

National Park Service

Black Canyon of the Gunnison National Park And Curecanti National Recreation Area

Tehabi Student Intern Assisting with Gunnison Sage-Grouse Project

Black Canyon of the Gunnison National Park and Curecanti National Recreation Area, with funding through the RM-CESU, sponsored one Tehabi intern to assist NPS staff with a Gunnison Sage-Grouse project during summer 2004. Kody Menghini was the Tehabi student intern, and he assisted on the Gunnison Sage-Grouse project for approximately 12 weeks from 1 June through 20 August. His duties included assisting with vegetation and habitat mapping and classification, radio-telemetry tracking, data collection and data entry. Kody also conducted an independent project in which he utilized radio telemetry data, in the GIS Animal Movement Analysis Extension of ArcView to examine home range for Gunnison Sage-Grouse using the Kernel Home Range Method.

In July 2000, the Gunnison Sage-Grouse was officially recognized as a unique, endemic species. This species is currently designated as a Federal Candidate species. The largest population of Gunnison Sage-Grouse is located in the Gunnison Basin, Colorado. Declining trends in the Gunnison Basin population prompted local, state, and federal agencies and private entities to produce the Gunnison Basin Sage-Grouse Conservation Plan to develop community-wide support for implementation of conservation actions that would assure the survival of the Gunnison Sage-Grouse. This project supports the conservation plan by supporting the development and implementation of science-based habitat restoration actions for park lands. Results will also benefit other land managing partners with implementation of habitat restoration actions on public and private lands in the Gunnison Basin to enhance Gunnison Sage-Grouse population sustainability

During the 2004 field season Biological Science Technicians and the Tehabi Student Intern field classified approximately 13,400 acres of Gunnison Sage-Grouse habitat within and adjacent to Curecanti National Recreation Area. Classification was done using the "Ecological Types of the Upper Gunnison Basin" classification (Johnston, et al. 2001) off aerial photographs which had previously had vegetation polygons delineated on them. The 13,400 acres consisted of approximately 1,300 polygons on 9 aerial photographs.

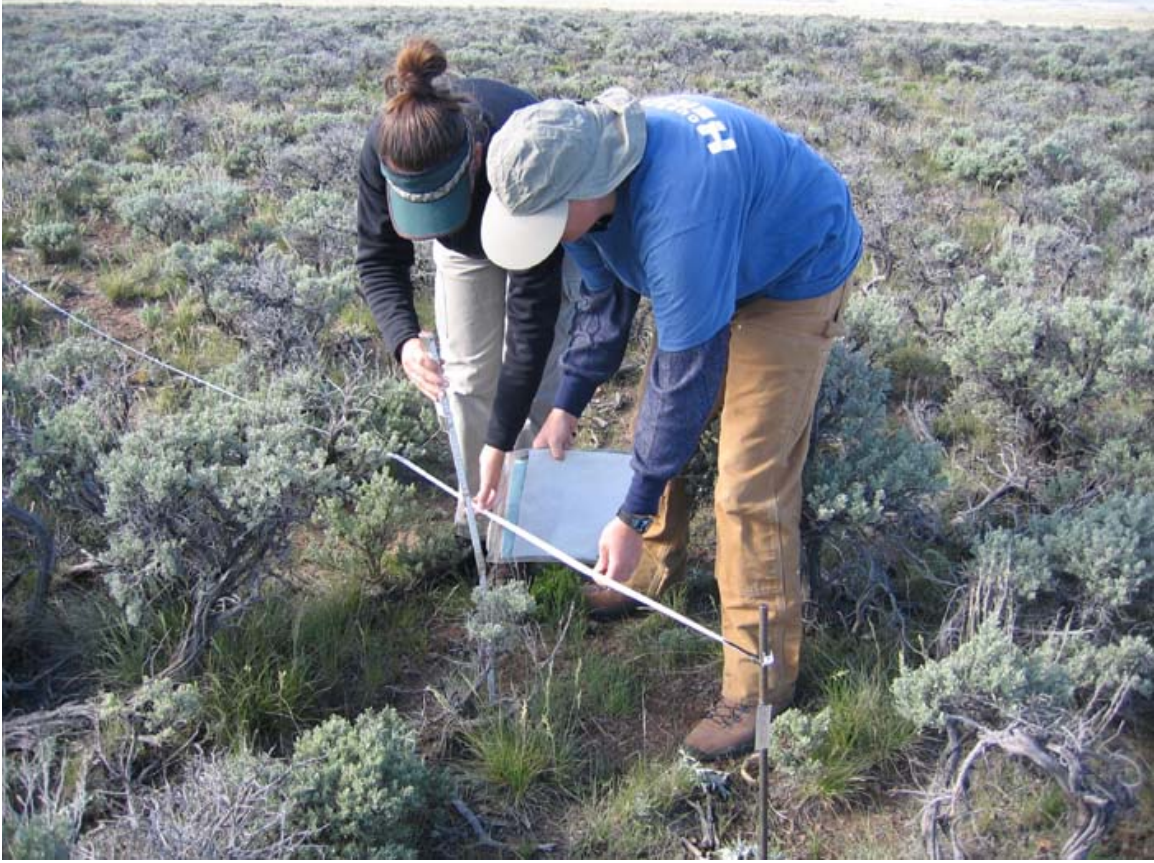
Home range estimates were conducted for individual grouse, and the average of these data using Kernel home range polygon estimates at the 95% and 50% levels. The 95% level polygon represent 95% of the locations, and the 50% polygon represent 50% of the individuals' locations, around the center of the area of use. Further refinement of the data, separating males and females, and individuals from differing geographic capture locations, was attempted. Future home range estimates will focus on this, as well as look at other home range estimators, such as minimum convex polygons.

Table 1. Gunnison Sage-Grouse home range estimates using Kernel home range method.

Individual Gunnison Sage- Grouse	Kernel Home Range Polygon Estimates (km²)	
GuSG ID Number	95% Polygon	50% Polygon
#0002	2090.31	440.03
#0009	27080.39	7020.1
#0010	8787.91	1138.08
#0013	10934.6	1334.39
#0103	2973.91	492.12
#0107	1053.81	134.04
#0108	7474.43	1321.06
#0112	21636.62	3590.22
#0116	1227.19	162.34
#0205	2479.86	350.69
#0206	6988.62	1118.98
#0207	1277.19	144.59
#0209	3934.59	685.11
#0211	2713.75	254.02
#0307	1853.67	183.99
Average of Individual Data	Kernel Home Range Polygon Estimates (km²)	
	95% Polygon	50% Polygon
Average	6833.79	1224.65
Max	27080.39	7020.10
Min	1053.81	134.04

Reference:

Johnston, Barry C., Laurie Huckaby, Terry J. Hughes, and Joseph Pecor. 2001. Ecological Types of the Upper Gunnison Basin: Vegetation-soil-landform-geology-climate-water land classes for natural resource management. Technical Report R2-RR-2001-01, 858 pp. Lakewood, CO: USDA Forest Service, Rocky Mountain Region. May, 2001



Conducting vegetation transect in Gunnison Sage-Grouse habitat, CURE, 2004.



Radio-telemetry tracking of Gunnison Sage-Grouse, CURE, 2004