Population assessment of Demidoff's dwarf galago in a Ghanaian forest fragment mosaic

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Background

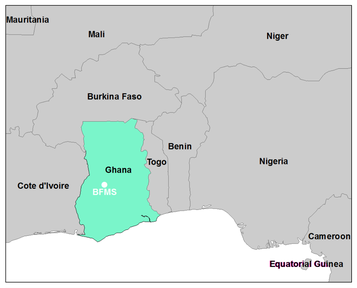
Demidoff's dwarf galago (*Galagoides demidovii*), the smallest primate of mainland Africa, is a widespread resident of Central and West African forest understory and edge habitats. It is relatively abundant in protected moist forests across its geographic range [1-6], but its occurrence in drier, semi-deciduous forests and in areas with heavy human modification remains unclear. We surveyed for *G. demidovii* in the Boabeng-Fiema Monkey Sanctuary (BFMS), a community-based conservation area that encompasses a mosaic of woodlands and abandoned farmlands surrounding a small fragment of primary forest. Although a centuries-old hunting taboo in BFMS has successfully conserved two monkeys species, *G. demidovii* was not afforded any protection from hunting until the passage of a local bylaw in 1974 that banned hunting within a 5-km radius of the sanctuary [7].

Research Objectives:

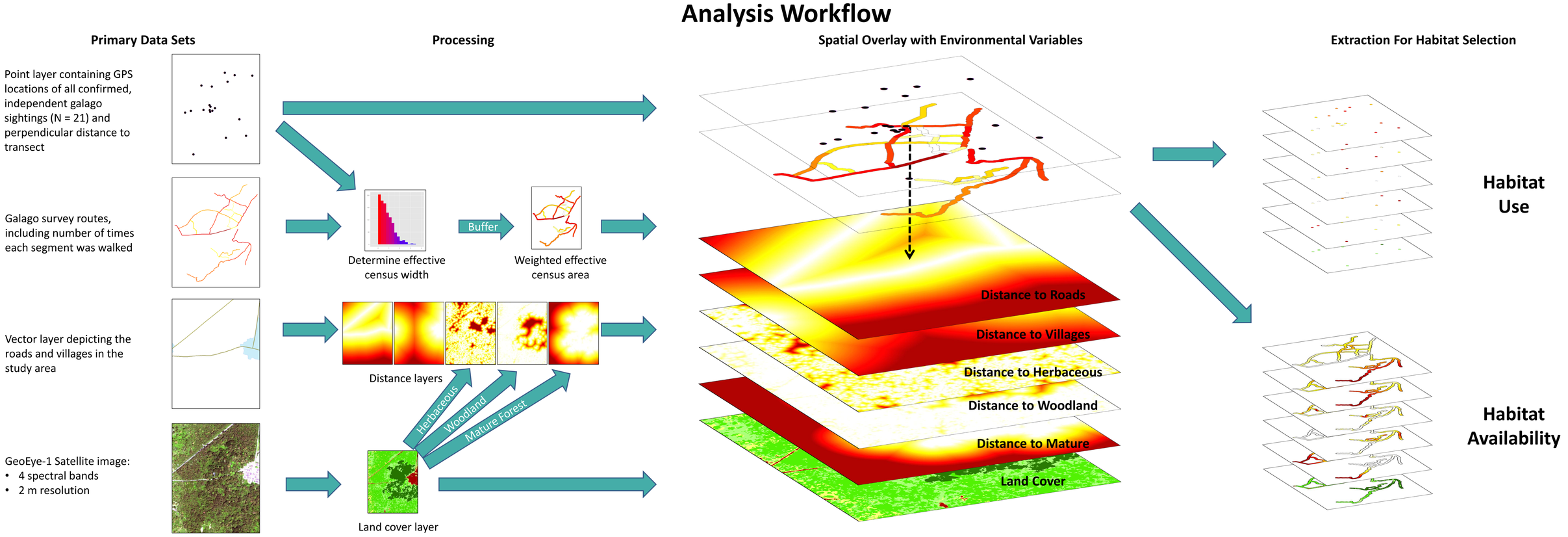
1. **Determine population density of *G. demidovii* at BFMS**
2. **Estimate the current total population size**
3. **Examine the habitat preferences of *G. demidovii***

Methods

- Boabeng-Fiema Monkey Sanctuary (BFMS), Ghana: 192 ha.
- Nocturnal surveys on 19 days between Jul 2008 and Jun 2009.
- Two observers walked linear routes distributed among habitat types.
- Identified galagos by eye shine reflected from headlamps and by their distinctive calls (*G. demidovii* only galago present at BFMS).
- For each detected animal, we recorded GPS location, microhabitat characteristics, and the perpendicular animal-to-transect distance.
- Transect width calculated by histogram inspection method [8].
- Significance of selection for each environmental variable (below) evaluated with log-likelihood χ^2 tests on selection ratios of used vs. available resource units [9], with distance categories defined as close (<30 m), intermediate (30-100 m), and far (>100 m).

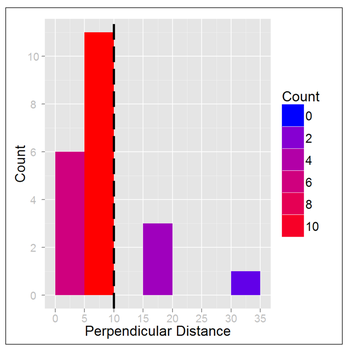


Analysis Workflow



Results

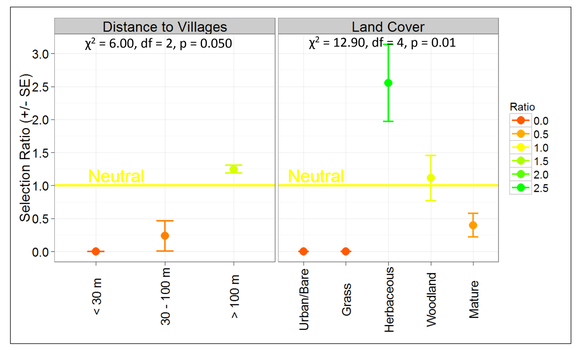
1. **Total transect distance 28.2 km (19.5 hours), with 21 sightings along census routes**



2. **Effective census radius = 10 m; weighted census area 63.6 ha**

G. demidovii census site	Encounters/hr	Reference
Korup N.P., Cameroon	0.35	[1]
Mount Cameroon, Cameroon	0.22	[2]
Rhoko, Cameroon	0.71	[3]
Tai Forest, Côte d'Ivoire	1.3	[2]
Moka, Bioko, Equatorial Guinea	0.36	[4]
Moka, Bioko, Equatorial Guinea	1.84	[5]
Okumu N.P., Nigeria	0.9	[6]
BFMS, Ghana	**1.10**	**This Study**

3. **Encounter rate (1.10 / hr) comparable to some other localities. Galago density: 0.33 / ha; total population likely 60-70 animals.**



4. **Galagos preferred 1) areas far from villages and 2) low-canopy secondary forest with a dense, liana-rich understory. Other variables not significant.**

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