

# THE ECOLOGICAL DISASTER OF TRUMP'S BORDER WALL

During the campaign, it was easy to scoff at President Donald Trump's promise to build a "big, beautiful" concrete wall along the US-Mexico border. It sounded, well, preposterous.

But now the prospect of a border wall is quite real. Trump has requested \$1.6 billion for fiscal year 2018 to build three segments totaling 74 miles. The Department of Homeland Security is planning to test the eight prototypes it built this summer in San Diego over the next 30 to 60 days.

There's a long debate over whether physical barriers on the border actually curb the illicit flow of people and drugs. The Border Patrol, which is backing Trump's plan, says they're a "vital tool." Migration experts say they're more symbolic than effective.

But what is undeniable is that the 654 miles of walls and fences already on the US-Mexico border have made a mess out of the environment there. They've cut off, isolated, and reduced populations of some of the rarest and most amazing animals in North America, like the jaguar and ocelot (also known as the dwarf jaguar). They've led to the creation of miles of roads through pristine wilderness areas. They've even exacerbated flooding, becoming dams when rivers have overflowed.

Now, DHS is eyeing unfenced areas in two Texas wildlife refuges that conservationists consider some of the most ecologically valuable areas on the border — home to armadillos and bobcats. If a wall were to slice through these ecosystems, it could cause irreversible damage to plants and animals already under serious threat.

## **The border region is ecologically rich because a lot of it has been federally protected.**

The political boundary between the US and Mexico stretches 2,000 miles from the Gulf of Mexico to the Pacific Ocean. Along the way, there are three mountain chains, the two largest deserts in North America, vast cattle ranches, a handful of cities and their sprawling suburbs, and the Southern section of the mighty Rio Grande river.

Much of the region has never been heavily populated, and over the years, several large swaths of land have been designated as protected areas. Today there are 25 million acres of protected US public lands within 100 miles of the line. That includes six wildlife refuges, six national parks, tribal lands, wilderness areas, and conservation areas — all of them managed by various federal agencies and tribal governments.

On the Mexican side, meanwhile, sit protected areas like El Pinacate y Gran Desierto Altar, which abuts the US Cabeza Prieta National Wildlife Refuge and parts of the Organ Pipe National Monument and Barry M. Goldwater Range in Arizona.

These protected areas have been established, in part, to protect wildlife and plants that span both countries. In the case of the El Pinacate and Cabeza Prieta, desert species like the Sonoran pronghorn (an antelope relative) have been able to migrate back and forth.

**"People think of deserts as barren lands and flat sand dunes with nothing there,"** Sergio Avila, a conservation scientist at the Arizona-Sonora Desert Museum, says. **"But deserts are very diverse and rich in life."**

When you trace the border from west to east, you find shrinking pockets of remarkable biological abundance. At the far west is the Tijuana Estuary, a key salt marsh habitat for some 400 species of migrating birds. At the far east, birds and butterflies stop through the Lower Rio Grande Valley, which is also a permanent home for colorful mammals, reptiles, and amphibians.

Since 1994, the US government has been erecting barriers to keep people and drugs from Mexico and beyond out. By 2010, about one-third of the border had been fenced with materials ranging from barbed wire to steel, bollard to wire mesh, and chain link. In addition, the Department of Homeland Security has built hundreds of miles of roads to allow the Border Patrol to access remote regions, both fenced and unfenced.



All of this construction has sliced and diced a lot of protected land along the border. And ever since the passage of the Real ID Act of 2005, DHS has had the power to waive most environmental reviews in the name of national security.

So, unlike most federal infrastructure projects, these fences have received little or no input from the public, land managers, conservation groups, or other agencies. Experts had no chance to assess beforehand what impact the fence might have on wildlife, plants, and rivers. Only after the fact have researchers documented instances where fences have interrupted wildlife corridors, and caused erosion and other damage to fragile ecosystems, as well as flooding.

Cutting off animal populations in this fashion leads to reduced gene flow and inbreeding — leading to a greater risk of extinction. Conservation groups are particularly worried about the Mexican gray wolf; in 2016, there were just 113 in the US and about three dozen south of the border. A wall between them could make the recovery of the population unsurmountable.

Fences also can restrict animals' access to water sources — particularly problematic in the drought-prone Southwest. And they can make it harder for animals to adapt to climate change.

The wall structures hurt animals and insects in other ways too. Some sections have lights that attract and zap pollinators, like the monarch butterfly, that migrate across the border. And the taller the fence, the more impassable it is for some bats and birds, like the cactus ferruginous pygmy owl.

Based on this research, leading groups like the Sierra Club, the Center for Biological Diversity, and Defenders of Wildlife have strongly recommended against any further construction of fences on the border.

About two-thirds, or 1,350 miles, of the border remains unfenced. Trump said on July 13 that he intends to build a total 700 to 900 miles of new wall, which will be exceedingly difficult to do. (Cost estimates for walling off the entire border range from \$21 billion to \$40 billion, and 700 miles would cost at least \$12 billion.)

But it's plausible that Congress will give US Customs and Border Patrol, the division of DHS in charge of border security, at least some of the \$1.6 billion that Trump requested to build three segments totaling 74 miles for fiscal year 2018. That would reportedly include "28 miles of new levee wall system in Rio Grande Valley, 32 new miles of border wall system in the Rio Grande Valley, and 14 miles of replacement secondary barrier in San Diego," according to a DHS spokesperson.

San Diego is a sprawling urban center, but just south of it is the Tijuana Estuary, where the Tijuana River meets the Pacific Ocean. It's one of

the most biodiverse areas in the entire state of California, according to Millis of the Sierra Club, and has already been impacted by fences. Replacing the fences there could mean more habitat destruction in the estuary.

Walls and levee walls in this region could also pose a serious flooding hazard, says Millis. "They are particularly problematic because they would be the first walls built inside the Rio Grande floodplain, and thus are likely to cause floods in the populated areas where they are planned," he says.

Building fence where there is a flood risk has already caused chaos on other parts of the border: Flash floods in Nogales and Organ Pipe Cactus National Monument in Arizona have caused millions of dollars in damage and two deaths because of floodwaters that built up along the fence.

"Flood water always has debris in it," Millis says. "That's how you got these damming events that blew out chunks of wall. Damming also causes erosion — it creates the situation we saw in Arizona where debris backs up the water and then the sediment building upstream created a waterfall that causes more erosion. This is liable to happen in Texas."

Current walls in Texas are not in the floodplain — in part because a binational commission that oversees the Rio Grande River has refused to allow CPB to build there, fearing flooding in towns on both sides. But Scott Nicol, with the Sierra Club in McAllen, Texas, says he's worried that CPB intends to act unilaterally and will build new fence in the floodplain of the Rio Grande, despite Mexico's objections.

The Trump administration is focused on building new fence in Texas and San Diego for the moment. But one day it could turn its sights on other unfenced sections — and one of the most troubling possibilities would be the miles of protected areas in Arizona and New Mexico where jaguars occasionally roam.

Jaguars are critically endangered in North America; the populations that once prowled New Mexico, Arizona, Texas, and Southern California were essentially hunted to extinction in the 20th century. The northernmost breeding population in the Americas — some 80 to 120 individuals — is in the Northern Jaguar Reserve in the Mexican state of Sonora.

Like wolves, jaguars like to ramble widely, with ranges anywhere from 10 to 50 square miles. And since 1996, seven males have been spotted in the US, giving conservation groups hope that they may be trying to reestablish a population on this side of the border. The Fish and Wildlife Service, along with several conservation groups, have tried to encourage them by establishing six critical habitat areas under the Endangered Species Act to allow the jaguars to enter the US.

"The only hope for natural re-colonization in the U.S., however remote, hinges on maintaining this core population to the south, and its connectivity," said Alan Rabinowitz, CEO of Panthera, in a statement. And a fence through the unfenced areas in the illustration above would clearly destroy that connectivity.

Conservationists say the threat of Trump's wall also puts a strain on binational relationships. "We have a lot of successful conservation partnerships working together with Mexico (monarch butterfly and jaguar, for example)," says Avila. "But these policies are putting a dent on those partnerships and pitting people against each other. They could sour the relationships." For instance, he says, changes in immigration policies are making it harder for him to bring Mexican officials to meetings in the US.

**When it comes to protecting jaguars and other big cats threatened on the border, he says the solution is pretty simple: "Just don't build a wall."**

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