

## A comment about the meeting's results

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We summarize in Tab. 1 the results from the presentations of this meeting, and compare them with the results from the First Meeting on the diurnal and nocturnal Italian Raptors, held in Treviso (Fasce & Fasce 2003), when a first estimate about the species consistency in the national territory was attempted. One fact impresses immediately the reader: the Italian population of the Golden Eagle has, since then, greatly increased.

Even outside the Italian borders this population increase is currently ongoing: for instance, in France (Goar 2004), Scotland (Watson 1997, Eaton *et al.* 2007, Hayhow *et al.* in press), Sweden (Tjernberg 1990) and Switzerland (Haller 1988, Jenny 1992). In particular, in Scotland the population has grown by 15% (Hayhow *et al.* in press) in the last 12 years.

All the Authors in this volume agree that this increase is not only apparent, i.e. due to better surveying techniques, but it is an actual increase in territorial pairs.

In almost every region the number of recorded pairs is higher today than the numbers estimated in 2003.

Unfortunately, for several small regions, the comparison of data presented in 2003 is approximative, due to lack of monitoring.

In fact, for example, in the Central Alps, data from the province of Biella and the Sesia Valley are not available today, whilst, in 2003, 33-34 pairs were observed in these areas as well as in the province of Verbano-Cusio-Ossola. While Bionda (this volume) has confirmed the presence of 23 pairs in the Verbano-Cusio-Ossola areas, we may assume that at least a further 10 pairs must occupy the province of Biella and the Sesia Valley. We therefore added these 10 pairs to the number of known and estimated pairs.

In the Eastern Alps, data for Trentino and Alto Adige resulted, in 2003, 115 recorded pairs; today, consistency amounts to 105 (65 in Trentino and 40 in Alto Adige). The complete picture of the distribution and consistency in Alto Adige is not available yet, as Clementi (this volume) re-

marks in his communication, due to the lack of a coherent programme of analysis of the whole territory: the apparent contradiction in data comes likely from that. It seems anyway that in this part of the alpine arc the Golden Eagle does not follow the same rate of increase observed elsewhere in Italy.

In the peninsular Italy, the population seems to encounter a phase of marked increase: the number of pairs has almost doubled, much more than expected.

Also in Sardinia the population has increased considerably, whilst in Sicily the increment is undoubtedly lower. The only Italian region where the Golden Eagle is absent is Apulia, most likely due to the absence of suitable habitat.

The reasons for the present higher density of this species in our country lie, according to all of the Authors, in general, higher food availability, in the increase of the populations of prey species, in the creation of protected areas and in the reduction of illegal persecution (that in several regions is almost null).

Everywhere threats are similar and mostly depend on human activities, especially hobbies that are more and more widespread: climbing, paragliding, photography and so on.

Another threat, detected only recently, is lead poisoning, deriving from ingestion of carcasses of animals killed or wounded by lead shot. In some regions, the relevant authorities have proceeded to fix this situation and discourage the use of this kind of ammunitions, encouraging instead the use of non toxic metals (mostly copper).

The negative effect of afforestation, caused by the abandonment of grazing and farming, is controversial: some Authors minimize its impact on the Golden Eagle, others think it is a limiting factor. The Golden Eagle is increasing all over our country, in spite of the fact that open areas are decreasing: this appears to be in contrast with the negative effect ascribed to this factor.

The total numerical consistency of the Italian population is questionable, because data on floating individuals are missing from almost everywhere.

In Lombardy a commendable effort has been made to evaluate the number of floaters (Bassi, this volume) that

allowed to obtain the first Italian estimates based on contemporary censuses. These results show that the number of floaters was remarkably increased during the years and their proportion amounts to a maximum of 42.4% (S.D. 13.1) recorded in March. According to the estimated

**Table 1.** Known and possible pairs in 2003 and 2016 of Golden Eagle breeding population in western, central and eastern Alps, northern, central and southern Apennines and islands.

Zone	2003		2016	
	known pairs	possible pairs	known pairs	possible pairs
Ligurian Alps	6	7	7	9
Province of Cuneo	33	34	44	44
Province of Turin	46	48	58	60
Aosta Valley	44	45	59	60
<b>Western Alps</b>	<b>129</b>	<b>134</b>	<b>168</b>	<b>173</b>
Lombardy	25 <sup>1</sup>	30 <sup>1</sup>	68	84
Verbano-Cusio-Ossola	21	22	23	24
Sesia Valley and province of Biella	12	12	12 <sup>2</sup>	12 <sup>2</sup>
<b>Central Alps</b>	<b>58</b>	<b>64</b>	<b>111</b>	<b>125</b>
Veneto	45	48	45	53
Trentino	56	60	65	70
Alto Adige	59	64	40 <sup>3</sup>	67
Friuli-Venezia Giulia	25	35	35	38
<b>Eastern Alps</b>	<b>185</b>	<b>207</b>	<b>185</b>	<b>228</b>
<b>ALPS</b>	<b>372</b>	<b>405</b>	<b>456</b>	<b>521</b>
Liguria, Tuscany, Emilia-Romagna	20	23	32	40
<b>Northern Apennines</b>	<b>20</b>	<b>23</b>	<b>32</b>	<b>40</b>
Umbria and Marche	13		18	25
Latium	7	8	11	13
Abruzzi			23	24
<b>Central Apennines</b>	<b>20</b>	<b>36</b>	<b>52</b>	<b>62</b>
Campania	2	3	3	3
Basilicata			1	3
Calabria	5	6	4	4
<b>Southern Apennines</b>	<b>7</b>	<b>10</b>	<b>8</b>	<b>10</b>
<b>PENINSULAR ITALY</b>	<b>47</b>	<b>69</b>	<b>92</b>	<b>112</b>
Sicily	15	17	17	21
Sardinia	41	53	57	70
<b>ISLANDS</b>	<b>56</b>	<b>70</b>	<b>74</b>	<b>91</b>
<b>ITALY</b>	<b>475</b>	<b>544</b>	<b>630</b>	<b>729</b>

<sup>1</sup> Data after Tosi & Pinoli in Bricchetti & Fasola (1990).

<sup>2</sup> Non updated data

<sup>3</sup> Census not completed

values of Fasce (1984) that gave the fraction of floaters around 30%, it is likely that the Italian population today consists of at least 1600-1700 individuals with seasonal differences.

The knowledge of the age classes of the territorial birds has much improved, as in many studies the age of partners of territorial pairs has been evaluated: it emerges that, for instance, in the Western Alps the percentage of mixed pairs, i.e. pairs formed by an adult bird and a sub-adult or an immature, is about 6% (Fasce *et al.* this volume); in the recently-monitored Scottish population, this percentage corresponds exactly to the one registered in the Western Alps (Hayhow *et al.* in press).

In the Northern Apennines, this percentage is equal to 16% (Nardelli this volume).

It is often debated whether a higher percentage of sub-adult/immature partners correspond to a healthy population or the opposite: in fact, this value should be considered together with the mortality rate (that is unknown for this population). Indeed, in the presence of a low mortality rate, a high number of mixed pairs could originate from an increase in productivity and could also mean an expanding population; on the contrary, if the mortality rate is high, the presence of a large amount of mixed pairs could mean that the population is crossing a remarkable stress phase, because not enough young birds are reaching the reproductive age to adequately replace the losses of adult birds.

The relatively high number of mixed pairs in the Northern Apennines, where productivity is quite high (0.76: Nardelli this volume), could, in our opinion, be actually ascribed to the second possibility, i.e. to a population that is remarkably expanding, whilst in the Western Alps 6% of mixed pairs could be ascribed to the normal biology of the species, as this fraction was almost constant during the 45-year surveys.

Productivity (number of fledged young/monitored pairs per year) has been evaluated in many regions, even if with different methodologies, in particular the duration of surveys.

Although it is not possible to directly compare the productivities reported in this volume with those published in 2003 (Fasce & Fasce 2003), because the study areas do not have the same boundaries of the previous surveys and also the duration of monitoring are different, it seems that this parameter has a general negative trend, as registered also in Scotland (Hayhow *et al.* in press). Anyway, it has an oscillating trend in every region.

Explaining this alternation of good and bad productivity years with dependence on meteorological factors does not appear to be completely convincing and has not been demonstrated yet.

Also the presence of floaters, disturbing the pairs during the breeding period, and causing brood failures (Haller 1982), is questionable (Fasce & Fasce 2003), because in areas, where the population density is high (for instance the Gran Paradiso National Park), productivity is higher than in regions with lower density.

In our opinion, the most convincing hypothesis, but not necessarily the only, is the one we sketched in our study (Fasce *et al.* this volume): this alternation originates from a density-dependent factor, originated not from the presence of floaters, but by the occurrence during the pre-laying period of the young of the previous year, which would affect egg-laying. Indeed we observed a parallel trend in the number of pairs laying eggs and productivity, thus supporting the conviction that the negative factor occurs before the egg-laying period.

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## Book Reviews - Recensioni

*Publishers and Authors are invited to submit a copy of their books for a review in the journal. Books are to be sent to the CISO secretary (Tommaso La Mantia - Dipartimento SAF (Scienze agrarie e forestali), Università di Palermo - Viale delle Scienze, Ed. 4, Ingr. H - 90128 Palermo (Italy) – Editori e Autori sono invitati a sottoporre una copia dei loro volumi per una recensione. I volumi devono essere spediti alla segreteria CISO (Tommaso La Mantia - Dipartimento SAF (Scienze agrarie e forestali), Università di Palermo - Viale delle Scienze, Ed. 4, Ingr. H - 90128 Palermo (Italy).*

**Cauli F. & Genero F. (eds), 2017.** Rapaci d'Italia. Ed. Belvedere, Latina (Italy), 448 pp., € 48,00 (price to 2018 CISO members: € 36,00). [www.edizionibelvedere.it](http://www.edizionibelvedere.it)

The editors of this book, Federico Cauli and Fulvio Genero, were able to involve more than 30 hands of selected Italian authors among the most experienced in diurnal raptor research and their conservation. In this way the authors presented a completely new publication for Italy, very well and finely printed; resulting in an important reference book, not only for Italy but also for other European countries.

### *Structure and organization of this volume*

The first chapter, co-authored by F. Cauli, F. Genero, B. Massa and M. Panuccio, concerns the life style of raptors. The authors present interesting and often little known information on etymology, classification, morphology and adaptations, eyesight, habitats, hunting modalities, migration, nesting and breeding cycle.

The title of the second chapter, jointly written by M. Panuccio, G. Dell'Omo, F. Genero and F. Cauli, is "Studiare i Rapaci" (studying raptors). The authors give an excellent overview of methods used to estimate populations (concerning this subject cf. contents of this issue of *Avocetta*, dedicated to the status of the Golden Eagle in Italy), the use of radar and other tools provided by modern technology (satellite receivers, webcams, etc), food analysis, biometrics, bioacoustics, marking methods, etc.

Following this wide introduction covering ca. 80 pages, the book regards the 25 species of diurnal raptors breeding in Italy, and the other seventeen (some of them rare or occasional) migrating through our country; a significant sample of the European avifauna. The original and of high caliber color plates of raptors in flight have been prepared by Andrea Ambrogio.

Each species is extensively treated in the following way: on the left page a nice drawing by Federico Gemma presents the species, while on the right page a short story on a particular encounter with that species by one of the 30 collaborators to the volume is presented.

The coverage of each species is wide and includes every significant aspect of its life; there are different authors for each species.

Other drawings are scattered in the volume, prepared by Luigi Corsetti, Niccolò Falchi, Fabio Perco and Alessandro Troisi, among the best Italian bird illustrators. This part of the book covers about 200 pages.

F. Genero and F. Cauli present a short annotated list of non-breeder raptors. After, F. Perco introduces an interesting subject, raptors in myths and the legends; this long chapter (15 pages) is very rich in information, some of which are difficult to find.

The last parts of the book are devoted to projects related to raptor protection, conservation priorities, relationships with man, and past, present and future threats to raptors by J. Cecere and A. Andreotti.

Raptor conservation projects in Italy include: the re-introduction of the Osprey in Maremma (Tuscany) by G. Sammuri; the return of the Lammergeyer in the Alps by F. Genero; the efforts to reintroduce the Egyptian Vulture into Tuscany by G. Ceccolini; the long and fearless battle to safeguard migrant raptors through the Strait of Messina by A. Giordano; the reintroduction of the Griffon Vulture in some Italian regions by F. Genero; the active protection against the theft of nestlings of the Bonelli's Eagle by poachers and falconers by M. Gustin; the protection of Montagu's Harrier nests in wheat fields by E. Calevi; the reintroduction of the Red Kite in Tuscany by A. Cenerini; the installation of nest-boxes to entice the colonization by the Lesser Kestrel in Northern Italy by M. Gustin; the recent colonization of the Red-footed Falcon in the prov-

## *Columns - Rubriche*

ince of Parma by M. Gustin; the study and the conservation camps at Carloforte (Sardinia) aimed for the protection of the Eleonora's Falcon by G. Pinna and the project to protect the Lanner Falcon in Italy by A. Andreotti.

Finally, there are 32 pages of selected bibliography, divided by arguments, prepared by F. Genero and M. Pannuccio, and some appendices: a list of nature conservation associations involved in raptor conservation, and a list of

short biographies of the 32 authors of this book. The volume is enriched by many colour photographs of very high quality.

Overall, this is a very nice and original book on raptors, penned by Italian researchers, who demonstrate that Italian research on raptors has risen to high levels and that the conservation of these important and keystone birds in the food-webs is now in secure hands.

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