

J. Raptor Res. 40(3):244–246

© 2006 The Raptor Research Foundation, Inc.

SPRING MIGRATION OF EUROPEAN HONEY-BUZZARDS (*PERNIS APIVORUS*) ALONG THE SARDINIA-CORSICA CORRIDOR (CENTRAL MEDITERRANEAN)

NICOLANTONIO AGOSTINI¹

Via Carlo Alberto n° 4, 89046 Marina di Gioiosa Jonica (RC), Italy

GUIDO PREMUDA

Via G. Pierluigi Da Palestrina n° 20, 40141 Bologna, Italy

LEONARDO COCCHI

Via Ruffini n° 12, 41010 Piumazzo (MO), Italy

RICCARDO MOLAJOLI

Via Britannia n° 54, 00183 Roma, Italy

CARMELA CARDELLI AND MARCO GUSTIN

LIPU (Lega Italiana Protezione Uccelli), Conservation Dep., Via Trento n° 49, 43100 Parma, Italy

LUCA BAGHINO

LIPU Liguria, Salita delle Battistine n° 14, 16125 Genova, Italy

KEY WORDS: *European Honey-buzzard*; *Pernis apivorus*; *Corsica*; *Sardinia*; *water crossing*.

During spring migration thousands of raptors wintering in tropical Africa use the Central Mediterranean corridor to reach their breeding areas in central-eastern Europe. In this Mediterranean area observations have been made at several sites in northern Tunisia, Sicily, Malta, and the Italian peninsula where the European Honey-buzzard (*Pernis apivorus*) was frequently the most common species (Agostini 2003). During spring migration, European Honey-buzzards use

two paths to reach Italy: via the Channel of Sicily, between Tunisia and western Sicily (Agostini et al. 1994), and via the Ligurian coast (northwestern Italy, Baghino 1996, Fig. 1). However, although systematic observations were lacking, some authors suggested the existence of a third migratory flyway along the Sardinia-Corsica corridor (Thibault 1983, Zalles and Bildstein 2000). In particular, Zalles and Bildstein (2000) reported a spring flight over these islands, with birds flying along a south-north axis between northern Tunisia in the south and northern Italy in the north (Fig. 1). This migratory route includes passage across the Bocche di Bonifacio, the narrowest strait between Sardinia and Corsica (14 km wide). The purpose of this study was to determine whether there is a significant spring move-

¹ Present address: Via Gorini n° 6, 27100 Pavia, Italy; Email address: nicolantonioa@tiscalinet.it

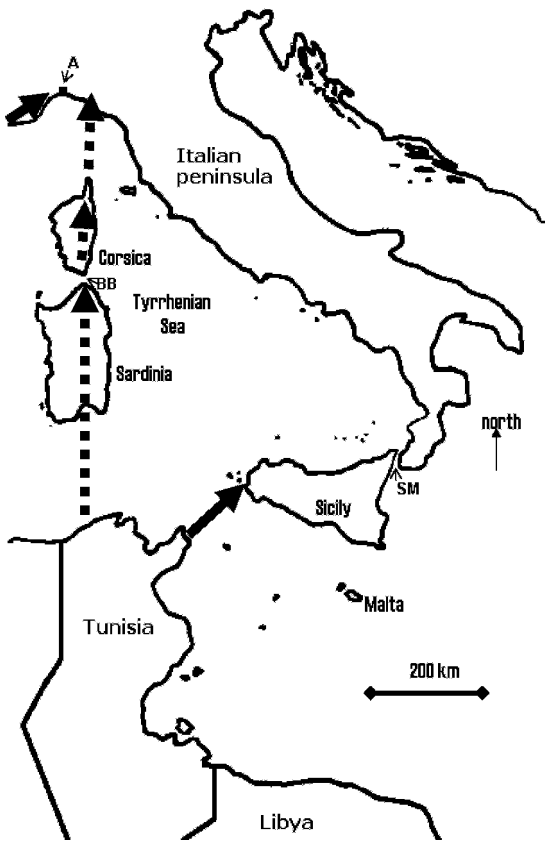


Figure 1. The Central Mediterranean area; SM = Straits of Messina; BB = Bocche di Bonifacio; A = Arenzano; dotted arrow = pathway suggested by Zalles and Bildstein (2000); solid arrow = major pathways used by European Honey-buzzards during spring migration to reach Italy.

ment of European Honey-buzzards at this water crossing, by comparing the migratory flow in this area with that at the Straits of Messina.

METHODS

At both Bocche di Bonifacio and the Straits of Messina, we used binoculars and spotting scopes to observe migrating raptors from 1–14 May 2005, the peak of the spring migration of honey buzzards in the Mediterranean Basin (Cramp and Simmons 1980). At the Bocche di Bonifacio the observation site was located at Punta Falcone, the northernmost point of the Sardinian slope, at the altitude of ca. 100 m above sea level. At the Straits of Messina the observation site was located along the Sicilian slope, over the Peloritani Mountains at an altitude of ca. 500 m.

RESULTS AND DISCUSSION

At the Bocche di Bonifacio, 103 birds were counted in 132 hr; of them, 89 (86%) crossed toward Corsica while 14 (14%) flew back inland or disappeared before crossing.

We recorded 42 (40.8%) honey buzzards that migrated singly. All birds that could be aged reliably in the field ($N = 35$) were adults. At the Straits of Messina, we recorded the passage of 14 180 individuals in 158 hr and only 129 (0.9%) migrated alone; on three days (3, 4, and 9 May) we counted 2035, 2204, and 2988, respectively. These data do not support the existence of a large spring migratory flow of European Honey-buzzards across the Bocche di Bonifacio during the presumed peak period of movement. During spring migration, this species shows a strong tendency to migrate in flocks (Kerlinger 1989), with adult males and adult females reaching their breeding areas together (Gensbøl 1992). The high proportion of solitary birds reported at Bocche di Bonifacio suggests perhaps many nonbreeders and/or first breeders were detected during our observations. We note that over the Ligurian coast, at a site located north of Corsica (Arenzano; Fig. 1), 4183 honey buzzards coming from west-southwest and heading east-northeast were counted in 88 hr between 5–14 May 2005 (Parco del Beigua unpubl. data). These data agree with observations previously made at the same site in terms of numbers, migration orientation, and peak period (Baghino 1996). These honey buzzards travelling along the Ligurian coast probably crossed the Mediterranean at the Straits of Gibraltar (Baghino 1996), not via the Sardinia-Corsica corridor, across the Bocche di Bonifacio.

During post-reproductive movements, a significant passage of juvenile honey buzzards, involving at least hundreds of birds, moving later than adults, was reported en route to Corsica from the Italian peninsula (Paesani and Politi 2002, Agostini et al. 2004). A recent study made at the Straits of Messina showed that a late passage (late May–June) of birds with immature characteristics also occurs across the Central Mediterranean during spring migration (Panuccio and Agostini 2006). Perhaps, a late passage of younger, less experienced individuals could occur along the Sardinia-Corsica corridor during both spring and autumn, with a significant number of birds passing across the Bocche di Bonifacio between late May and June.

MIGRACIÓN PRIMAVERAL DE *PERNIS APIVORUS* A LO LARGO DEL CORREDOR CERDEÑA-CÓRCEGA (MEDITERRÁNEO CENTRAL)

RESUMEN.—El objetivo de este estudio fue determinar si existe un paso primaveral significativo de *Pernis apivorus* a lo largo del corredor Cerdeña-Córcega (Mediterráneo Central) durante el pico del período de migración. Observamos rapaces migratorias entre el 1 y el 14 de mayo del 2005 en Bocche di Bonifacio, en el punto más angosto del estrecho entre estas islas. Comparamos conteos realizados en Bocche di Bonifacio con aquellos hechos en los Estrechos de Messina, entre el este de Sicilia y el sur de Italia continental, donde se presenta la mayor concentración de rapaces del Mediterráneo central durante la migración de primavera. Se registraron 103 individuos de *P. apivorus* en Bocche di Bonifacio, mayormente (40.8%) migrando so-

los. De estos, 89 aves cruzaron el mar en dirección hacia Córcega. En los Estrechos de Messina se contabilizaron más de 14 000 individuos de *P. apivorus*, mayoritariamente (99.1%) migrando en bandadas. Estos resultados no confirman la existencia de un paso migratorio significativo para esta especie a lo largo del corredor Cerdeña-Córcega durante el pico del período migratorio.

[Traducción del equipo editorial]

ACKNOWLEDGMENTS

We wish to thank K. Bildstein, R. Yosef and F. Sergio for their useful comments on this manuscript and the Beigua Park, in the Ligurian Apennines, for their invaluable collaboration.

LITERATURE CITED

- AGOSTINI, N. 2003. La migrazione dei rapaci sul Mediterraneo centrale: stato attuale della ricerca e prospettive. *Avocetta* 27:48–51.
- , G. MALARA, F. NERI, D. MOLlicONE, AND S. MELOTTO. 1994. Flight strategies of Honey Buzzards during spring migration across the central Mediterranean. *Avocetta* 18:73–76.
- , C. COLEIRO, AND M. PANUCCIO. 2004. Analysis of the autumn migration of juvenile Honey-buzzards (*Pernis apivorus*) across the central Mediterranean. *J. Raptor Res.* 38:283–286.
- BAGHINO, L. 1996. The spring migration of raptors over a site of western Liguria (Italia): results 1985 to 1994. Pages 387–391 in J. Muntaner and J. Mayol [Eds.], *Biología y Conservación de las Rapaces Mediterráneas*, 1994. Monografías No. 4, *SEO/BirdLife*, Madrid, Spain.
- CRAMP, S. AND K.E.L. SIMMONS. 1980. The birds of the western palearctic, Vol. 2. Oxford University Press, Oxford, U.K.
- GENSBØL, B. 1992. Guida ai rapaci diurni. Zanichelli, Bologna, Italy.
- KERLINGER, P. 1989. Flight strategies of migrating hawks. Univ. Chicago Press, Chicago, IL U.S.A.
- PAESANI, G. AND P.M. POLITI. 2002. Monitoraggio della migrazione autunnale dei rapaci diurni nell'isola di Pianosa (LI). *Informamigrans* 10:6–7.
- PANUCCIO, M. AND N. AGOSTINI. 2006. Spring passage of second-calendar-year Honey-buzzards at the Strait of Messina. *Br. Birds* 99:95–96.
- THIBAUT, J.C. 1983. Les oiseaux de la Corse. Parc National Regional Corse, Ajaccio, Corsica.
- ZALLES, J. AND K. BILDSTEIN. 2000. Raptor Watch: A global directory of raptor migration sites. BirdLife International, Cambridge, U.K. and Hawk Mountain Sanctuary, Kempton, PA USA.

Received 19 September 2005; accepted 14 July 2006

Associate Editors: Fabrizio Sergio and James C. Bednarz