

THE SHEEP THAT WILL NOT DIE

BY BRETT FRENCH

CAN A SPECIES BE EXTINCT if it never existed? With the bicentennial of the Lewis and Clark Expedition now under way, Audubon's bighorn sheep are often mentioned as one of the now-extinct species the Corps of Discovery encountered on its trip up the Missouri River. "The Mandan Indians Call this sheep Ar-as-ta," Clark wrote on December 22, 1804, while camped in what is today central North Dakota. "It is about the size of a large Deer, or a small Elk, its Horns Come out and wind around the head like the horns of a Ram...."

But did expedition members actually see a unique sheep subspecies, or, as new research indicates, did they simply come across a variation of the widespread Rocky Mountain bighorn that, at the time, lived farther east than it does today?

WHAT DID THEY ACTUALLY SEE?

There is no debate that bighorn sheep once existed farther east from their current range. Biologists believe the sheep likely settled in the northern Great Plains badlands over millennia by migrating from the Rocky Mountains down the Missouri and Yellowstone rivers, slowly expanding up tributary drainages. Lewis and Clark encountered their first bighorn sheep in eastern Montana, killing three in what is today the Upper Missouri River National Monument. A year later, on his return trip down the Yellowstone River, William Clark noted in his journal that the party saw "a gang of about 40 Big horn" sheep, and he killed four after inscribing his name in the sandstone of Pompeys Pillar.

While retracing the Lewis and Clark Expedition's route in 1843, noted naturalist John James Audubon hunted bighorn sheep in the badlands of North Dakota and wrote about his experience. In 1901, perhaps in honor of Audubon's observations, natural historian C. Hart Merriam scientifically classified the badlands sheep as a subspecies of Rocky Mountain bighorn (*Ovis canadensis*) and called them *Ovis canadensis auduboni*. The name gained even greater scientific credence in 1940, when the esteemed Canadian zoology professor Ian McTaggart-Cowan included the Audubon's as one of seven subspecies of bighorn sheep he defined in North America.

It took thousands of years for bighorn sheep to explore, claim, and settle the badlands, but the animals were removed from the region in less than 100 years. The westward expansion of land-hungry Americans and immigrants quickly displaced the bighorn sheep in eastern Montana and the western Dakotas and Nebraska. The sheep were hunted for food and, later, their elegant curled horns. Then, as sheepherders and cattlemen moved in, the bighorn's range was overtaken by livestock that carried diseases for which the native sheep had no immunity.

Though research done four years ago appears to show there never was an Audubon's bighorn, many people still cling to the notion that a now-extinct species once roamed the region.

Finally, cheap land offered to those who would settle and cultivate the ground brought a rush of farmers to the dry lands.

Squeezed by the pressures of western settlement and expansion, bighorn sheep living in the badlands died out. In his book *Lives of Game Animals*, published in 1929, naturalist Ernest Thompson Seton noted that bighorn sheep were "practically cleared out of the Black Hills by about 1887, though... a few lingered on till 1899 when the last one was killed." The last bighorn sheep seen in eastern Montana was a ram killed in 1916 in the Seven Blackfoot Creek area of the Missouri Breaks.

QUESTIONING A CLASSIFICATION

For nearly a century after the Missouri Breaks ram was killed, biologists and others have lamented the disappearance of the so-called Audubon's bighorn. As one North Dakota state publication puts it, "Thus, the Audubon [sic] bighorn went the way of the passenger pigeon and Carolina parakeet."

And yet new evidence seems to show there never was a separate Audubon's bighorn subspecies. These great sheep of the Great Plains were simply Rocky Mountain bighorns that had adapted to life at lower elevations.

A species is a population with roughly the same size, color, behavior, and habitat that breeds with each other and can't breed with other groups. Members of the Canada goose species, for example, can't breed with those of other waterfowl species, such as the snow goose.

A subspecies is a race or group within a species that looks and is genetically different



CHARLES COTTRELL

PASSENGER PIGEON WITH HORNS? A mounted specimen identified as an Audubon's bighorn resides behind glass in the science building at Montana State University–Northern in Havre. However, new research indicates this specimen is likely a regular Rocky Mountain bighorn.

from other members of the species but can still breed with them. For example, there are several subspecies of Canada geese that differ mainly in size. And scientists have concluded that the Rocky Mountain bighorn and the desert bighorn are different subspecies.

The big question is whether what has been called the Audubon's bighorn sheep differed enough from ordinary Rocky Mountain bighorns to be considered a subspecies.

Biologists don't dispute that the badlands bighorns may have looked slightly different from their mountainous cousins. But those minor differences weren't enough for population research scientists John Wehausen and Rob Ramey. In a study published in *Journal of Mammalogy* in 2000, they wrote, "Our results did not support the recognition of Audubon's bighorn sheep as a subspecies separate from Rocky Mountain bighorn

sheep..." The scientists noted that Cowan's classification of the Audubon's 60 years earlier was based on examination of just four bighorn skulls, and they took issue with the fact that the "type specimen" was not an adult ram but a juvenile. "The resolution and results were influenced by small samples, age-related effects on size, and violation of statistical assumptions," they wrote. "As a result, statistical re-analysis of Cowan's

(1940) original data has not found support for most of his subspecific designations.”

Taxonomy in the early 20th century was fraught with subjective interpretations of limited information. “In traditional taxonomy, species and subspecies were what a good taxonomist said they were,” says Ramey, chair and curator of vertebrate zoology at the Denver Museum of Nature and Science.

For their study, Ramey and Wehausen were able to find seven alleged Audubon’s specimens—two adult male bighorn skulls from North Dakota, two from South Dakota, and three from eastern Montana. They used 50 measurements to describe four skull attributes: lengths, widths, height, and horns, and then measured each horn using five circumferences to determine volume. The researchers found “no significant differences” between those skulls and those of ordinary Rocky Mountain bighorn sheep.

“It’s really not a very surprising result,” says Wehausen, a scientist at the University of California White Mountain Research Station. “We’re just correcting some questionable work from earlier days. Now we have more rigorous hypothesis testing.”

Modern scientists also point out that no reasonable evolutionary explanation exists to explain a distinct subspecies of bighorn sheep. The badlands sheep were never geographically separated from the Rocky Mountain bighorn sheep. Biologists say a newly formed natural barrier would have been necessary to isolate the badlands bighorns so they would develop distinct, unique characteristics.

OLD MYTHS DIE HARD

Because the idea of an Audubon’s subspecies has been promulgated for more than a century, it has become entrenched in western mythology. “People just eat this stuff up and keep repeating it,” Wehausen says about the romantic notion of a “lost” species. He adds that much incorrect information circulating about bighorn sheep doesn’t stand up under scrutiny. “It’s frustrating for people like us, who try to set the record straight, that the information is being ignored.”

In 2003, three years after Wehausen’s

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and Ramey’s study was published, the National Bighorn Sheep Interpretive Center in Dubois, Wyoming, exhibited an aging bighorn sheep mount labeled as the extinct Audubon’s bighorn subspecies. The mount was on loan from South Dakota’s Custer State Park, which labeled it as an “endemic subspecies to the badlands and Dakotas.”

June Sampson, director of the Wyoming bighorn sheep center, justifies the Audubon’s label by noting that Ramey’s and Wehausen’s technical study can be difficult for the lay person to understand. The center included a footnote in its information on the mount that the two scientists concluded there never was a separate subspecies. “We let visitors decide for themselves from there,” Sampson says.

The Dakotas and Nebraska have been especially keen on recounting the past glory of Audubon’s bighorn. The subspecies is mentioned on the websites of all three states’ conservation agencies. North Dakota, however, has recently begun to publicly question the validity of the subspecies, says Ron Wilson, editor of *North Dakota Outdoors*. “There is growing recognition here that the Audubon’s designation is based on some pretty shaky science,” he says.

Bill Jensen, a big game biologist with the North Dakota Game and Fish Department, has collected bighorn skulls and skull measurements since the mid-1980s, when he first grew suspicious that there was no separate subspecies.

“This all stems back to an era when a naturalist gained fame by naming new species and subspecies,” Jensen says. “We had naturalists running all over the place trying to name new animals. At one time, they actually thought there were 20 different subspecies of black bear.”

Montanans aren’t immune to the Audubon’s bighorn mystique. Full mounts of what are called Audubon’s bighorn sheep can also be found in Havre at the Montana State University–Northern’s science building and in Miles City’s Montana Bar.

SYMBOL OF PARADISE LOST?

Michael Sexson, a professor of mythology at Montana State University, says no matter what the facts are, the myth of Audubon’s bighorn will likely survive.

“Some people would prefer to believe in things more interesting than the facts allow them to be,” he says. “We like to have our stories as stories.”

Sexson says the sheep play an important role in the story of Lewis and Clark’s journey across the West, an epic adventure that has become part of American mythology. The two heroic characters overcame enormous odds to voyage from the mouth of the Missouri River to the Pacific Ocean and back. It’s a tale of bravery, perseverance, and faith. Yet, like other heroic myths, the Lewis and Clark adventure has its dark side.

“As the adventurer in traditional mythology forges ahead to a new civilization, he typically wreaks havoc on the land and leaves carnage in his wake,” Sexson says. In the case of the Lewis and Clark saga, the unspoiled paradise discovered by the Corps of Discovery was degraded in the subsequent scramble for precious metals, timber, grazing lands, and farmland. Hence, the mythologist explains, within the larger myth of the Lewis and Clark Expedition, Audubon’s bighorn emerges as a corollary myth of how westward exploration and eventual expansion led to the demise of the badlands bighorn sheep.

Seen in this way, Audubon’s bighorn symbolizes both abundance and loss. It stands for the great natural wealth America possessed when the West was young, an Eden of bountiful forests and wildlife where native people lived harmoniously with their natural surroundings. But it can also represent how Americans exploited the nation’s finite natural resources in their quest for higher living standards.

Because both views of western expansion are widely popular, Audubon’s bighorn will likely live on—even though, as some now say, it never even existed. 🐻