WYOMING WILD SHEEP FOUNDATION
GRANT APPLICATION

Prior to completing this application, please review the Funding Priorities located here.

Project Title: Ferris-Seminoe Bighorn Sheep Monitoring and Sightability
80 character limit

Organization Name: Wyoming Game and Fish Department

Project Lead:

Name: Ashley Umphlett
Email: ashley.umphlett1@wyo.gov
Phone: (307) 320-6200
Mailing Address: 260 Buena Vista Drive
City, State, Zip: Lander WY 82520

Additional Point of Contact *(if different from Project Lead)*:

Name: Teal Cufaude
Email: tea.cufaude@wyo.gov
Phone: (307) 321-7087
Mailing Address: 1212 South Adams Street
City, State, Zip: Laramie WY 82070

Project Type *(select all that apply)*:

- [x] Disease
- [ ] Education and Outreach
- [x] Habitat
- [ ] Land Conservation
- [x] Population Management/Monitoring
- [ ] Other
- [ ] Action: Collaring

Project Location(s) Information:

County: Carbon
Nearest Town: Alcova

Project Phase *(if applicable)*: Two (2) of Two (2)
Estimated Invoice Dates: 12/10/2025 to 06/01/2027

Budget Information:

Total WY-WSF Request $ $ 45,500.00

Total Project Cost: $ 140,000.00

Has this project been funded by the Foundation previously? No

If yes, list each grant received for five years

Other Project Contributions or Matching Funds:

			In Hand	Requested
Source	**WGBGLC**	Amount $ 68,500.00	✔	
Source	**WGBGLC**	Amount $ 26,000.00	✔	
Source		Amount $		
Source		Amount $		
Source		Amount $		
Source		Amount $		

Project Objective and Narrative:

funding priorities

The objectives of this project are: 1) maintain a sample of approximately 50-60 GPS collars / eartags on male and female bighorn sheep across the entirety of the herd unit (Bennett, Ferris, and Seminoe Mountains) through the sightability survey period in summer 2026; and 2) utilize deployed collars to develop a sightability model applicable to summer surveys of bighorn sheep in Wyoming in an effort to obtain a reliable and data-driven population estimate for the Ferris-Seminoe bighorn sheep herd.

Beginning in 1958, wildlife managers began transplanting sheep into the Ferris-Seminoe bighorn sheep herd. Initial transplant efforts all used bighorn sheep from the late-lambing, high-elevation, migratory Whiskey Mountain herd near Dubois; while adult sheep survived well, lambs did not. Lambs were born later when much of the local vegetation had already dried and cured; there was very little lamb recruitment, and eventually population numbers were reduced to negligible numbers. Beginning in 2009, transplants of early-lambing, low-elevation, non-migratory sheep were made from Oregon and the Devil's Canyon herd near Lovell. Sheep from these source herds have their lambs a month or more earlier than Dubois sheep, allowing sheep to make use of local spring green-up, and increasing recruitment into the population. Following 166 total sheep transplants into the herd over a 9-year period, the Ferris-Seminoe bighorn sheep herd has successfully established in the Ferris, Seminoe, and Bennett Mountains, and continues to grow.

The Ferris-Seminoe bighorn sheep herd is currently managed using a mid-winter trend count objective of 240 to 360 animals, with the current three-year average of 278 well within that range. Maintaining the herd at a healthy population size and density is critical to prevent an overconcentration of bighorn sheep, which may lead to decreased habitat health and / or increase the likelihood of individuals dispersing or foraying to ranges that may harbor dangerous pathogens. Currently, the Ferris-Seminoe bighorn sheep herd remains free of pathogens such as Mannheimia haemolytica and Mycoplasma ovipneumoniae, which have caused devastating pneumonia outbreaks in other bighorn sheep populations. This herd is the only one in the state that remains pathogen free, and as such, is the only herd that can be used for future reintroduction and transplant efforts.

Collaring efforts in this herd have allowed Wyoming Game and Fish Department (WGFD) managers to monitor disease risk, bighorn sheep movements, and habitat use since successful transplant efforts began in 2009, with an increased monitoring effort related to disease risk assessment and habitat use beginning in February 2020. The most recent capture efforts occurred in winter 2024-2025, when managers GPS ear-tagged and / or collared 20 (14 males, 6 females) bighorn sheep found in the Bennett Mountains and Miracle Mile area. In addition to the transmitters we deployed in the Bennett Mountains and Miracle Mile, we GPS collared 24 (17 rams and 7 ewes) bighorn sheep in identified sub-herds that comprise the Ferris-Seminoe bighorn sheep herd; these collars will be maintained through the sightability survey in summer 2026, but are programmed to release in early 2027. As part of Phase One of the project, managers attempted to collar an additional 12 ewes during the 2025-26 capture season to increase the sample size of females. However, weather conditions prevented the deployment of these collars; these collars will instead be used for other monitoring projects related to Ferris-Seminoe bighorn sheep.

These low-elevation, non-migratory sheep do not congregate in restricted, well-defined winter ranges like many herds in high mountain valleys, instead having the option to move wherever winds have exposed forage. Ferris-Seminoe bighorn sheep readily utilize rocky outcroppings and timbered environments as escape cover and can be difficult to locate during population trend counts, and have become increasingly wary of helicopters due to increased monitoring and capture efforts. As a result, obtaining a reliable classification sample and trend count in this herd is difficult, because the majority of the population must be included in the sample to have confidence in resulting ratios and overall population numbers. To address this issue, we propose a focused aerial survey effort using established sightability-correction methods to assess current population size, herd composition, and potential changes in sub-herd distribution.

Sightability models offer managers the ability to utilize statistical models to correct for animals missed during aerial counts, allowing for more accurate wildlife population estimates. Updated estimates gained from sightability surveys can serve as critical anchor points for the Integrated Population Model (IPM) used by WGFD biologists to estimate population size and project future herd dynamics, thereby better informing management strategies and strengthening long-term conservation efforts. Sightability models currently available for bighorn sheep were developed in canyon-dwelling, desert bighorn sheep populations in Idaho and New Mexico; such models offer a foundation for future population abundance estimates, but likely have a limited use in Wyoming due to the biological, ecological, and behavioral differences of bighorn sheep across the western United States. Following the 2025-26 capture season, approximately 20% of the Ferris-Seminoe population will be monitored using GPS transmitters. As a result of these ongoing monitoring efforts, WGFD wildlife managers and members of the Science, Research, and Analytical Support Unit have recognized the unique opportunity to develop a sightability model specific to Wyoming bighorn sheep and their habitats. Conducting sightability trials utilizing the collars deployed in the Ferris-Seminoe herd would either confirm the validity of using existing models in Wyoming herds, or provide a more applicable alternative to assess population abundance and density, thereby informing future management decisions for the Ferris-Seminoe and similar herds. Additionally, this methodology will establish a long-term monitoring framework, enabling intensive surveys to occur every 5 years rather than annually, thereby reducing long-term costs while maintaining reliable population trend tracking.

This project will provide updated and more reliable population estimates for the Ferris-Seminoe bighorn sheep herd, ensuring that management decisions (such as those related to license allocation strategies or wandering movements) are based on the best available data. Additionally, enhanced predictive modeling through the integration of aerial survey data with an IPM framework will strengthen long-term conservation efforts, while simultaneously reducing the need for frequent, resource-intensive surveys. Wyoming Wild Sheep Foundation (WY-WSF) funding would help cover the flight costs for a full sightability survey of the herd unit plus additional flights for conducting sightability trials, including per hour flight rates, per diem, and mileage for both helicopter and fixed-wing aircraft and crews.

Miles/Acres Affected *(if applicable)*: [ ] (●) Miles ( ) Acres

Describe Any Current or Future Monitoring/Management *(if applicable)*:

Ferris-Seminoe bighorn sheep have been monitored extensively by way of collars over the past several years. Maintaining transmitters on bighorn sheep in this herd will allow us the opportunity to garner a longer term data set of bighorn sheep movement, disease risk, habitat use, as well as allow managers to build a sightability model specifically for low-elevation, non-migratory sheep, thereby informing future management decisions for the Ferris-Seminoe and similar herds.

Describe how you will share your learned info with us

Final and annual reports, detailing bighorn sheep sightability model development and application, will be provided to the Wyoming Wild Sheep Foundation. Additionally, project details and updates will be submitted for RamPage and Wyoming Wildlife articles.

Additional Budget or Project Information for Consideration *(if applicable)*:

Eric Newkirk, a Principle Wildlife Biologist with the Wyoming Game and Fish Department's Science, Research, and Analytical Support Unit, will be an additional Project Lead and Point of Contact for the sightability component of this project. His information is as follows:

Email: eric.newkirk@wyo.gov

Phone: (307) 721-2918

Address: 1212 South Adams Street, Laramie, WY 82070

We are requesting $45,500 from the WY-WSF to conduct a focused aerial survey to assess current population size, herd composition, and potential changes in sub-herd distribution; this survey will be conducted in conjunction with current monitoring efforts (i.e. deployed collars) to develop a sightability model applicable to summer surveys of bighorn sheep in Wyoming in an effort to obtain a reliable population estimate for the Ferris-Seminoe herd. Requested funding would help cover flight costs for the sightability project, including per hour flight rates, per diem, and mileage for both helicopter and fixed-wing aircraft and crews. Additional funding was requested and granted from Wyoming Governor's Big Game License Coalition (WGBGLC) to cover collar purchase and deployment to increase female bighorn sheep sample size prior to sightability trials ($26,000), and sightability survey and trial costs ($68,500). Any remaining budget balance would be used for model development as needed, and / or future monitoring efforts including collar purchase, capture costs, collar data fees, etc. incurred over the duration of the project.

Future funding will also be requested from both organizations to continue monitoring after these transmitters release in 2027, and assist with the analysis of the GPS data to determine male bighorn sheep movement outside their identified occupied range and in between sub-herds or other populations.

Attachments and Supporting Documentation:

Please select the types of attachments included:

- [x] Map(s) *required*
- [ ] Letter(s) of Support
- [ ] Project Design
- [ ] Photos
- [ ] Monitoring/Management Plan Permit(s) / NEPA Compliance
- [x] Other: Budget Estimate

Please submit applications and attachments via email to: Info@wyomingwildsheep.org
Subject Line: " Name of Project - Organization Name"

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