SAVING THE BIGHORN

To a motorist traveling down Highway 395, the spectacular eastern slope of the Sierra is a seemingly impenetrable wall of granite. It stretches over 300 miles, reaching 14,000 feet at the summits of the highest peaks — a fortress for wild things, the dividing line that is too inhospitable for convenience-minded mankind to leave a lasting mark. Or so it would seem.

But the California Gold Rush marked the beginning of an ecological disaster whose effect lingers to this day. The fortress remains, but the prime user of its highest castles — the Sierra bighorn sheep — was nearly wiped out.

The Sierra bighorn, with its distinctly flared horn, was once found in isolated herds along the east slope from the Truckee River drainage to the southern terminus of the Sierra 300 miles south. Only one viable herd of 200 animals survived into the mid-twentieth century. With one herd, a communicable disease could spell disaster.

But thanks to a small group of scientists, veterinarians and volunteers, the future of the Sierra bighorn is the brightest it's been in more than a century. In a carefully planned project, the sheep have been successfully captured and reintroduced to historic haunts. For the first time in this century there is a new viable herd, and — if things keep going as planned — sighting of Sierra bighorn may become a treat to travelers in Yosemite and other areas that were once occupied by the animal John Muir called "the bravest mountaineer."

By Eric Hoffman

The story of the Sierra bighorn's disappearance in the 1800s has a familiar cast of characters: white men with guns, disease from imported stock, destruction of habitat and migration corridors, ignorance. To the wave of humanity that poured into the Sierra during the Gold Rush, bighorn were ready mutton, especially during winter months when herds descended to snow-free winter ranges.

After the gold-seekers came domestic sheepherders, whose herds confronted bighorn with the double onslaught of disease and overgrazing. John Muir referred to the domestic sheep as "hoofed locusts." At the turn of the century scabies destroyed at least one large herd that ranged in what is now the heart of Sequoia National Park.

In 1878, in an amazingly laudable action for the day, the California legislature voted to outlaw hunting of bighorn. Unfortunately, there was little enforcement. The first arrest occurred in 1911, the second in 1932.

By the 1930s few if any sheep had survived north of Owens Valley. The

Owens Valley, with its 5,000-foot elevation at the foot of the eastern slope, provides nutritional, snow-free range and quick access to rocky outcroppings to avoid dangers. In the areas north of the Owens Valley (Yosemite, Sonora Pass and Donner Pass), sheep had to cross high open rangeland — where they were easily shot by ranchers and miners — to reach wintering areas.

In the 1940s and 1950s some fairly casual censusing of Sierra bighorn took place, but it wasn't until the 1970s that the first accurate census was taken. Wildlife biologists found that the total number of Sierra bighorn was only around 250, most of them in a single herd on the slopes of Mount Baxter, north of Mount Whitney. Near the Baxter herd, a second small group was found.

The bighorn live just outside the eastern boundary of Sequoia and Kings Canyon national parks during much of the year, so a 41,000-acre preserve was set aside to protect them. Human use was restricted, and money was set aside to study the sheep.

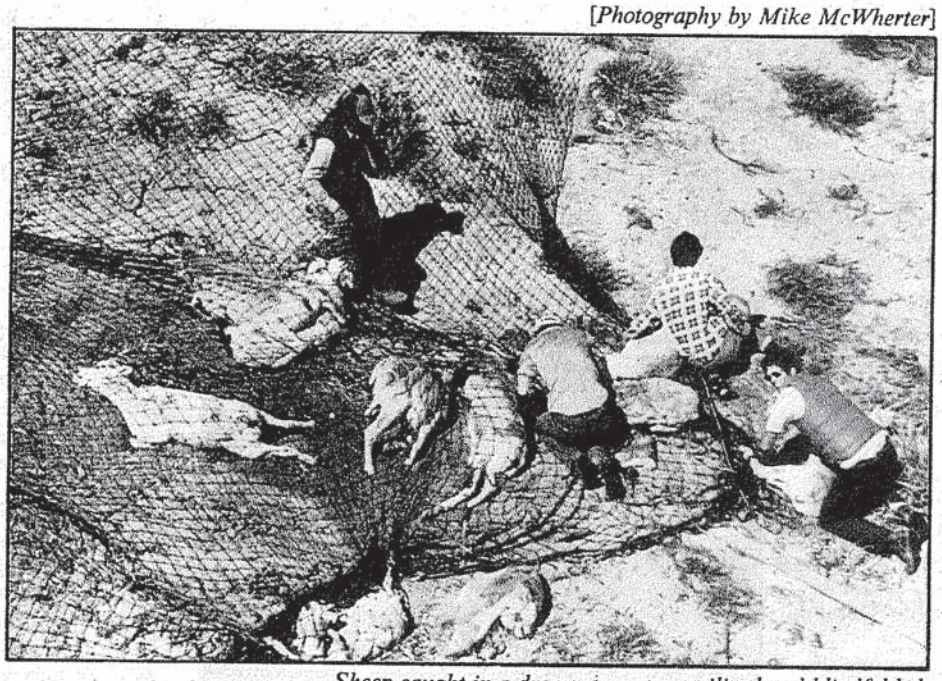
In 1975 John Wehausen — who holds the only Ph.D. in studies of Sierra bighorn sheep — began an exhaustive five-year study of the animals. Using telescopes, analyzing fecal samples and spending countless hours observing, Wehausen gathered essential information on diet, predation, herd behavior, general herd health, demographic trends and effects of human contact with bighorn.

Wehausen and other researchers found that the Sierra bighorn maintained boundaries: Even in years of heavy snow, when winter ranges were covered, forcing sheep to eat woody parts of shrubs, they would not move to an unfamiliar range. "Apparently, they operate as if they're on an island," says Wehausen. "They migrate up and down the slope, but rarely leave their home range."

In the late 1970s Wehausen noted a rapid population increase in the Baxter herd. Some biologists feared that such a surge in population might be followed by a crash once the habitat's carrying capacity was reached. Fears aside, more animals meant it was now possible to capture some and reintroduce them to their historic range.

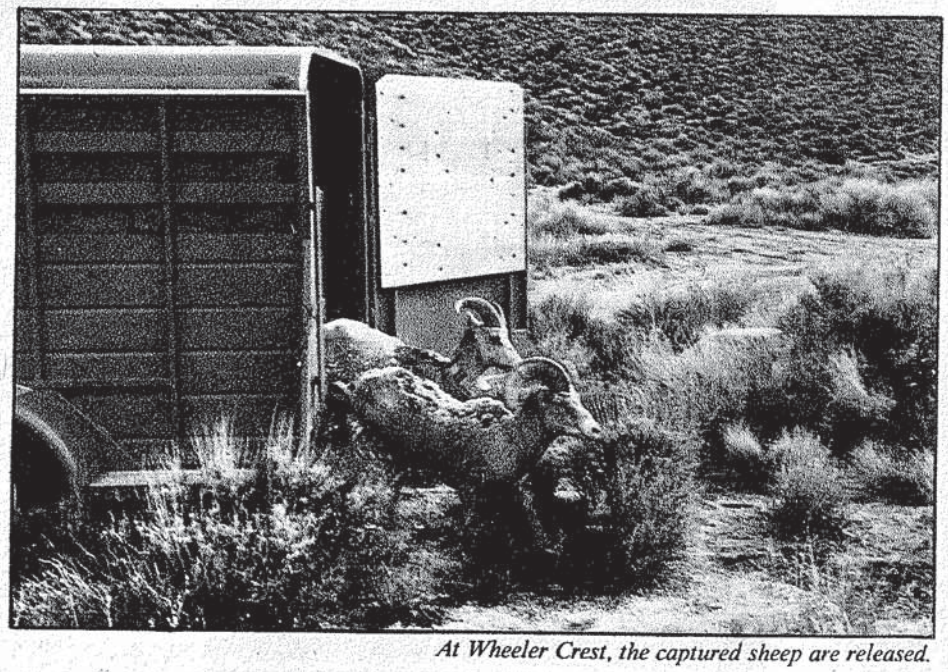
Department of Fish and Game biologist Dick Weaver, who had just finished the first comprehensive census of bighorn throughout California (there are about 3,400 desert bighorn, of different subspecies than Sierra bighorn), got together with Wehausen. Together they decided that the time was right to try reintroductions. First, though, Weaver had to convince superiors that a reintroduction would work. At the time the upper echelons of the department were hesitant to approve plans involving officially "rare" animals. There were always unforeseen problems when wild animals were captured. Weaver persisted and got the green light.

[*Photography by Mike McWherter*]



Sheep caught in a drop net are tranquilized and blindfolded.

The first time, the sheep came readily to the bait, but then — unexpectedly — milled around, wanting the pulp, but not trusting the net. The stand-off ended when wind blew the net down.



At Wheeler Crest, the captured sheep are released.

Weaver and Tom Blankinship, from the Department of Fish and Game's Inyo County office, meticulously studied capture plans. A team of vets and volunteers was formed. Murray Fowler, from the UC Davis veterinary school, was consulted. Fowler has a reputation for heading projects that have successfully captured and transported some of the rarest, most sensitive creatures in the world. Fowler suggested using M-99, an extremely potent drug that requires special clearance to handle. An injection of M-99 quickly sedates a captured animal before it has a chance to succumb to shock. As soon as handling is completed, an antidote is given that immediately erases all effects of the drug.

The team decided to use a drop net baited with apple pulp in places sheep congregate during winter months. The net would be set up with small explosive charges that would sever ropes holding it up once the sheep walked under it. Once netted, the sheep would be tranquilized, blindfolded, trussed and helicoptered to vehicles that would transfer them to Wheeler Crest, 40 miles to the north.

The team worked on a shoestring budget. "Dick Weaver came up with a dump truck full of apple pulp," Blankinship recalls, "and volunteers lugged it on their backs to the capture site."

The sheep came readily to the bait, but the unexpected happened. The sheep milled around, wanting the pulp but not trusting the net. The concealed team sat patiently for hours trying to outwait the sheep and the wind before their own bodies became too cold to function. The stand-off ended when the wind blew the net down and the sheep scattered. Once the weather cooperated and the sheep became less distrustful, they entered, the net was dropped and the team sprung into action. Four pregnant ewes and five rams were caught and safely released in their new home.

At first the reintroduction went well. The sheep remained low on the slope for the winter and followed the snow melt up in the spring. All four ewes successfully lambed. The sheep summered at the 12,000-foot crest and appeared healthy. However, when the storms arrived that traditionally signal

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lownhill migration, only one ewe and lamb lescended while the rest remained above 0,000 feet, far above the snowline.

Louis Andaloro and Rob Ramey, two UC anta Cruz students, volunteered to monitor he reintroduced herd. The ewes and two ams had been outfitted with telemetry col-rs to aid in following their movements. Vhile braving sub-zero temperatures and isking death from frequent avalanches com-ion to the eastern Sierra, Andaloro and amey doggedly tracked the little band. efore Andaloro was injured in a 100-foot fall ff an icy ledge, they found that two lambs ad perished in the sub-freezing tempera-ires. Then one cold January morning a lemetry collar on a ewe stopped working. /hen Ramey reached the area where the llared ewe had last been seen, he found bris from a massive avalanche and a coyote ting the dead lamb he had dug from the ow. Later Andaloro and Ramey found a m that had been swept to its death with the ve and her lamb.

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During the 1979-80 winter, Weaver and ankinship went to work catching 31 more ep at Mount Baxter. Again, not an animal s lost — a rarity considering the many iables a capture team must face. This e, newly devised drive nets, as well as the drop net, were used. Ten sheep were released in the Warner Mountains in Northern California, eleven were taken to Mount Langley at the southern terminus of the Sierra and ten were added to the winter range of the first group at Wheeler Crest.

At first there was concern when two of the new releases wearing telemetry collars were killed by mountain lions. Did the colorful collars that aided researchers studying the sheep also aid lions in finding a meal? But when the sheep became familiar with their surroundings there were no more lion kills.

That winter Wehausen's prediction proved correct. The first Wheeler Crest band followed the ewe downhill and the second group joined them in their snow-free winter range, ensuring lamb survival and — most importantly — proving that transplanting Sierra bighorn can work.

One more time, Blankinship and Weaver caught additional sheep and supplemented the Wheeler Crest Group and the Mount Langley Group. It was decided that no other reintroductions would be tried until the parent herd's ability to regenerate and the staying power of the reintroductions were studied.

The 1982 census of reintroduced sheep gave project planners reason for celebration. The Wheeler Crest herd had established solid migratory patterns, had a large lamb crop and now numbers more than 30 animals. In the jargon of the wildlife biologist, it is a viable herd.

The group in the Warner Mountains had grown to twenty animals, and if the group holds its numbers and has another good lamb crop, it will be considered viable by 1983.

The Langley Group is a question mark. The terrain is extremely rugged, and finding the sheep has been difficult. Backpackers have seen ewes with lambs, but attempts to get a total count have not been successful.

The parent herd on Mount Baxter is quickly replenishing animals lost to reintroductions.

Tom Blankinship sums up the significance of the project and makes a prediction: "We've found the sheep can be successfully trapped and that they take readily to new territory. It is conceivable that Sierra bighorn will be restored to much of their original habitat by the turn of the century."

But Dick Weaver adds a cautionary note: "As long as there is adequate funding. There is even less money coming down the pipe these days. We barely scraped together the necessities this last time around. I'm hoping for philanthrophic help." □