Resolution on the threat of wind farms to Bearded Vultures (version 2009-12-17)

Annual Bearded Vulture Meeting, Bormio (SO) Italy, 23rd – 25th October 2009

The promotion of wind energy occupies a central position in the European objective of reducing greenhouse gases in favour of energy derived from renewable sources. As a consequence, numerous wind farms have been built in Europe. At present, there are plans for further wind farms within the Alps.

There is strong evidence that wind farms can have negative effects on the avifauna, especially on large birds and raptors like Griffon Vultures (de Lucas *et al.* 2008) and Golden Eagles (Hunt 2002). Collision mortality arises as a result of collision with turbines, meteorological masts and power lines (BirdLife International 2003). This impact seems relatively independent of bird species abundance (de Lucas *et al.* 2008) but clearly relates to the species-specific (soaring) behaviour (Hoover & Morrison 2005) and the specific location of the wind turbines. There are serious concerns that the Bearded Vulture (and other alpine raptors) could be fatally affected, if its mortality would significantly increase due to collisions in wind farms.

In the beginning of the 20th century, Bearded Vultures had become extinct in the Alps. A reintroduction programme started in the 1980ies, and slowly growing subpopulations have meanwhile established in different alpine regions. The species lives mainly on bones of dead animals. The main food resources are wild and domestic ungulates, but also remains of small mammals and birds are frequently consumed (Margalida *et al.* 2007). The scavengers soar over large distances to search for carrion and thereby fly close to the relief, exploiting the up winds along the slopes of their alpine habitat. Bearded Vultures have a very low reproduction rate (~1 fledgling per pair every second year) and do not start breeding before the age of 5 years (mean age: 8.3 years). About 135 Bearded Vultures are currently living in the Alps. A recent study showed that a decrease of the actual annual survival from 0.96 to 0.92 would endanger the success of the reintroduction project. This implies that only some few (presently less than 5) fatal collisions with wind farms per year would turn the slowly growing alpine Bearded Vulture population into a declining one and even bring it to the verge of extinction (Schaub *et al.* 2009).

The food searching strategy of this scavenger (distant and long lasting flights) and its low reproduction rate make the Bearded Vulture presumably more susceptible to collisions with wind farms than are other species. In addition, wind farms could be attractive for food searching individuals due to a high supply of small bird and bat carcasses (victims of earlier collisions). Our concern on the vulnerability of Bearded Vultures is supported by recent investigations on the endangered Egyptian Vulture in Spain (Carrete *et al.* 2009), demonstrating that wind farms significantly affect the extinction risk of this species.

We therefore urgently ask the stakeholders promoting the construction of wind farms in the Alps to consider the possible threats of such installations to Bearded Vultures and other long-living raptors with low reproduction rates and small population sizes. Until more specific knowledge and recommendations are available, turbines should not be built in the surroundings[1] of nest sites, regularly used roosting places or releasing and feeding sites. Furthermore wind mills should be avoided in altitudes where the activity of bearded vultures is highest[2].

A careful site selection and an appropriate management of wind turbines are thus considered as crucial factors to minimize collision risks, and possibly provide key tools in order to avoid the negative impacts of wind farms. We therefore recommend a close collaboration with experts and professional organisations having specific knowledge on Bearded Vultures. Impact assessment programmes are urgently needed to identify significant risk factors and to develop specific recommendations on how fatal collisions in wind farms can be avoided.

[1] The Spanish Birds association SEO/BirdLife suggests building wind farms not closer than 15 km to such places (see also the resolution of the XV Italian Ornithological Congress, 2009). However, fatal incidences have even been recorded within larger distances.

[2] Bearded Vultures in the Alps predominantly range in altitudes from 1600 to 2900 m asl.

This resolution is based on the concerns and suggestions expressed at the discussions in the frame of the Annual Bearded Vulture Meeting held in Bormio, 23rd – 25th October 2009.

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