

Encampment River bighorn sheep project

Between 1976 and 1989, the Wyoming Game and Fish Department (WGFD) translocated more than 80 bighorn sheep from Whiskey Mountain to the Encampment River herd. Following these translocations, the Encampment River bighorn sheep population grew rapidly and peaked at approximately 150 individuals in 1982. The harsh winter of 1983-84 likely stimulated a population decline.

Currently, there are approximately 60 bighorn sheep in the herd. The herd faces a number of challenges including disease, predation, competition, habitat succession, and human disturbances. Wildlife managers have struggled to identify the causes of the decline and to isolate factors that continue to limit population growth in the Encampment River herd.

This small population of bighorn sheep is coveted by the public, landowners, and sportsmen. The sheep often frequent the steep hillsides of the North Fork Encampment River, making them visible from Highway 70. Hunting opportunities have been offered for rams in this herd unit every other year for the past decade, in combination within the Douglas Creek herd. The Encampment River bighorn sheep herd has a reputation for producing great quality rams, making an opportunity to hunt within the herd unit highly desirable.

In 2018 and 2019, the herd was sampled for diseases as part of the statewide bighorn sheep herd health surveillance study, and several sheep were collared with Global Positioning System collars to learn about the herd's habitat use. Due to failing collars and loss of sheep from natural factors, only two active GPS collars remained by fall 2019. Biologists needed a larger sample of collared sheep to make any statistically valid assessments of habitat selection and movement patterns.

So in February 2020, an additional 10 ewes were captured, disease sampled, and fitted with GPS collars. Two ewes with malfunctioning collars were recaptured and had their collars replaced. The collars will collect GPS location data every hour for three years and store the data on the collar. Real-time GPS location data will be collected every day and is transmitted via satellite every five days to a biologist's computer.

The collars are equipped with breakaway mechanisms that will automatically release them from the ewes in November 2022. Each collar will transmit its final location, allowing biologists to retrieve the collar and download the animal's hourly locations for the previous three years. If a sheep dies before the collar falls off, the collar will emit a mortality signal. At this point, biologists will go into the field, find the carcass, perform a field necropsy and collect important samples to submit to the WGFD veterinary lab.

The fine-scale movement data collected from the collars will help delineate annual variation in seasonal movements, habitat selection and resource use. Without understanding habitat selection patterns, it is difficult to plan and prioritize effective habitat enhancements to increase population resilience. These analyses will help biologists determine the habitat characteristics that bighorn sheep select under different environmental contexts and facilitate resource-use comparisons with other more productive herds. In addition, the work will help inform the goals and placement of future habitat enhancement projects in the herd unit.

During bighorn sheep captures, all efforts are made to ensure the safety and survival of captured animals. Captures are done between December and mid-March to avoid the bighorn sheep breeding season (October-late November) and lambing season, which occurs about mid-May.

The most common method to capture a large number of bighorn sheep is via helicopter net-gun. The Game and Fish Department contracted with Native Range Capture Services to perform the net-gun capturing. The crew uses a helicopter to locate the sheep in their rugged and remote habitat, then the pilot positions the helicopter close to the herd and a net gunner shoots a 6-foot square net over one of the animals. If a bighorn sheep shows signs of excessive exertion during the chase the crews will abort the chase.

Once a bighorn sheep is in the net it is fitted with a blindfold and hobbled. It is then carefully lifted and delivered to a nearby staging area. At the staging area, WGFD biologists, veterinarians, and volunteers collect disease samples and fit the bighorn sheep with a GPS collar and ear tags. The sheep are then moved away from the staging area and released. Post-capture, biologists will be closely monitoring the collared individuals to see that they make it back to their capture locations.

Since 2012, the WGFD has been conducting statewide bighorn sheep herd health surveillance. Biologists hope to identify respiratory pathogens that are known to affect bighorn sheep, as well as other factors, such as trace minerals or nutrition, which may influence how one herd may do better than others when infected with the same pathogens. Pathogen transmission can cause disease events and long-term lamb mortality. Following outbreaks, survivors often carry the bacteria and transmit disease to lambs in subsequent years, causing lamb death and poor lamb survival for years.

For the past three years, teacher Jordan Seitz at Encampment School has had his students involved with the bighorn sheep capture and collar efforts. The students learn about bighorn sheep ecology, the history of the Encampment herd, and about the types of habitat that bighorn sheep need. The students also take field trips to look for collared bighorn sheep, learn about radio telemetry, and study bighorn sheep habitat. Then the students join Game and Fish personnel during the bighorn sheep capture project.

The success of the Encampment River bighorn sheep project relied on the participation of local landowners willing to allow the Game and Fish Department to capture bighorn sheep on their property, as well as set up staging locations. Their cooperation is very much appreciated. Also, the collars for this project were purchased with Wyoming Wild Sheep Foundation Grant-In Aid funds, so many thanks for their support.