

# Bighorn Sheep



*Ovis canadensis*

## Identification

The bighorn sheep is a wild North American sheep with three subspecies: Rocky Mountain bighorn (*O. c. canadensis*), desert bighorn (*O. c. nelsoni*), and Sierra Nevada bighorn (*O. c. sierrae*). They can weigh between 160-250 lb/73-113 kg and stand up to 3 ft/1 m tall at the shoulder. Males have large horns that curl back behind their ears towards their face. Sierra Nevada bighorn sheep horns are smaller and flare out instead of curling in front of the face. Female bighorn sheep have smaller, thinner horns that curve backward slightly. The Rocky Mountain and desert bighorn sheep's coat is a light brown with cream color around the nose, mouth, and rump. The Sierra Nevada bighorn sheep's coat ranges from dark brown to almost white, with a cream patch on the rump. Historically, bighorn sheep were widespread across mountains from Canada to Mexico. Now, though their range is still wide, bighorn sheep populations are much smaller and more fragmented. In the United States, Rocky Mountain bighorn can be found from the eastern Cascades in Washington to Montana in the north through Colorado in the south. Desert bighorn sheep live in low desert mountains throughout the southwest United States. Sierra Nevada bighorn sheep are only found in the Sierra Nevada Mountains, with habitat ranging from alpine to Great Basin sagebrush scrub.



Photo credit: JJ Autry/The Nature Conservancy

## Observation Tips

Bighorn sheep can be seen in social groups on or near rocky cliffs and grassy mountain slopes, usually avoiding dense forests and areas with low visibility. Adult rams typically form "bachelor herds," only congregating with ewes for breeding from October to January. Though they can be seen at all hours of the day, peak activity is at dawn and dusk. Rocky Mountain and Sierra Nevada bighorn sheep have winter and summer ranges, following the most nutritious forage and avoiding deep snow. These bighorns typically move to higher elevations (above 10,000 ft/3,000 m) in the summer and lower elevations (4,000 ft/1,200 m) in the winter. However, they will inhabit higher elevation south-facing slopes in

winter where wind and sun remove snow. Desert bighorn sheep tend to inhabit east-facing slopes. These bighorns remain close to water sources and abandon areas without water.

## Interesting Fact

A male bighorn sheep has horns that can weigh up to 30 lb/14 kg. Rams compete for mating rights by rushing, rearing up, and crashing their horns together. The sound of their ramming can be heard echoing through the mountains.

## Ideal Habitat

Bighorn sheep use a range of plant ecosystems, from alpine meadows to prairie grasslands, including grassy mountain slopes, canyonlands, and foothills. They prefer open areas where horizontal visibility is high, generally avoiding dense forest (>20% tree cover) and areas where visibility is obscured by vegetation taller than 3 ft/1 m. Bighorn sheep are

rarely far (<1000 ft/305 m) from escape terrain; cliffs, rock rims, outcroppings, and bluffs with sparse cover, where the slope is between 35-80%. Escape terrain provides relatively high protection for lambing and from predators. Sheep usually stay within 1 mi/3 km of perennial water during the hot summer months. Natural mineral licks are an important nutritional resource for bighorn sheep.



## Management Activities that Benefit Species – Best Management Practices (BMPs)

Maintain and improve grasslands that provide high-quality bighorn sheep habitat. Ensure connectivity between escape terrain, water, and grazing areas. Allow fires or practice controlled burning in bighorn habitat near escape terrain to promote grassland habitat and natural openings in dense woody vegetation. Maintain natural water sources or provide supplemental water during summer and drought. Collaborate with public land managers and other private landowners to maintain habitat connectivity, population health and allow gene flow among bighorn populations.

## Management Activities to Avoid

Bighorn sheep populations suffer when they occupy marginal habitats with fewer or lower-quality resources. They are susceptible to diseases spread by domestic sheep, especially when under stress, resulting in die-offs. Avoid grazing domestic sheep in or near bighorn sheep habitat to avoid transmission. Avoid fire suppression as it

Range map provided by International Union for Conservation of Nature

allows young trees to infill and expand into grasslands creating dense stands of woodland/forest, increasing the risk of predation for bighorn sheep. If managing juniper for bighorn sheep habitat, avoid clear-cutting large areas. Instead, leave legacy trees and target young junipers that are infilling and creating dense stands. In landscapes where water sources are rare, avoid allowing vegetation to infill and become overgrown around water as this can create a 'predator trap' and lead to high mortality of sheep. Avoid excessive human activities such as hiking, backpacking, and four-wheel-drive vehicles around bighorn sheep, especially in lambing areas.

## Other Species that Benefit from Similar Habitat Management

Management for bighorn sheep is beneficial to other species that depend on open grassland and cliffs.

## Other Resources

**California Department of Fish and Wildlife.** 2021. Sierra Nevada bighorn sheep facts. [Ovis canadensis sierrae](#).

**International Union for Conservation of Nature (IUCN).** 2020. The IUCN Red List of Threatened Species. Version 2020-3. [Bighorn sheep](#).

**NatureServe.** 2021. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. [Bighorn sheep](#); [Rocky Mountain bighorn sheep](#); [Desert bighorn sheep](#); [Sierra Nevada bighorn sheep](#)

United States Department of Agriculture (USDA). 1999. Forest Service Proceedings. [Response of Bighorn Sheep to Pinyon-Juniper Burning Along the Green River Corridor, Dagget County, Utah.](#)

Washington Department of Fish and Wildlife. 2021. [Bighorn sheep.](#)

*Consult with your state wildlife agency about hunting and bighorn sheep population management*