CONCILIATE ECONOMIC DEVELOPMENT WITH THE CONSERVATION OF THE COCK-OF-THE-ROCK (RUPICOLA RUPICOLA) IN FRENCH GUIANA

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Abstract

The orange cock-of-the-rock is an endemic species of the Guiana Shield. So far, studies mainly focused on the reproduction of this species in Suriname, Guiana and Brazil. Little is known about its ecology and behaviour in French Guiana. In this French overseas department the cock-of-the-rock is located in lower montane forests with economic challenges as tourism, forestry and mining. Since 2010, the European LIFE+ Cup Dom program studied 1) the home ranges of 9 individuals during breeding and non-breeding season via telemetry; 2) the females' diet during breeding season; 3) the tourism impact on the males via comparison of the flush distances between disturbed and undisturbed leks. The first results show that: 1) the tracked birds used the montane forest within 5km around the lek with home ranges varying from 54 to 419ha during the telemetry periods; 2) the diet was composed of 183 morpohotypes with predominance of Myristicaceae, Hugoniaceae, Lauraceae, Annonaceae and Arecaceae; 3) the males' flush distances of the disturbed leks were significantly lower than in the undisturbed lek, showing an adaptation to regular visitors. These results are essential to make recommendations for the professional guides (trainings, charter of good practice) and for the mining/forestry earnings in the department in order to contribute to the conservation of this patrimonial species.

Introduction

- The cock-of-the-rock is: - endemic of the Guiana Shield, - distributed discontinuously.
- It is subject to many anthropogenic pressures such as, forestry, mining and tourism.
- Studies: - focused on male reproduction and some on the diet of the species.
- Home ranges were made between sexes (males versus females) and monitoring periods (breeding versus non-breeding season).

Materials and Methods

This study was conducted on the population of the mountain forest of Kan (two leks sites and twenty-five nesting sites) between 2011 and 2012.

- Home range determination:
  - 5 males and 4 females fitted with transmitters (PPI Biotrack) and tracked during 11 consecutive days between 6:00AM and 6:00PM.
  - Kernel's method was applied to analyse the data. Comparisons of home ranges were made between sexes (males versus females) and monitoring periods (breeding versus non-breeding season).

- Diet study:
  - 18 collection installed under nests,
  - seeds identified by Mr. Daniel Sabatier, researcher at the IRD. Biological type and plant strains of the most consumed plant species have been identified.

- Impact of visitors on males’ behavior: Comparison of males’ flush distances between a visited lek (150 people per week) and a lek located in a Natural Reserve.

Results

- Home range determination:
  - Analyses show that:
    - using 150 points, home ranges' sites are overestimated by 10%.
    - measured home ranges (95%) vary between 56ha and 410ha (bootstrapping analysis).
  - male home ranges are significantly larger than females’ home ranges (Wilcoxon test, p-value = 0.003).

- Diet study:
  - 135 points used.
  - monitoring during breeding and non-breeding season.
  - kernel method sometimes overestimates home ranges.

- Impact of visitors on males’ behavior:
  - Males’ flush distances:
    - Unperturbed lek > disturbed lek

Conclusion

- Improved knowledge
- Species and habitat conservation

Discussion

- Home range determination:
  - Home ranges measured are 10-18 times greater than home ranges’s estimated in Arigo & Opdam, 1994.
  - More accurately estimated home ranges

- Diet study:
  - French Guiana 2012:
    - < 7 individuals;
    - < 150 points used.
    - monitoring during breeding and non-breeding season.
    - kernel method sometimes overestimates home ranges.
  - More accurately estimated home ranges

- Impact of visitors:
  - Behavioral adaptation of regular visitors

Bibliography