

The Bordercats Working Group: Protecting Neotropical Cats in the U.S./Mexico Borderlands

Sharon Wilcox¹, Melissa Grigione Ph.D.², and Kurt Menke³

¹Department of Geography and the Environment, University of Texas at Austin, 78701

²Department of Environmental Science and Policy, University of South Florida, 33620

³Bird's Eye View GIS Services, New Mexico, 87131

The Bordercats Working Group and the Importance of Neotropical Cats

The Bordercats Working Group (BWG) was founded in 1998 to promote recovery and conservation of ocelots (*Leopardus pardalis*), jaguars (*Panthera onca*), and jaguarundis (*Herpailurus yagouaroundi*) in the U.S./Mexico border region. The BWG is a cooperative comprised of carnivore biologists, conservation biologists, policy makers and advocates who are concerned about the present status of these neotropical cats throughout their historic range in Arizona, New Mexico, Texas, Chihuahua, Coahuila, Nuevo Leon, Sonora, and Tamaulipas. By working together in an international setting, BWG believes that great strides can be made for the survival of these "bordercats."

The BWG's projects are based on the following beliefs:

- As top predators, bordercats are a fundamental component of border ecosystems.
- Threats to bordercat survival are persistent.
- Current bordercat research is insufficient.
- Previous conservation recovery efforts are inadequate.



The BWG's objectives include:

- **Research** to determine distribution, abundance, habitat preferences, corridor use, location of core populations, and principal threats to each species. Additionally, BWG is interested in the impacts of border militarization on range, migration, and distribution of neotropical cats.
- **Education** regarding the importance of bordercats and other carnivores for school children and residents in regions impacted by the presence of bordercats.
- **Facilitation** amongst groups and individuals involved in border region conservation.

Environmental Consequences of Changing Border Security Policy: Effects of Artificial Night Lighting on Endangered Ocelots Along the United States/Mexico Border

One of the greatest challenges now facing neotropical cat conservation is finding a means to protect cross-border wildlife linkages in this ecological region. If existing and proposed security infrastructure along the border are continued as planned, there will be no wildlife-friendly crossing structures, protection for open space corridors, effective habitat mitigation plans, or other protective considerations for these species.

In an article published in *Urban Ecosystems* (2004) Dr. Melissa Grigione and Dr. Robert Mrykalo examined the impact of artificial night lighting on mammals and their habitats, and generated hypotheses regarding the effects of lights erected across the militarized U.S./Mexico border on the ocelot and its nocturnal prey. Predicting that activity patterns for ocelots and their nocturnal prey would be altered under artificial night lighting conditions, they hypothesized that evening activity levels would either be reduced or redirected towards areas with dense vegetation. In addition, ocelot foraging success would likely be altered as a result of turning night into day. This article concluded by providing recommendations for ocelot recovery and future research on surrogate species. This study provides conclusive evidence that present border security measures are not conducive to neotropical cat survival in the borderlands region, and that alternative security measures must be considered.



Identifying Priority Habitats in the U.S./Mexico Border Region: An International Effort

A detailed understanding of cat distribution is an essential building block for conservation, education, and outreach activities. However, little is known about bordercat distribution and status, and they are difficult to observe due to their low densities. These cats currently face numerous threats including poaching, land development and conversion, and the construction of highways and international bridges. Without a detailed understanding of their distribution and habitat requirements in this portion of their range, the development of adequate conservation measures are not possible.

The BWG's Solution: First Steps

To recover endangered populations and ensure their long-term survival, it is imperative to identify current cat distribution and status in the northern periphery of their range. During a three-day workshop in 2003, 29 scientists and conservationists working in this region convened to share important information relating to the distribution and status of all three species. The purpose of this study was to develop a blueprint of important conservation areas for neotropical cats in the border region of the United States and Mexico.

Sightings Gathered for each Species by Class

Experts delineated and described specific areas in the border region that once or currently support(ed) neotropical cat populations. A total of 864 cat sightings were compiled.

	I	II	III	Total
OCLOT				
Arizona	3	5	7	15
Texas	121	87	72	280
Tamaulipas	7	0	0	7
Sonora	0	0	0	0
Total	131	92	79	302
JAGUAR				
Arizona	0	25	25	50
New Mexico	0	1	1	2
Texas	22	130	143	295
Coahuila	0	0	1	1
San Luis Potosi	1	0	0	1
Sonora	0	0	0	0
Tamaulipas	2	0	0	2
Total	25	157	170	352
JAGUARUNDI				
Arizona	20	13	49	82
New Mexico	0	2	0	2
Texas	1	0	0	1
San Luis Potosi	1	0	0	1
Sonora	0	0	0	0
Tamaulipas	0	1	0	1
Total	22	16	59	97

Cat Conservation Units (CCUs)

Cat Conservation Units are defined as core pieces of habitat important to the long-term survival of a species and in which there was a population of cats currently living.

- Twenty one of these CCUs were identified, totaling 265,790 km².
- 67% are on the Mexican side of the border and 52% are for the ocelot.
- 12 study areas were identified.
- Most of this protected land (86%) is represented by jaguar units in the western bioregion north of the border.
- On average only 8.9% of the units currently have some level of legal protection.

CCUs	Total (km ²)	IUCN Protected Status (km ²)						Protected (km ²)	% Protected
		I	II	III	IV	V	VI		
Ocelot East	45,387	0	0	0	161	0	524	1,091	2.4
Ocelot West	31,535	0	0	0	0	0	601	601	1.9
Jaguar East	17,821	0	0	317	0	0	0	317	1.8
Jaguar West	102,520	5,908	0	29	0	19	14,297	20,244	19.8
Jaguarundi East	68,407	168	1,100	60	0	0	0	1,328	1.9
Total (km²)	265,790	6,076	1,423	86	161	19	15,822	23,586	8.9

Cat Conservation Corridors (CCCs)

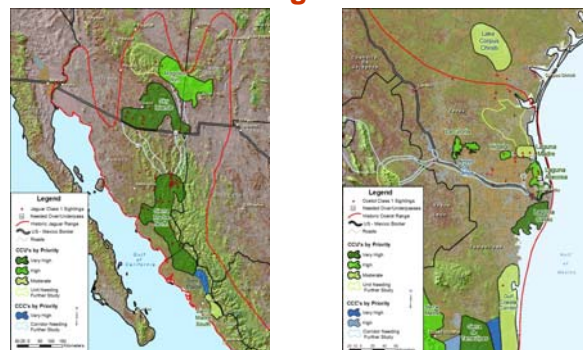
Cat Conservation Corridors are defined as linear strips of habitat connecting otherwise isolated CCUs which had documented evidence of cat movement within them.

- Seven CCCs were identified totaling 11,453km².
- None of these connect CCUs across the international border.
- 12 study areas were also identified, 50% of which connect areas across the border.
- There were no CCCs identified for jaguarundi.
- Only one CCC in the study currently has protection.

CCC's	Total (km ²)	IUCN Protected Status (km ²)						Protected (km ²)	% Protected
		I	II	III	IV	V	VI		
Ocelot East	5,421	0	0	0	0	0	0	0	0
Ocelot West	0	0	0	0	0	0	0	0	0
Jaguar East	2,712	0	129	0	0	0	0	129	4.7
Jaguar West	3,320	0	0	0	0	0	0	0	0
Jaguarundi East	0	0	0	0	0	0	0	0	0
Total (km²)	11,453	0	129	0	0	0	0	129	1.1

Maps Identifying Priority Habitats in the U.S./Mexico Border Region for Neotropical Cats

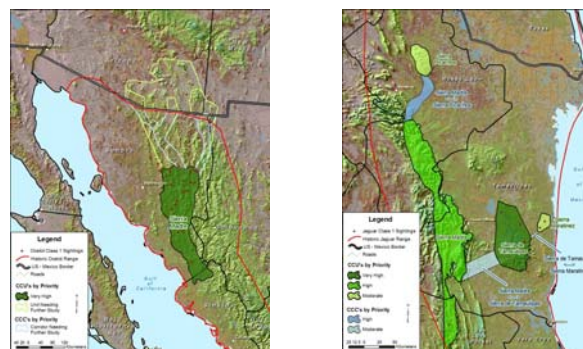
Jaguar



Jaguarundi



Ocelot



Future Projects

The two main benefits of this cooperative habitat mapping project were the identification of high priority areas for future research and conservation measures, and the strengthening of an international network of concerned scientists and conservationists. It is this synthesis of people and knowledge on both sides of the border that is fundamental to the future protection of these bordercats. BWG is currently developing a number of projects to address its goals in these high priority areas. These projects include:

Research: BWG continues to study range dynamics among bordercat species. Recent studies have demonstrated that when species become endangered, they persist in the periphery of their historic geographical ranges (Channell and Lomolino, 2000). This pattern is contrary to conventional wisdom that range contractions accompany species decline such that populations persist in core portions of their historic geographical ranges. This recent insight suggests that periphery populations of neotropical cats in the border region may in fact be more persistent than populations closer to the center of their distribution, in parts of Central and South America.

Additionally, BWG is developing a study to gauge perceptions and perceived relationships to bordercats among residents throughout the borderlands region, and to determine how these attitudes and perceptions affect actions and policies toward bordercats. BWG's hope is that the results of this study will better inform conservation, education, outreach, and incentive programs, so that they are more effective and sustainable within these communities.

Education: Currently, BWG is completing a teacher's guide and educational booklet about bordercats for distribution in rural Mexican schools. In the future, a similar educational program will be developed for school children in the United States.

Outreach: BWG is exploring programs to address the needs and concerns of landowners, farmers and ranchers in the region through outreach and incentive programs.



Conclusion

The current lack of protections afforded to neotropical cats is alarming and requires immediate attention from the international community. There is a lack of understanding of all three species along the border and more research is needed, especially in the study areas identified, to increase understanding of their status and biological requirements. There is also a need for better understanding of the social, cultural, economic, and political contexts that inform perceptions of and actions toward neotropical cats in the borderlands region, so that conservation, education, and outreach measures can be more sensitive and effective in the future.

For more information contact:

Sharon Wilcox
Email: SEWilcox@mail.utexas.edu

Dr. Melissa Grigione
Email: MMGrigione@bordercats.org

Web: <http://www.bordercats.org>

