



Monitoring Sensitive, Threatened, and Endangered Species

BACKGROUND

Siting and permitting projects can be delayed due to improper planning, lack of adequate surveys, or incomplete management plans for various wildlife and plant species. Here we present monitoring techniques for a variety of species, including often overlooked groups like bats and pollinators, that will help in planning and siting wind and solar projects across the intermountain west.

BENEFITS OF MONITORING

- Eliminate/minimize negative impacts to species.
- Comply with local, state, and federal laws
- Data collected helps the USFWS determine if a species should be protected under the ESA
- Knowing where species occur can help informed decisions (e.g., where to develop or avoid)

LAWS AND REGULATIONS

In addition to following local and state agency regulations, wildlife timing stipulations, and surface occupancy requirements, it is important to follow these federal laws:

- **Endangered Species Act**
- **Bald and Golden Eagle Act**
- **Migratory Bird Treaty Act**

MONITORING METHODS



Amphibians

- Delineate water features
- Conduct visual encounter surveys (VES) at water features
- Use dip nets if the water is murky



Big Game

- Identify crucial big game ranges
- Conduct crucial big game habitat assessments



Prairie Dogs

- Delineate prairie dog colonies
- Document activity status and density
- Survey year-to-year to monitor changes in the size of towns, activity, and density



Migratory Birds

- Conduct point count surveys to determine diversity of breeding birds
- Identify all birds heard and seen in a 5-minute period
- For wind projects: conduct carcass searches around turbines



Raptors

- Conduct ground surveys for nests during breeding season (April to July)
- Check nests to determine productivity (nest success or failure)
- For wind projects: curtail for eagles and conduct carcass searches around turbines for raptor mortalities

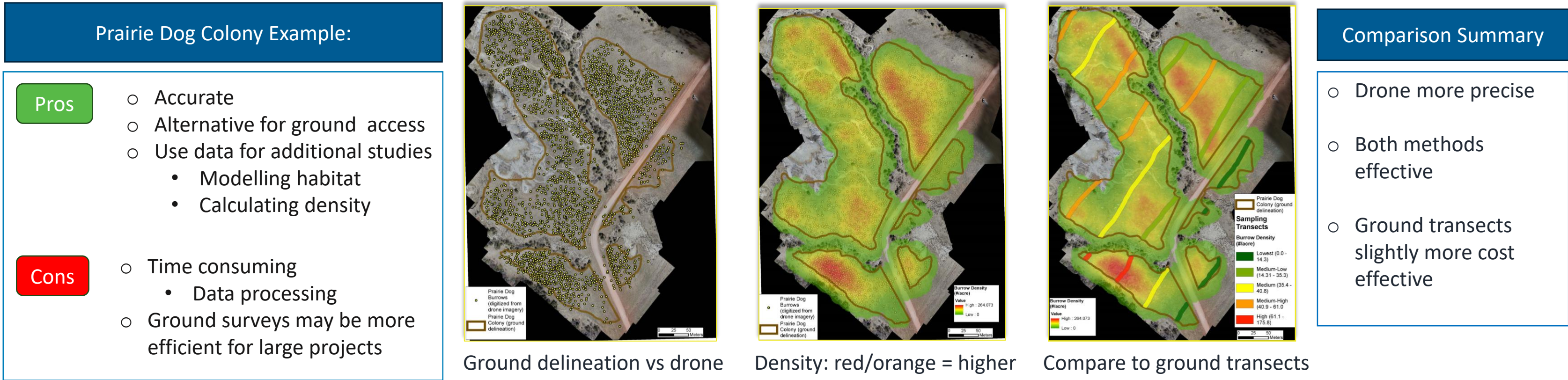


Swift Foxes

- Set up scent stations
- Set up remote cameras near scent stations
- Keep scent stations deployed for at least 5 nights

ALTERNATIVE METHODS USING DRONES

Although not always an approved method by agencies, drones are becoming more and more useful.



CONCLUSIONS

- Monitoring a variety of wildlife is imperative for following federal and state regulations and avoiding delays in the project schedule.
- Contacting state and federal agencies early will aid in regulatory compliance, avoid potential shut-downs, and help in obtaining permits in a timely manner.
- Different project areas require different monitoring needs. Make sure to develop a site-specific plan for each project.

OVERLOOKED SPECIES

Based on recent trends, more bats and pollinators may be listed in the near future. Managers should be mindful of these groups of species that are often overlooked when planning and monitoring projects.



Bats

- Use acoustic monitoring units to detect bats to monitor bat diversity and abundance
- Set up mist-nets to capture bats
- For wind projects: conduct carcass searches around turbines once site is operational



Pollinators – Bees, wasps, beetles

- Employ pollinator traps for 48 hours in different habitats for diversity and abundance
- Submit invertebrates to an invertebrate zoologist for identification



Pollinators – Butterflies/Moths

- Conduct transect surveys (Pollard Walks) and identify species with binoculars
- Capture butterflies in nets to aid in identification, if needed