# Border barriers threaten global wildlife by fragmenting habitats and restricting movement



The construction of border barriers is increasingly impacting wildlife across the globe, as demonstrated by recent studies focusing on the Polish-Belarusian border fence and the US-Mexican border wall.

In 2022, Poland erected a 115-mile (186 km) wall along its border with Belarus, aimed at stopping refugees and migrants from entering the European Union. This barrier, standing 5.5 metres high and topped with wire and surveillance cameras, has bisected the ancient Białowieża Forest, an expansive woodland covering approximately 1,420 square kilometres (548 square miles). The division has trapped about 15 Eurasian lynxes on the Polish side, subjecting them to a genetic bottleneck and threatening their long-term survival. Katarzyna Nowak, lead author of a paper from the Polish Academy of Sciences’ Mammal Research Institute, remarked, “I could not have foreseen the diversity of impacts that we ended up finding.” The fence also disrupts populations of bison, wolves, and elk, with wildlife avoiding the border area due to disturbance.

Researchers have monitored ten sites along the border, finding fewer animal signs and more human presence, including sounds such as vehicles, music, dogs, and gunshots penetrating up to 250 metres into this UNESCO World Heritage site. The presence of rubbish along the fence attracts domestic scavengers, creating unnatural interactions between wildlife and human-associated animals. Plant surveys indicate that invasive species could proliferate in the sunlit strip cleared by the barrier, further impacting the forest's ecosystem. Nowak expressed concerns that these changes could eventually lead to the forest splitting into two separate habitats.

Globally, the number of border walls has surged from six in 1989 to an estimated 74 today, with more under construction. These structures frequently obstruct the ranges of numerous species, fragment habitats, and inhibit critical migration routes, contributing to genetic isolation. Dr Stuart Butchart, chief scientist at BirdLife International, noted that border walls affect over 700 mammal species, including leopards, tigers, cheetahs, and the critically endangered Saiga antelope. His research identified 20,000 miles of fortified borders worldwide causing such impacts.

The US-Mexican border wall stands out as particularly disruptive, bisecting the territories of 120 mammal species. Species such as pygmy owls, which fly low to the ground, cannot cross the wall, while puma and coati populations have declined. Bighorn sheep face the prospect of becoming “zombie species” – populations too genetically fragmented and immobilised to adapt to climate change. At the same time, small gaps in the US-Mexican border barrier, about the size of an A4 sheet of paper and spaced roughly every 10 kilometres, have proven vital for certain wildlife. Cameras captured species including coyotes, peccaries, American badgers, and some mountain lions using these passages. Eamon Harrity, wildlife programme manager at Sky Islands Alliance and lead author of a study on these gaps, commented, “We were surprised by how busy the A4 holes ended up being... We want more of them. They need to be, at a minimum, every half a kilometre.”

Border walls not only restrict movement but can cause long-lasting behavioural changes in wildlife. For instance, red deer on the Czech-German border still avoid crossing the region that was once divided by the "Iron Curtain," despite the removal of the electric fence 25 years ago. The slow recovery of migration routes highlights the depth of these barriers' impacts.

Calls for mitigation include recommendations such as creating gaps in fencing, reducing light and noise pollution, eliminating concertina razor wire, which often injures animals, and fostering international cooperation to better manage cross-border ecosystems. Some researchers also propose the establishment of “ecological peace corridors” designed to sustain wildlife movement amid geopolitical conflicts.

The experiences from Białowieża Forest, the US-Mexican border, and other regions illustrate the complex consequences human-imposed border barriers have on biodiversity. As migration patterns for both humans and animals intensify under the pressures of climate change, understanding and addressing these ecological impacts become increasingly significant.

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