Some Ecological Damage From Trump's Rushed Border Wall Could Be Repaired

Conservationists urge Biden to dismantle it quickly, especially in key habitats

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By April Reese on January 25, 2021

The jagged granite peaks of Arizona's Tinajas Altas Mountains, reminiscent of the Iron Throne in the television series *Game of Thrones,* are almost insurmountable to humans. But bighorn sheep have long climbed through them with ease—until their path was blocked by a 30-foot-high steel fence built atop a blasted-out right-of-way on the U.S.-Mexico border last spring.

Just to the east, federal contractors have built more border fencing through the habitat of the endangered Sonoran pronghorn in the Cabeza Prieta National Wildlife Refuge. And in South Texas, sections of wall continued to rise in protected areas of the Lower Rio Grande Valley in recent months, increasing flooding risks and bisecting the subtropical woodland habitat of endangered ocelots and jaguarundis and other imperiled species.

These barriers are the climax of a three-year building spree designed to make good on former president Donald Trump's promise to keep undocumented immigrants from crossing the southern U.S. border. In early January Customs and Border Protection (CBP) announced it had achieved Trump's goal of completing a total of 450 miles of fence. Construction continued across parts of the four southern border states in the final week of his administration, however. These stretches, which Trump touted in a visit to southern Texas on January 12, are in addition to the 654 miles of both low and tall barriers built during previous administrations.

Hours after his inauguration last Wednesday, incoming president Joe Biden issued an executive order calling for a "pause" to border wall construction within seven days. But some environmental groups and scientists want the new administration to go a step further and tear down parts of the fence that cut through some of North America's most biodiverse landscapes—including the Otay Mountain Wilderness Area in California, the Sonoran Desert and the Sky Islands in Arizona, New Mexico's

Chihuahuan Desert and the Lower Rio Grande Valley in Texas—and restore those key habitats. “We have the wall running through wildlife habitat, through refuges and reserves intended to be protected,” says Scott Nicol, a conservationist who has long fought border walls in South Texas.

Determining which fence segments should come down and how to fix the damage they have caused would likely require some tough decisions, however. With hundreds of species affected and several rivers and washes now blocked or flanked by the structures, far more sites need restoration than funding would allow, wall critics say. Also, with little baseline data on the preconstruction state of the lands and waters of the border, it may be hard to say what successful restoration would look like in some areas. Laiken Jordahl, borderlands campaigner at the nonprofit Center for Biological Diversity, says tearing down the wall might be a hard sell. But “we have an obligation to the wildlife and the communities to repair the damage caused by the Trump administration and restore this place to its original beauty,” adds Jordahl, who lives in southern Arizona. “Giving up is not an option.”

THE DAMAGE DONE

Though the wall may look like just a thin line on a map or drone image, each segment requires a major construction project whose ecological consequences extend far beyond its physical footprint. Building a 30-foot-high steel bollard fence—the design of most new wall segments, with wide bars and narrow gaps between—requires stripping away vegetation to create a 150-foot-wide “enforcement zone” that includes a parallel access road to the site and surveillance cameras used by Border Patrol to monitor border activity. Workers remove any old structures (typically low-slung vehicle barriers), dig a trench several feet deep, and fill it with concrete and rebars, steel rods used for reinforcement. They then use heavy machinery to sink the fence into the concrete base.

The full extent of the damage from these fence projects—the barriers themselves, the vegetation scraped away to make way for patrol roads, the light pollution from floodlights—is unknown. Under a 2005 law that lets the Department of Homeland Security waive federal requirements to expedite border fence construction, the environmental impact studies typically required for federal projects were never conducted for the newer wall efforts. “This thing went in so fast, and all the mitigation and study measures that you’d normally do never got done,” says Aaron Flesch, a biologist and ecologist at the University of Arizona. “We really don’t have much [data].” But what data there are, combined with observations and images, reveal a picture of ecosystems interrupted: blocked migration corridors for species, including jaguars and ocelots; fragmented habitat; and eroded and flood-damaged washes and rivers. In a 2018 letter in *BioScience,* Flesch and other scientists warned that “already-built sections of the wall are reducing the area, quality, and connectivity of plant and animal habitats and are compromising more than a century of binational investment in conservation.”

One of the few investigations to track the impacts on multiple species in the same area, before and after fence construction, is the *Border Wildlife Study* conducted by the Sky Islands Alliance, a Tuscon, Ariz.–based conservation nonprofit. Using camera traps placed along more than 30 miles of border in the Huachuca and Patagonia mountains before construction began, the study has collected 12,000 images documenting more than 100 species since March 2020, including mountain lion, pronghorn, elf owl, black bear, porcupine and a Mexican subspecies of Virginia opossum. Construction in the area began last summer and continued through the winter. Conservationists hope to use the before-and-after data of the animal sightings to track how the new structure has affected them—insights that could help inform future fence removal efforts. “Our goal is to use this information to help us figure out how to protect and conserve these species during this remarkable period of unprecedented habitat fragmentation,” says Emily Burns, an ecologist at the Sky Islands Alliance.

Some of the most consequential damage, and likely some of the most difficult to fix, occurred late in Trump’s presidency as his administration raced to build more wall before Biden was sworn in last week. Most of the newest work is on remote, rugged federal lands that previous administrations bypassed for fence construction. “They’re blasting in these crazy places that are just totally impassable by people but are really important habitat,” Flesch says. He has studied the border fence’s consequences for the cactus ferruginous pygmy owl, a palm-sized bird under consideration for Endangered Species Act protection.

Taking stock of what has been lost is crucial to figuring out which areas to prioritize for fence removal, Jordahl says. “It’s impossible to assess the damage until we send the construction teams packing and send scientists down to these sites where the environmental laws have been waived,” he says.

WHAT TO FIX FIRST

The environmental coalition opposing the wall recognizes it is politically unfeasible to push for toppling the entire fence, so it has compiled a list of places where tearing down the barriers would do the most environmental good. The groups (which include the Center for Biological Diversity, Defenders of Wildlife, the Sierra Club, the Southwest Environmental Center and others) plan to use the report to convince the Biden administration to remove what they view as the most problematic sections, including a migratory wildlife corridor in New Mexico that is important for jaguars and an international bison herd; the San Pedro River in Arizona, the last free-flowing river in the state until a wall was built across it last year; and the Quitobaquito Springs in Organ Pipe Cactus National Monument, home to the endangered Quitobaquito pupfish and an important cultural site to a dozen Native American groups.

Kurt Vaughn, director of the Borderlands Restoration Network (a nonprofit collaboration of environmental organizations that restores degraded landscapes in southeastern Arizona), says springs, riparian areas and wetlands—all crucial to desert ecosystems—would be priorities for him. “I would focus first on water resources, working as quickly as possible and being careful not to worsen the damage that’s already been done,” he says. “Then I’d work on wildlife corridors.”

Once parts of the wall come down, Burns says, “there’s a lot we can do to help the biological communities come back,” such as replacing roads with native plants. “Where water has been depleted, we’re going to have to work extra hard,” she adds. “We can help stop erosion, and hopefully we’ll get some rainfall” to replenish streams and ponds.

Simply removing the fence may be enough to improve some binational species’ prospects, Flesch says. “For species that are able to cross an open area, like jaguars, [they] can go right over that 60-meter [197-foot] swath of destruction,” he says. “For those species, removing the wall is going to very rapidly restore connectivity.” But for other border species, such as the tiny owl he studies—which has lost federal habitat to fence projects dating back more than a decade—the remedy “could be more complicated,” he adds. “Everybody thinks birds just fly over, but they’re understory woodland birds. They’re not migratory.” Flesch says the vegetation they rely on for cover would need to be replanted.

Restoration might be even more challenging in Texas. There, sections of the wall cut through mature subtropical woodlands, as well as former farmland that the U.S. Fish and Wildlife Service (FWS) purchased and replanted over 30 years to restore habitat in the Lower Rio Grande Valley National Wildlife Refuge. Nicol thinks restoration is possible in those areas. But he says, “It won’t be cheap, and it won’t be quick” because of the sheer amount of work to be done how long it takes for replanted vegetation to mature into good woodland habitat. Waterways present their own special challenge. “It’s going to be harder when you’re talking about areas like Starr County, where you have [washes] that led toward the river, and they put in barriers and roads,” he says. “Getting to a natural drainage regime will be a lot more difficult.” Nicol would prioritize taking down the wall in a tract of the refuge in Starr County, where the barrier has created major flooding and erosion risks.

Scientific American’s calls and e-mails to federal land managers who work in some of the protected areas where new wall has gone up were referred to the FWS’s national press office, which declined to answer questions about fence removal and restoration of damaged habitat.

WHAT RESTORATION MIGHT COST

With fence construction halted, CBP and the Army Corp of Engineers, which jointly oversee fence construction, could end up turning right around to deconstruct

projects now in progress. “For example, we could have already dug a trench and put rebar in it,” said Mark Morgan, then acting CBP commissioner under Trump, in a conference call with reporters on December 14. “We’re going to have to pay a contractor to go back in and remove the rebar and fill in the trench.”

Because billions of dollars’ worth of wall-building contracts have already been awarded, Morgan added, the government agencies involved would need to go through a lengthy process to reach a settlement over canceled projects—costing taxpayers more money. Even so, Jordahl says, “the cost to tear it down will pale in comparison to what it cost to build it.” The money saved from walls left unbuilt could be used to help pay for restoration, he adds. Under a deal with the Department of the Interior in 2009, DHS allocated $50 million for remediation of fence damage, but that amount was later cut in half, and little work has been done, Nicol says. At the time, the agencies discussed the possibility of a long-term environmental monitoring program, which never materialized.

Former senator Tom Udall of New Mexico, a longtime critic of the fence who retired from Congress in December, says he is glad to see Biden pledge to stop the wall construction. In 2019 he and Senator Martin Heinrich of New Mexico, both Democrats, introduced legislation to prohibit fence construction in refuges and wilderness areas and to require DHS to conduct environmental reviews. Neither bill gained traction in the Senate. “The Trump administration just seemed to have thrown out any idea of balance when they were thinking about what to construct,” Udall says. “Trump’s border wall has been hugely destructive to the environment, to wildlife, to habitat connectivity.”

Now Biden needs to act quickly, Nicol says. “If he takes his time with tearing down walls, then that damage compounds,” he explains. “You want to tear down the wall at San Pedro or Arroyo Ramirez [a Lower Rio Grande Valley National Wildlife tract in South Texas] *before* a big flood tears it apart. You want to tear down walls before ocelots go extinct.” Even if the new administration does make removing the wall and fixing the damage a priority, some places can never be restored, Burns says. “The face of the Huachuca Mountains—on national public lands—has been blasted, and that’s not reparable,” she says. “That scar will always be there.”