncommon passage migrant. Most individuals of the dark phase; twice they migrated in pairs of the same phase. Probably more common, but identification difficult when the birds are far away or at a high altitude, especially dark phase individuals.

First obs: 3/4, Last obs : 21/5

Circaetus gallicus: a rare and irregular passage migrant, probably because of the different period and migration behaviour (high altitude, flight over clouds). Unrecorded in some years.

First obs: 17/4, Last obs : 26/5

Pandion haliaetus: a regular but uncommon migrant, underestimated since it often follows the coast and the observation posts are mainly on the mountain tops. It has been observed fishing in a lake on the North Sicilian side of the Straits on three different occasions. One bird shot in autumn was ringed in Sweden. It is a confident species and can be easily shot by the poachers.

First obs: 1/4, Last obs : 27/5

Buteo buteo: a scarce but regular migrant which may be underestimated due to its different migration period and the presence of local breeding pairs which can confuse the observers. Some individuals were *B.b. vulpinus*.

First obs: 3/4, Last obs : 28/5

Buteo rufinus: an uncommon and irregular passage migrant. Most of the times the distinction from other *Buteo* sp. was not easy due to the distance or weather conditions.

First obs: 7/4, Last obs: 17/5

Pernis apivorus: a common and regular passage migrant, mainly in May, sometimes in flocks of 150-250 birds. Early on, they migrate also singly or in small groups. Most of the population migrate within a few days as shown by the following numbers: 404 birds on 1/5/84; 501 on 16/5/1985; 985 on 7/5, 1013 on 19/5 and 1062 on 25/5/86; 1377 on 6/5/87; 1730 on 10/5/88; 1763 and 1627 on 6 and 7/5/89; 2522 and 1239 on 9 and 10/5/90. It is interesting to note that the number of birds migrating is increasing year by year.

First obs: 5/4, Last obs : 22/6, Peak day : 2522 on 9/5

Milvus milvus: a rare but regular migrant, singly, sometimes accompanying *Pernis apivorus* or *Milvus migrans*.

First obs: 6/4, Last obs : 22/5

Milvus migrans: a common and regular passage migrant, singly or in flocks of 33 - 50. It has been observed feeding on a dead cow on the Lipari Island of Vulcano (30 March 1983) and carrying a fish while migrating. Probably often overlooked.

First obs: 30/3 or 1/4, Last obs : 27/5, Peak day : 79 on 8/4

Accipiter nisus: a scarce and irregular passage migrant, unrecorded in some years.

First obs: 5/4, Last obs : 12/5

Accipiter brevipes: one Sicilian record of an adult male on 15 April 1989. Only one recorded on Italian mainland (1893, Calabria: Arrigoni degli Oddi 1902). In the case of this sole record for Sicily, the bird was very close and the

light was perfect for a positive identification. This sighting is awaiting a reply from the Italian Ratification Committee.

Circus Spp.: unidentified *Circus* species, female, male or immature, are included, provided that the observer was sure of their identity as *Circus*. Weather conditions and distance influenced the number unidentified.

Circus pygargus/macrourus: only females, males or immatures, distinguishable from the other two *Circus* (*aeruginosus* and *cyaneus*) and for which no other identification was possible.

Circus aeruginosus: a common and regular passage migrant. In the last two years it was the commonest species after *Pernis apivorus*. From the second half of April females and immatures are more common than males. It migrates singly or in small parties, both sex and age together or separately, with other *Circus* spp., *Pernis* or *Milvus*.

First obs: 30/3, Last obs : 26/5, Peak day : 282 on 23/4

Circus cyaneus: a scarce and irregular passage migrant, probably overlooked.

First obs: 1/4, Last obs : 21/5, Peak day : 29 on 5/4

Circus pygargus: a regular but scarce migrant, in 1990 it was very common. Most of the time, females and immatures were not easily identified and so included in the *Circus* spp. or *Circus pyg./macr.* list. Probably increasing due to closer protection of the breeding areas in recent years.

First obs: 1/4, Last obs : 26/5, Peak day : 69 on 23/4

Circus macrourus: a scarce but regular passage migrant; most sightings referred to males. Females and immatures were identified only a few times.

First obs: 1/4, Last obs : 15/5, Peak day : 4 on 12/4 and on 15/5

Falco cherrug: only three records, all in April. An accidental passage migrant, all birds were adult, flying at a short distance from the observers. Other sightings have not been considered as their identification was doubtful.

First obs: 7/4, Last obs : 28/4

Falco biarmicus: only one recorded, certainly belonging to the local breeding population (Dimarca & Iapichino 1984).

Falco peregrinus: a scarce and irregular passage migrant, and sometimes strays from the breeding area. Some sightings have not been considered, due to the presence, on occasion, of individuals spending several days in the migration area, easily recognised by their damaged plumage.

First obs: 4/4, Last obs : 24/5

Falco eleonora: a scarce but regular passage migrant. Birds crossing the Straits of Messina were probably heading for the South Tyrrhenian breeding areas. All individuals flew E-W, from the Ionian Sea side to the Tyrrhenian. Most were of the light phase, sometimes stopping over for more than one day, hunting insects. Usually single birds, but pairs seen twice.

First obs: 10/4, Last obs : 26/5, Peak day : 4 birds on several occasions throughout the years.

Falco columbarius: a scarce and irregular passage migrant, unrecorded in some years. Its main migration does not coincide with the Camp period. Mostly singles, once as a pair, female and male together.

First obs: 6/4, Last obs : 7/5

Falco subbuteo: a common and regular spring passage migrant, singly or in small flocks, often with *F. vespertinus*, *F. tinnunculus* or *Pernis apivorus*. Observed hunting on the ground or in flight.

First obs: 4/4, Last obs : 28/5, Peak day : 47 on 22/4

Falco vespertinus: a common but irregular passage migrant, with annual, sometimes remarkable fluctuations. Singly, or more often in small flocks though sometimes of 100 or more birds. Observed hunting, especially at sunset, and perching on electricity lines. 583 birds recorded between 29/4 and 12/5/90.

First obs: 4/4, Last obs : 1/6, Peak day : 100 (a flock) on 16/5, 120 (a flock of 100) on 1/6, 107 singles for small parties on 1/5

Falco tinnunculus: a common and regular passage migrant, singly or in small groups. Often associated with *F. vespertinus*, *F. subbuteo* or *F. naumanni*. The figures were not compiled for the first three years, nor in 1989, because of the confusion between female, immature and sometimes male *F. tinnunculus* with those of *F. naumanni*. In those years, the two species were counted together and listed as *Falco tinn/naum*.

First obs: 1/4, Last obs : 27/5, Peak day : 85 on 6/4

Falco naumanni: a scarce but regular passage migrant, probably overlooked due to possible confusion with *F. tinnunculus*: most records are of adult males, females and immatures being difficult to identify.

First obs: 1/4, Last obs : 22/5, Peak day : 17 on 28/4

Ciconia ciconia: a regular but scarce passage migrant, in small flocks, singly or sometimes in large numbers (60 birds), usually following the coastline. This, combined with their early migration period, may account for the scarcity of sightings.

First obs: 6/4, Last obs : 15/5, Peak day : 60 on 18/4

Ciconia nigra: a regular but scarce passage migrant, singly or in pairs, once in a flock of 30. Often together with *Pernis apivorus* and *Milvus migrans*.

First obs: 2/4, Last obs : 26/5, Peak day : 30 on 22/4

CONCLUSIONS

As the figures show, the raptors migrating through the Straits of Messina have been increasing dramatically over the last three years, probably due to the protection accorded against the traditional poaching. The quality of the observations has not varied since they began; only the period of observation has been longer in the last four years. The small number of observers, made up of volunteers from the European Association for the Protection of Birds, mostly from the DBV, could cover only a small part of the large migration area. Whilst the number of protectionists remains the same or less, hundreds, maybe thousands of migrating raptors will be missed during the count. Poaching is still strong on the Calabrian side of the Straits. Thousands of shotguns are heard firing every year during the spring season. The only chance the birds have to be saved during their migration through the Straits depends on joint action by all European Governments and the constant presence of the Forestal Guards with helicopters to stop the daily slaughter.

At the same time, any lessening of protectionist activity in Sicily would lead to the return of poaching to its former levels. Thus it is necessary to continue the International Camp until an International Ornithological Observatory can (hopefully) be established, aimed at preserving and studying the migration and educating the local population.

Many things must be done to attain this goal, but we hope that all the ornithologists and protectionists of Europe will help us.

Table 1.

Total numbers of the Birds of Prey and Storks migrating through the Straits of Messina, by species and by year.

	1984	1985	1986	1987	1988	1989	1990
<i>Pandion haliaetus</i>	2	3	9	2	20	10	6
<i>Milvus milvus</i>	3	1	5	5	4	1	6
<i>Milvus migrans</i>	244	85	252	197	397	155	384
<i>Circaetus gallicus</i>	-	-	3	-	-	2	3
<i>Buteo buteo</i>	40	18	21	15	36	18	42
<i>Buteo rufinus</i>	-	-	-	-	4	2	3
<i>Pernis apivorus</i>	1876	3138	7675	6032	6072	7966	8516
<i>Hieraaetus pennatus</i>	-	-	22	15	10	5	8
<i>Aquila chrysaetos</i>	2	-	3	3	6	1	-
<i>Aquila heliaca</i>	-	-	1	-	-	1	-
<i>Aquila pomarina</i>	2	-	5	1	3	-	-
<i>Aquila clanga</i>	-	-	1	-	2	-	-
<i>Aquila rapax orientalis</i>	-	-	-	-	1	1	-
<i>Aquila sp.</i>	-	-	-	-	7	-	1
<i>Neophron percnopterus</i>	14	1	8	7	4	7	6
<i>Circus aeruginosus</i>	149	41	125	218	696	486	978
<i>Circus cyaneus</i>	2	-	43	21	59	19	11
<i>Circus macrourus</i>	1	-	15	8	12	4	6
<i>Circus pygargus</i>	32	6	5	42	46	64	273
<i>Circus pyg/macr.</i>	110	25	-	-	-	29	8
<i>Circus "non id."</i>	-	-	138	141	248	166	93
<i>Accipiter nisus</i>	2	-	1	2	7	-	6
<i>Accipiter brevipes</i>	-	-	-	-	-	1	-
<i>Falco cherrug</i>	-	-	2	1	-	-	-
<i>Falco biarmicus</i>	1	-	-	-	-	-	-
<i>Falco peregrinus</i>	5	1	6	2	2	11	3
<i>Falco eleonorae</i>	9	4	10	3	15	8	19
<i>Falco subbuteo</i>	82	41	137	220	121	84	160
<i>Falco columbarius</i>	-	-	4	1	2	-	2
<i>Falco vespertinus</i>	54	131	165	507	28	119	672
<i>Falco tinnunculus</i>	-	-	-	90	156	-	488
<i>Falco naumanni</i>	-	-	-	30	24	-	28
<i>Falco tinn/naum.</i>	314	280	375	9	114	294	45
<i>Falconidae "non id."</i>	103	97	171	223	227	145	238
<i>Accipitridae "non id."</i>	148	165	218	176	544	146	141
<i>Ciconia nigra</i>	4	14	57	31	39	36	33
<i>Ciconia ciconia</i>	-	5	9	-	7	74	124
Total	3198	4056	9486	8002	8913	9854	12303

Data from Anna Giordano, Christoph Hein and Carmela Cardelli (1986-1990) and Carmelo Iapichino (1984-1985).

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Figure 1.
Map showing main and secondary migration routes via Sicily.

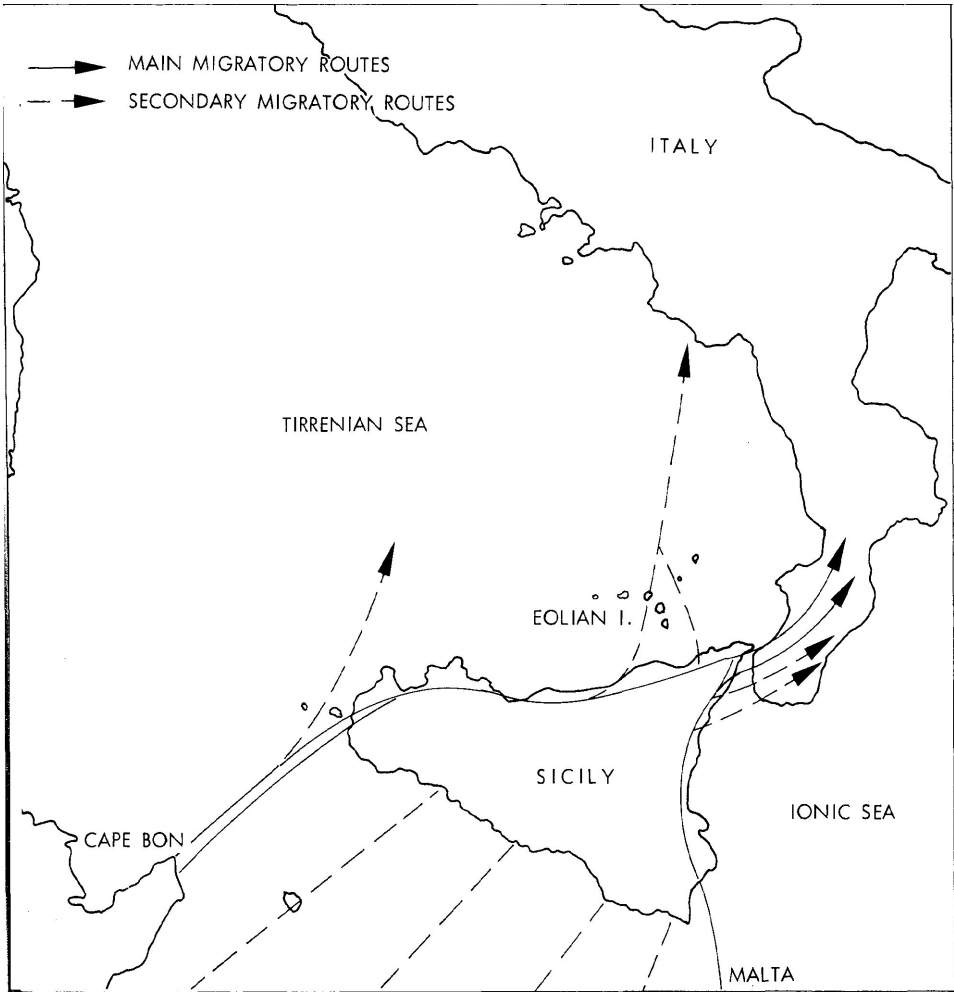
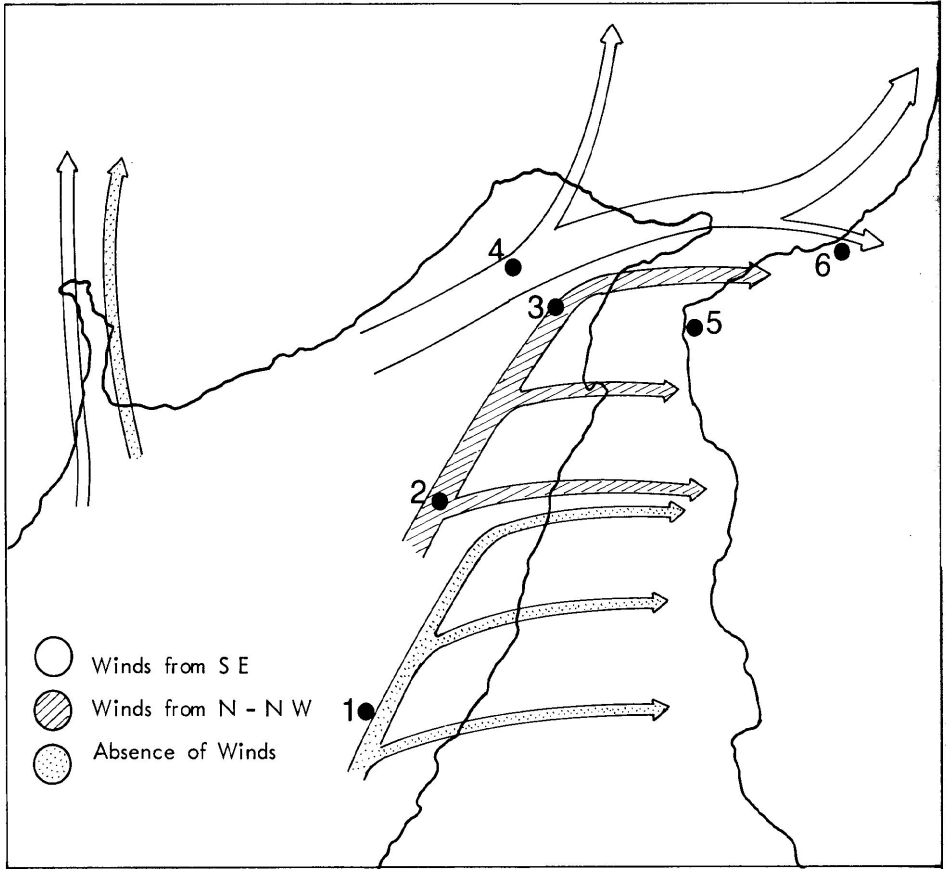


Figure 2.
The Straits of Messina, showing migration routes in relation to prevailing winds.



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