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Border walls may pose big challenges to biodiversity -- but smaller ones to humans

Walls that impede animal movement may produce dramatic effects on populations

AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES

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With the prospect of a US-Mexico border wall looming, research and reporting on the ecological impacts of walls is both important and timely. Reporting in *BioScience* on such barriers' known effects on wildlife, science journalist Lesley Evans Ogden describes the potential effects of the proposed structure along the 2000-mile US-Mexico border. "If the wall is completed, it will create a considerable biodiversity conservation challenge--one unlikely to disappear anytime soon," she writes.



IMAGE: AT THE US-MEXICO BORDER AT THE CORONADO NATIONAL MEMORIAL/ROOSEVELT EASEMENT. THE WALL AND WIDE PATROL ROAD CAUSE HABITAT FRAGMENTATION, THREATENING THE WELL-BEING OF MANY SPECIES. [view more >](#)

CREDIT: MATT CLARK/DEFENDERS OF WILDLIFE

The threats posed to local populations of species may be dire. Smaller aggregations of animals are often ephemeral and rely on individuals moving between populations to replenish their numbers and genetic stocks. "Local populations blink on and off like Christmas lights," says the University of Arizona's Aaron Fleisch, who was interviewed for the article. The concern is that, if a border wall prevents migration, isolated local populations may fail to blink back on again.

Research described in the article points to problems even in areas where actions have been taken to allow animal movement. "Even when there isn't a physical wall or much of a barrier, [border agents] are actively engaged in enforcing the law through patrols," explained David Christianson of University of Arizona. These patrols, which may disrupt movement or other animal behavior, often include off-road travel "right in the middle of this endangered species habitat," says Christianson. Preliminary radio-collar and camera-trap data indicate that some species, such as pronghorn antelope, do not frequently travel near the US-Mexico border.

Perhaps most significant, some research described by Evans Ogden indicates that hardened border barriers may be ineffective in preventing passage by the species they are intended to impede--humans. Jamie McCallum, a consultant at Transfrontier International Limited, and his colleagues from the Zoological Society of London set camera traps in protected areas where 4- to 5-meter steel barriers are already in place. The traps were used to photographically "capture" the presence of mammals along the border. Animals such as coati and pumas were found in lower numbers near hardened borders, as was expected by the researchers. However, the photographic evidence showed no lower likelihood of finding smugglers or undocumented migrants near border walls. Although more work remains to be done, this could be a sign that walls do little to prevent human cross-border movement. Says McCallum, "I thought it would have at least some kind of trace of an effect, even if it wasn't a statistically significant finding. But it didn't appear to."

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BioScience, published monthly by Oxford Journals, is the journal of the American Institute of Biological Sciences (AIBS). *BioScience* is a forum for integrating the life sciences that publishes commentary and peer-reviewed articles. The journal has been published since 1964. AIBS is an organization for professional scientific societies and organizations, and individuals, involved with biology. AIBS provides decision-makers with high-quality, vetted information for the advancement of biology and society. Follow *BioScience* on Twitter [@BioScienceAIBS](#).

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Media Contact

James M. Verdier
jverdier@aibs.org
205-286-8626

[@AIBSbiology](#)

<http://www.aibs.org>

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Border Fence (IMAGE)

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