APPENDIX J

GUSG HABITAT USE DATA

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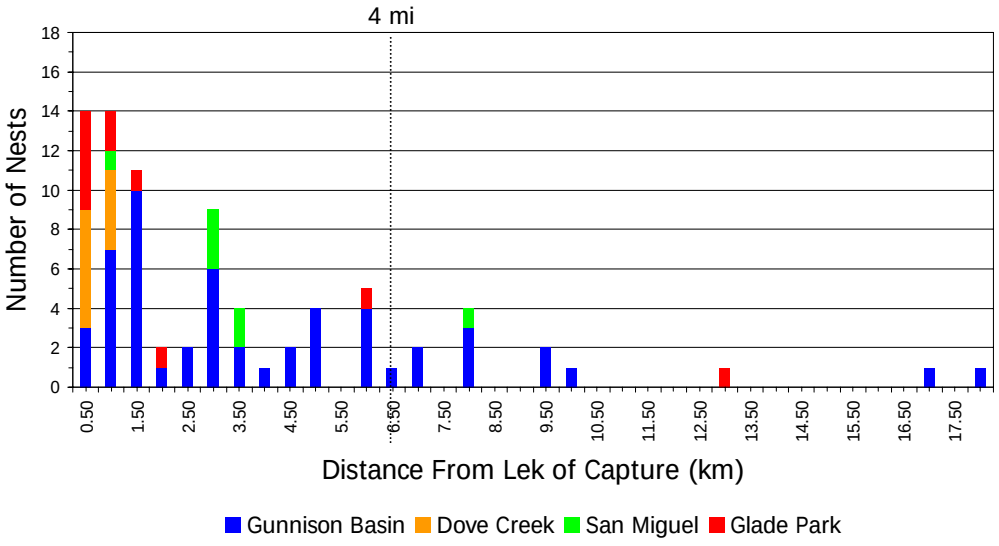
This appendix illustrates GUSG habitat use data from 3 different studies (NPS unpublished data, Young 1994, Apa 2004). Apa (2004) studied GUSG in 5 population areas, and the other 2 studies focused on the Gunnison Basin (NPS unpublished data, Young 1994). Data from Young (1994) and NPS (unpublished data) are limited to nest locations only. Data from this Appendix were used to develop the "GUSG Disturbance Guidelines", Appendix I.

Nesting Habitat Use

Female Gunnison sage-grouse were captured in 3 different studies (NPS unpublished data, Young 1994, Apa 2004) and their nest locations were identified. Fig. 1 illustrates a frequency distribution of the number of nests located at differing distances from the lek of capture. A majority of females (85.2%, n = 69/81) sampled across the range of the species nested within 4 miles of the lek of capture.

Fig. 1. DISTRIBUTION OF GUNNISON SAGE-GROUSE NESTS
Rangewide (2002-2004; Apa 2004, NPS unpublished data) (n = 53)
Gunnison Basin (1990-1993; Young 1994) (n = 28)



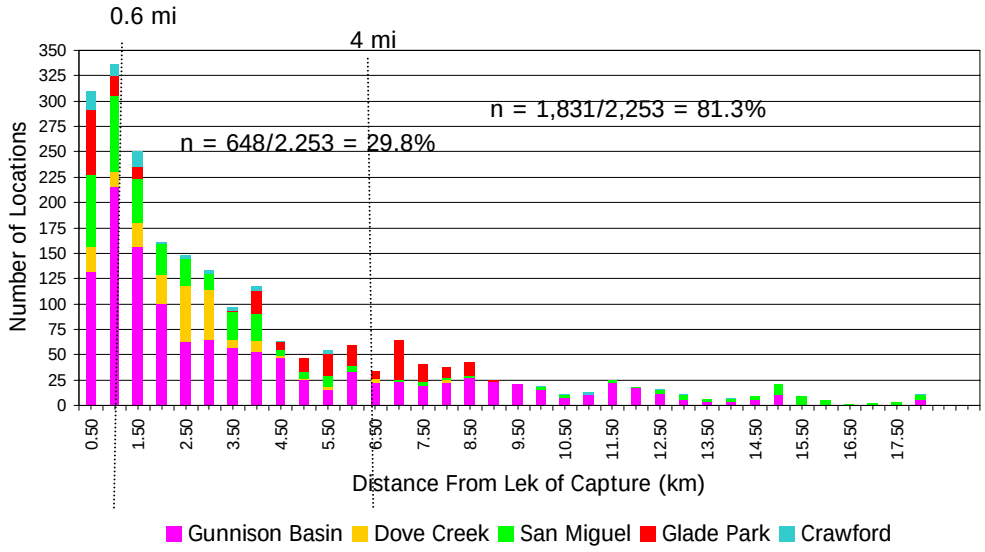
Seasonal Habitat Use

Rangewide Data

Four seasons of seasonal use data are depicted in the following figures. Breeding habitat includes not only nesting habitat, but also very early brood habitat used from 1 March – 30 June, and habitat used during this same period by males and non-brooding females. In other sections of the RCP, summer and fall habitats are combined, but for the purpose of the following figures summer and fall habitat are separated. Summer habitat includes areas used by males, non-brooding females, and brood females, from 1 July – 30 August. Fall habitat includes all of the areas used by the aforementioned grouse groups from 1 September - 28 September. Winter habitat is areas used by all age and sex classes of GUSG from 1 October – 28 February.

All seasonal habitat locations (from 5 separate GUSG populations) were summarized and graphed against distance (Fig. 2). Seasonal use data are from nest locations (NPS unpublished data, Young 1994, Apa 2004), and telemetry habitat use data (Apa 2004). From a rangewide perspective, 81.3% of all seasonal habitat locations rangewide were located within 4 miles of the lek of capture and 29.8% of the rangewide locations were found within 0.6 miles of the lek of capture.

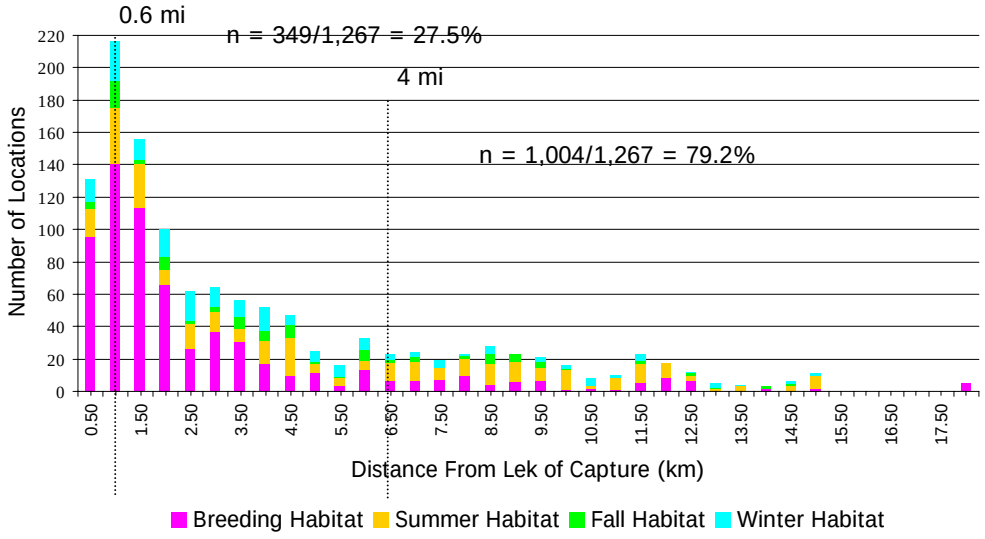
Fig. 2. RANGEWIDE DATA: DISTRIBUTION OF GUNNISON SAGE-GROUSE SEASONAL USE LOCATIONS



Gunnison Basin Data

In the Gunnison Basin, the pattern of habitat use within 4 miles of the lek of capture is similar for all seasons (breeding, summer, fall, and winter, Fig. 3). Approximately 80% of all seasonal habitat locations were found within 4 miles of the lek of capture, while 27.5% of the seasonal habitat locations were located within 0.6 miles from the lek of capture.

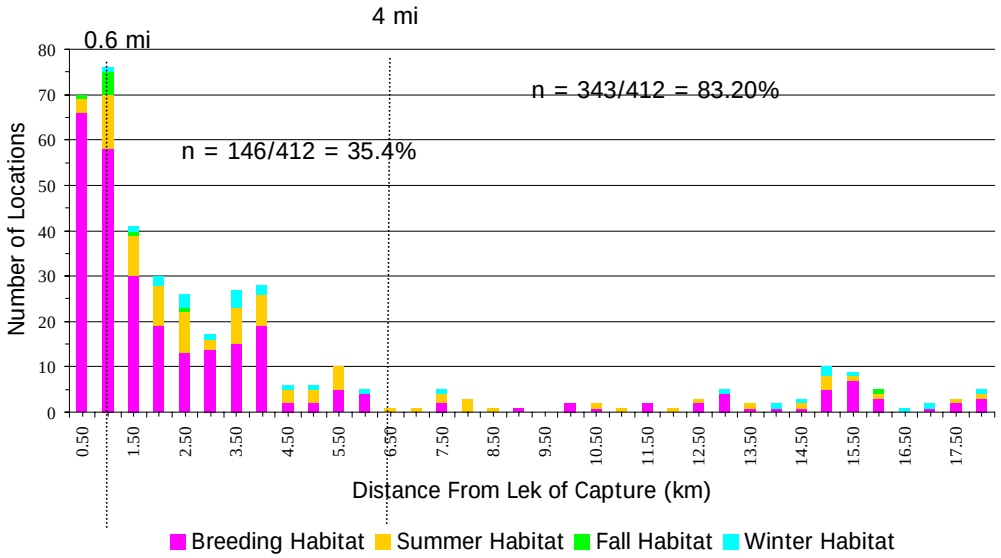
Fig. 3. GUNNISON BASIN: DISTRIBUTION OF GUNNISON SAGE-GROUSE SEASONAL USE LOCATIONS



San Miguel Basin Data

Gunnison sage-grouse in the San Miguel Basin illustrated a greater dispersion of movement patterns, although 83.2% of the seasonal habitat locations were found within 4 miles of the lek of capture (Fig. 4). Approximately 35% of all habitat use locations were located within 0.6 miles of the lek of capture.

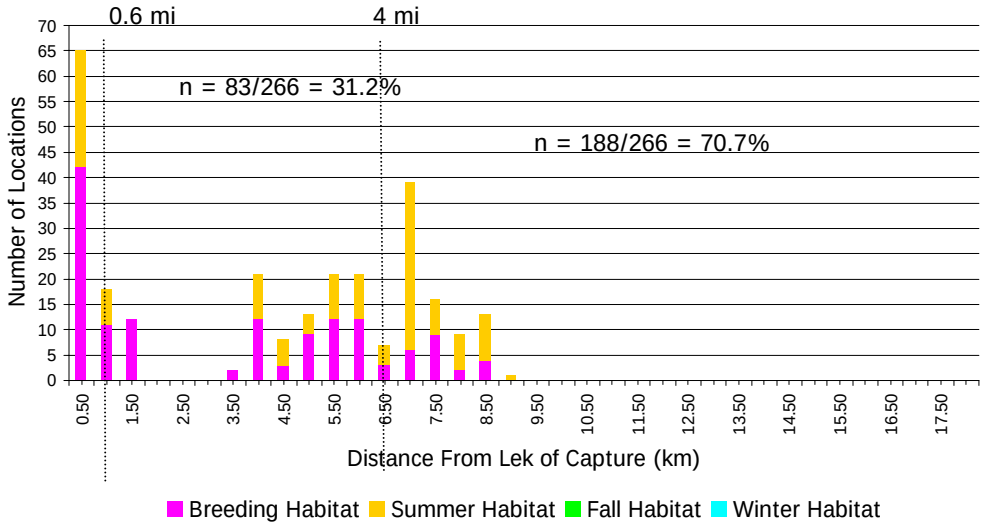
Fig. 4. SAN MIGUEL BASIN: DISTRIBUTION OF GUNNISON SAGE-GROUSE SEASONAL USE LOCATIONS
San Miguel Basin (2002-2004) (n = 42 grouse)



Glade Park / Piñon Mesa Data

Although sample sizes were lower in Glade Park/Piñon Mesa, nearly 71% of habitat use locations were found within 4 miles of the lek of capture (Fig. 5). In contrast, 31.2% of the seasonal habitat use locations were found within 0.6 miles of the lek of capture.

Fig. 5. PIÑON MESA: DISTRIBUTION OF GUNNISON SAGE-GROUSE SEASONAL USE LOCATIONS
Glade Park/Piñon Mesa (2002-2003) (n = 19 grouse)

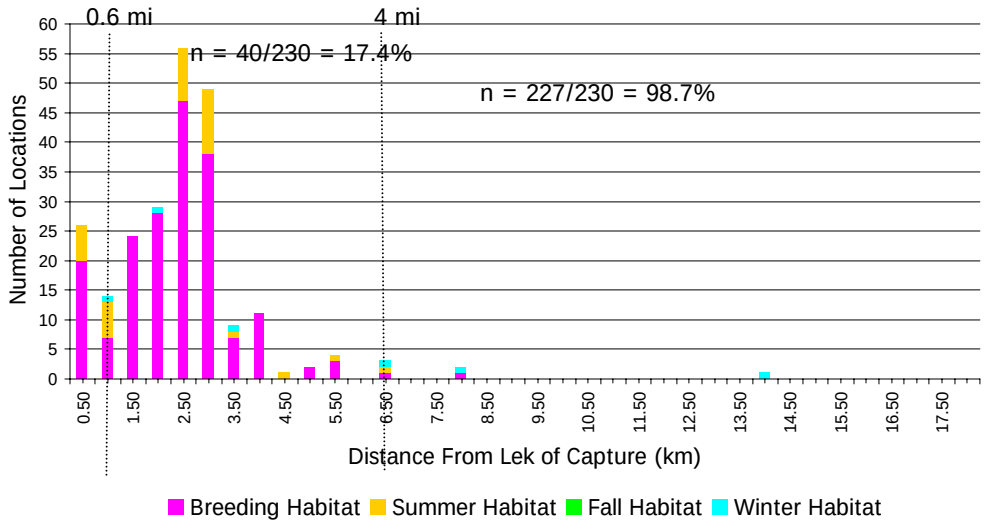


Dove Creek Data

At Dove Creek, Gunnison sage-grouse did not move as far from the lek of capture, with 98.7% of grouse locations located within 4 miles of the lek of capture (Fig. 6). Only 17.4% of seasonal habitat locations were found within 0.6 miles of the lek of capture.

Shorter distances traveled from lek of capture in the Dove Creek sub-population as compared to the other populations most likely are due to the limited and highly fragmented habitat. Sagebrush patches have progressively become smaller and fragmented, limiting available habitat and options for use by sage-grouse.

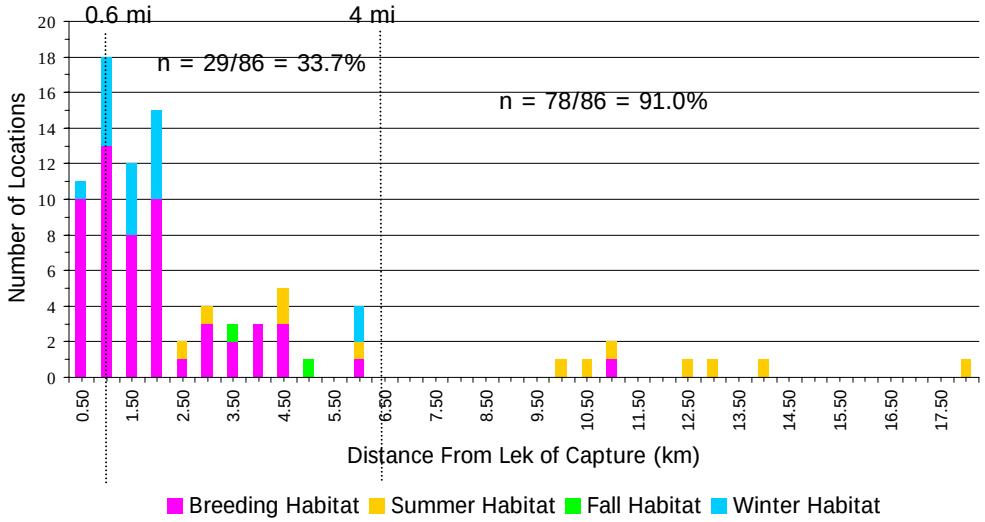
Fig. 6. DOVE CREEK: DISTRIBUTION OF GUNNISON SAGE-GROUSE SEASONAL USE LOCATIONS
Dove Creek (2002-2003) (n = 21 grouse)



Crawford Data

Gunnison sage-grouse in Crawford exhibited some longer movements to summer habitat, although 91% of seasonal habitat locations were found within 4 miles of the lek of capture (Fig. 7). Approximately 34% of locations were found within 0.6 miles of the lek of capture.

Fig. 7. CRAWFORD: DISTRIBUTION OF GUNNISON SAGE-GROUSE SEASONAL USE LOCATIONS
Crawford (2002-2003) (n = 7 grouse)



Summary Data

Fig. 8 depicts an overall summary of GUSG locations within the following distances: 0.25 miles, 0.6 miles, and 4.0 miles. When all locations were evaluated, only 9.1% of seasonal habitat locations were found within 0.25 miles of the lek of capture.

Fig. 8. DISTRIBUTION OF GUNNISON SAGE-GROUSE SEASONAL USE LOCATIONS IN RELATION TO LEK OF CAPTURE. GB: Gunnison Basin; SM: San Miguel Basin; GPPM: Glade Park / Piñon Mesa; DC: Dove Creek; CR: Crawford.