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Conference Paper · September 2011

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MOUNT OLYMPUS: A NEW RAPTOR MIGRATION BOTTLENECK IN NORTHERN GREECE

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KEY WORDS: MIGRATION, GREECE, RAPTORS, ORIENTATION, *CIRCAETUS GALLICUS*, *PERNIS APIVORUS*, *ACCIPITER BREVIPES*

Riassunto Questo studio è il risultato di osservazioni sistematiche effettuate per la prima volta durante la migrazione autunnale e primaverile dei rapaci lungo le pendici orientali del Monte Olimpo, nella Grecia settentrionale. Il monitoraggio è stato effettuato tra il 9 settembre e il 1 ottobre 2009 e tra il 6-26 Marzo e il 27 Aprile e il 16 maggio 2010. Durante la migrazione autunnale è stato riportato il passaggio di 1093 rapaci, prevalentemente bianconi *Circaetus gallicus*, falchi di palude *Circus aeruginosus* e falchi pecchiaioli *Pernis apivorus*. Mentre i bianconi sono stati osservati dirigersi verso NNE, i falchi di palude e i falchi pecchiaioli svanivano verso SSW. Durante la migrazione primaverile sono stati contati 785 rapaci, prevalentemente bianconi osservati quasi tutti dirigersi verso SSW. Solo poche decine di falchi pecchiaioli sono stati riportati in questo periodo.

Little is known of raptor movements in Greece (Handrinos & Akriotis, 1997). In particular, a recent survey made over the island of Antikythira, in southern Greece, showed that a small but significant passage of raptors occurs along the Peloponnese-Crete flyway during spring and autumn (Lucia *et al.*, 2011). As expected, few of the broad-winged raptors using soaring flight during migration were recorded on Antikythira, even though important populations of several species breed in Greece (BirdLife International, 2004). At that site, large numbers (> 1000) of adult honey buzzards, *Pernis apivorus*, were reported during autumn but not during spring movements (see also Agostini *et al.* in press). In addition, in another study made in spring at Dadia National Park, c. 80 km northwest of the Dardanelles, 2.030 raptors were recorded in three seasons (2003–05), including 136 short-toed snake eagles, *Circaetus gallicus*, and it was assumed that these migrants crossed into Europe at the Dardanelles (Schindler *et al.*, 2009).

This study documents the first systematic survey of autumn and spring migration of raptors in a new raptor migration bottleneck in northern Greece: the Mount Olympus. The mountain chain (approx. 40° 01'N, 22° 29'E) in this area runs parallel and close to the coast (approx. 7 km) forcing migrants to concentrate on a narrow corridor (Panuccio *et al.*, 2011). Observations were made with telescopes and binoculars along its eastern slopes between 9 September-1 October 2009, 6-26 March and 27 April-16 May 2010. During autumn migration we reported the passage of 1093 raptors, mostly short-toed snake eagles, marsh harriers *Circus aeruginosus* and honey buzzards (Table 1). While short-toed snake eagles were seen heading NNE, marsh harriers and honey buzzards flew towards SSW. As expected, among honey buzzards juveniles outnumbered adults while the opposite occurred in the other two species. In fact, adult honey buzzards migrate earlier, thus we cannot exclude a passage before our observation period. During spring migration we counted a total of 785 raptors, mostly short-toed snake eagles nearly all heading SSW. The spring migration of honey buzzards is virtually non-existent at this watchsite. Our observations do not confirm the hypothesis that, such as short-toed snake eagles during both spring and autu-

mn (Panuccio *et al.*, 2011), honey buzzards breeding in central-southern Greece use a circuitous route in spring via NE Greece avoiding the long water crossing between Libya and Peloponnesus (Agostini *et al.*, in press). They probably reach their breeding areas undertaking that water crossing and choosing a more direct route such as during autumn migration (see also Agostini *et al.*, in press). The observations of tens of levant sparrowhawks, *Accipiter brevipes*, migrating northward in autumn and southward in spring suggest that also this species tends to avoid the crossing of the Mediterranean Sea, concentrating at Bosphorus and/or Dardanelles. It is interesting to note that all individuals seen heading south in autumn were juveniles. The fact that the short-toed snake eagle was the only broad-winged raptors recorded (in huge numbers if referred to the estimated breeding population in central and southern Greece) at the site during both spring and autumn, could be the result of its wide distribution over the whole Greek mainland, while populations of other broad-winged raptors are less numerous and localized in the Country, such in the case of the booted eagle, *Aquila pennata*, egyptian vulture, *Neophron percnopterus*, and lesser-spotted eagle, *Aquila pomarina* (Handrinos & Akriotis, 1997; BirdLife, 2004). Finally, since the Greek population of the short-toed snake eagle is estimated on 300-500 breeding pairs, a valuable fraction of this population migrate through Mount Olympus. For this reason we suggest that the eastern slope of Mount Olympus has to be considered an Important Bird Area as proposed by Grimmet and Jones (1989).

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Table 1 - Numbers and migratory directions of raptors observed migrating at Mount Olympus

| | Autumn Heading | | Spring Heading | |
|-----------------------------|-------------------|------------|-------------------|------------|
| | Northwards | Southwards | Northwards | Southwards |
| <i>Pernis apivorus</i> | 0 | 177 | 2 | 26 |
| <i>Accipiter brevipes</i> | 36 | 14 | 4 | 57 |
| <i>Accipiter nisus</i> | 0 | 19 | 10 | 1 |
| <i>Circus aeruginosus</i> | 0 | 268 | 17 | 3 |
| <i>Circaetus gallicus</i> | 367 | 9 | 4 | 606 |
| <i>Aquila pennata</i> | 0 | 1 | 1 | 2 |
| <i>Buteo rufinus</i> | 0 | 2 | 1 | 2 |
| <i>Milvus migrans</i> | 1 | 7 | 1 | 0 |
| <i>Circus pygargus</i> | 0 | 20 | 0 | 0 |
| <i>Circus macrourus</i> | 0 | 1 | 0 | 0 |
| <i>Pandion haliaetus</i> | 0 | 5 | 0 | 0 |
| <i>Aquila heliaca</i> | 0 | 0 | 0 | 2 |
| <i>Aquila pomarina</i> | 2 | 11 | 0 | 1 |
| <i>Gyps fulvus</i> | 0 | 0 | 0 | 1 |
| <i>Buteo buteo vulpinus</i> | 0 | 1 | 0 | 0 |
| <i>Buteo buteo buteo</i> | 0 | 81 | 14 | 25 |
| <i>Falco vespertinus</i> | 0 | 3 | 0 | 0 |
| <i>Falco naumanni</i> | 0 | 53 | 3 | 0 |
| <i>Falco tinnunculus</i> | 0 | 7 | 1 | 1 |
| <i>Falco subbuteo</i> | 0 | 8 | 0 | 0 |