

[Talk] Title:

**Understanding the effect of study design on estimates of species density:
camera-trapping jaguar *Panthera onca* and their prey**

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Abstract:

The use of camera-trap surveys to study rare and elusive species is rapidly becoming the standard for gaining knowledge about absolute density and other population parameters. The lack of a standard approach makes comparisons between sites very difficult and results in poor assessments of conservation status at the species level. A diversity of density estimates exist for jaguar *Panthera onca*, yet patterns in the data likely reflect data collection methods and not regional variations. One reason for the variation in density estimates is the lack of standards for parameterization of variables used in a study designs, including distance between cameras, buffer zone distance, number of traps, and area sampled. In this study we examine the effect which study design can have on estimates of density for jaguar using two methods. First we conduct a literature review to understand the historical context and to explore the diversity of study design, density estimates and protocols used to date. Secondly we design an experiment by adjusting the standard parameters within a camera-trapping survey of a known population on jaguar in Costa Rica. Our findings demonstrate the need to both standardize methods in study design and develop new tools for the analysis of camera-trap data.

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