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Andy Ostmeyer: American burying beetle fight goes into next round

- Andy Ostmeyer
- 14 hrs ago

The tiny American burying beetle is playing an outsized role in conservation debates heating up with a new administration.

The beetle is famous for a couple of reasons: In 1989, it was one of the first insects added to the federal endangered species list, and the decadelong effort to restore it to virgin prairies in Southwest Missouri marked the first reintroduction of an endangered species to the state.

Although not as charismatic as other endangered species, such as the wolf, it is no less controversial.

The U.S. Fish and Wildlife Service last fall announced it was downlisting the American burying beetle from endangered to threatened. That decision earned praise from some politicians and industry groups who ultimately favor complete delisting but was criticized by some conservation organizations as premature and unsupported by science. Earlier this month, one of those groups, the Center for Biological Diversity, announced plans to sue if the downlisting isn't overturned.

“Far from having recovered, this striking orange-and-black beetle is facing dire threats from climate change and habitat destruction,” Kristine Akland, an attorney with the center, said in a statement announcing the lawsuit. Akland said the downlisting was a result of pressure from the oil and gas industry.

With the switch from a Trump to a Biden administration, they are hoping for a review of the downlisting that will be overturn it; failing that, they said they will go to court.

USFWS spokeswoman Lesli Gray would only say the agency “used the best available science in its decision to downlist the American burying beetle," and she declined to comment about the lawsuit, saying officials haven't had a chance to review it.

The agency defines as endangered any species that is at risk of extinction throughout all or a significant portion of its range; a threatened species is one that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

10,000 traps

How the beetle ended up in the middle of this fight is a long story, perhaps even intertwined with the fate of a much more famous and now extinct species — the passenger pigeon.

Historically, the beetle was found in much of the eastern and central United States — across 35 states — but by 1989, there were only two known populations of the beetle surviving in the wild: one in Rhode Island and the other in Oklahoma. The beetle experienced “one of the most disastrous declines of an insect’s range ever to be recorded,” according to federal records.

Surveys in Missouri started in 1991, and a ramped up effort led by experts began in 2002. At one point, scientists put out 10,000 traps at dozens of sites around the state. Not a single beetle was found. Before the reintroduction, the last American burying beetle on record in Missouri was collected in 1972 in Newton County.

Since its listing as endangered, subsequent surveys for the American burying beetle have turned up populations in a number of Midwestern states, including Oklahoma, Kansas and Arkansas, but scientists say the beetle is still missing across most of its former range. Some scientists argue that those remaining populations in the Midwest are isolated from each other and small, making them vulnerable.

Scientists offer a number of theories for the beetle’s decline, including the widespread use of DDT and other pesticides, habitat loss and fragmentation, and possibly the loss of the beetle’s primary food source, which is carrion. One theory holds that the extinction of the passenger

pigeon — so numerous it once darkened the skies — had a ripple effect for carrion eaters, including burying beetles.

Now, they say, the beetle faces a new threat.

Missouri, so far

From 2012 to 2018, a total of 2,800 beetles were stocked at Wah' Kon-Tah Prairie near El Dorado, and in 2019 and 2020, more were stocked at Taberville. Both sites contain remnants of original tallgrass prairie, providing ideal habitat, according to scientists. Restocking means scientists and volunteers dig a small hole in the prairie and place in it the carcass of a quail and a pair of beetles before replacing the soil. To track the beetles that were stocked, scientists notched the elytra, which is the hard, modified forewings that encase the thin hindwings used by beetles in flight. The notch distinguishes captive-bred beetles from wild beetles.

Following the stockings each year, scientists returned to Wah'Kon-Tah to look for evidence of reproduction, and so far, it has been mostly positive. The summer and fall of 2016 was a peak — more than 850 beetles were trapped on the prairie — 473 of those were unnotched, meaning they were offspring. Each spring before stocking, scientists also check for what they call "overwintering" beetles and again have evidence of success each year.

Another signal of success: The beetles have expanded their territory, first to nearby Monegaw Prairie Conservation Area, which is about a mile away from Wah' Kon-Tah, and then to the Linscomb Wildlife Area and the Schell Osage Conservation Area, two other public tracts that are a few miles farther yet. The beetles also have been found on nearby private land up to several miles away.

Political fight

While the restoration has been going on, the beetle found itself in a political fight.

Noah Greenwald, endangered species director with the Center for Biological Diversity, said last year that a 2015 petition from the Independent Petroleum Association of America prompted a review of the beetle's status. He also said the downlisting happened even though the beetle

population had not met criteria outlined in a 1991 federal recovery plan, which called for three populations of at least 500 individuals in each of four regions of the country.

He also said that the beetle is still missing from most of its historic range and now facing another threat — climate change.

“Far from recovering," he wrote, "American burying beetles are spiraling toward extinction as their habitat is sacrificed to oil and gas development that’s also making our world too hot for the species to survive."

Akland said the USFWS has concluded that, "As early as the next 20 years, the Southern plains population (Oklahoma, Texas) could be extinct. That is 60% of the population."

She also argued that even when the beetle was listed as endangered, "the oil and gas industry in the Permian basin was booming."

However, U.S. Sen. Jim Inhofe, R-Okla., said last fall the downlisting is "the right call and the first step to total delisting."

"Since it was listed over 30 years ago, the population of the (beetle) has made a resurgence — dramatically expanding the areas that are forced to deal with cost and red tape to work around its habitat," he said last fall. "(The) action provides important regulatory relief to our farmers, ranchers, home builders, developers and energy industry that have long been plagued by the unnecessary endangered listing of this species.”

In a statement, the Petroleum Alliance of Oklahoma also argued in favor of changing the status for the beetle, noting that it will make it easier for members to work in areas where the beetle is present. Mallori Miller with the Independent Petroleum Association of America trade group said recently she is confident the new threatened listing for the beetle will be upheld.

“The beetle’s listing was rooted in faulty assumptions about the species’ range, distribution and abundance,” she said.

Next for Missouri?

Regardless of the downlisting and the ongoing political and possibly legal fight, the effort to restore the beetle to the prairies in Southwest Missouri will continue, say scientists.

In 2019, for the first time since stocking began at Wah' Kon-Tah, scientists stepped back to see how the beetles would do on their own, without supplementing the population and providing a food source. They likened it to taking the training wheels off a child's bike and letting go.

Instead, they shifted their stocking effort to nearby Taberville. They hope for three more years of stocking there.

Efforts to find out how well the beetles were doing at Wah' Kon-Tah without the stocking and also at Taberville in 2020 were undermined this year because of COVID-19, which limited the ability to survey.

Ultimately, scientists say success will mean a stable, self-sustaining population in the region, and it's too early to tell how close they're getting in Southwest Missouri.

Hopefully we'll learn more about the status of the Missouri reintroduction this year.

The Associated Press contributed to this report.