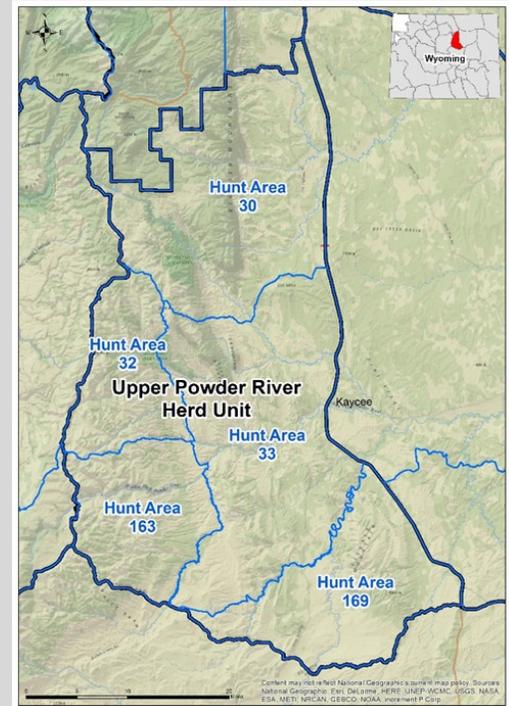
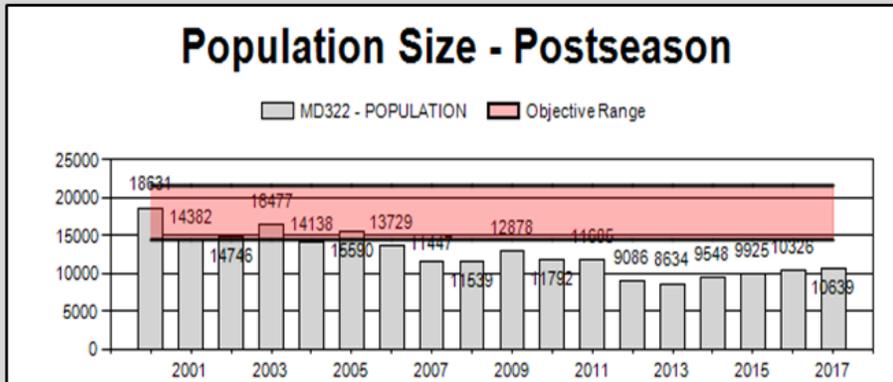




Managing Deer for Tomorrow: Upper Powder River Mule Deer Initiative Research Project

In 2014, during WGFD Mule Deer Initiative public meetings, the public voiced concerns about the population of the Upper Powder River mule deer herd. The population has been below the objective of 18,000 animals since the early 2000s.



Game and Fish is currently implementing several management strategies in response. These include nearly complete elimination of doe/fawn licenses, very conservative general license deer harvest, the liberalization of mountain lion, black bear, white-tailed deer and elk seasons and the initiation of habitat improvement projects.

In addition, research has begun to assess mule deer survival, nutritional status, seasonal movement patterns, fawn recruitment and habitat use patterns.



Phase 1

Captured **70** adult doe mule deer in **December 2018**.

Collected biological samples & affixed **GPS radio-collars**.

Radio-collars will record deer locations every 2 hours for 3 years.

Phase 2

Re-capture radio-collared deer to measure body condition annually (pending additional funding).

Phase 3

Data analysis will begin in 2022, after all GPS collar location data has been collected. We plan to assess: 1) the main causes & rates of adult doe **mortality**, 2) the relationship between annual doe **nutrition** and population dynamics and habitat use, 3) seasonal **travel patterns** and potential migration routes, 4) **fawning** locations, habitats, and recruitment, and 5) **habitat** use patterns.

Phase 4

Use the new information gained to inform our management strategies for the Upper Powder River mule deer herd.

Thank you to our funding and cooperating partners:

Wyoming Game and Fish Mule Deer Initiative, Buffalo Bureau of Land Management, Wyoming Sportsman Group and multiple private landowners in the Kaycee and Buffalo area.



Phase 1 Update - Fall 2019

To date, we have captured and radio-collared 76 adult doe mule deer in the Upper Powder River mule deer herd unit. Captures were focused around 8 staging areas distributed throughout the herd unit. We have already learned some new and unexpected things about this mule deer herd.

Mortality

As of September 2019, 18 radio-collared deer have died. When a radio-collared deer dies, we get an email notification so that we can locate the carcass as soon as possible to investigate the cause of death. To date, chronic wasting disease (CWD) is the leading cause of death for radio-collared deer, with 8 confirmed positives. Five mortalities have unknown causes because they were heavily scavenged or degraded when we located them or because we are awaiting results from tissue samples that were submitted for analysis. Two deer were likely killed by mountain lions and three, including a CWD positive deer, were likely killed by coyotes. One deer fell off of a short, steep cliff and died from trauma.

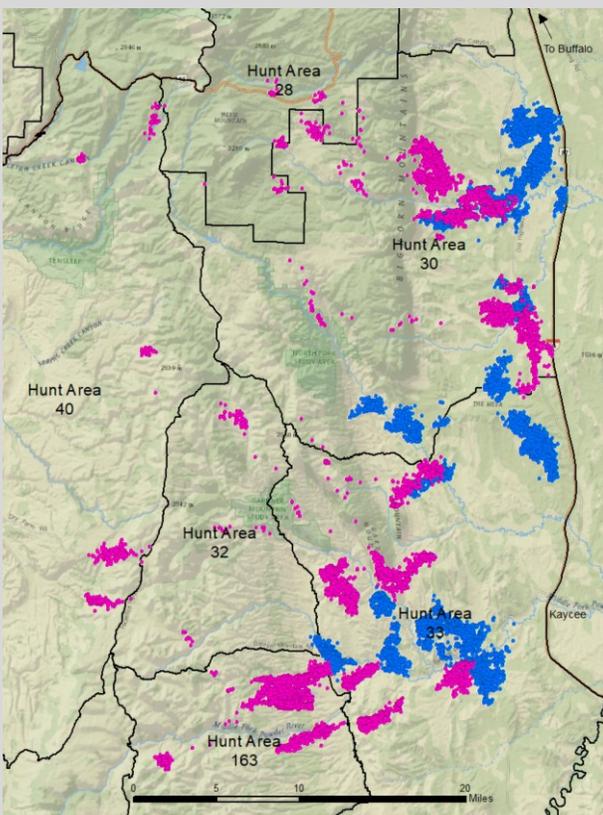
Nutrition

Deer forage on nutritionally rich foods in the spring and summer, which sustain them while lactating and holds them over through the winter when only lower quality food is available. We therefore expect doe deer to come into winter in good body condition, which is why we were surprised when the captured deer were in fairly poor condition in December. This is why it is so important for us to re-capture these deer each year in December; so we can find out if the 2018 results were an anomaly or if it is normal for these deer to be in poor condition before winter.



Travel patterns

Twenty-five of the deer showed spring migratory movements along an elevational gradient. One deer traveled an impressive 30 miles before settling onto her summer range. We are eager to track fall migrations as these deer make their way back to winter range. The rest of the deer were mostly resident deer, where their home range did not have a major seasonal shift. In the map, the pink dots represent all of the GPS locations for all of the migratory deer and the blue dots represent all of the GPS locations for all of the resident deer.



Habitat preferences

We are using deer locations to target our habitat assessment and treatment efforts. We are also looking for opportunities to modify fences to allow easier wildlife passage while maintaining their intended purpose for livestock management.

What comes next...

Game and Fish personnel will search for radio-collared deer in November 2019 to determine which does recruited fawns onto winter range.

Radio-collared does will be recaptured in December 2019 to take biological and disease samples and measure body condition going into winter.