The Environmental Impacts of the Border Wall Between Texas and Mexico

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INTRODUCTION

The United States government asserts that construction of the border wall between Texas and Mexico would affect wildlife and aquatic resources by conferring only "short- and long-term negligible to moderate adverse and minor beneficial impacts."[3] This assertion is inaccurate, according to ecologists and wildlife biologists and information contained in the government's own preliminary environmental documents. To the contrary, the detrimental effect of the border wall on wildlife and the environment in Texas will be significant. The serious deleterious effects of the border wall have been documented by scientific research, review of historical evidence, and expert opinion. In contrast, the data relied upon to formulate the government's conclusion of "negligible to moderate adverse and minor beneficial impacts" is almost non-existent. Furthermore, in its environmental reviews the government failed to adequately consider the proposed border wall's indirect or cumulative effects, the effects to wildlife and conservation lands, and meaningful alternatives that could minimize environmental damage.

INTERNATIONAL AND DOMESTIC LEGAL FRAMEWORK

In the United States, the National Environmental Policy Act (NEPA) requires that federal agencies conduct analyses of the environmental effects of "major Federal actions" that "significantly affect the quality of the human environment." [4] NEPA requires that agencies prepare environmental impact statements (EIS) to document the environmental effects and analyze alternatives to the Federal action (including "no action").[5] The EIS must meet certain statutory criteria. In addition to an analysis of alternatives, NEPA requires an EIS to include (1) a description of the environmental impacts of the proposed action, (2) any unavoidable adverse environmental impacts, (3) the relationship between short term uses of the environment and maintenance of long term ecological productivity, (4) an analysis of secondary and cumulative impacts, and (5) a description of any "irreversible and irretrievable commitments of resources" that would be involved in the proposed action, should it be implemented.[6]

In addition to NEPA, the federal Endangered Species Act (ESA) requires that federal agencies consult with the Secretary of the Interior when a proposed agency action "may affect" a plant or animal that has been listed as "threatened" or "endangered" pursuant to the law.[7] The consultation process requires that the agency document the effects of the proposed action on the species and their habitats, ensure that the action will not "jeopardize the continued existence" of the species, and implement measures designed to minimize the impact of the proposed action on the species.[8]

In April 2008, Secretary of Homeland Security Michael Chertoff exercised his authority under federal immigration law to waive all applicable environmental statutes that may apply to the

[3] Draft Environmental Impact Statement for Construction, Maintenance, and Operation of Tactical Infrastructure, Rio Grande Valley Sector.
[4] 42 U.S.C. § 4332(C).
[5] Id.
[6] Id.
[7] 16 U.S.C. § 1536(a)(3).
[8] 16 U.S.C. § 1536(b).

construction of the border wall, including NEPA and the ESA .[9] In doing so, he authorized a stark departure from the normal protocol of taking account of environmental issues in situations in which a government project will have clear and far reaching environmental impacts.[10] The procedural protections provided by NEPA and the ESA were rendered toothless by the waiver.

In addition to U.S. laws that are intended to protect the environment, both for its own sake and for the benefit of people who rely on wildlife and other natural resources, international law requires that natural resources be protected. For example, the Inter-American Commission on Human Rights concluded in a report involving the Maya Indigenous Communities of the Toledo District of Belize that environmental damage caused in that case by logging impacted the property rights of the Mayan people.[11] In this case, environmental resources, and the people who rely on them, will suffer as a result of the U.S. government's decision to build the wall without a thorough analysis or mitigation of its environmental impacts.

Insufficiency of Government Analysis

Prior to issuing the waiver of environmental laws, the Department of Homeland Security (DHS) had prepared a draft environmental impact statement (DEIS) and a draft environmental assessment (EA) for certain segments of the wall.[12] The DEIS and EA were inadequate. It is likely that, had the waiver not been issued by DHS, environmental and indigenous groups would have challenged the sufficiency of the NEPA environmental review. Essentially, the environmental studies commissioned by DHS appeared to be designed to support a predetermined decision: construct the border fencing regardless of any cost to the natural environment or the people who depend on it.

Several U.S. environmental organizations commented on the draft environmental documents earlier this year. Following is a description of some of the most serious inadequacies that were identified by the organizations in their comments. First, the DEIS and EA inadequately addressed the wall's effects on wildlife and ecology, basing conclusions on unacceptably short studies outside normal migratory and breeding seasons.[13] Second, no analyses on the impacts of wetlands were included. Third, the EA did not mention potential impacts to threatened and endangered species, despite the fact that affected project areas are home to numerous bird and mammalian species that depend on the impacted areas for water, food, cover, and migration. The project areas covered by the Rio Grande Valley DEIS are home to several endangered or threatened species, yet the DEIS contained only a

[9] The waiver authority is found in section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act, 8 U.S.C. § 1103.
[10] "DHS Exercises Waiver Authority to Expedite Advancements in Border Security," Department of Homeland Security Press Release, April 1, 2008, available at http://www.dhs.gov/xnews/releases/pr_1207080713748.shtm.
[11] I/A Comm. H.R., Report N° 40/04, Case 12.053, Maya Indigenous Community (Belize), Annual Report of the Inter-American Commission on Human Rights 2004.
[12] An EA was prepared for the El Paso segment and a draft EIS (DEIS) was prepared for another segment in the Rio Grande Valley.
[13] The El Paso EA bases its conclusion on two single day surveys which were conducted outside migratory and breeding seasons, while the Rio Grande Valley DEIS's conclusions are based on a 6-day biological study also conducted outside the breeding season.

cursory analysis of the effects of construction on these species. Finally, the DEIS and EA failed to address the impacts of artificial night lighting on migratory birds or other animals.

One of the most significant flaws in the DEIS is the inadequate discussion of alternatives. As mentioned above, NEPA requires that an EIS contain a discussion of the "alternatives to the proposed action."[14] This analysis of alternatives is "the heart" of the NEPA process, and is intended to provide a "clear basis for choice among options by the decision maker and the public."[15] An agency's failure to consider reasonable alternatives is fatal to its NEPA analysis of a proposed action.[16] However, before the analysis of alternatives is even reached, an agency must first specify the "purpose and need to which the agency is responding in proposing the alternatives included in the proposed action."[17] A project's stated goal will dictate the range of "reasonable" alternatives and an agency cannot define its objectives in "unreasonably narrow terms."[18] By logical and legal extension, then, every time an agency prepares an EIS, it must answer three questions in the following order:

1. What is the purpose of the proposed project (the major federal action)?
2. Given that purpose, what are the reasonable alternatives to that project?
3. To what extent should the agency explore each particular reasonable alternative?[19]

Instead of articulating a purpose that reflects the national goal of improving border security, and then addressing different avenues by which to achieve that goal, DHS instead defined <u>border wall construction</u> itself as the goal: The "purpose of the Proposed Action is to increase border security… through the construction, operation, and maintenance of tactical infrastructure in the form of fences, roads, and supporting technological and tactical assets."[20] By so drastically narrowing the scope of the project's purpose, DHS restricted the range of alternatives considered to an extent that U.S. courts have not allowed.[21]

In addition to inadequate treatment of alternatives, DHS failed to consider indirect effects such as immigration diversion and interference with land management practices that would result from the border wall's construction. Agencies are required to assess foreseeable, indirect effects of their actions: "Reasonable forecasting and speculation is implicit in NEPA, and we must reject any attempt by agencies to skirt their responsibilities under NEPA by labeling any and all discussion of future environmental

[14] 42 U.S.C. §433.
[15] 40 C.F.R. 1502.14; Citizens for a Better Henderson v. Hodel, 768 F.2d 1051, 1057 (9th Cir. 1985) (EIS must consider "every" reasonable alternative).
[16] *See* Idaho Conservation League v. Mumma, 956 F.2d 1508, 1519-20 (9th Cir. 1992) (The existence of a viable, but unexamined alternative renders an environmental impact statement "inadequate.").
[17] 40 C.F.R. §1502.13.
[18] City of Carmel by the Sea v. DOT, 95 F.3d 892 (9th Cir. 1996).
[19] *Id.* at 903.
[20] Draft Environmental Impact Statement for Construction, Maintenance, and Operation of Tactical Infrastructure, Rio Grande Valley Sector, p. 5.
[21] *See* Carmel by the Sea, 123 F.3d at 1155.

effects as crystal ball inquiry."[22] DHS has over a decade of experience with the phenomenon of shifting migration, where increased enforcement efforts in one zone predictably lead to increased illegal immigration and subsequent increased enforcement efforts within adjoining areas. These indirect effects, and the environmental impacts that will accompany them, are nonetheless overlooked by DHS in its environmental analyses.

Finally, the EA and DEIS also failed to adequately consider cumulative effects. Cumulative effects are defined in NEPA regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non Federal) or person undertakes such other actions."[23] Failure to conduct a detailed cumulative effects analysis discredits DHS' position, as "[g]eneral statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided."[24] The environmental analyses commissioned by DHS produced only ambiguous generalities with no effort to provide specific details of likely cumulative effects.

Direct Wildlife & Ecological Impacts

The direct effects of border wall construction and maintenance will be significant and detrimental to past, present, and future conservation efforts. The fence is slated to traverse important ecological areas, including (but not limited to) the Lower Rio Grande Valley National Wildlife Refuge and The Sabal Palm Audubon Center and Sanctuary. The Nature Conservancy also owns property in the region, which is managed as wildlife sanctuary. This section will examine some of the direct impacts on those regions that will likely result from the construction and maintenance of the border wall.

Movement & Habitat Fragmentation

The Lower Rio Grande Valley in general, including protected areas like the Wildlife Refuge and the Sabal Palm Audubon Center, is home to a vast array of wildlife and plant diversity, including endangered and threatened species. Many of the rare species are found on both sides of the border; their ranges are not restricted to one country or the other. The refuges' primary wildlife conservation strategy has been to link habitat patches that are isolated due to intense agriculture, urbanization, and other factors, in order to create and maintain a more continuous wildlife corridor for the species that migrate and move among habitat areas. This goal of habitat connection in south Texas has been a guiding management practice since 1979, and the federal government has spent over $80 million in taxpayer money to support piecemeal aggregation of the refuge which today exceeds 90,000 acres.[25] Various government and private agencies in Texas and Mexico have entered into agreements or memoranda of understanding (MOUs) over the years to establish international wildlife corridors and

[22] Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810, 816-17, *rev'd on other grounds*, Robertson v. Methow Valley Citizens Council, 490 U.S. 332 (1989) (internal quotations and citations omitted).
[23] 40 C.F.R. §1508.7.
[24] Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1379-80 (9th Cir. 1998).
[25] Defenders of Wildlife, RE: Comments on Draft Environmental Impact Statement for Construction, Maintenance, and Operation of Tactical Infrastructure, Rio Grande Valley Sector, Texas, submitted December 31, 2007, at 4.

protected areas. These MOUs resulted from many years of collaboration and negotiation on both sides and are imminently threatened by the proposed border wall construction along the Rio Grande River.

Construction of the proposed border wall will degrade and fragment over 500 acres of land, of which over 400 serve as wildlife habitat. Destruction and/or alteration of this habitat will impose additional stress on wildlife in a region that has already been cleared of 95% of its native vegetation. Major wildlife impacts from border wall construction include at least the following: increased road mortality along access and patrol roads, loss of habitat cover and connectivity, altered wildlife behavior and range due to high intensity lightning/construction/operational noise, and the interruption of mating activities necessary to sustain wildlife populations over time.[26] These effects are significant and irreversible, and fly in the face of DHS's conclusion that the construction of a border fence "would not significantly increase impediments" to wildlife movement and migration in its vicinity.[27]

The wall segments described in the Rio Grande Valley DEIS could imperil the recovery of endangered species in the project area including the ocelot and jaguarondi. The ocelot and jaguarondi are tropical species at the northern limit of their natural habitat range. The barrier that would be created by the border wall would almost certainly expedite the disappearance of these species from the U.S. and could essentially nullify decades of cost- and labor-intensive planning, restoration, and recovery efforts. Habitat connectivity has been shown to be extremely critical in the outer range of a species distribution, where resources are typically smaller, more isolated, and lower in quality.[28] Border wall construction and maintenance will further isolate resource patches and prevent critical dispersal events from occurring.

The U.S. Fish and Wildlife Service (FWS) draft ocelot recovery plan, which has not yet been released for public review, confirms the serious implications of border security construction activities such as lighting, fencing, road construction, and human activity, which are among critical threats that will collectively determine the endangered ocelot's chances at recovering in the U.S. [29] Specifically, habitat loss and travel corridors necessary for ocelot population maintenance will be severely compromised by the border wall. Recovery of the ocelot in the U.S. will be more challenging if the population is genetically and demographically isolated from the much larger Mexican population.[30]

An extensive body of scientific research supports the major impacts of habitat fragmentation. The movement ability of a given species is a key factor in determining its distribution, abundance, extinction/recovery, and gene flow.[31] Restoring populations of threatened and endangered species (such as the ocelot) requires management approaches that enhance – or, at least, *maintain* – habitat

[26] *Id.* note 3 at 5.
[27] *Id*. at 9.
[28] J.H. Brown, D.W. Mehlman, and G.C. Stevens, *Spatial Variation in Abundance*, Ecology 76:2028-45, 1995; R.J. Wilson et. al., *Large Scale Patterns of Distribution and Persistence at the Range Margins of a Butterfly*, Ecology 83:3357-3368, 2002.
[29] U.S. Fish and Wildlife Service, Draft Ocelot (*Leopoldus pardalis*) Recovery Plan, Southwest Region, Albuquerque, NM. 2007(b)(revision dated 04/07).
[30] *Id.*
[31] *See i.e.* J. Colbert et. al., *Dispersal*, Oxford University Press, London, 2001.

connectivity. Impermeable border walls will certainly block and/or limit cross border dispersal events between resource patches to the detriment of wildlife populations. For example, mule deer depend upon seasonal migration and will be prevented from easily accessing resources by the construction of the border fence. While they may be able to circumvent the wall, to do so will require them to re-learn how to access these resources and expend greatly more energy to do so. If they are unable to circumvent the wall, population loss will result. The negative effects of impermeable walls on wildlife movement have been documented in other countries: a security fence build along the India-Pakistan border has altered wildlife movements and resulted in increased human-wildlife conflict.[32]

Impacts to Other Threatened and Endangered Species

The construction of the border wall will deleteriously affect other endangered species, in addition to the ocelot and jaguarondi. Five endangered species are known to exist in the El Paso area, including the Northern aplomado falcon, Southwestern willow flycatcher, and Mexican wolf. Moderate and highly suitable habitat for the endangered falcon exists both to the immediate north and south of the project area, and while the species was not detected during surveys for the proposed project, currently unoccupied habitat could easily become occupied as the species recovers and expands its range into suitable habitats adjacent to the project corridor. The Northern aplomado falcon has been sighted a mere 35-40 miles from the project corridor, which in terms of highly mobile raptors is quite close.[33]

Additionally, the Mexican gray wolf, the most endangered mammal in North America, is currently the subject of intense reintroduction efforts in Arizona and New Mexico. As this population expands, more reintroduction sites will be utilized. Several sites along the U.S.-Mexico border show promise, and scientists believe it is essential that protected wolf habitat areas include functional corridors for wolf populations in border regions. Border fencing is contradictory to maintaining these transboundary connections, and will have long term negative effects on Mexican wolves' ability to move between suitable habitat in the U.S. and Mexico.

Artificial Night Lighting

Part of the proposed border fence infrastructure calls for miles of high intensity artificial lighting, which has been shown to have detrimental effects on migratory birds: light towers have been documented to cause "tower kills" when large concentrations of birds become confused by the lights and fatally collide with the structures or each other.[34] However, not much is known about night lighting impacts on other animals such as mammals. Even if animals, as suggested by one ecologist, "choose to move away from" the lights, this avoidance effect itself would be significant to species in the lighted area, especially nocturnal animals.

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[32] A. Pahalwan, *Fenced In, Kashmir's leopards, bears stalk villages*, Reuters, available at http://www.reuters.com/article/scienceNews/idUSDEL17197120061123 (accessed May 2008).
[33] *Id*. at 12.
[34] Defenders of Wildlife, RE: Comments on Draft Environmental Assessment for the Proposed Construction, Operation and Maintenance of Tactical Infrastructure, U.S. Border Patrol El Paso Sector, El Paso, Texas, submitted March 19, 2008, at 8.

Indirect Effects on Wildlife and Ecology

NEPA defines indirect effects as those effects that "are caused by action and are later in time or farther removed in distance, but are still reasonably foreseeable."[35] Significant indirect effects of border wall construction will include diversion of immigration flow and impairment of land management practices such as prescribed burns and other wildfire strategies.

Shifting Immigration Patterns

Since the early 1990's, which marked the beginning of the Border Patrol's implementation of its deterrence strategy, fence construction and associated infrastructure development of roads, lighting systems, remote camps, and other enforcement efforts have had clear indirect "ripple effects" on other areas of the border by shifting—but not decreasing – illegal immigration activities. The shifting effects caused by enforcement efforts, as well as their environmental effects, have been extensively documented: A 2004 study noted that while illegal migrant apprehensions in urban areas such as San Diego and El Paso *decreased* by a combined 64% since 1993, apprehensions on land managed by the Department of the Interior (DOI) *increased* dramatically.[36] Between 1997 and 2000, the number of undocumented migrants apprehended on DOI lands exploded from 512 to over 113,000, while the National Park Service estimates that 200,000 undocumented migrants entered Arizona's Organ Pipe National Monument alone in 2001.[37]

Construction of the border wall in proposed areas will undoubtedly result in this same pattern of diverting illegal immigration through more isolated pathways, potentially affecting the wildlife and ecology in those areas in ways they would not have been affected otherwise. In its draft ocelot recovery plan (*supra*), FWS anticipates the effects of shifting migrants into more remote and sensitive areas as an important factor affecting the recovery of this endangered species: "One result of increased [enforcement efforts] on traditionally used points of entry by undocumented immigrants is to push potential immigration into the most inaccessible zones where impacts on the ocelot and other species may be high."[38]

Interference with Land Management Practices

The proposed construction of border fencing will alter normal habitat and wetland management on refuge lands. If the border wall is constructed as proposed, as many as 40,000 acres of federally maintained land could end up inaccessible to U.S. land managers. Federal land managers will be prevented or hindered from performing tasks necessary to control invasive plants and respond to the 300+ wildfires per year on refuge land. Prescribed burns, an important tool in wildfire management, will be severely obstructed if fire crews are bound on one side by the Rio Grande River and the other by an impenetrable wall. The Sabal Palm Audubon Center could end up entirely on the other side of the

[35] 40 C.F.R. §1508.8(b).
[36] GAO Report 04-590, *Border Security: Agencies Need to Better Coordinate Their Strategies and Operations on Federal Lands* (2004).
[37] *Id.*
[38] *Id.* note 3.

fence, raising a host of practical and serious questions related to insurance, access to local government services, and entitlement to U.S. federal funds.

Incompatibility with Bi-national Conservation Efforts

The Mexican government has stated its opposition to the border wall on many grounds, including the fact that it will have negative impacts on the ecosystems along the border that both countries are trying to manage and protect. In a communiqué issued by the Mexican government in June 2007, for example, the government stated, "Mexico has emphasized the negative impact that [the wall] will have on ecosystems on the border, particularly in relation to migratory species."[39]

In May 2007, the Mexican Secretariat of Environment and Natural Resources convened a scientific workshop that included 55 experts and academics from the U.S. and Mexico to discuss the environmental impact of construction of the border wall. The papers were collected in the publication A Barrier to Our Shared Environment. The Border Fence between the United States and Mexico.[40] The papers in the book documented the threat that the border fence represents for the viability of species and ecosystems. Some of the papers also addressed the fact that construction of the border wall represents a regression in bilateral diplomacy and runs counter to efforts to conduct productive binational dialogues between the governments of the United States and Mexico to avoid foreseeable damages to the border ecosystems.[41]

Environmental Damage Impact on Humans

The damage to wildlife, wildlife habitats, and border ecosystems that will likely result from construction and maintenance of the border wall will impact people, too. The indigenous people who live along the border depend on the natural environment for their sustenance and survival, as well as for ritual purposes. The impacts on these peoples are described in a separate paper.[42] Other residents of the region enjoy access to the national wildlife refuge and other sanctuaries in order to observe wildlife and the natural environment. The species that historically populated the border region, many of which are rare and in decline today, are part of the natural heritage of Americans and Mexicans. The citizens of both countries will be poorer if this natural heritage is lost.

CONCLUSION

The construction of the border wall will have significant impacts on humans, wildlife, and the environment. U.S. law – the National Environmental Policy Act and the Endangered Species Act, specifically – mandates that federal agencies document the impacts of proposed federal actions on the

[39] The communiqué is found on the website of the Ministry of Foreign Relations at http://www.sre.gob.mx/csocial/contenido/comunicados/2007/jun/cp_167.html.
[40] Available at: http://www.ine.gob.mx/publicaciones/consultaPublicacion.html?id_pub=519.
[41] *Id.*
[42] See Michelle Guzman & Zachary Hurwitz, Violations on the Part of the United States Government of Indigenous Rights Held by Members of the Lipan Apache, Kickapoo, and Ysleta del Sur Tigua Tribes of the Texas-Mexico Border, at 15-17.

human environment and minimize impacts to threatened and endangered species. In this case, DHS Secretary Michael Chertoff has waived U.S. federal and state environmental laws applicable to the border wall. As a result, there will be no meaningful government review of the impacts of the wall on the environment and the people who live in the border region. The result will be the loss of rare species and our bi-national natural heritage.