Bird in a bind

Farmers, ranchers, energy corporations, environmentalists and more are trying to save the greater sage grouse. How did one species end up in everyone's business?

by Jimmy Tobias

Heading west on Highway 12, the mountains give way to the gold-gray plains of sagebrush and native grasses. It is a dry, monotonous landscape and it hides its treasures like the sea.

Wyoming big sagebrush dominates the vista, splattered at random across the plains like coagulated paint. Its sparse foliage clings to gnarled limbs whipped day and night by hard winds. The first white naturalists who looked on this land saw in sagebrush a symbol of wilderness. They named the genus Artemisia after the Greek deity Artemis, who presides over hunters and all things wild. The bush's bitter pungency and tenacious existence are synonymous with the American West.

"Remember that the yield of a hard country is a love deeper than a fat and easy land inspires," wrote journalist and historian Bernard DeVoto. "Throughout the arid West the Americans have found a secret treasure ... a stern and desolate country, a high bare country, a country brimming with a beauty not to be found elsewhere."

Over the millennia the greater sage grouse evolved as the precise expression of this tough country. It is a sagebrush obligate, wholly dependent on the desiccated little bush. Maybe that's why the species is so damn fragile.

In March 2010, after years of legal wrangling and scientific research, the U.S. Fish and Wildlife Service declared that the greater sage grouse warranted federal protection under the Endangered Species Act. But the agency refrained from action. Other species were a priority for protection, it claimed, and the service placed the bird on a waiting list. Under direction from a federal court, it has until 2015 to decide if the West's most iconic grouse will receive the legal protection of the

federal government.

The sage grouse, Centrocercus urophasianus, is the storied hermit diva of the upland game bird world. It entered written history on March 2, 1806, when Meriwether Lewis described the species in his journal as the "cock of the plains." He observed that the bird needs wide-open spaces, and its habitat requirements are specific and nonnegotiable.

"The scale at which the birds perceive their environment is huge compared with most other species," says Dave Naugle, a wildlife biologist at the University of Montana who has studied the greater sage grouse for 13 years. "During the nesting season they use dry sagebrush upland. When it is time to raise their chicks they move to wetter lowland sites, and in the winter 98 percent of their food is sagebrush so they need large tall stands of it." They tolerate very little human disturbance, he adds. Barely a peep.

The sage grouse once made its home in 13 Western states and three Canadian provinces. Naugle estimates that their numbers were in the millions. Legends contend that their seasonal migrations could blot out the sun and fill the sky with a feathered moving mass.

Today the species is in precipitous decline across the West. Arizona, Nebraska, Saskatchewan and British Columbia no longer harbor the greater sage grouse. There are only marginal populations in Nevada and California, which prompted the U.S. Fish and Wildlife Service to move forward with listing a subpopulation in those states. Sage grouse in the Dakotas are vulnerable to extirpation. Scientists estimate that the total population throughout the range is down to 200,000 birds.

"Loss and degradation of sagebrush habitat has resulted in at least a four decade-long sage-grouse population decline and extirpation of the species from [at least] 46 percent of its native range," Naugle wrote in a report prepared for the Bureau of Land Management.

Contemporary land uses conspire against the grouse.

"Scientists have identified at least 26 different land uses and related effects that negatively impact the sage grouse," says Mark Salvo, a federal lands policy analyst with Defenders of Wildlife. "Sod busting was historically the most important threat to sage grouse in the eastern part of their range, and now it's oil and gas development. In the western part of their range, it is mostly cheatgrass invasion and livestock grazing."

The decline of the species is due to years of habitat degradation—more than a century of ranching and row cropping, and decades of oil and gas drilling, subdivision development, invasive species encroachment, disease and depredation. The result makes it all but impossible for the grouse to survive on its native home range in the sagebrush steppe of the North American plains.

Now, the Endangered Species Act, or ESA, looms large. Oil and gas companies, coal corporations, row crop farmers, cattle ranchers, real estate developers and an array of other powerful interests

are desperate to avoid an ESA listing because it will be bad for the bottom line. But how else do you protect a bird that has its beak in everybody's business?

The Lehfeldts, a ranching family in the small town of Lavina, population 187, run thousands of Rambouillet sheep on 12,000 acres of sagebrush plains. On a recent Friday, Ben Lehfeldt, stout, black-haired and boyish, sits at the family's dining room table talking about sage grouse. Ben's father, Bob, and mother, Marie, sit next to him. On the wall behind the table is a shrine to the Lehfeldt ancestors, black and white photos of the five preceding generations that called Lavina home. Ludwig Lehfeldt, Ben's great-great-grandfather, built this house in the 1890s. Out the window, the Musselshell River flows east along the crooked valley.

The Lehfeldt family ranch is part of a major effort to avert the need for ESA protections in sage grouse country. The effort is called the Sage Grouse Initiative, or SGI, and it began in Montana.

Launched in 2010, SGI is a multi-agency strategy to promote ranching as a way to protect and improve sage grouse habitat. The initiative, spearheaded by the USDA's Natural Resources Conservation Service, or NRCS, works with ranchers to reduce overgrazing of the native grasses and forbs that are a crucial part of sage grouse habitat. The birds rely on these plants for cover and food.

"The whole premise of SGI is that what's good for ranching is good for sage grouse," says Mark Szczypinski, a wildlife research technician with Montana Fish Wildlife and Parks who works with SGI. "So if the range is healthy and productive for a rancher, it will more than likely be that way for sage grouse too."

According to state estimates, 65 percent of sage grouse habitat in Montana is privately owned. Much of that land is used for ranching, and so rancher cooperation is crucial for the bird's survival.

The Lehfeldts signed up with SGI in 2010. With the agency's financial assistance, they developed a grazing plan, fenced new pastures and built water tanks so they can rotate their sheep across the landscape more frequently. Additional rotation means less pressure on any one parcel of land.

They started lining their fences with shiny reflective markers to keep the grouse from flying into fatal strands of barbed wire. Szczypinski flagging fences reduces sage grouse collisions by an estimated 83 percent.

"We put 13 miles of flagging up, six miles of fencing and we added 13 water facilities," says Bob Lehfeldt in a barely audible voice. "Another 2,400 acres are going into the SGI soon."

"We couldn't have done that type of project in a five-year period without the help of NRCS," adds Ben, who speaks with authority. "Maybe we could have done it over the next 30 years."

The Lehfeldts are clearly pleased with the program.

"It will improve how we graze over the next 30 years and then maybe we can add more livestock later," says Ben. "As for the sage grouse, hopefully it will be a win for them like it was a win for us."

Among other things, the SGI has dished out more than $234 million to flag 500 miles of fencing and secure conservation easements on 240,000 acres in prime sage grouse habitat across the West. The organization plans to spend an additional $24 million in 2014.

Some are skeptical of SGI's approach, however. They worry about the continued impact of grazing on grouse and want to see the cows and sheep go away.

"So far what we are seeing is just the same old stuff—more fences, more water development, more funding for ranchers to do things that hurt sage grouse," says Katie Fite, biodiversity director of the Western Watersheds Project. "You ask, why in the world wouldn't they use the money to buy up the land, rather than to build fences and develop water sources that keep the cows out there trampling habitat?"

Fite's concerns stem from history. Ranching has not always been friendly to the sagebrush steppe.

When conservationist Rachel Carson published Silent Spring in 1962, she included a lengthy diatribe about the plight of sagebrush country. In the middle of the 20th century, range managers across the West began a campaign of "range improvement." In their eyes sagebrush was the mortal enemy of productive rangeland and successful ranching. Thus began the era of sagebrush eradication that continues to the present day, though much diminished.

"One of the most tragic examples of our unthinking bludgeoning of the landscape is to be seen in the sagebrush lands of the West, where a vast campaign is on to destroy the sage and to substitute grasslands," wrote Carson. "Several government agencies are active in it ... the newest addition to the weapons is the use of chemical sprays. Now millions of acres of sagebrush lands are sprayed each year."

The pamphlet "Controlling Sagebrush on Rangeland", published by the U.S. Department of Agriculture in 1960, offers a view of the past policy. It presented a laundry list of sagebrush eradication methods endorsed by the federal government. For the mechanically inclined, the pamphlet recommended using a one-way disc plow to ensure "good sagebrush kills." For those who wanted a high-tech solution, it noted that "experimental spraying with 2,4-D and 2,4,5-T has produced good kills" of the pesky bush. The pamphlet boasted a smattering of before-and-after pictures to drive home the message.

For the organizers of SGI, however, the past is mostly past. Very few agencies or private landowners still engage in sagebrush eradication, they say. And ranching, they argue, is benign compared to other contemporary land uses.

"In eastern Montana the big threat is row crops," says Joe Smith, a doctoral student at the

University of Montana who works with the initiative. "SGI's main strategy is to keep ranchers ranching rather than tilling up the land, because there is no comparison between ranching and row crops when it comes to the impact on sage grouse."

Smith studies how "sod busting," as it is known, impacts sage grouse in eastern Montana. His research shows that when landowners convert native sagebrush grassland to wheat or corn or another commodity crop, it reduces the population of sage grouse within a five-mile radius of the freshly tilled ground. It is habitat fragmentation par excellence. And row crop conversion consumes more land in Montana every year.

A July 2013 study by the Environmental Working Group uses government data to estimate that farmers in Montana converted 323,539 acres of highly erodible lands—including large swaths of sagebrush steppe—into row crops in the last five years alone. The study, titled "Going Going Gone: Millions of Acres of Wetlands and Fragile Land Go Under the Plow," reports that lavish federal crop insurance subsidies and record-high grain prices are largely to blame for the uptick in sod busting. Row cropping is lucrative and a constant temptation, even for the Lehfeldts.

"When you're ranching you have to leave yourself as many possibilities as you can," says Ben Lehfeldt as he points over his shoulder. "The big chunk right out north of here would be conducive to farming. It's always a possibility."

Already, the Lehfeldts have a few plots of corn and turnips and alfalfa in the bottomlands of their vast ranch.

Tilled farmland has zero value as sage grouse habitat. Well-maintained sagebrush rangeland, on the other hand, can support plenty of birds. Naugle, who is also SGI's science advisor, sums it up like this: "Cows not plows." If that message doesn't take, the birds will continue to diminish.

"We used to have big groups of sage hens out there, oh yes," says Bob Lehfeldt. "When I was a boy you would go hunting and there would be groups of 50 or 60 birds that would rise out of the brush, especially in the fall."

"It was a meal for us," remarks Marie. "They are big birds."

When noon arrives the Lehfeldts serve lunch, though sage grouse is not on the menu. The birds are too scarce. The Lehfeldts don't hunt them anymore. Instead, Bob and Marie, Ben and his wife, Jamie, and their young son, Luke, dig into homegrown lamb and homemade gravy, with a salad and a plate of croissants to boot.

Then it's time to go. In the driveway, as the ranch recedes in the rearview mirror, a sheep dog gnaws on a stack of raw venison ribs. Fifty feet to the right, a coyote lies dead in the grass. Tough country.

On a wind-whipped afternoon, Jenney Paddock, a NRCS range specialist, and Mark Szczypinski, the FWP research technician, drive out to the plains near Lavina in search of sage grouse. They turn down a dirt road and disappear on foot, armed with telemetry equipment that Szczypinski will use to track down radio-collared grouse in the area.

Along with Paddock, Joe Smith and a handful of other scientists, Szczypinski studies the nesting habits and childrearing success of sage grouse hens. They've collared a number of local birds and monitor their movements regularly. Szczypinski stops on top of a tawny hill and scans the landscape for a signal. He and Paddock get a slow beep from the southwest. Off they go.

The scientists cross the land, splotched here and there with cow dung and deer tracks, and drop into a grease brush bottom where the birds like to congregate in winter. Pepper weed, a scrumptious forb, lies under stiff clumps of brush. The telemetry equipment beep beeps as they approach the camouflaged creatures. The scientists see the flash of a white wing and pause.

Szczypinski and Paddock inch forward quietly when 100 yards due west 20 birds burst into motion like cottonwood seed on the wind, disappearing into distant brush. Paddock and Szczypinski follow. Again they burst and disappear. And again. At each approach, the birds tease the pair with their movements, always out of reach.

"They're hermits," says Szczypinski.

The birds' skittishness is understandable. A lot of things eat the greater sage grouse. Szczypinski, for example, shows off a piece of dung he carries around with him. Sticking out of the matted excrement is a mangled radio antenna. It belonged to a collared grouse chick before it turned into a coyote chew toy. Such is a grouse's fate.

"Chick survival rates are somewhere around 20 percent," says Szczypinski, his voice struggling against the roaring wind. "And that's if the eggs hatch."

But don't blame a particular predator or a single industry for the decline of the sage grouse. "It's death by a thousand cuts," says Paddock. Habitat fragmentation and grouse mortality happen every day in a thousand different ways.

After the U.S. Fish and Wildlife Service made its 2010 announcement, federal and state land management agencies began work on a flurry of plans to stem the hemorrhaging.

In Montana, Gov. Brian Schweitzer and then Gov. Steve Bullock convened advisory councils to help develop a sage grouse conservation strategy. On Nov. 1, Bullock's Greater Sage-Grouse Habitat Conservation Advisory Council, which includes representatives from a wide range of interest groups, released a draft habitat conservation plan that lays out the state's regulatory framework for protecting the bird.

Around the same time, the Bureau of Land Management, which administers the majority of sage grouse habitat nationwide, released a slew of regional plans to manage the bird on federal land. Both the state and the BLM will focus their efforts on what they call "core areas."

"Montana Fish, Wildlife and Parks worked with the BLM about five years ago to designate core areas," says Catherine Wightman, FWP's habitat and Farm Bill coordinator. "The intent was to identify those areas that are most important to the conservation of the species." The agency met with local biologists to identify the areas with the highest population densities of sage grouse in the state. The governor's advisory council drew lines around these strongholds to create a total of 12 different core areas.

"These core areas have to be big and intact," says Naugle. "They have to keep out the major stressors like energy development and sod busting."

Montana and the BLM put forth rules to regulate future energy development inside the core areas. The Montana plan, for instance, allows no surface occupancy within one mile of active sage grouse breeding grounds, also known as leks. Oil and gas companies cannot build more than one well pad per square mile in core areas. Power companies must locate their transmission lines, which provide perches for grouse-eating raptors, at least one mile from leks or bury the lines underground. Though the BLM plans vary in detail, their stipulations follow a similar approach.

All of which has the energy industry peeved.

In September, the House Committee on Natural Resources held a listening meeting in Billings to hear from locals about the impact a sage grouse ESA listing would have in their communities. David Galt, executive director of the Montana Petroleum Association, spoke out against the BLM draft strategies.

"... New oil and gas leasing, exploration and development in Montana will be essentially terminated in areas within sage grouse habitat if the measures proposed by BLM in its [Resource Management Plan] revisions are adopted," Galt told the committee. "[No surface occupancy] stipulations, which prevent the use of the surface area of the lease, would be imposed on 50 percent of the public lands in the Miles City Field Office, 70 percent in the HiLine Field Office and 60 percent in the Billings Field Office."

At a recent press conference, the Montana Electric Cooperatives' Association announced that it supports a state management plan for sage grouse, but would like to see the plan tweaked.

"It is more restrictive than we hoped it would be ... Our biggest worry about this plan is what it's going to do to rates," said Gary Wiens, assistant general manager of MECA. "What we are urging the governor to do is to stand firm, to resist pressure to make [the plan] more restrictive."

Some conservation groups, however, argue that the state and federal plans don't go far enough.

With 18 percent of the range-wide population, Montana has the second highest number of sage grouse after Wyoming. The stakes here are high.

"While these plans would attempt to manage future land uses more carefully in sage grouse habitat, one of our major concerns is that much of the landscape has already been leased for mineral development," says Salvo, the Defenders of Wildlife policy analyst. "None of these plans would prescribe new conservation measures for existing leases."

The Cedar Creek Anticline, a long, thin oil and gas field that jabs into Montana's eastern flank like a knife, is of particular concern. The 780-square-mile anticline contains a crucial core area that links Montana's sage grouse population to sage grouse in the Dakotas. Oil and gas wells, roads and truck traffic dominate the landscape.

A 2010 study by Naugle, Rebecca Taylor and others identified 30 sage grouse leks and 265 male sage grouse in the Cedar Creek Anticline area. A look at the Montana Board of Oil and Gas webmapper application reveals that there are more than 1,000 approved, producing or completed wells that slice right through important habitat in Fallon County alone—and more wells are on their way.

"The Cedar Creek Anticline was called out in the state draft plan as an area that will require ongoing special management due to current and future development," says Catherine Wightman of FWP. Special management means oil and gas companies will be able to develop their own sage grouse management plans and submit them to the state for approval, rather than follow the state's core area stipulations.

The special management approach applies only to future development. The state offers no plans to manage previously developed well sites in the area.

"The bottom line here is that we need to do as much as we can to restore those areas that should be core habitats but are degraded by industrial development," says Erik Molvar, a wildlife biologist with WildEarth Guardians. "The BLM, for instance, could shut down oil and gas well access on public lands during breeding and nesting seasons." Other conservationists, including former Interior Secretary Bruce Babbitt, advocate the expansion of the federal wildlife refuge system.

The Powder River Basin, which extends from northeastern Wyoming into Montana, is another area of concern. It links sage grouse in Montana, Canada and the Dakotas to populations in the rest of the range. If extirpation proceeds there, the northern grouse could become dangerously isolated.

The basin, however, is a major coal producing region, and also harbors oil and gas development and coal bed methane drilling. Cloud Peak Energy's Spring Creek Mine sits right in the middle of two small special management core areas near the Wyoming border. The strip mine covers 9,115 acres, of which 4,059 are disturbed. It is the single large coal mine in the state, having produced 17 million tons of coal in 2012. Eight sage grouse leks are in close proximity to the mine.

Such industrial activity, combined with West Nile virus outbreaks that are getting worse as wastewater ponds from drilling and mining create more mosquito habitat in the area, poses a fatal threat to Powder River Basin grouse.

In 2012, the Taylor and Naugle team studied sage grouse persistence on the Wyoming side of the Powder River Basin, and found a troubling trend: "Effects of energy development and past [West Nile virus] outbreaks have depressed sage-grouse numbers in northeast Wyoming, placing the remaining small population at risk of extirpation," they wrote in the report. Montana's Powder River Basin grouse face the same dire problem.

The BLM and Montana's sage grouse advisory council will hold public meetings across Montana in the months ahead. Depending on public response, they will adopt their draft proposals sometime next year. The million-dollar question, as FWP's Wightman put it, is this: Will the plans work?

If they don't, an ESA listing is imminent.

With the wind gusting and the sage grouse long gone, Szczypinski and Paddock return to the truck. They drive to the edge of a nearby lek, an ancestral breeding ground at the center of the sage grouse life cycle. Part dance hall, part boudoir, the lek beckons generations of sage grouse to an annual mating ritual that begins in early spring. When researchers want to find sage hens, they look near the lek. When scientists want to estimate grouse populations, they count males on the lek.

The two scientists walk out onto the lek as a herd of cows eyes them. It is a flat, dried-out mudflat pockmarked with prairie dog mounds; an anonymous slab of dirt. It doesn't look like much, but this is where the male sage grouse dance and fight for supremacy each year while the ladies look on.

The ornate mating ritual happens like this: A male appears on the mudflat lek. He wobbles two sagging yellow bags on his chest, each breast-like and hemmed in by the white feathery boa permanently wrapped around his neck.

He beats his wings, lifts his legs like a royal horse, and dances between the springtime sagebrush while the yellow bags inflate and deflate and inflate again. He lets out a Jurassic-like pop, a hiss that harkens back to bison and yew bows, and further back to land bridges and great migrations. He wants to dance and fight and win. He wants to mate, and everyone—from oil developers to wildlife biologists, whether out of calculated self-interest or ecological idealism—wants the bird to succeed.

This story was updated Friday, Dec. 13, to include Conservation Media to two photo credits.