

Documenting local knowledge of Gunnison Sage-grouse Executive Summary and Preliminary Results

Abstract: Successful conservation requires adequate understanding of the species at risk, how to protect it, and a desire to protect it. For many species at risk, we simply don't know enough. This project with the Gunnison Sage-grouse [*Centrocercus minimus*] suggests it is important to talk with local experts, who have formal training and/or long-term observations, to understand the conservation context. In this project I interviewed 26 local experts and identified several benefits of local knowledge. This project shows that when there is controversy surrounding species protection, local knowledge can provide understanding of local values and motivations, highlight disagreements, and provide suggestions for important future research. For species only present in small areas or those with little prior research, this project highlights how local knowledge can provide observations made over longer time periods, during different seasons, and provide understanding of how to apply management strategies and science developed with similar species. The patterns of expert referrals in this project suggest that long-term collaboration has created a pool of experts with both scientific and long-term experiential knowledge. Systematic assessment of the local pool of experts may improve long-term conservation efforts by providing increased insight into the conservation context.

Methods: I identified experts by asking the Gunnison Basin Sage-grouse Strategic Committee (GBSC) to recommend individuals they felt were most knowledgeable about Gunnison Sage-grouse (GUSG). I prioritized individuals who received three or more recommendations. I conducted 26 semi-structured qualitative interviews with locally defined experts on the GUSG including: biologists (12), ranchers (5), long-time residents (5) and agency employees (4). Interviews were audio recorded, transcribed, and then coded in a qualitative data analysis program. Coding is a process that allows tracking of themes both within and across interviews to assess both the content of statements as well as how many times particular themes were addressed. When I cite a percentage in the text (below), I also include the number of participants (EX: 100%: 26).

Results & Discussion:

- **Knowledge network.** The Upper Gunnison River Basin has a large group of formal and observational experts on GUSG and there is mutual respect for the diverse knowledge in the community. It is important that conservation efforts build upon this network of local experts.
- **Complementary Observations.** The different spatial and temporal scales of observation complement one another. For example, biologists often observe GUSG on leks in spring, while rancher observations occur throughout the year, over large areas, and during other activities.
- **Novel Observations.**
 - Participants described how GUSG are more prone flushing off leks than other grouse species.
 - Observations of GUSG use of hay meadows and serviceberry stands could inspire research to study the importance of these habitats for GUSG.
- **Highlight Controversies.** This project highlights where there are disagreements about threats to GUSG including the relative importance of historic grazing, predators and elk. It also highlights disagreements around conservation strategies including sagebrush treatments and predator control. It suggests that collaborative research is needed to resolve these disagreements.
- **Beliefs about Listing.** All of the participants expressed concern over the decline in GUSG, and the majority (88%: 23) felt that it was important that they survive in the future. Despite this, only about a quarter (23%: 6) felt like GUSG should be listed as an endangered species. The primary explanation participants gave for this opinion was that they didn't believe that this status would provide any greater conservation outcomes, and they were concerned that listing might derail current community conservation efforts.