Modeling Habitat Selection by Animals

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Target Audience: Practicing biologists, biometricians, and wildlife managers who work with VHF and GPS data sets and need to develop and interpret habitat use/selection models.

Materials: Participants will receive a CD/DVD of all PowerPoint presentations, R code, example data, manuscripts cited, etc.

Schedule:

Day 1:

1) **Resource/Habitat selection by animals.** Brief history and justification of resource/habitat selection studies.
2) **GPS telemetry data and Resource Selection.** Compare and contrast VHF and GPS data, and illustrate how habitat selection approaches between the two types of data may differ.
3) **Estimating habitat selection using VHF data**. Analyzing use vs. availability using logistic regression or the discrete choice model.
4) **Estimating habitat selection in the absence of GPS bias**. Introduction to the negative binomial model for associating the height of an animal's utilization distribution on habitat variables.
5) **Estimating habitat selection when GPS bias is present**. Sources and implications of GPS bias. Introduction to a new method for modeling habitat selection when GPS fix-rate success is < 100% and varies across the landscape due to habitat features (e.g., % canopy cover, rugged terrain).

Day 2:

1) **Work through example data sets and analyses using personal computers and the program R**.
2) **Discussion.** Q &A and additional discussion of workshop materials, recent publications, existing and future projects.