Implementation of compensation and offset measures for large birds of prey

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Context & Strategy

Raptors are one of the groups highly affected by Wind Farms (WF). In Southern Portugal a new WF is being built on the border with the SCI and SPA Calderão where two Bonelli’s eagle (Aquila fasciata) pairs are breeding. Since this is an “Endangered” species in Portugal, the Environmental Impact Statement has conditioned the WF construction to the development and execution of a Compensation Measures Program (CMP).

Since the affected species is a top predator, the offset activity should promote habitat enhancement through prey population recovery. Our goal is to develop a conservation plan for one of the Bonelli’s most important prey species, the European Rabbit (Oryctolagus cuniculus) exclusively through habitat management techniques. This is a “Near Threatened” species in Portugal and it is considered a key species in Mediterranean Ecosystems.

Our strategy is to implement the CMP in an area inside the local Bonelli eagle’s home range, but further away from the WF. This off-site scheme intends to mitigate the negative impacts by promoting eagles’ activity outside WF’s area and compensate eventual mortality by improving eagles’ survival and annual productivity. This project has started in Spring 2011 and will run for 3 years, with predicted end in 2014.

Compensatory Measures Program

1. Offset Planning & Design
To ensure project’s long term success, there are some crucial steps to follow:
- Ecological requirements of target species (raptor & prey)
- Detailed baseline data & Selection of the most suitable area
- Stakeholders involvement: Game managers and hunters
- Implementation of management scheme & Monitoring

2. Habitat management interventions
- Compensation sites: 2 management areas (M1 & M2) - Act on prey species’ limiting factors and improve habitat quality (water, food & shelter conditions)

2A. Opening patches inside scrub areas
Enhance habitat heterogeneity
- Creation of 54 patches (6.5 hectares)

2B. Sowing created patches
High quality vegetables for rabbits
- Legume & Cereal

2C. Supplementary food and water
Installation of 30 feeders/drinkers during Summer

2D. Construction of artificial warrens

3. Offset Monitor and follow up

3A. Monitoring management scheme (post-execution)
Rabbit usage/occupation - Prospecting & Camera trapping
Preliminary results – 2nd Year (occupation average):
- Sowed patches: 70%
- Feeders/drinkers: 40%
- Artificial warrens: 20%

3B. Monitoring prey population dynamics and trends
Study of rabbit population
Preliminary results – 2nd year
- Pellet counts
- 2 surveys per year
- M1, M2 and Control Area

Final Considerations

1. Since Spring 2012, Bio3 is also monitoring Bonelli’s eagles pairs in order to study raptors’ breeding success, population dynamics & managed areas use (compensation sites). Why? This is a crucial component for evaluating the effectiveness of the compensatory measures.
2. From Bio3’s experience managing rabbit populations we know that in normal conditions populations take about 2 years to recover (to achieve high densities).
3. In July 2012 a fire of great proportions devastated the South of Portugal and the our study area. Despite the destruction of some of the actions undertaken, the monitoring results indicate that rabbits still remain in the study area. Hence we are now evaluating the best solutions to recover ecological conditions.

Acknowledgements:
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