

# Addressing the Impacts of Border Security Activities On Wildlife and Habitat in Southern Arizona: STAKEHOLDER RECOMMENDATIONS

The combined impacts of unprecedented numbers of undocumented immigrants entering the United States from Mexico through Arizona and stepped-up border security activities are harming the wildlife, habitat and health of our sensitive borderlands, one of the nation's most ecologically significant regions. To examine these impacts and make sound, science-based recommendations for addressing them, Defenders of Wildlife and the Wildlands Project assembled a diverse group of interested stakeholders for a series of two meetings, a two-day symposium in March 2005 and a day-long workshop in October 2006.

CABEZA PRIETA NATIONAL WILDLIFE REFUGE © RANDY PRENTICE/PRENTICEPHOTO.COM



## THE STAKEHOLDERS

Arizona Department of Environmental Quality*	Center for Biological Diversity**	Organ Pipe Cactus National Monument	State University of New York**
Arizona Game and Fish Department	Conservation Biology Institute**	Philadelphia Zoo	The Nature Conservancy**
Arizona-Sonora Desert Museum*	Coronado National Forest	San Bernardino National Wildlife Refuge**	The Wildlands Project
Arizona State Land Department*	Coronado National Memorial	Sierra Club	Tucson Preparatory School**
Arizona State Parks	Defenders of Wildlife	Sky Island Alliance	University of Arizona
Arizona State University*	Friends of the Jaguar**	Sonoran Institute*	U.S. Bureau of Land Management
Arizona Wilderness Coalition*	National Parks and Conservation Association**	Sonoran Joint Venture*	U.S. Customs and Border Protection
Cabeza Prieta National Wildlife Refuge	Northern Arizona University*	Southwest Consortium for Environmental Research & Policy**	U.S. Fish and Wildlife Service
	Northern Jaguar Project*	Southwest Strategy*	World Wildlife Fund*

\*Attended March 2005 symposium only.  
\*\* Attended October 2006 workshop only.

Recognizing that national security is the top priority, these conservationists, educators, scientists and state and federal agency representatives identified the most critical borderlands conservation issues and information gaps. They also pinpointed the most critical cross-border wildlife corridors and other areas of concern and came up with recommendations for protecting the wildlife and habitat of these sensitive areas. Their conclusions and a borderlands map showing the critical wildlife corridors and vulnerable public and tribal lands of concern to area stakeholders are presented herein.

## CRITICAL CONSERVATION ISSUES

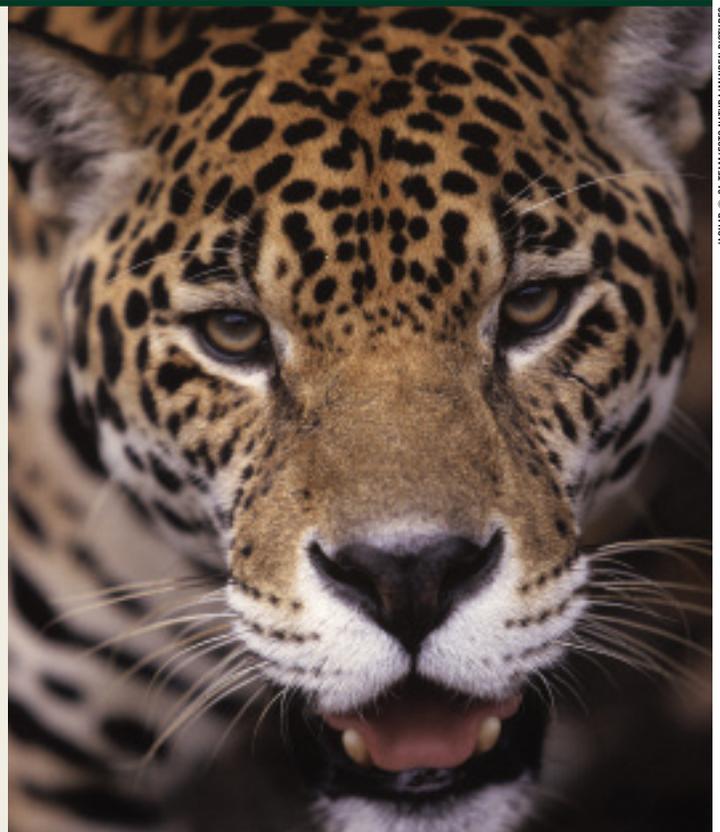
Desert, mountain and subtropical habitat converge along the Arizona border, fostering a rich diversity of plants and animals, many of them found nowhere else in the United States. Beginning in the early 1990s, the U.S. Border Patrol dramatically increased its immigration enforcement efforts in heavily populated border areas, essentially shifting undocumented immigration, drug trafficking and other illegal activities from urban areas to these remote, sensitive borderlands. Enforcement-related road-and wall construction, lighting projects and off-road vehicle and low-flying helicopter patrols proliferated, compounding the damage. As a result, this pristine region—much of it on public lands set aside to protect rare and imperiled wildlife and sensitive habitat—is under siege. The most serious concerns and policy challenges as determined by stakeholders at the 2005 symposium are outlined below. Also highlighted are their recommendations for filling in the gaps in scientific information, which is necessary for sound resource management and decision making in the region.

### *Environmental Concerns*

- Trampling of vegetation and other direct damage to wildlife and habitat.
- Fragmentation of habitat and wildlife corridors.
- Introduction of exotic species.
- Air and water pollution.
- Wildlife mortality and displacement.
- Modifications of wildlife behavior in response to disturbances.
- Additional pressure on threatened and endangered species and species of special concern.
- Difficulties in restoring habitat and maintaining improvements.

### *Policy Challenges*

- Real ID Act exemption of the Department of Homeland Security from all environmental laws.
- Border Patrol's inadequate compliance with environmental laws.
- Disproportionate focus on fences and high-tech deterrence at the border at the expense of interior enforcement.
- Unmanaged development in ecologically sensitive areas along the border.
- Weak "conservation ethic" guiding Border Patrol organization and structure.
- Poor coordination among agencies, nongovernmental organizations and the general public.
- Lack of coordination on GIS and mapping efforts.
- Absence of mechanisms and processes for addressing ecological concerns.



JAGUAR © SA TEAM/FOTO NATURAWINDEN PICTURES

- Inadequate binational cooperation, partly because of new border crossing requirements.
- Scant research and monitoring on both sides of the border.

### *Recommendations for Filling Information Gaps*

1. Develop lists of potential funding sources for borderlands research.
2. Improve interior enforcement to make ecological study and monitoring safer.
3. Collect data on impacts of illegal traffic and security operations on wildlife and habitat.
4. Monitor roads, fences and other infrastructure for impacts on ecological resources.
5. Determine compatibility of security operations and infrastructure with migratory wildlife.
6. Monitor effectiveness of operations at deterring illegal traffic across sensitive areas.
7. Collect data on wildlife corridors.
8. Develop GIS mapping of border region to provide mitigation options.
9. Study undocumented migration patterns and trends.
10. Explore opportunities for using infrared cameras and other security technology to monitor wildlife as well as people.

## CRITICAL CORRIDORS

Scientists widely recognize that preserving key linkages connecting habitat on both sides of the U.S.-Mexico border is essential to keep species moving within their traditional habitat and range. This is especially important for the health of the region's populations of imperiled species such as the jaguar, which has been absent from the United States since the 1970s. Jaguars are starting to venture back into the United States from Mexico, but fencing and road projects proposed by the Border Patrol threaten to cut off the cross-border corridors they use. To protect these and other critical corridors, the 2006 stakeholder workshop attendees identified corridors most in need of immediate attention (see map inside). They also named "indicator" species—animals commonly found in these areas—that can be monitored to help assess ecosystem health and habitat integrity. These designations and the attendees' recommendations for protecting these and other vulnerable corridors from illegal traffic and border security operations follow.

### *Critical Cross-Border Wildlife Corridors and Indicator Species*

- Baboquivari Mountain Complex  
Indicator species: cactus ferruginous pygmy-owl, Chiricahua leopard frog, jaguar, masked bobwhite quail
- Pajarita Mountain/Atascosa Mountain/Sycamore Canyon Complex  
Indicator species: Chiricahua leopard frog, elegant trogon, jaguar, Sonoran chub
- Huachuca/Patagonia Mountain-San Pedro/Santa Cruz River Complex  
Indicator species: black bear, jaguar, loach minnow, vermilion flycatcher
- Peloncillo Mountain Complex  
Indicator species: American bison, jaguar, black bear, Mexican wolf

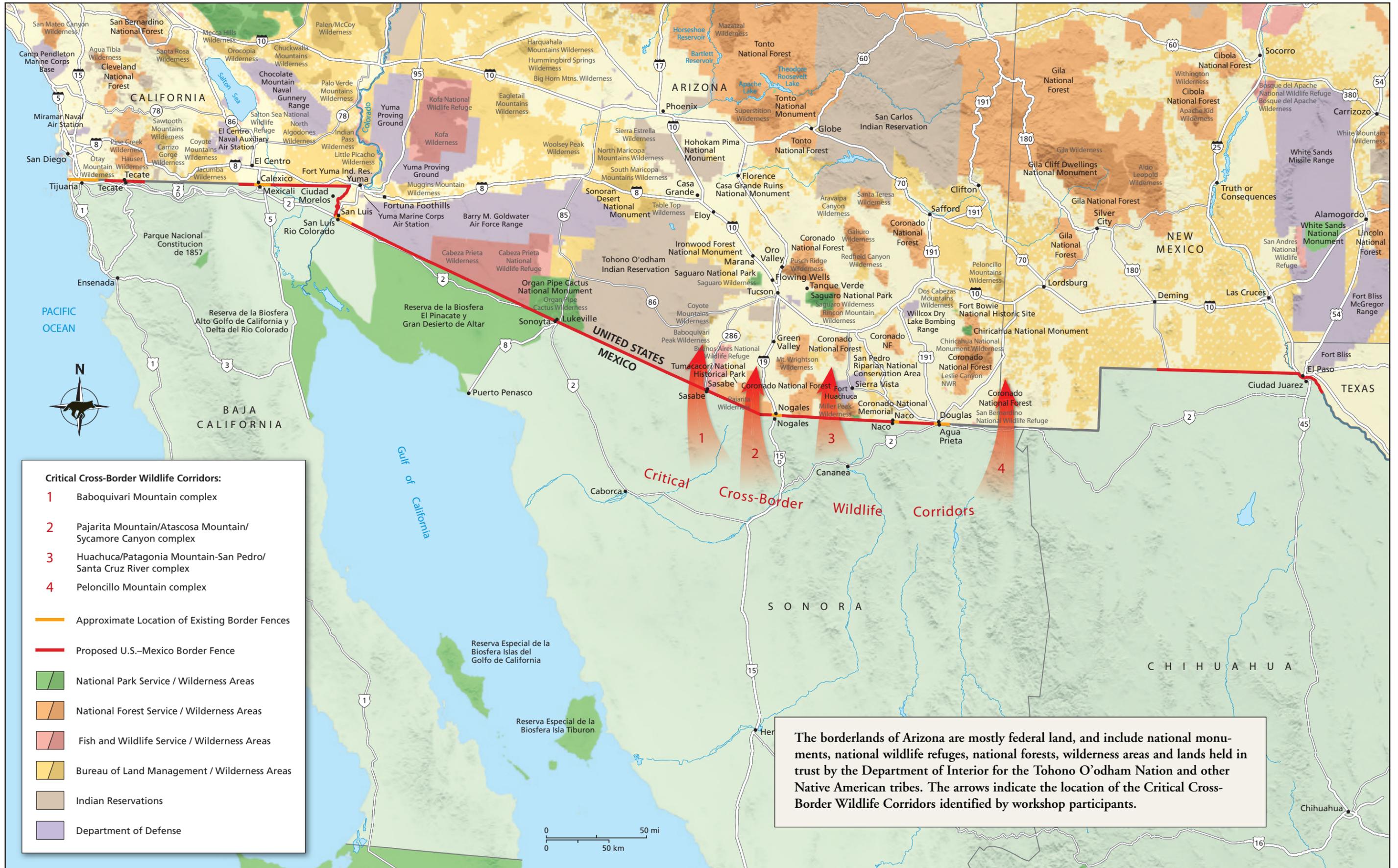
### *Other Corridors of Concern*

- Mountain ranges: Ajo Mountains, Chiricahua/Pedregosa Mountain complex
- Waterways: Colorado River, San Bernardino River, Rio Magdalena, Quitobaquito Springs, San Pedro River, Santa Cruz River
- Grasslands: San Rafael Valley, Altar Valley, Sulphur Springs Valley, San Bernardino Valley

### *Recommendations for Protecting Wildlife Corridors and other Vulnerable Lands*

1. Use "virtual" high-tech fencing options, such as unmanned aerial surveillance vehicles, motion sensors, laser barriers and infrared cameras, whenever possible.
2. Limit the use of pedestrian fences to urban and adjacent areas. In the Arizona borderlands, fencing should be a last resort and used only if cross-border species are accommodated with gaps controlled by virtual fencing and designed using the best available science.
3. Use wildlife-friendly vehicle barriers in conjunction with virtual fencing in areas where hard infrastructure is necessary and appropriate.
4. Consider allocating funds for habitat protection or other recovery efforts as mitigation for unavoidable impacts in ecologically sensitive areas.
5. Make compliance with environmental laws a top priority for all agencies.
6. Increase opportunities for collaboration among land managers, biologists, local jurisdictions, and U.S. Customs and Border Patrol at the beginning of the planning process.
7. Incorporate long-term monitoring and adaptive management at all levels to monitor the effectiveness of mitigation efforts and to inform future planning efforts.
8. Develop a comprehensive internal environmental program for U.S. Customs and Border Patrol similar to the one the U.S. military uses to address environmental issues.
9. Improve environmental education for U.S. Customs and Border Patrol agents.
10. Increase funding for borderland management agencies.
11. Clearly designate legal roads to minimize use of illegal travel routes.
12. In the western Arizona deserts, continue to press for alternatives to the reinforced double-layer pedestrian fencing mandated in the Secure Fence Act by participating in the development, implementation and monitoring of vehicle barrier plans in the Barry M. Goldwater Range, Organ Pipe Cactus National Monument, Cabeza Prieta National Wildlife Refuge, Tohono O'odham Nation lands, Buenos Aires National Wildlife Refuge and other vulnerable areas.
13. Along waterways, maintain stream flows and vegetation by keeping the impacted border corridor as narrow as possible, and limiting off-road vehicle use and the enforcement footprint to the immediate border area as much as possible.

# Vulnerable Public and Tribal Lands and Critical Wildlife Corridors in the U.S.-Mexico Borderlands



## FOR MORE INFORMATION

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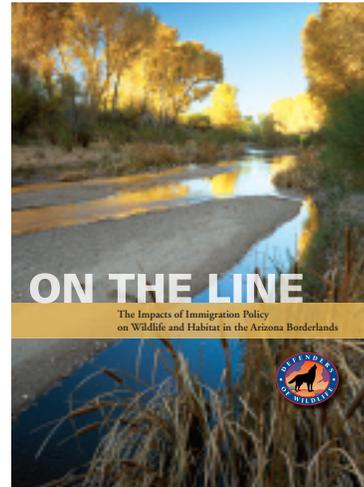
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Download Defenders' report on the devastating impacts of undocumented immigration and law enforcement activities on fragile wildlife and habitat at [http://www.defenders.org/border/border\\_report.pdf](http://www.defenders.org/border/border_report.pdf)



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