

Wind energy boom and golden eagles collide in the US West

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Clouds cast shadows near wind turbines at a wind farm along the Montana-Wyoming state line on Monday, June 13, 2022. The rush to build wind farms to combat climate change is colliding with preservation of one of the U.S. West's most spectacular predators, the golden eagle. Scientists say the species is teetering on the edge of decline and worry that proliferating wind turbines could push them over the brink. Credit: AP Photo/Emma H. Tobin

The rush to build wind farms to combat climate change is colliding with preservation of one of the U.S. West's most spectacular predators—the golden eagle—as the species teeters on the edge of decline.

Ground zero in the conflict is Wyoming, a stronghold for golden eagles that soar on seven-foot (two-meter) wings and a favored location for wind farms. As wind turbines proliferate, scientists say [deaths from collisions](#) could drive down golden eagle numbers considered stable at best and likely to drop in some areas.

Yet climate change looms as a potentially greater threat: Rising temperatures are projected to reduce golden eagle breeding ranges more than 40% later this century, according to a National Audubon Society analysis.

That leaves golden eagles doubly vulnerable—to the shifting climate and to the wind energy promoted as a solution to that warming world.

"We have some of the best golden eagle populations in Wyoming, but it doesn't mean the population is not at risk," said Bryan Bedrosian, conservation director at the Teton Raptor Center in Wilson, Wyo. "As we increase wind development across the U.S., that risk is increasing."

Turbine blades hundreds of feet long are among myriad threats to golden eagles, which are routinely shot, poisoned by lead, hit by vehicles and electrocuted on power lines.



Ecologist Bryan Bedrosian with the Teton Raptor Center prepares to return a young golden eagle to its nest after banding the bird for future tracking as part of a long-term population study of the species, on Wednesday, June 15, 2022 near Cody, Wyo. Bedrosian says combined eagle deaths from wind farms illegal shootings, vehicle collisions and lead poisoning threaten to push the species into decline if more isn't done to address those problems. Credit: AP Photo/Matthew Brown

The tenuous position of golden eagles contrasts with the conservation success of their avian cousins, bald eagles, whose numbers have quadrupled since 2009. There are about 350,000 bald eagles in the U.S., versus about 40,000 golden eagles, which need much larger areas to survive and are more inclined to have trouble with humans.

Federal officials have tried to curb turbine deaths, while avoiding any slowdown in the growth of wind power—a key piece of President Joe Biden's climate agenda.

In April, a Florida-based power company pleaded guilty to criminal charges after wind turbines killed more than 100 golden eagles in eight states. It was the third conviction of a major wind company for killing eagles in a decade.

Dangling from a rope 30 feet (9 meters) above the ground with a canvas bag slung around his neck, Bedrosian shouldered his way into a golden eagle nest lodged in a cliff ledge. The scientist made an awkward grab for the young eagle in the nest, slid a leather hood over its head then wrestled it into the bag.



Eagle researcher Charles "Chuck" Preston carries a young golden eagle that was temporarily removed from its nest as part of research related to long-term population studies of the birds, on Wednesday, June 15, 2022 near Cody, Wyo. Preston and other researchers are trying to find ways to reduce golden eagle deaths from collisions with wind turbines. Credit: AP Photo/Matthew Brown

The six-week-old bird was lowered and carefully extracted by Bedrosian's colleague, Charles Preston, a zip tie around its feet as a precaution against inch-long talons.

"The key is not to forget later to cut the zip tie," Bedrosian said.

The eaglet went on a scale—about seven pounds (3.2 kilograms). Bedrosian drew some blood from a wing to test for lead exposure, and Preston clamped a metal identification band onto each leg.

Golden eagles don't mate until about 5 years old and produce about one chick every two years, so adult eagle deaths have outsized impacts on the population, said Bedrosian.

Illegal shootings are the biggest cause of death, killing about 700 golden eagles annually, according to federal estimates. More than 600 die annually in collisions including with cars and wind turbines.



Ecologist Bryan Bedrosian with the Teton Raptor Center prepares to return a young golden eagle to its nest after banding the bird for future tracking as part of a long-term population study of the species, on Wednesday, June 15, 2022 near Cody, Wyo. Scientists say U.S. golden eagle populations are teetering on the brink of decline as deaths from wind turbines, illegal shootings, lead poisoning and other causes take a toll on the species. Credit: AP Photo/Matthew Brown

"Wind mortality wasn't a thing for golden eagles 10 years ago," Bedrosian said. "I don't want to pick on wind as the only thing. ... But it's the additive nature of all these things and several are increasing. Vehicle strikes are increasing. Climate change is increasing. Wind is increasing."

The recent criminal prosecution of a NextEra Energy subsidiary offered a glimpse into the problem's scope.

The company was ordered to pay more than \$8 million in fines and restitution for killing eagles at wind farms in eight states.

NextEra remained defiant after the plea deal: Its president said bird collisions with turbines were unavoidable accidents that should not be criminalized.

Duke Energy and PacifiCorp previously pleaded guilty to similar charges in Wyoming. North Carolina-based Duke was sentenced in 2013 to \$1 million in fines and restitution and five years probation following deaths of 14 golden eagles, and a year later, [Oregon-based PacifiCorp received \\$2.5 million in fines](#) and five years probation over 38 killed eagles.



Cattle graze near wind turbines at a wind farm along the Montana-Wyoming state line on Monday, June 13, 2022. The rush to build wind farms to combat

climate change is colliding with preservation of one of the U.S. West's most spectacular predators, the golden eagle. Scientists say the species is teetering on the edge of decline and worry that proliferating wind turbines could push them over the brink. Credit: AP Photo/Emma H. Tobin

The number of wind turbines nationwide more than doubled over the past decade to almost 72,000, according to U.S. Geological Survey data.

To control the impact on eagles, federal officials want companies to obtain permits that allow them to kill some birds if the deaths are offset. Companies then pay utilities to retrofit power poles, so eagles can't be easily electrocuted. Every 11 poles retrofitted typically counts as an eagle death avoided.

Nationwide, 34 permits last year authorized companies to "take" 170 golden eagles—meaning that many birds killed by turbines or lost through impacts on nests or habitat. An Associated Press public records review shows most are wind farms.

"This sounds crass but it's realistic. Eagles are going to be incidentally killed at wind farms," said Brian Millsap, who heads the wildlife service's eagle program. "We've got to reduce other things that will allow wind energy development."



Power lines stand near hills outside Cody, Wyoming on Wednesday, June 15, 2022. The region is ground zero in the conflict between golden eagles and wind energy, which both find homes in areas where there are strong winds. As wind turbines proliferate, scientists say deaths from collisions could drive down golden eagle numbers considered stable at best and likely to drop in some areas. Credit: AP Photo/Emma H. Tobin



The talons of a six-week-old young golden eagle are seen as the bird's feet are held by Charles "Chuck" Preston during research work at a nesting site, on Wednesday, June 15, 2022, near Cody, Wyo. The recent criminal conviction of a wind energy company for illegal eagle killings in Wyoming underscored the clash between renewable energy to fight climate change and efforts to preserve the iconic western U.S. species. Credit: AP Photo/Matthew Brown



A droplet of blood from a young golden eagle is put into a vial by researcher Bryan Bedrosian with the Teton Raptor Center, after the bird was temporarily captured at a nesting site on Wednesday, June 15, 2022, near Cody, Wyo. Lead poisonings are a significant cause of golden and bald eagle deaths. Credit: AP Photo/Matthew Brown



Researcher Charles "Chuck" Preston places a young golden eagle into a bag so it can be returned to its nest after the bird was temporarily removed as part of research into the species' population, on Wednesday, June 15, 2022 near Cody, Wyo. Climate change could significantly reduce golden eagle ranges, but wind farms that are being built to counter climate change also cause eagle deaths as they collide with turbines. Credit: AP Photo/Matthew Brown



This Monday, June 13, 2022 photo shows a wind turbine at a wind farm along the Montana-Wyoming state line. The rush to build wind farms to combat climate change is colliding with preservation of one of the U.S. West's most spectacular predators, the golden eagle. Scientists say the species is teetering on the edge of decline and worry that proliferating wind turbines could push them over the brink. Credit: AP Photo/Emma H. Tobin



Wind turbines stand at a wind farm along the Montana-Wyoming state line on Monday, June 13, 2022. The rush to build wind farms to combat climate change is colliding with preservation of one of the U.S. West's most spectacular predators, the golden eagle. Scientists say the species is teetering on the edge of decline and worry that proliferating wind turbines could push them over the brink. Credit: AP Photo/Emma H. Tobin



Seasonal biologist Adrian Rouse prepares to practice rappelling down a cliff on Wednesday, June 15, 2022 in Cody, Wyo., while Bryan Bedrosian, conversation director at the Teton Raptor Center, supervises. The scientists are monitoring populations of golden eagles, which live on cliff faces in the U.S. West. Nationally, the species is teetering on the edge of decline. Credit: AP Photo/Emma H. Tobin



This Wednesday, June 15, 2022 photo shows hills outside Cody, Wyo. The region is ground zero in the conflict between golden eagles and wind farms, which both find homes in areas where there are strong winds. As wind turbines proliferate, scientists say deaths from collisions could drive down golden eagle numbers considered stable at best and likely to drop in some areas. Credit: AP Photo/Emma H. Tobin



This Monday, June 13, 2022 photo shows a road along the Montana-Wyoming state line. The region is ground zero in the conflict between golden eagles and wind farms, which both find homes in areas where there are strong winds. As wind turbines proliferate, scientists say deaths from collisions could drive down golden eagle numbers considered stable at best and likely to drop in some areas. Credit: AP Photo/Emma H. Tobin



Bradley University professor Anant Deshwal points to cliffs where golden eagles are nesting in Cody, Wyo., on Wednesday, June 15, 2022. He and a team of scientists, including Charles Preston, are monitoring golden eagle populations in their natural habitat the U.S. West. Nationally, the species is teetering on the edge of decline. Credit: AP Photo/Emma H. Tobin



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The nests where Bedrosian and Preston are doing population studies are about 60 miles (96 kilometers) from the nearest wind farm—114 turbines that PacifiCorp began operating about two years ago near the Wyoming-Montana border.

Personnel on site scan the skies with binoculars for eagles and can shut down turbines when they approach. Ten PacifiCorp wind farms have

permits authorizing the incidental killing of eagles, according to the company.

Company representatives declined to say how many eagles have died at those facilities. They said PacifiCorp's been building a "bank" of retrofitted power poles to offset eagle deaths and also wants to try new approaches such as painting turbine blades to be more visible and easier to avoid.

"We're working as hard as we can to avoid and minimize (deaths) up front, and then anything we can't we're mitigating on the back end," Brown said.

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