

The Golden Eagle *Aquila chrysaetos* in the Umbria-Marche Apennines

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The Golden Eagle's *Aquila chrysaetos* population in the Umbria-Marche Apennines has been monitored since 1979. The most recent information covering the period up to 2012 was published, in 2013 (Magrini *et al.* 2013). Since then, research has continued for four years, totaling 38 years of monitoring activities concerning the main population parameters considered representative of the whole Italian peninsula.

The study area is 5000 km² wide and consists of the main mountains, mostly calcareous, of Umbria and Marche between 150 and 2476 m a.s.l. A bibliographic research and a collection of testimonies were carried out from the beginning of the study, with the earliest data available dating back to 1912 (Ricci 1929).

Each year the pairs breeding activities have been recorded through a minimum of three visits to the nesting territories in the February-August period. Data concerning the mean number of fledged young per pair (productivity) and the mean number of fledged young per successful pair have been collected following Cheylan (1981).

In the first half of the Twentieth century the Golden Eagle's population in the Umbria-Marche Apennines reached its maximum total with about 25 pairs. In the period 1979-1990 the number of recorded pairs was never higher than 9 or 10. Since 2014 the number of pairs present amounts to 18, with an increase of 80% compared to the 1979-1990 period. The population density has grown from 2 pairs/1000 km² to 3.6 pairs/1000 km².

Between 1979 and 2016, 393 pairs have been checked. In total 215 successful pairs and 242 fledged young were counted. The mean number of fledged young per pair was 0.55. The mean number of fledged young per successful

pair was 1.12; only since 1987 numbers have been higher than 1.00.

As suggested by Magrini *et al.* (2013), the increase of the Golden Eagle population in the 1990-2016 period is probably due to the higher percentage (from 6.5% to 25%) of protected areas and the higher amount of wild ungulates and other prey species.

In the study area, the population density reached in 2014 is quite similar to those of other parts of the Italian peninsula (3.2; Schiassi *et al.* 2013), but still far from those registered, for example, in the Alps (9.2 following Borgo 2001, and 16.7 as reported by Fasce *et al.* 2011).

The mean number of fledged young per pair (0.55) and the mean number of fledged young per successful pair (1.12), registered in the 1979-2016 period, showed to be within the normal range known for this species (Watson 1997).

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