

# Bighorn Sheep Winter Habitat Protection

Grand Teton National Park: Wyoming

National Park Service

U.S. Department of the Interior



The National Park Service (NPS) is considering implementing management strategies to protect bighorn sheep winter habitat within Grand Teton National Park.

Bighorn sheep are an iconic element of the Teton Range's intact and functional ecosystem, and are a valuable national resource worthy of preservation. This population has occupied the range since the last ice age. Today it is vulnerable due to its small size and isolation from neighboring populations. It also faces threats from habitat loss, disease, non-native mountain goats, and disturbance from backcountry winter recreation.

Because the Teton Range bighorn sheep population is small, tenuous, and sensitive to pressures from increasing backcountry winter recreation, conservation actions are needed to protect winter habitat for the sheep to build and maintain resiliency.

The vulnerability of the population has prompted federal and state managers along with partner organizations to collaborate on a number of bighorn sheep conservation efforts over many years. Other conservation actions aimed at securing a future for Teton Range bighorn sheep are occurring concurrently to this effort. One example is the ongoing implementation of the 2019 Mountain Goat Management Plan. Mountain goats are not native to the Teton Range and present a risk to the bighorn sheep population through the potential for disease transmission and habitat competition, especially on limited winter ranges.

Since 2020, Grand Teton National Park has been actively removing mountain goats within the park. While these efforts have improved conditions for bighorn sheep, more management actions are needed to ensure bighorn sheep have access to secure (undisturbed) winter habitat within the park.

In addition to providing for the conservation of bighorn sheep, the NPS recognizes the importance of the Teton Range for winter recreation. The NPS has engaged with the skier community for the past five years to address bighorn sheep conservation, while still providing for winter activities like backcountry skiing.

The NPS is preparing an Environmental Assessment under the National Environmental Policy Act to evaluate alternatives and analyze impacts from additional management strategies for the protection of bighorn sheep habitat, including potential winter habitat closures.

I encourage you to review the project background information in this newsletter and provide input during the 30-day scoping period. Thank you for your interest and participation. We look forward to hearing from you!

Sincerely,

A handwritten signature in black ink, appearing to read "Chip Jenkins".

Chip Jenkins, Superintendent

## How You Can Be Involved

Grand Teton National Park is seeking public input on bighorn sheep winter habitat protection. Civic engagement is important to the process, and comments will be accepted from April 20 through May 20. Public comments are encouraged to be submitted online at [https://parkplanning.nps.gov/bighorn\\_habitat](https://parkplanning.nps.gov/bighorn_habitat) or may be mailed to:

Grand Teton National Park Planning Office  
Attn: Bighorn Sheep Winter Habitat Protection  
P.O. Box 170  
Moose, WY 83012-0170



## Project Background

The Teton Mountain Range is approximately 40 miles long north-south, seven to nine miles wide east-west, and 444,500 acres in size, with elevations ranging from 6,320 feet near Fish Creek to 13,775 feet at the top of the Grand Teton (in addition there are eight peaks over 12,000 feet). The range is bounded by the Bridger-Teton and Caribou-Targhee National Forests. Of the 330,000 acres within Grand Teton National Park and the John D. Rockefeller Jr. Memorial Parkway, 131,000 acres are part of the Teton Range. High elevation areas in the Tetons provide the only remaining winter habitat for the small, native bighorn sheep population that lives year-round in the mountain range. The majority (79%) of the highest quality winter habitat for the bighorn sheep population is located within the park, while the rest is within the Caribou-Targhee National Forest and the Bridger-Teton National Forest.

The Teton Range bighorn sheep population has lost access to its former low elevation winter ranges due to development in the valleys on both sides of the range. Repopulating the low elevation winter ranges in the valley is not a viable conservation option as the habitat no longer exists. Winter is the most challenging time of year for bighorn sheep. They currently spend winter at high elevation (above 9,500 feet) where conditions are extreme with deep snow, cold temperatures, and high winds. The bighorns are typically found in proximity to escape terrain, close to snow-free areas, on south-facing slopes, and away from dense tree cover. In winter, bighorn sheep offset their energy losses with available forage while expending as little energy as possible, so they can survive and reproduce.

In addition to providing this important winter habitat, the Tetons provide exceptional opportunities for human-powered backcountry winter recreation, including backcountry skiing and snowboarding, ski touring, ice climbing, and mountaineering. Participation in these activities in Grand Teton National Park has grown steadily over the last decade as advances in backcountry equipment and skills have made it possible for backcountry travelers to venture further from trailheads into areas where bighorn sheep winter. This has resulted in an increase in visitors in areas that previously saw little winter recreational activity.

The Teton Range Bighorn Sheep Working Group (hereafter Working Group) was formed in 1990 to coordinate management for conservation of this population. The interagency Working Group is comprised of wildlife biologists from Grand Teton National Park, Wyoming Game & Fish Department, Bridger-Teton National Forest, and Caribou-Targhee National Forest. The Working Group has conducted or facilitated





numerous research studies up to the present. A recent study, conducted in the Teton Range, found that bighorn sheep avoided areas of winter recreation, even when those areas were otherwise relatively high-quality habitat ([Courtemanch 2014](#)). Avoidance behavior by bighorn sheep resulted in up to a 30% reduction in available high-quality habitat for some individual sheep. Individual bighorn sheep exposed to high levels of recreation also exhibited increased daily movement rates and larger home range sizes compared to sheep exposed to low or no recreation. In the winter, bighorn sheep are in a precarious physical state, often in a state of starvation, and the female sheep are pregnant. Unintentional disturbance, which may appear minor to people, if sheep simply stand there or flee a short distance, can cause sheep to burn their energy reserves unnecessarily. Fat that they lose over the course of the winter can decrease the probability of survival or successful lambing in the spring.

In the fall of 2017, the Working Group began discussing the best way to apply the results of the winter recreation study to management of bighorn sheep in the Tetons. As a first step, the group initiated conversations with members of the backcountry skiing and conservation communities to understand their perspectives and concerns around the issue of bighorn sheep and backcountry winter recreation in the Tetons and gauge community awareness of the issue. In the spring of 2019, the Working Group convened a



panel of experts to review the existing state of knowledge available on the bighorn sheep population and identify key data gaps, research needs, and management actions to conserve the population. The panel identified several management priorities including addressing threats from non-native mountain goats and engaging the public to address human disturbance on bighorn sheep winter ranges.

In 2020 the Working Group held a series of five collaborative public workshops facilitated by the Ruckelshaus Institute from the Haub School of Environment and Natural Resources at the University of Wyoming. The workshops included

information-sharing between the Working Group, local experts on backcountry skiing, and other participants, as well as facilitated small group discussion and brainstorming on potential solutions. The Working Group synthesized all the public input, including information on highly valued ski terrain, and integrated it with existing bighorn sheep data (GPS collar and survey locations, mapped habitat, visitor sightings, etc.) to develop a comprehensive set of recommendations.

In October 2021, the Working Group released the [Teton Range Bighorn Sheep and Winter Recreation Strategy](#). Specific recommended actions included implementing new or expanded winter habitat protections for sheep, areas to maintain recreational access for people, designated travel routes through habitat zones to maintain valued ascent or descent routes or facilitate traditional traverses for skiers, increased public education and outreach (including new signage and map products), citizen science opportunities, enhanced monitoring of bighorn sheep and backcountry winter recreation to evaluate success, and potential habitat restoration opportunities. The polygons identified as bighorn sheep winter habitat zones were delineated through an iterative process with significant input from local community members and participants in the collaborative process. Areas of currently occupied bighorn sheep winter habitat formed the basis of the habitat zones, with a few additional areas for population expansion (see map on final page).



During winter 2021/2022, the Working Group asked backcountry skiers to voluntarily avoid selected bighorn sheep winter habitat zones. For the most part, the polygons identified in the recommendations document formed the basis for the winter habitat zones with two notable exceptions: 1) the polygon identified in the North Fork of Avalanche Canyon in the recommendations document was not included as a voluntary avoidance area in winter 2021/2022 because more public input was needed to develop a solution that balanced winter access with the habitat needs of wintering bighorn sheep; and 2) park biologists made small adjustments to the original polygons to facilitate winter recreation access in a few locations when doing so was not detrimental to bighorn sheep. These changes were based on input and feedback from the public after the recommendations document was released.

The Teton Range bighorn sheep population also faces threats unrelated to human disturbance in winter range. Consequently, NPS managers are working on multiple fronts to build resilience in the population and improve its chances for long-term persistence.

To that end, several other bighorn sheep management and research efforts are currently underway in the park. These include implementation of the plan to remove mountain goats from the Teton Range, research aimed at obtaining a more precise estimate of the number of bighorn sheep in the population, improved understanding of demographic parameters, and an update on the genetic status of the herd using state of the art techniques. This work will complement and inform this planning effort for bighorn sheep conservation.



## Purpose and Need for Action

The purpose of this planning effort is to improve the Teton Range bighorn sheep population's chances for long-term persistence by protecting, and where feasible, restoring its winter habitat in Grand Teton National Park. Action is needed to address increases in the number of winter backcountry visitors who are accessing winter bighorn sheep habitat in the Teton Range that previously saw little human activity. A new and growing body of research demonstrates that winter recreation can disturb and harm wintering ungulates, including bighorn sheep. The objective is to provide secure winter habitat for bighorn sheep while providing backcountry winter recreation opportunities, to the extent possible.

## Management Action Criteria

The actions developed from this planning effort and Environmental Assessment must meet the following criteria:

- Be based on the park's enabling legislation and the overall [purpose and mission of the park](#);
- Comply with direction and guidance in the [2006 NPS Management Policies](#), NPS Organic Act, and other NPS management guidance;
- Support population management [goals](#) for Teton Range bighorn sheep and provide secure winter habitat for bighorn sheep distributed throughout the Teton Range;
- Find a compatible management balance that protects bighorn sheep and provides opportunities for backcountry winter recreation; and
- Use an adaptive management framework with monitoring that will provide information to evaluate, adjust, and adapt management strategies.



## Proposed Action

In an ongoing effort to conserve and protect the bighorn sheep within Grand Teton National Park, the park is proposing additional actions beyond the current 2019 Mountain Goat Management Plan implementation and the 2021/2022 voluntary bighorn sheep winter habitat avoidance areas. Based on emerging science, recommendations from the Working Group, and changing conditions on the ground, the NPS is considering implementing other visitor and resource management actions to protect the bighorn sheep population within the park, while providing backcountry winter recreation opportunities, to the extent feasible. Alternatives will consider visitor management and education strategies for protection of bighorn sheep as recommended by the interagency Working Group.

Actions that the NPS is considering include increased public outreach and education; new signage and map products; enhanced monitoring of both bighorn sheep populations and winter recreation use; new or expanded winter habitat protection areas for bighorn sheep; areas where recreational access is maintained; and designated travel routes through some bighorn sheep winter habitat zones. Specifically, the bighorn sheep voluntary avoidance areas or bighorn sheep winter habitat zones (see map on the following page) that were in effect in winter 2021/2022, would be evaluated for seasonal access restrictions from 1 December – 30 April. In addition, the NPS will further analyze the recommended Avalanche Canyon winter habitat zone, which was not part of the voluntary avoidance areas this past winter.

The Environmental Assessment will evaluate several alternative management strategies and disclose the anticipated environmental consequences of implementing them. The draft Environmental Assessment will be available for a 30-day public review and comment period during late summer to fall of 2022.

**Thank you for your interest and participation.**



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