Carried Toward Recovery

▲ **An alpha female Mexican wolf, dubbed AFS11, stands in a pre-release pen in the mountains of Arizona in 1998. The wolf was one of the first 11 wolves to be reintroduced into its historic home range in the Southwest.**

BIOLOGISTS STRUGGLE TO BRING BACK THE MEXICAN WOLF

By David Frey

The dignitaries had left. The camera crews were gone. On this evening in 1998, after a ceremony to mark their return to the Southwest, the three wolves — a male, a female and their yearling daughter — remained alone in their pen in the Arizona high country. Hunted to near extinction, Mexican wolves (*Canis lupus baileyi*) were being released again onto their native landscape, but one refused to leave its crate.

Credit: George Andrejko, Arizona Game and Fish

Credit: George Andrejko, Arizona Game and Fish

▲ **A Mexican wolf appears with a new tracking collar after biologists returned it to its home territory following an annual count and capture operation to track how well the population is recovering.**

"I think it was the dad who was too timid to come out of his kennel," recalled Dave Parsons, who served as the Mexican wolf recovery leader for the U.S. Fish and Wildlife Service from 1990 to 1999.

Never mind the years of politics, environmental impact statements and community meetings. Never mind the battles with environmentalists on one side and wolf opponents on the other. Never mind the struggle to find enough individuals to breed the Mexican wolf back from the edge of extinction. Parsons' problem was coaxing a wolf to be wild.

"It just braced its feet and it wouldn't come out," Parsons said. He and Diane Boyd, a wolf biologist who had worked with wolf recovery efforts in the Northern Rockies before joining the Arizona Game and Fish Department, entered the pen and tried to coax the wolf. It wouldn't budge.

"We undid all the bolts holding the top and bottom and took off the top of the crate. It still wouldn't come out," Parsons said.

They tipped the crate forward until finally the wolf trotted away, joining 10 others soon to be released into the wild. Nearly two decades later, more than 100 Mexican wolves are again roaming the Southwest, but the road to recovery has never been easy.

"It was a joyous thing to see these wolves restored to the landscape," said Boyd, a TWS member who is now a Montana Fish, Wildlife and Parks wolf and carnivore specialist, "but the seriousness of the challenges they met, I don't think it could be perceived."

A new plan

On June 30, the USFWS released the first draft recovery plan for the animal since 1982 (USFWS, 2017), establishing where the wolves should be and how many of them would be needed before the subspecies could be removed from the endangered species list.

The Service is under a U.S. District Court order to approve a final recovery plan by the end of November after wolf advocacy groups, including Defenders of Wildlife and the Arizona Game and Fish Department, sued in 2014 over the lack of a specific recovery program.

The draft plan sets the threshold at 490 wolves in two populations — 320 wolves in the U.S. and 170 in Mexico — for eight years.

"I think this is a very recoverable species," said Sherry Barrett, USFWS' Mexican wolf recovery coordinator and a TWS member.

The Mexican wolf is the smallest, rarest and most genetically distinct of all gray wolf subspecies. It once roamed a region that spanned across Arizona, New Mexico, Texas and northern Mexico. As humans settled across the landscape, the wolves came into conflict with livestock operations and other human activities and by the 1980s, extermination programs had eliminated them from the United States and left only a few to range on the other side of the Mexican border.

In 1976, the Mexican wolf was listed as an endangered subspecies under the Endangered Species Act, which itself passed just three years earlier. The listing prompted the USFWS to embark on efforts to bring it back to the wild. At the time, the Mexican wolf was in such dire straits, biologists wondered if recovery would be possible. Instead of establishing

a recovery goal, the 1982 plan sought a more modest interim objective: "a viable, self-sustaining population of at least 100 Mexican wolves in the middle to high elevations of a 5,000-square-mile area within the Mexican wolf's historic range," and a captive breeding program to make it happen (USFWS, 1982).

Despite daunting obstacles — a shallow gene pool, fragmented habitat, cultural resistance, political battles and legal challenges among them — that interim goal has been reached, and, for the first time since recovery efforts began, wildlife managers have released numbers to say what recovery looks like.

Criticism always follows wolf recovery efforts, though, and the new plan is no different, attacked by opponents who balk at reintroduction and wolf advocates who say it does not go far enough to ensure survival. Wolf supporters also have other fears. A proposed House spending plan for the Interior Department released in July calls for a new study to determine if Mexican wolves really are a genetically unique subspecies — a move they fear could derail recovery efforts, despite numerous studies that have already established it — and legislative riders propose delisting Mexican wolves or defunding the recovery program.

A different wolf story

The release of the Mexican wolves followed on the heels of the reintroduction of gray wolves (*Canis lupus*) to the Northern Rockies. The Mexican wolves didn't rebound as quickly as the northern gray wolves did, but they confronted challenges the northern wolves never faced. When wolves were released in Yellowstone and Idaho in 1995 and 1996, wildlife managers had the genetic diversity of large Canadian wolf packs to draw from and vast roadless areas, including Yellowstone National Park, where the wolves could roam. Even before reintroduction efforts began, dispersing wolves had already begun appearing south of the Canadian border. Now, these wolves are no longer federally listed, and more than 1,900 gray wolves are believed to roam a widening territory that has reached to northern California (USFWS, 2016).

That's not the story for the Mexican wolf.

"We were really on the brink of extinction," Barrett said.

With no wolves in the U.S. to choose from and only a few dozen believed to be in Mexico, the USFWS dispatched trapper Roy McBride across the border between 1977 and 1980 to find some in an effort to launch a captive breeding program.

"Conservation is a luxury unheard of in most areas," McBride wrote of the territory he crossed, as recounted in Rick Bass' *The Ninemile Wolves*, "and the luxury of setting aside areas such as national parks which would preserve large mammals cannot be afforded under the demands of the agrarian system that now exists (Bass, 1992)."

Better known for trapping wolves to remove them than to restore them, McBride had a legendary reputation on the border. He returned with five wolves, including just one female, but two soon died and only three became founders.

"That became the captive breeding base," Parsons said.

In the 1990s, wolves held in captivity in Mexico City and the U.S. proved to be pure Mexican wolves, and pairs from each expanded the genetics with a total of seven founding wolves. Since then, their numbers have steadily grown. The 2016 year-end annual survey counted at least 113 wolves in Arizona and New Mexico, up from 97 the previous year. They are all descended from these seven wolves, and are all about as genetically related as siblings. That raises concerns about further inbreeding with future generations.

"We have a lower level of genetic diversity than other subspecies of wolves," Barrett said.

Biologists estimate another 30 wolves, with similar genetics, may live in the wild in Mexico. About 250 are held in 51 captive breeding facilities in the two countries, but those captive wolves also descend from the same seven forebears, and the wild wolves in Mexico have similar genetics. Each year the wolves' genetic diversity lessens.

▼ **Biologists examine a Mexican wolf that has been tranquilized and captured as part of an annual wolf count-and-capture operation.**

Credit: David Majure, Arizona Fish and Game

Credit: George Andrejko, Arizona Game and Fish

▲ **A collared Mexican wolf stands in its territory. A recent draft recovery plan calls for 490 wolves in two populations for eight years before the animal can be removed from the endangered species list.**

"Time is not the Mexican wolves' friend," said TWS member Mike Phillips, executive director of the Turner Endangered Species Fund, which runs a Mexican wolf recovery facility on Ted Turner's Ladder Ranch in New Mexico. "All you're ever doing is slowing the rate of loss. Every year it's a little worse. It's not getting any better."

Facing opposition

Mexican wolves also face other obstacles due to the controversies that surround the predator.

"Honestly, it's been mostly human issues," said TWS member Jim Heffelfinger, wildlife science coordinator with the Arizona Game and Fish Department. "If you can get wolves on the ground, all you have to do is make sure they're not killed faster than they reproduce and have something to eat. They're fantastic animals. They're just great at surviving."

Getting them on the ground wasn't easy. Like the Northern Rockies wolves, they faced opposition, particularly from livestock producers; but the issues were sharper in the Southwest, which lacked the broad, uninhabited territory the gray wolves had.

"This is a working landscape," Barrett said. "It's very different from Yellowstone National Park and even the Idaho wilderness."

USFWS targeted the 7,000-square-mile Blue Range Wolf Recovery Area along the New Mexico-Arizona border for the wolves' return, spanning parts of the Apache and Gila national forests. If wolves strayed past the recovery area in both states, wildlife managers agreed to capture them and relocate them or return them to captivity. New Mexico initially opposed the reintroduction, due in part to widespread concerns among ranchers about the damage wolves would do to their livestock operations. The Service agreed to introduce new wolves only into Arizona, although they would be free to roam into New Mexico. In 2000, as the state became a partner in reintroduction efforts, the first nine wolves were introduced in New Mexico. After Gov. Bill Richardson took office, he supported reintroduction efforts and urged residents to "find ways for indigenous wildlife species and our ranching communities to coexist."

The approach changed when Gov. Susana Martinez took office in 2011. Amid states' rights concerns and fears about vague recovery targets, the governor-appointed state Game Commission withdrew state support for wolf recovery and removed its staff from the recovery team.

"In my opinion, the Mexican wolf is probably about the lowest on that list" of species that deserve to be recovered, said state Game Commissioner Bill Montoya, a former Department of Game and Fish director, according to minutes of the meeting when the commission withdrew its support.

The move was supported by many ranchers who remained opposed to wolf recovery and suspicious of the USFWS. "I ask that the Department back out of involvement in the program, use all the influence it has with USFWS to show them this program is a crock, and use whatever resources you have to help ranchers protect their interests to eliminate problem wolves," one rancher told commissioner, according to the minutes.

New approaches

In 2015, the USFWS changed its approach in New Mexico. It asked New Mexico officials for permission to again release wolves into the wild there. The state agency refused to issue a permit unless the Service specified its criteria for Mexican wolf recovery and the steps needed to achieve its goal — details not in the 1982 document.

Dan Ashe, then the director of the USFWS, insisted the Service couldn't meet its commitment to restore the wolf without bucking the state. It went ahead with a new type of introduction. Instead of releasing captive-bred adult wolves, the Service was trying a new method, introducing captive-bred pups and "cross-fostering" them to parent wolves in the wild.

New Mexico challenged the action and in 2016, a U.S. District Court judge ruled in favor of the state. It placed an injunction on the new wolf introductions but allowed the current wolf pups to stay. In April 2017, the 10th Circuit Court of Appeals reversed the decision and lifted the injunction.

The cross-fostering plan has seen some success, Barrett said. "The true success will be the point at which those pups will be old enough to breed, but the technique of fostering seems to be working."

Credit: David Majure, Arizona Fish and Game

▲ **Biologists prepare to release two captive-raised Mexican wolf pups into a wild den. It's part of a cross-fostering effort that seeks to increase the Mexican wolf population by encouraging wild wolves raise introduced pups.**

Biologists have also produced the first pup by artificial insemination using frozen semen in captivity. The technique could allow them to have more flexibility in mixing the wolves' genetics thanks to several decades of frozen gamete banking efforts.

"It could be looked at as a time extender," said Maggie Dwire, USFWS assistant Mexican wolf recovery coordinator. "You're not introducing any new genetics, but being able to use genes from already deceased wolves would slow the loss of diversity."

Heffelfinger is optimistic about the wolf's future.

"It's doing fantastic, but you don't hear that in the news," he said. He points to charts that show a general rise in population since the first wolves were introduced. The population increased rapidly in the first five years. Between 2003 and 2009 it saw rises and falls before climbing again. In 2015, it took an unexplained 12 percent dive before rebounding again last year.

"Everything is looking very good for Mexican wolves," he said. "If you look at the graphs, I don't know how you can think the Mexican wolf is doing poorly."

Credit: David Majure, Arizona Fish and Game

▶ **Captive-bred Mexican wolf pups join wild pups after biologists released them into a den. The practice created controversy in New Mexico, where the U.S. Fish and Wildlife Service introduced wolf pups over state officials' objections.**

North and south

In 2010 Heffelfinger, serving as Arizona's representative, joined the USFWS's Mexican Wolf Science and Planning Subgroup (SPS), a group of wildlife biologists working to craft a new recovery plan that would provide the first recovery numbers since the wolves were reintroduced. Past efforts to come up with recovery areas and numbers that the Service would adopt failed, and this effort would, too.

Heffelfinger found himself at odds with the group again and again in a battle between north and south, with Interstate 40 running between them. He wanted Mexico included in a binational plan and more input from stakeholders, and he felt the group's recovery numbers weren't based on sound science. He was also concerned that expanding recovery efforts beyond the historic range would be illegal. Those disagreements continue to dog the latest recovery plan.

Heffelfinger stood alone in arguing for a southern option that would limit reintroduction to what he believed was the wolf's historic range. In a March 2017 paper published in the *Journal of Wildlife Management*, Heffelfinger outlined that historic range to include southeastern Arizona, southwestern New Mexico, the Sierra Madre Occidental in Mexico and sometimes western Texas (Heffelfinger, et al 2017). Extending the range northward, he argued, would allow northern wolves to genetically swamp the Mexican wolf and destroy its unique qualities as a subspecies.

"Recovery efforts attempted outside the subspecies' historical range, especially when suitable habitat exists within, would make the program vulnerable to legal challenge, thereby delaying recovery of this endangered subspecies," he wrote.

The other biologists in the group disagreed with Heffelfinger. They called for a northern option that would expand the release area to include northern Arizona, southern Utah and southern Colorado where they argued the land was wilder and ranches were fewer. If it wasn't the Mexican wolves' historic range, proponents believed, it would offer the wolves more habitat, especially as climate change threatened to shift southwestern prey species northward. They believed it would also allow the wolves a better chance to disperse and connect with dispersers from the Northern Rockies, providing more genetic flow, even if not from the same subspecies.

Credit: David Majure, Arizona Fish and Game

▲ **A captive-bred Mexican wolf pup drinks from a tube at a field station as biologists prepare to cross-foster it with a family of wild wolves.**

"The science upon which those areas were based — I'm trying to be diplomatic — was not solid," said Heffelfinger. He resigned from the group in protest in December 2012, citing scientific and process flaws.

"It became obvious," Larry Voyles, then director of the Arizona Game and Fish Department, wrote in a letter to the Service, "that there are significantly divergent perspectives within the SPS on how best to recover the subspecies and the scientific underpinnings used to develop recovery criteria" (Voyles, 2012).

As opposition from other Western states grew, the Service ended the group and began a new recovery planning and implementation approach that relied more on state wildlife agencies. Representatives from Arizona, New Mexico, Colorado, Utah, the U.S. Forest Service and independent scientists took part in six workshops in the U.S. and Mexico over a 14-month period.

"Now I'm happy to report we've really fixed most of those issues," Heffelinger said.

The resulting recovery plan follows the southern approach with a goal of establishing two separate wolf populations in its historic range in the U.S. and Mexico within 25 to 35 years. The wolf could be downlisted to threatened under two conditions: if the U.S. population averages at least 320 for four years and 22 released wolves survive to breeding age, expanding the genetic diversity and the Mexican population averages at least 170 wolves for four years and 37 released wolves survive to breeding age; or if each population averages at least 150 for four years "with a positive growth trajectory" and captive releases have been successful.

To be delisted altogether, the U.S. population must average at least 320 and the Mexican population must average at least 170 for eight years, for a total of 490 wolves.

"I think the path that we're on is a very successful one," Heffelfinger said. "Hopefully it won't be derailed by people who, in their own minds, are trying to do good."

Credit: George Andrejko, Arizona Game and Fish

▲ **A Mexican wolf emerges from its kennel into a pen to be acclimated to the wild before being introduced to its range in the Arizona high country.**

Criticism remains

Critics continue to doubt the plan. "It will not lead to recovery," said Phillips, of the Turner Endangered Species Fund, who sat on the subgroup with Heffelfinger.

Phillips fears the plan's recovery numbers are too low. The subgroup's previous recommendation had called for a total of 750 wolves in three populations, including areas north of I-40, and those are the numbers he'd still like to see before it could be delisted.

"We know gray wolves have the potential to cause conflict," he said. "People are tired. The Service is tired. They would like to move on. I get it. But the ESA doesn't say, 'Go forth and do these things until you get tired and you can quit. We have to find the energy to follow the law and do the best work that we can."

Parsons agreed. He sat on a group of stakeholders and backed those who called for a northern option with more wolves. Since retiring from the Service, he has become a wolf advocate, serving as a scientific advisor to several conservation groups rallying behind wolf reintroduction.

"This is an extinction plan more than a recovery plan," he said.

Courtesy of Dave Parsons

▲ **Dave Parsons (far left), the former Mexican wolf recovery leader for the U.S. Fish and Wildlife Service, walks with officials including former Interior Secretary Bruce Babbitt (second from right) as they prepare to release the first Mexican wolves into the wild in 1998.**

He believes states have been given too much leeway to decide the wolf's fate, putting its future in jeopardy. The recovery numbers are too low, he said, and he fears the plan relies too much on states that may not cooperate, and on Mexico, where USFWS has no say over recovery efforts.

"The authority to recover Mexican wolves rests with the ESA, and they've delegated a significant portion of recovery efforts to another country where they have no legal authority," he said.

Opposition continues from wolf opponents, too. The New Mexico Cattle Grower's Association is asking members to submit written comments opposing the plan, but not to attend a series of meetings for public comment.

"For more than a quarter of a century, ranchers have been attending meetings on the Mexican wolf program held by the agency only to be verbally abused, physically threatened and completely ignored," the association's executive director, Caren Cowan, wrote in New Mexico Stockman Magazine.

Learning to be wild

Nearly two decades ago, Parsons walked with then-Interior Secretary Bruce Babbitt as Babbitt released the first Mexican wolf back into the Southwest in front of more than a dozen reporters gathered in the January snow in the Arizona high country.

"I grew up in this country and always had the sense that something was missing," Babbitt told them. "We've got to make this work. This is just the beginning of the beginning."

He was right. Within months, five of the 11 reintroduced wolves had been shot by poachers. The surviving wolves were rounded up and in the fall, Babbitt returned to release another group of wolves. At first biologists fed them frozen roadkill until they learned to fend for themselves. Raised in captivity, they struggled to survive on their own.

It was unlike anything Boyd had seen with the recovery efforts in the Northern Rockies. "They had never been wild," she said. "Neither had their parents or grandparents or great-grandparents. I remember wondering if they would ever get used to killing something."

The following spring, she got her answer. Along a mountain creek, biologists came across a cow elk carcass. A hunter's arrowhead was embedded in its femur, but that wasn't what brought it down, Boyd realized. The elk had survived, but it was weakened, making it easy prey. The new wolves on the landscape were learning to be predators.

This is how it is supposed to be, Boyd thought. The Mexican wolves were making it on their own.

"I have a total belief," she said, "that given a chance, a wolf can survive anywhere." ■

Mexican Wolf Conservation Symposium

There's more to the ongoing story of reintroducing the Mexican wolf into its native habitat in the Southwest. Speakers in a symposium at the 2017 TWS Annual Conference in Albuquerque, N.M, organized by Julia B. Smith, a wolf biologist for the Arizona Game and Fish Department, will go into greater depth about the obstacles, not least of which is the polarization and controversy elicited by wolves wherever they exist. The session will include presentations addressing wolf reintroduction efforts and habitat suitability in Mexico and the U.S., including concerns of livestock producers and local communities affected by wolf recovery. Whether in favor of or against wolf recovery, building a culture of trust and cooperation among the public and the agencies responsible for managing wolves requires all involved. Strategies for coexistence in a working landscape and conflict mitigation techniques will be described.

Wednesday, Sept. 27
1:10 – 5 p.m.
Albuquerque Convention Center

David Frey is the managing editor at The Wildlife Society.