Management and conservation of capercaillie’s habitat (Tetrao urogallus aquaticus) in Catalonia

Elisabet Bedmar Giménez

Introduction

Due to its high habitat demands, the capercaillie is considered an umbrella species, and its preservation ensures the survival of other animal species. Nowadays capercaillie is an endangered species due to its habitat alteration caused mainly by human actions and climate change. For this fact, its preservation and management is primordial to reverse its unstable situation.

Capercaillie’s habitat

Mature and heterogeneous conifer forests (Pinus uncinata)

- Canopy cover between 40-70%

- Shrub cover between 50-80%

  • Vaccinium myrtillus
  • Rhododendron ferrugineum
  • Arctostaphylos uva-ursi

Recompilation of capercaillie’s threats

1) Climate
   - Greater reproductive success when T9 increases sharply in April
   - + food for hens

2) Habitat
   - Fragmentation commercial forestry and other human activities (ski, electrical wiring, forest tracks...etc)
   - Abandonment forestry practices forest densification
   - Loss of potential habitat for the species

3) Predation
   - Increased populations of predators Sus scrofa, Vulpes vulpes, Martes martes

4) Ungulates
   - Increased population of ungulates Sus scrofa, Cervus elaphus, Capreolus capreolus

Performed actions in Catalonia

- Forest management designed to increase the resistance of forests to climate change

Recompilation of capercaillie’s threats

1) Climate
   - Greater reproductive success when T9 increases sharply in April
   - + food for hens

2) Habitat
   - Fragmentation commercial forestry and other human activities (ski, electrical wiring, forest tracks...etc)
   - Abandonment forestry practices forest densification

3) Predation
   - Increased populations of predators Sus scrofa, Vulpes vulpes, Martes martes

4) Ungulates
   - Increased population of ungulates Sus scrofa, Cervus elaphus, Capreolus capreolus

Competition for food resources and habitat transformation

Conservation status

- Vulnerable National Catalogue of Endangered Species
- In Danger Red Book of Birds of Spain

Objectives

- Review of actions to improve capercaillie’s habitat in Catalonia and analysis of census data from the period 2008-2014 in Pallars Sobirà to relate changes in demographic parameters with other variables such as climate change or actions performed.

Results and discussions

- Commenence of interventions→ predator control and habitat improvement
- Low increment in April/March T9 (Fig.3)
- Orri 1 predator control
- Orri 2 predators in general
- Orri 1→ more capercaillie’s presence in clearings

- Maximum brood size in all zones (Fig.2)

- No increase in April/March T9 (Fig.3)
- Drought→ Poor conditions of blueberry

- Opening clearings→ more ungulates presence (boar) (Fig.4)→ eggs depredation

Some of the actions could reverse or even temporarily stop the species decline, but the majority of them lose their long-term efficiency if not continued and can cause possible indirect repercussions on the capercaillie by potentiating another harmful factor.

Conclusions

- Blueberry
  - Overgrazing
  - Competition for light
  - Overgrazing
  - Subsidies

- Forest densification
  - Possibilities of escape
  - Aerial predators

- Populations dynamics

- Human and Climate

- Ecological costs
- Economical costs

- Need of permanent or continued actions

- Management objectives
  - Combined with other biodiversity
  - Act on the original causes of the decline
  - Take into account all the direct and indirect relations that establishes with its environment

- Minimize the effects of climate change and humans alterations
- Promote mature and heterogeneous forests

Campodrom, J. 2013. Seguiment de les parcel·les de refugis d’habitats per al golfej per als Primers catalans. Centre Tecnològic Forestal de Catalunya

- Ferrández-Olalla, M. 2011. Sistemes de gestió de la convivència entre el gravat i el capercaille a la comarca de Pallars Sobirà. Escola d’Ingenieros de Montes, Universitat Politècnica de Madrid

- Masdeu, C., Planells, F., Garcia, A., Sanz, J. 2013. Cartografia de la presència de capercaille a la comarca de Pallars Sobirà. Institut d’Estudis Catalans

- Canet et al., 2006. Total number of censsed males registered per county. Source: Canet et al., 2006

Figure 1. Situation of the plots with presence of capercaillie analysed. Source: Cartography/IIC.

Figure 3. Average temperature rise of April over March during the period 2006-2013 in the meteorological station of Sort. Source: SMN.

Figure 4. Variation in the % of daily contacts in different species of ungulates in Orri 2 during the period 2009-2012. Source: Campodrom, 2013.