Sierra Nevada Ally

US Fish and Wildlife Service concludes that animals killed nearly half of rare Tiehm's buckwheat population

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Tiehm's buckwheat is known to exist on 21 acres in the Silver Peak range of Nevada, a distinctly remote area half way between Tonopah, Nevada and Bishop, California. Biologists have identified 6 populations of the rare plant in the region, and according to the proposed plan of operations for the Rhyolite Ridge Lithium-Boron mine, two of these populations are located where an open pit mine is proposed.

On September 8, 2020, lab technicians from the University of Nevada Reno (UNR) visited the Tiehm's buckwheat populations to make general observations and note seasonal changes.

"We noticed that quite a few of the mature plants near our transect had holes dug around their bases," reads a report titled Eriogonum tiehmii herbivory observations.

"Many plants were completely excavated and were lying beside the holes with their taproots severed. The cuts on the taproots were not straight and clean as if they had been mechanically clipped, but were uneven, with ragged edges and bark missing near the ends, suggesting that they had been gnawed off. Most of these remnants were fairly intact, with the caudex, leaves, and flower stalks appearing un-chewed; however, some larger plants had been completely shredded, and were lying in scattered pieces below the holes.

"We did not notice any human or large animal tracks immediately surrounding the holes, and the disturbance looked very similar to what we had observed at the transplant sites I'd worked on earlier in the summer, which had primarily been caused by a couple species of small rodents, so we assumed they had been created by some small mammal."

According to the Nevada Department of Conservation and Natural Resources (DCNR), on September 9th, the Nevada Division of Natural Heritage (NDNH) first received the report of Tiehm's buckwheat damage from the UNR field team. The UNR field team promptly and simultaneously sent their observations to the US Fish and Wildlife Service (USFWS) and US Bureau of Land Management (BLM).

In an email, a DCNR spokesperson said that the BLM and EM Strategies initiated an investigation, with the first field inspection by BLM on September 11th.

The USFWS acknowledged receipt of the UNR field team observation, and then on the weekend of September 12, Patrick Donnelly, Nevada state director, Center for Biological Diversity, and Dr. Naomi Fraga, director of conservation at the California Botanic Garden, visited the Tiehm's population and noted the destruction of the buckwheat and sent their findings to USFWS on September 15.

According to a statement from USFWS, the agency explored the issue with the Nevada Division of Forestry, the Bureau of Land Management, UNR, and ioneer in an effort to attain more information and determine next steps. ioneer is an Australian-based company proposing to develop the Rhyolite Ridge Lithium-Boron mine.

In a phone conversation on September 18, President of EM Strategies Richard DeLong said that his company completed a field assessment of the damage to the Tiehm's buckwheat. Based on what they found, he concluded that the destruction was an act of herbivory. DeLong said another species of buckwheat was also affected and that he is conducting a detailed survey of the damage.

Patrick Donnelly said that the destruction appeared to have been perpetrated by human vandals, a premeditated operation.

"It certainly appears that way to us," Donnelly said over the phone on September 16. "We went out there over the weekend, and we discovered dramatic impacts to the buckwheat. Some were destroyed, some were half destroyed, and there were many holes in the ground where buckwheat

were removed. So we saw evidence of humans doing this including recent footprints, developing social trails, and scrapes consistent with some sort of trowel being used to dig up these buckwheat."

On December 4, the USFWS released a statement saying that the agency has concluded the Tiehm's mortality was an act of herbivory.

"An environmental DNA (eDNA) analysis conducted on damaged Tiehm's buckwheat roots, nearby soils and rodent scat strongly links small mammal herbivory to the widespread damage and loss of Tiehm's buckwheat reported in September 2020," reads the press release.

The U.S. Fish and Wildlife Service and the Bureau of Land Management, according to the release, contracted a researcher affiliated with Southern Utah University to conduct an independent review and analyze materials collected from the area for eDNA. According to the USFWS, "the analysis found squirrel, deer and a small trace of human DNA on root samples and soils near damaged or dead plants.

"Buckwheat DNA was detected in the scat, and the genetic signatures were a strong match (96.9-99.8 percent) to ground squirrels. This coupled with known white-tailed antelope ground squirrel populations at Rhyolite Ridge, burrowing at damaged plants, and rodent bite marks on plant roots strongly supports that ground squirrels were responsible for the damage. Current drought conditions likely motivated the rodents to seek moisture by consuming the shallow taproots of mature buckwheat plants. This is the first time herbivory was documented on Tiehm's buckwheat and its significance depends not only on its frequency and intensity, but whether damaged plants can recover and survive."

Within hours of yesterday's USFWS announcement, ioneer called a press conference to make a statement on the decision. James Calaway, executive chairman of ioneer ltd, read a prepared statement and took a few questions from reporters.

"As you may know, U.S. Fish and Wildlife Service just issued its final report, based upon on extensive-site evidence and full investigation, that conclusively shows that the destruction of Tiehm's buckwheat at Rhyolite Ridge discovered in mid-September was animal-caused," Calaway said by phone. "This report categorically refutes the irresponsible assertion by the Center for Biological Diversity that this was an intentional human attack. The fine work by the responsible federal agency, which we supported in any way we could, provides important information that will help ioneer develop and implement practical and prudent measures to support the protection and propagation of Tiehm's Buckwheat moving for-ward."

Patrick Donnelly is not on record naming ioneer as the destroyer of the plants, but when Calaway was asked if he felt ioneer was impugned by the assertion that humans had destroyed the plants, he said, "yes."

In his remarks, Calaway emphasized the importance of both lithium and boron to the development of renewable energy sources and batteries for automobiles. But Calaway went on to call-out the Center for Biological Diversity for what he called "false conspiracy theories."

"But in this rare plant's time of great need, there was unfortunately one group, Center for Biological Diversity or CBD, that went to great lengths to broadcast far and wide false conspiracy theories that grossly mislead the public and the media," said Calaway. "Their blunt accusations against responsible government agencies and with particular venom at ioneer, unfortunately created a climate of wasted effort and impeded the truth. They should have focused on working to determine the real cause of the incident and helping develop credible plans to properly manage future threats."

Endangered Species Listing

On October 7, 2019, Center For Biological Diversity (CBD) petitioned the US Fish and Wildlife Service to protect the Tiehm's buckwheat under the Endangered Species Act. Concurrently, the CBD petitioned the Nevada Division of Forestry to protect the rare plant under state law. The petitions are under consideration.

On September 29 of this year, following the destruction of nearly half the extant Tiehm's population, the Center for Biological Diversity sued the U.S. Fish and Wildlife Service and Bureau of Land Management seeking emergency Endangered Species Act protection for the Tiehm's buckwheat.

"Our litigation is agnostic about the cause of the destruction," Donnelly wrote in an email. "We argue that a greater than 50 percent loss in population, essentially overnight, clearly indicates the need for an emergency Endangered Species Act listing.

"ioneer's transplanting experiment was a complete failure – they have no plan for how to conserve this species when they plan on destroying most of its habitat with a strip mine. Whether it was rodents or humans, Tiehm's buckwheat obviously is in dire need of protection, and we feel confident a judge will agree with that assessment."

Dr. Naomi Fraga, director of conservation at California Botanic Garden, cast doubt on the herbivory conclusion.

"I would be cautious about interpreting the result of this study as definitive proof that rodents caused the extensive damage observed at the Tiehm's buckwheat population," Fraga wrote in an email. "I am familiar with eDNA studies and I have co-authored a paper utilizing eDNA data. This report appears to provide evidence that buckwheat plant parts have at some point been eaten by white-tailed antelope ground squirrels at Rhyolite Ridge. But I don't see how this line of evidence can substantiate that the entirety of the wide scale damage was caused by small mammals."

Rhyolite Ridge Lithium-Boron Mine

Like most species of wild buckwheat, Tiehm's buckwheat has adapted to an environment typically difficult for plant life. The small flower exists at roughly 6,000 feet elevation in an unforgiving region that sees a fraction of an inch of precipitation a year.

The plant is adapted to very specific soils, a substrate that is high in boron and lithium, which are the target minerals for the Rhyolite Ridge Lithium-Boron mine project.

Typically, mines on federal land must develop an Environmental Impact Statement and work though the environmental and public scrutiny mandated by the National Environmental Policy Act (NEPA). But because the Rhyolite Ridge project uses less than one square mile of land, the company is only required to complete a less rigorous Environmental Assessment, a concern for environmentalists.

If the Tiehm's buckwheat were listed as an Endangered Species, it would be much more difficult, if not impossible, to gain approval to mine the earth from beneath the plants.

The Endangered Species Act requires federal agencies, in consultation with the U.S. Fish and Wildlife Service and/or the NOAA Fisheries Service, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species, plant or animal.

During yesterday's press conference, Calaway said ioneer is committed to preserving the Tiehm's buckwheat but is opposed to listing the plant under the Endangered Species Act. He said ioneer is intent to preserve the plant through collaboration with stakeholders and government agencies, should the mine be approved.

"By working thoughtfully and in earnest together at Rhyolite Ridge, we can ensure that we both protect and uplift Tiehm's Buckwheat, while at the same time making sure that we deliver Rhyolite Ridge and quadruple our nation's lithium production just as it is needed most."