Monitoring the bighorns

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LUCERNE VALLEY — Human activity and the barren slopes of mines in Lucerne Valley have not been enough to drive away a small herd of bighorn sheep, which seem to like the hilly terrain and often approach trucks.

They come so close to people that Dayan Anderson, the environmental engineer for Specialty Minerals Inc. mine, has given several of them nicknames.

The small group of about 25 bighorns known as the Cushenbury herd appears to be doing well, but a collaborative of three local mines, the U.S. Forest Service, the California Department of Fish and Game and Victor Valley College is conducting an ongoing study to gain more insight on how the mines affect them. The High Desert Bighorn Collaborative has outfitted the sheep with collars that collect Global Positioning System, or GPS, information, and they are programmed to drop off the bighorns' necks this fall.

At that time, information about the bighorns such as movement and grazing habits will be taken from the collars.

"The GPS info on the collars will tell us whether some of the mine activities are disturbing the sheep, if they move out from mine activities like blasting, and if they're using the reclaimed areas of the mines," said Fish and Game wildlife biologist Jeff Villepique.

Mining companies have also been working with the U.S. Forest Service and Victor Valley College to protect four federally endangered and threatened plant species known as carbonate endemics that grow on limestone deposits, and are unique to the area.

Cushenbury buckwheat, Cushenbury milk-vetch and Cushenbury oxytheca are federally endangered, and Parish's daisy is federally threatened. Since the plants grow in areas that are also commercially valuable for limestone mining, the mines and conservationists came together in 1999 to work out a management plan.

The result, said Victor Valley College agriculture and natural resources teacher Neville Slade, is "one of the truly well thought out conservation plans, and it's right in our backyard." Under the plan, some of the area it covers is being using for mining and a limited amount of land has been put aside in a permanent reserve. As more land is mined, more must also be added to the reserve at a ratio of three units of reserve land for each mining unit.

"Both Mitsubishi and [Specialty Minerals Inc.] have expansions in the works, and both will be using the strategy," said Scott Eliason, the district botanist for the Mountaintop District of the San Bernardino National Forest. The expansions will result in the loss of "quite a bit of carbonate habitat."

Because only two of the four plant species have been successfully propagated, the management strategy focuses on setting aside the best original habitat where they are already growing, Eliason said.

The strategy also makes the 35,000-acre carbonate habitat area part of the U.S. Forest Service and U.S. Bureau of Land Management's local management plans, and directs federal land acquisition

money to the project, he said.

In a twist that could pose a challenge to conservation efforts, the bighorn sheep seem to enjoy eating the endangered plants and other seedlings planted by the mines. Often, the fresh plants are the greenest, most appealing foraging available in the dry valley, Villepique said. A study of the bighorn's pellets will reveal more about what they are eating.

Although the mines have been collecting data on the Cushenbury herd for about 15 years, students at Victor Valley College helped to finally organize it, Slade said. They produced a digital atlas with information from the collars using geographic information system, or GIS, technology.

"Basically, we produced something they were trying to with a consultant for thousands of dollars in the Santa Monica flock," Slade said.
Some of Slade's former students have carved out careers in conservation and reclamation. Jeff Crouse and Jennifer Hinojosa formed JJ Restoration Service, which helps with revegetation efforts at the mines, after doing similar work in classes at the college.

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