In Harm's Way

How the U.S. State Department and U.S. Fish and Wildlife Service Have Ignored the Dangers of the Keystone XL Pipeline to Endangered Species

by Lori Ann Burd, Noah Greenwald and Curt Bradley

September 2013

Center for Biological Diversity

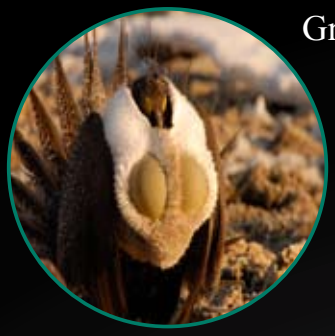
Threats to Imperiled Species From Keystone XL

American burying beetle

Mowing vital grassy habitat, smashing during construction, spills

Northern swift fox

Construction crushing adults and offspring in dens, lost prairie habitat



Greater sage grouse

Construction noise and spills destroying adjacent strutting grounds

Whooping crane

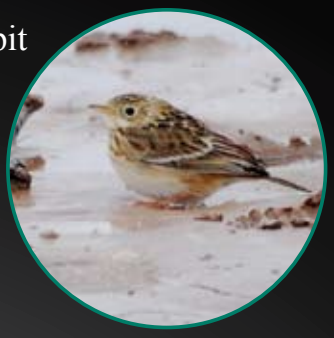
Toxic tailing ponds in Canada, power line collisions in the U.S, spills

Black-footed ferret

Cuts over potential recovery habitat, reduces chance of reestablishment

Sprague's pipit

Construction activities cutting through native prairie breeding grounds



Piping plover

Power line collisions, increased exposure to raptors, pipeline spills

Western prairie fringed orchid

Construction activities cutting through native prairie breeding grounds

Pallid sturgeon

Construction activity, inevitable pipeline spills would destroy habitat

Interior least tern

Construction disturbing breeding grounds, power line collisions, spills

EXECUTIVE SUMMARY

Under the Endangered Species Act ("ESA"), the U.S. Department of State and U.S. Fish and Wildlife Service ("FWS") are required to analyze the potential impacts of the Keystone XL pipeline and ensure that it will not jeopardize the continued existence of any endangered species. In analyzing the proposed pipeline's impacts, the State Department and FWS summarily dismiss or ignore some of the most significant harms that these species would face if this pipeline is approved and built. They failed to fulfill their duties under the ESA and to the American public, which overwhelmingly supports the protection of wildlife.

To identify the true impacts of the Keystone XL ("KXL") pipeline on endangered species, the Center for Biological Diversity has mapped the location of imperiled species along the pipeline's 1,700-mile route and analyzed key documents produced by both the State Department and FWS. We found that both agencies excluded consideration of the impact of pipeline spills on endangered species, despite otherwise acknowledging that spills are all but certain to occur. They also failed to consider the impacts of related infrastructure like power lines and roads, improperly downplayed the impacts of ground disturbance, and ignored the impacts of increased tar sands production on endangered species in Canada.

We find that at least 12 threatened and endangered species in four states will be put in harm's way by the proposed Keystone XL pipeline. They include whooping cranes, interior least terns, American burying beetles, northern swift fox, greater sage grouse, piping plovers, pallid sturgeons and black-footed ferrets.

Our review of available documents on the location and habitat needs of endangered species along the pipeline's route clearly shows that the Keystone XL pipeline would have significant and long-lasting detrimental effects on some of America's most imperiled species, with the potential to severely impair their recovery or even contribute to the extinction of animals like the pallid sturgeon and whooping crane. The American public has invested substantial monetary and human resources in the recovery of the sturgeon, crane and other endangered species in the path of the pipeline. It deserves a complete analysis and full disclosure of the impacts of Keystone XL on these species' survival and recovery.

Highlights of what we found:

Pipeline Spill Impacts

- The agencies in charge of evaluating spill risks have minimized the risk and consequences of KXL spilling.
- KXL would spill an average of 1.9 times annually, releasing an average of 34,000 gallons of dirty tar sands oil each year. Past tar sands oil spills have devastated local wildlife, but the State Department completely fails to consider the cumulative effects of spills on terrestrial wildlife and migratory birds in important bird areas.
- Even though the agencies admit that the toxic effects of tar sands spills can reduce entire populations or biological communities of sensitive species, they come to the unsupported conclusion that endangered species such as the pallid sturgeon and American burying beetle would not be adversely impacted by pipeline spills.

Photo Credits. Cover photo by LWP Kommunicacio / Flickr Commons. Photos on "Threats to Imperiled Species" page: American burying beetle by Doug Backlund; greater sage grouse by Robert Crow; black-footed ferret, pallid sturgeon, swift fox, and western prairie fringed orchid courtesy of USFWS; piping plover and interior least tern courtesy of Nebraska Game and Parks Commission; whooping cranes by Claire Timm / Flickr Commons; Sprague's pipit by Jerry Oldenettel / Flickr Commons; Arkansas river shiner courtesy of USFWS; woodland caribou by Jon Nickles courtesy of USFWS; northern long-eared bat courtesy of USFWS; snow geese by Mizmac / Flickr Commons; Fort McMurray by Kris Krug / Flickr Commons
All maps by Curt Bradley / Center for Biological Diversity.

Power Line Impacts

- KXL would require the construction of 378 miles of new power lines, creating significant collision threats for imperiled birds and bats.

- Only about 300 endangered whooping cranes remain in the wild. Nearly all of the pipeline's route through Nebraska is within the migratory corridor used by 90 percent of these whooping cranes, and cranes are particularly susceptible to collisions because they are so lanky. The agencies wrongly conclude that by utilizing bird flight diverters — devices scientists deem only marginally effective — power line collisions would not adversely impact whooping cranes or other avian species.

Ground Disturbance

- Construction on just the northern U.S. segment of the KXL pipeline would directly disturb about 15,500 acres and would require the construction of hundreds of new roads.

- While the State Department admits that building KXL could result in the crushing of endangered northern swift foxes with young in dens, the State Department and FWS ignore their legal duty to consider impacts to this tiny imperiled fox under the Endangered Species Act.

International Wildlife Impacts

- By creating new infrastructure to move dirty tar sands oil, building KXL would allow for more tar sands extraction in Canada's rich boreal forest. Threatened woodland caribou are experiencing a rapid decline due to loss of habitat in the tar sands region, with one once-vast herd tragically expected to soon fall below 10 individuals.

- Increasing tar sands extraction will have devastating climate impacts. Species such as polar bears in the Arctic and emperor penguins in the Antarctic are already in rapid decline due to climate change, and building KXL would exacerbate this problem. The agencies have refused to consider KXL's international repercussions.

These are just a few of the significant impacts of KXL that the State Department and FWS have failed to properly analyze. By disclosing the ramifications of building KXL for protected wildlife, this report makes plain that this project's impacts are simply unacceptable.

Introduction

The proposed Keystone XL ("KXL") tar sands pipeline would be a disaster for the environment. The 1,700-mile pipeline would transport the world's dirtiest oil across America's heartland. It would also facilitate expanded development of Canada's tar sands.[1]

Tar sands oil for KXL would be extracted from northeastern Alberta, Canada. Scientists have described Canadian tar sands extraction as "one of the largest industrial undertakings in human history."[2] Tar sands development requires the destruction of massive areas in the ecologically significant boreal forests.[3] Boreal forests store 22 percent of the total carbon on earth.[4] Billions of birds, including half of America's migratory birds, nest in the boreal forest and about 300 bird species breed in or migrate through the very habitat where tar sands extraction and processing occurs.[5] The region is also the epicenter of habitat for North America`s iconic and imperiled woodland caribou. [6]

Producing tar sands oil requires up to three barrels of water for every barrel of oil.[7] Compared with conventional crude oil production, it generates 70 to 110 percent more greenhouse gas emissions from well to tank.[8] But perhaps most significantly, the tar sands represent a massive new source of fossil fuels, which leading climate scientist Dr. James Hansen has called "game over" for avoiding climate catastrophe caused by global climate change.[9] These concerns are significant, but this report focuses on something else: the oft-ignored imperiled plants and animals that live along the pipeline route and will be seriously harmed by construction and operation of the pipeline.

In this report we will show that the Keystone XL pipeline would be a disaster for endangered species and that the federal agencies entrusted with evaluating its risks — the U.S. State Department and U.S. Fish and Wildlife Service ("FWS") — have failed to account for its devastating impacts. In their deeply flawed analysis of the wildlife impacts, the State Department concluded[10] and Fish and Wildlife Service agreed,[11]

---

[1] Ian Austen, *Canadian Documents Suggest Shift on Pipeline,* New York Times, August 25, 2013, *available at* http://www.nytimes.com/2013/08/26/business/global/canadian-documents-suggest-shift-on-pipeline.html?emc=edit_tnt_20130825&tntemail0=y&_r=0. *See also* Canadian Energy Research Institute Writers, Pacific Access: Part 1, Linking Oil Sands Supply to New and Existing Markets, Canadian Energy Research Institute, 28 (July 2012), *available at* http://www.ceri.ca/images/stories/part_i_-_impacts_of_oil_sands_production_-_final_july_2012.pdf.

[2] McLinden, C. A., V. E. Fioletov, K. F. Boersma, N. A. A. Krotkov, C. Sioris, P. Veefkind, and K. Yang (2012), *Air Quality Over the Canadian Oil Sands: A First Assessment Using Satellite Observations*, Geophysical Research Letters., doi:10.1029/2011GL050273, 1 (February 2012).

[3] Natural Resources Defense Council et al., *Going in Reverse: The Tar Sands Oil Threat to Central Canada and New England*, 2 (April 2002), *available at* http://www.nwf.org/~/media/PDFs/Regional/Northeast/KeystoneTrailbeaker4pgr_0412_06.ashx.

[4] Boreal Songbird Initiative, *Canada's Boreal Forest: Shield Against Global Warming, available at* http://www.borealbirds.org/resources/factsheet-IBCC-globalwarming.pdf.

[5] Kari Lydersen, *Migratory Birds Endangered by Tar Sands Mining, Environmental Groups Report,* Washington Post, December 26, 2008, *available at* http://www.washingtonpost.com/wp-dyn/content/article/2008/12/25/AR2008122500928.html.

[6] Global Forest Watch Canada, *Canada's Woodland caribou: Industrial Disturbances in Their Ranges and Implications for Their Survival* (January 2012), *available at* http://www.globalforestwatch.ca/pubs/2012Energy/01CaribouDisturbance/Caribou_Industrial_Disturbances_2012.pdf.

[7] Ed Struzik, *Report: With Tar Sands Development, Growing Concern on Water Use,* Yale Environment 360, http://e360.yale.edu/feature/with_tar_sands_development_growing_concern_on_water_use/2672/.

[8] Richard K. Lattanzio, *Canadian Oil Sands: Life-Cycle Assessments of Greenhouse Gas Emissions,* Congressional Research Service, Summary (July 18, 2012), *available at* http://www.fas.org/sgp/crs/misc/R42537.pdf.

[9] James Hansen, *Game Over for the Climate*, New York Times, May 9, 2012, http://www.nytimes.com/2012/05/10/opinion/game-over-for-the-climate.html.

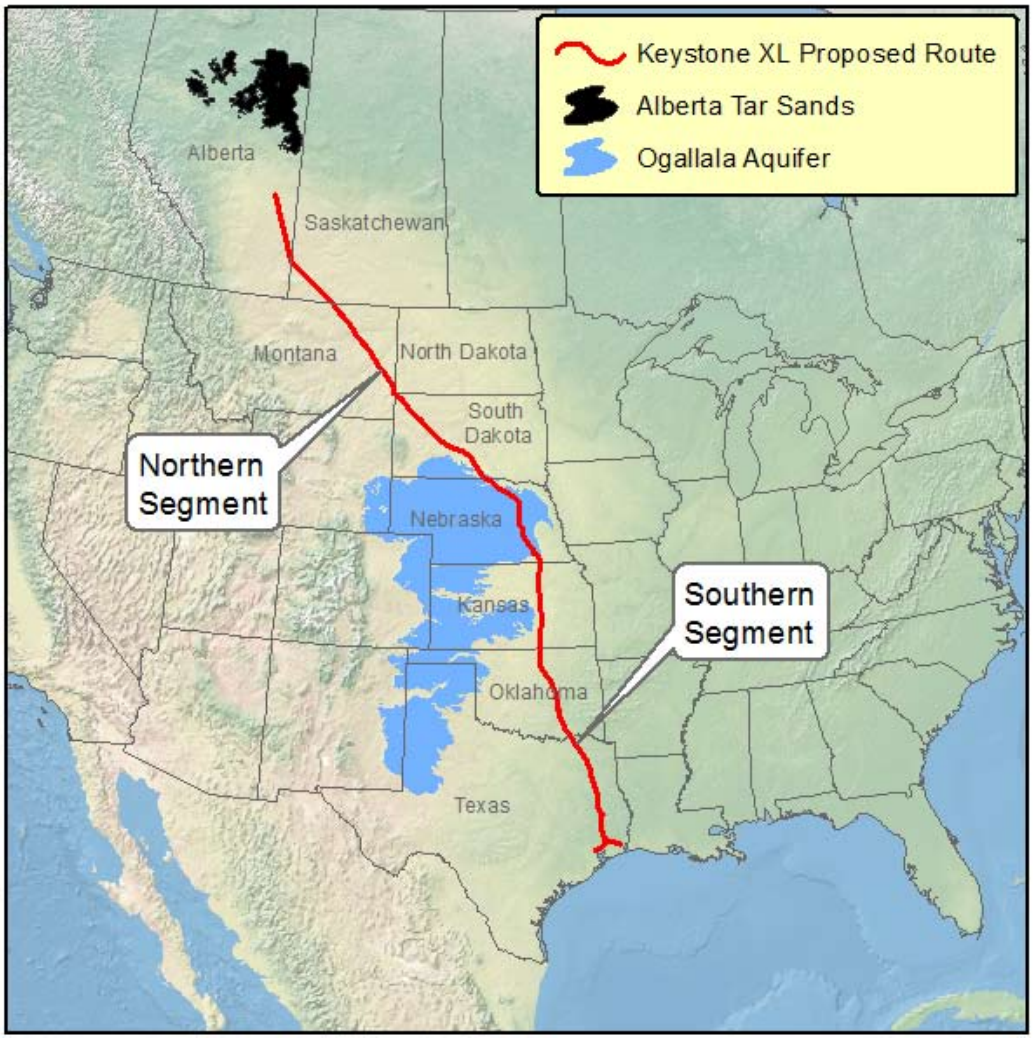
[10] U.S Department of State, Final Biological Assessment for the Keystone XL Project, Volume I, (December 21, 2012), 3.0-62, *available at* http://keystonepipeline-xl.state.gov/documents/organization/205581.pdf [hereinafter *BA*].

[11] U.S. Fish and Wildlife Service, Transmittal of the U.S. Fish and Wildlife Service's Biological Opinion on the Effects to Threatened and Endangered Species from the Issuance of a Presidential Permit to TransCanada for the Proposed Construction, Operation, and Maintenance of the Keystone XL Pipeline and Associated Facilities at the Border and

that only the endangered American burying beetle would be adversely affected. This conclusion was reached despite the fact that many other threatened and endangered species rely on habitats in the pipeline path, including the whooping crane, northern swift fox, pallid sturgeon, interior least tern, sage grouse, western sage grouse, Sprague's pipit, piping plover and western prairie fringed orchid.[12]

In order to fully evaluate the impacts of KXL on these and other imperiled species, we have mapped the path of the pipeline and species' locations; reviewed numerous documents produced by the State Department, FWS and other agencies; and analyzed the scientific literature on the status of the species in question. Our analysis shows that KXL will have serious impacts on endangered species. In particular, the agencies have drastically underestimated the impacts of the pipeline on endangered species by failing to properly consider the impacts of pipeline spills, power lines, ground disturbance and the impacts of this pipeline on wildlife outside of U.S. borders. When these impacts are considered, it is clear that proceeding with KXL will almost certainly result in numerous violations of our nation's bedrock wildlife protection law, the Endangered Species Act ("ESA").

I. Background on the Keystone XL Pipeline



TransCanada's proposed Keystone XL pipeline would require the construction of nearly 1,700 miles of new pipeline, with a 1,204-mile northern segment (comprising 875 miles in the United States and 329 in Canada)[13] and a 485-mile southern segment that is currently under construction.[14]

Starting in Canada, the pipeline would bring tar sands oil from Alberta into Saskatchewan, enter the United States in Montana, and then traverse six states to the Gulf Coast, leaving a permanent scar in special places across Montana, South Dakota, Nebraska, Kansas, Oklahoma and Texas. The proposed pipeline could carry up to 830,000 barrels (34.8 million gallons) of the world's dirtiest and most carbon-intensive fuel across America's agricultural heartland every day.[15] This dangerous tar sands

---

INTERRELATED AND INTERDEPENDENT ACTIONS, 10 (May 15, 2013), *available at* http://keystonepipeline-xl.state.gov/documents/organization/209745.pdf at 12 [hereinafter *BiOp*].

[12] *See generally BA* at 3.0-1-3.0-86.

[13] *BiOp* at 12.

[14] TransCanada, *Gulf Coast Pipeline Project,* http://www.transcanada.com/gulf-coast-pipeline-project.html (last visited September 11, 2013).

[15] U.S. DEPARTMENT OF STATE, DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT, Executive Summary 1 (2013), *available at* http://keystonepipeline-xl.state.gov/draftseis/index.htm [hereinafter *DSEIS*]

pipeline would go right over the Ogallala Aquifer, threatening to poison the water source for 27 percent of America's irrigated cropland and the drinking water source for millions of people.[16]

Because KXL crosses an international border, it requires a special permit from the president. TransCanada submitted its Presidential Permit application to the State Department in 2008.[17] The company hoped for a quick and easy process, but as more and more people got educated, the opposition has continued to grow. Since then, millions of people, including the world's most prominent climate scientists, the Dalai Lama, affected landowners, and indigenous leaders in the United States and Canada have expressed their opposition to KXL. *See* Appendix A for more background information on tar sands oil generally and KXL specifically.

II. The State Department and FWS Failed to Fully Consider the Impacts of the Keystone XL Pipeline on Endangered Species and Other Wildlife

Despite their mandate to fully analyze impacts of the proposed Keystone XL pipeline on the environment as a whole and threatened and endangered species in particular, the U.S. State Department and FWS have failed to adhere to the mandates of the Endangered Species Act and have instead ignored some of the most severe impacts of the pipeline on wildlife.

The Act requires federal action agencies, here the State Department, to ensure that their actions are "not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical habitat]."[18] The State Department created a "biological assessment" wherein it detailed its assessment of potential impacts to species along KXL's route. The Endangered Species Act also requires the State Department to formally consult with FWS when a proposed action, such as KXL, may affect endangered or threatened species or critical habitat.[19] FWS then publishes a "biological opinion" in which it provides its own analysis of impacts. However, in conducting these analyses, both agencies failed to consider many of the most significant impacts, instead glossing over major issues and proffering illogical conclusions about KXL's impacts.

Specifically, the agencies have failed to properly consider the impacts of pipeline spills, power lines, ground disturbance, and the impacts of this pipeline on wildlife outside of U.S. borders. In considering impacts to threatened and endangered wildlife, State wrongly determined that this 1,700-mile "death funnel"[20] will not adversely affect many of the species that will be directly impacted and also that it would not jeopardize the continued existence of any species. As discussed in greater detail below, these findings do not comport with common sense, the facts on the ground, or the Endangered Species Act.

a. Unacceptable Spill Impacts

Both the U.S. Fish and Wildlife Service and the State Department have stated that the risk of the proposed Keystone XL pipeline spilling and harming imperiled wildlife are extremely low, and so both agencies essentially brushed off the issue of spill impacts to wildlife.[21]

All oil spills are bad for the environment, but tar sands oil spills are especially harmful (*see* Appendix A for more background information on tar sands oil generally and KXL specifically). Compared to standard North America crude the tar sands oil that would move through the proposed KXL Pipeline, a

[16] U.S. Department of Agriculture, Natural Resource Conservation Service,, Ogallala Aquifer Initiative 2011 Report, 1 (2012), *available at* http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1048827.pdf.

[17] Natural Resources Defense Council, *Keystone XL Tar Sands Pipeline Timeline*, http://docs.nrdc.org/energy/files/ene_11110201a.pdf (last visited September 11, 2013).

[18] 16 U.S.C. § 1536(a)(2).

[19] *Id.*

[20] Charles P. Pierce, *TransCanada Wants to Keep Us Safe From People Who Don't Like the Pipeline*, Esquire, June 14, 2013, *available at* http://www.esquire.com/blogs/politics/transcanada-and-keystone-protestors-061413.

[21] *See e.g., BiOp* at 65, *DSEIS* at 3.0-4.

product called diluted bitumen, is 15 to 20 times higher in total acid concentrations, 40 to 70 times more viscous, 5 to 10 times more sulfuric and it also contains significant quantities of quartz and silicates while conventional crude contains almost none.[22] Moving thick tar sands oil also requires pipelines to operate at high pressures that result in high pipeline temperatures.[23]

These traits make tar sands oil potentially more likely to spill and certainly harder to clean up when it does spill.[24] The heavy bitumen (which makes up at least 50 percent of the blend) sinks when spilled in water, rather than floating on the surface like conventional crude.[25]. The diluents are light and swiftly evaporate, resulting in air quality problems and serious illness for those unlucky enough to be exposed to chemicals that include highly carcinogenic benzene.[26] Traditional spill clean-up devices that contain floating surface oil[27] and are the primary line of defense for conventional oil spills cannot capture the sunken bitumen and evaporated diluents released in tar sands oil spills.[28]

The State Department and FWS have concluded that the chance of KXL spilling and harming wildlife is extremely low.[29] According to the State's own data, KXL would spill an average of 1.9 times per year, releasing an average of about 34,000 gallons of dirty tar sands oil into the environment annually.[30] The failure of the State Department and FWS to properly consider the impacts of spills on wildlife is deeply problematic.

Spills of diluted bitumen have significant impacts on both terrestrial and aquatic species. The impacts of spills on wildlife can be divided into two categories: effects of toxicity and effects of lost habitat.[31] A spill of the Keystone XL pipeline would result in toxic impacts to wildlife, including but not limited to: reproductive failure, hypothermia or drowning due to coating of wings or fur, and fatal damage to internal organs.[32] As discussed in greater detail below, a spill from KXL could destroy prime habitat for nearly a dozen species at risk of extinction in addition to thousands of migratory birds.

The terrible effects of a tar sands spill on wildlife were on full display after the disastrous spill in Kalamazoo, Mich., in July 2010, the first major spill of tar sands oil in the United States. In that spill, a pipeline released approximately 850,000 gallons of diluted bitumen, first into a creek, and ultimately into the Kalamazoo River.[33] The cost of the ongoing clean-up is nearly $1 billion so far, making it the

---

[22] Natural Resources Defense Council et al.*, Pipeline and Tanker Trouble: The Impact to British Columbia's Communities, Rivers, and Pacific Coastline from Tar Sands Transport,* 7 (Nov. 2011), *available at* http://www.nrdc.org/international/files/PipelineandTankerTrouble.pdf.

[23] Natural Resources Defense Council, *Tar Sands Pipelines Safety* Risks, 6 (February 2011), *available at* http://www.nrdc.org/energy/files/tarsandssafetyrisks.pdf.

[24] *Id.*at 7-8.

[25] *Is Dilbit Oil?*, 1.

[26] Sam Eifling, *The Forgotten in Mayflower,* Arkansas Times, August 8, 2013, *available at* http://www.arktimes.com/arkansas/the-forgotten-mayflower-residents/Content?oid=3007639&showFullText=true.

[27] EPA, Oil Spill Response Techniques, EPA Emergency Management (January 2001), http://www.epa.gov/oem/content/learning/oiltech.htm.

[28] Natural Resources Defense Council, Tar Sands Pipelines Safety Risks 7 (February 2011), *available at* http://www.nrdc.org/energy/files/tarsandssafetyrisks.pdf.

[29] *See e.g., BiOp* at 65, *DSEIS* at 3.0-4.

[30] David Malitz, Ph.D., *The KXL Spill Risk: A Reanalysis of the Environmental Impact Statement*, Switchboard, http://switchboard.nrdc.org/blogs/eshope/keystone_xl_spill_risk_a_reana.html (last visited September 11, 2013).

[31] Enbridge, *Northern Gateway Project Application Volume 7C: Risk Assessment and Management of Spills — Kitimat Terminal*, 7-40 (May 2010), *available at* http://www.ceaa-acee.gc.ca/050/documents_staticpost/cearref_21799/43499/Volume_7C_-_Risk_Assessment_Mgmt_of_Spills-Kitimat.pdf.

[32] *Id.*at 7-25 and 7-40.

[33] *See generally* National Transportation Safety Board, Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release, Marshall, Michigan, July 25, 2010, Pipeline Accident Report (2012), *available at* http://www.ntsb.gov/doclib/reports/2012/par1201.pdf.

costliest on-shore oil spill ever.[34] Approximately 4,000 animals were treated for injuries as a result of the spill, and many required significant care before being released back into the environment.[35] Responders estimated that, "whatever the final tally of dead wildlife is, the real number will be almost three times higher because some oil in hard-to-get-to floodplain areas is being allowed to break down over time — oil that could potentially contaminate animals."[36] Countless animals dependent on aquatic habitat, including turtles, muskrats and geese, died slow deaths as a result of the Kalamazoo spill. One veterinarian treated 1,795 animals, including eight different types of turtles.[37] Recently researchers have started to look at the impacts of the spill on local fish and macroinvertebrates. According to the Michigan Department of Natural Resources, both "were pretty much wiped out" of the creek and their recovery is precarious, a situation undoubtedly worsened by the difficulty of recovering their habitat.[38]

Despite the severity of the Kalamazoo spill and predictions that KXL will spill 1.9 times per year, both FWS and the State Department have failed to truly consider the wildlife impacts of KXL spilling. While State mentions the Kalamazoo spill as a reference point for determining what a diluted bitumen spill might entail, it does not factor in that the proposed Keystone XL pipeline would carry substantially more diluted bitumen than the pipeline that ruptured in Kalamazoo.[39] The Department avoids any real analysis of potential scenarios, noting the obvious fact that the "magnitude of effects varies with multiple factors, the most significant of which include the amount of material released, the size of the spill dispersal area, the type of crude oil spilled, the species assemblage present, climate, and the spill response tactics employed."[40] It mentions generally that spill impacts to wildlife can include oil smothering, coating of feathers and subsequent hypothermia, mortality, subacute toxicity resulting in interference with feeding and reproduction, reduced disease resistance, tumors and "*many other acute or chronic effects*."[41] However, the State Department's impermissibly broad analysis fails to analyze the likely impacts from spills, which, as noted above, are all but certain to occur. Simply hoping that spills won't happen without any consideration of what happens when spills *do* occur can hardly be considered adequate analysis.

Of particular concern is, of course, that the State Department and FWS fail to consider the impacts of spills on the threatened and endangered species that both agencies have a duty to protect under the Endangered Species Act. The risks of KXL spilling are particularly grave for threatened, endangered, and candidate species including pallid sturgeon, Arkansas River shiner, greater sage grouse, whooping crane, interior least tern, piping plover, and American burying beetle in addition to the millions of migratory birds that utilize the habitat along KXL's route. The specific impacts to these species is discussed in section III below. FWS and the State Department's failure to conduct adequate analysis on how a pipeline spill would impact wildlife, especially threatened and endangered species, is a glaring oversight that puts some of our nation's most imperiled species directly in harm's way.

---

[34] Keith Matheny, *Three Years After Oil Spill, a Slow Recovery Haunts Kalamazoo River,* Detroit Free Press, June 24, 2013, *available at* http://www.freep.com/article/20130623/NEWS06/306230059/Kalamazoo-River-oil-spill.

[35] National Transportation Safety Board, Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release (July 25, 2010), available at http://www.ntsb.gov/doclib/reports/2012/PAR1201.pdf at 63 (A wildlife response center was established with the cooperation of Enbridge, the U.S. Fish and Wildlife Service, and the Michigan Department of Natural Resources and the Environment. The response center cared for and released about 3,970 animals, of the 196 birds treated, 52 were not released).

[36] Chris Killian, *Wildlife Rehab Continues After Kalamazoo River Oil Spill: Vicksburg Nonprofit may have been First to Respond,* Kalamazoo Gazette, October 7, 2010, *available at* http://www.mlive.com/news/kalamazoo/index.ssf/2010/10/wildlife_rehab_continues_after.html.

[37] Binder Park Zoo, *Kalamazoo River Animal Information, Oiled Animal Count,* http://www.binderparkzoo.org/kalamazooriver/ (last visited September 11, 2013).

[38] Keith Matheny, *Three Years After Oil Spill, a Slow Recovery Haunts Kalamazoo River,* Detroit Free Press, June 24, 2013, *available at* http://www.freep.com/article/20130623/NEWS06/306230059/Kalamazoo-River-oil-spill.

[39] *DSEIS* 4.13-40.

[40] *Id.*

[41] *Id.* at 4.13-23-24 (emphasis added).

b. Power Line Impacts

Some of KXL's most significant wildlife impacts would stem from the massive development of infrastructure it would require, especially power lines. Building KXL would necessitate the construction of 378 miles of new power lines to provide energy for the pump stations that would move the thick tar sands oil through the pipeline.[42] These power lines pose a major threat to birds and bats, including endangered species. Despite the fact that the power lines are being solely constructed for KXL, neither State nor FWS have properly analyzed their impacts. In its analysis of KXL's cumulative effects, the State Department stated that the "duration of impacts are all temporary and short term with negligible effects on wildlife resources."[43] Commenting on this analysis, the Department of the Interior noted that this is patently untrue, stating that the impact of 378 miles of power lines in four states in addition to substation construction "will be permanent for the life of these facilities. This will not be a temporary or short term impact on wildlife."[44] Further, the agencies have not even provided proper maps showing exactly where the power lines will occur.

Of special concern are impacts from power lines on endangered whooping cranes, one of the rarest and most cherished birds in North America. In addition, power lines serving KXL would cut through the habitat of the endangered interior least tern, threatened piping plovers imperiled sage grouse, and thousands of bats and migratory birds.

One of the conservation measures the agencies rely on most substantially to find that KXL, and specifically the power lines it would require, is not likely to adversely affect whooping cranes, piping plovers or interior least terns is the use of devices called bird flight diverters ("BFDs").[45] Both the State Department and FWS point to directives instructing power line companies to install BFDs on specific power lines at specific intervals as though the installation of these BFDs will eliminate the risk of power line collisions.[46] This is wishful thinking at best. FWS itself has admitted that "[m]ore research needs to be conducted on these so-called 'deterrent devices' to see if they truly work."[47] While some studies have shown that BFDs are somewhat effective at preventing power line collisions,

> the effectiveness of such aerial marking devices (diverters) is highly variable . . . . Understanding how different species react to treated lines is vital for reducing collision risk for threatened and endangered species and groups.[48]

Neither the State Department nor FWS has made any attempt to understand how the specific threatened and endangered species it claims will be spared any adverse effects by BFDs will respond to these devices and whether they would actually be effective. BFDs are generally only *60 percent* effective.[49] Other studies confirm that the agency's reliance on BFDs is misplaced. "Collisions with power lines frequently occur in bad weather and poor light" thus BFDs and other marking devices "are of dubious value . . . ."[50] "There are an *alarming number* of species with endangered or vulnerable status involved in these [power line] accidents."[51]

[42] *BA* at 3.0-67.

[43] *DSEIS*, 4.15-37.

[44] Comment Letter from Willie Taylor, Director, Office of Environmental Policy and Compliance, U.S. Department of Interior to Genevieve Walker, NEPA Coordinator, U.S. Department of State, 12 (April 29, 2013).

[45] *BiOp* at 24, 25, and 30.

[46] *Id.*

[47] Partners in Flight, *A Fine Line for Birds: A Guide to Bird Collisions at Power Lines* (2005), *available at* http://www.fws.gov/birds/documents/powerlines.pdf.

[48] Marcus L. Yee, *Testing the Effectiveness of an Avian Flight Diverter for Reducing Avian Collisions with Distribution Power Lines in the Sacramento Valley,* California Energy Commission (2008), *available at* http://www.energy.ca.gov/2007publications/CEC-500-2007-122/CEC-500-2007-122.PDF.

[49] *Id.*

[50] Kjetil Bevanger, *Bird Interactions with Utility Structures: Collision and Electrocution, Causes and Mitigating Measures,* Norwegian Institute for Nature Research, IBIS 136: 412-423, 418 (1994).

[51] *Id* (emphasis added).

Whooping cranes and greater sage grouse are especially at risk of dying from power line collisions because of their low maneuverability.[52] A recent study found that diverters and other marking devices only resulted in a 9.6 percent decrease in casualties and that such devices are "a way to reduce, but not eliminate, bird collisions with power lines."[53] These findings certainly do not inspire confidence in FWS and the State Department's unsupported determinations that BFDs will somehow help prevent all adverse effects from power lines to the threatened and endangered birds threatened by KXL's vast power line network.

The failure of FWS and the State Department to properly account for the significant impact of power lines on imperiled wildlife and their improper reliance on diverters as a conservation measures puts some of our nation's most imperiled species directly in harm's way.

c. Ground Disturbance

Building the 1,700-mile KXL pipeline would entail a massive amount of ground-disturbing activity. The U.S. portion of the northern route consists of 875 miles within a new 110-foot-wide construction right-of way and a 50-foot-wide permanent right of way[54] through farms, pastures, wild fields, wetlands, rivers and important wildlife habitat. In 2011 the Center learned that even though the project was not yet approved, TransCanada was already mowing the route and moving endangered American burying beetles as part of its pre-construction activities. The Center successfully sued to stop that illegal activity. In addition to mowing, the pipeline route would be cleared of *all* vegetation including crops and other "obstacles" such as forests.[55] Pre-construction would also require surveying and staking, a process that would involve significant vehicular activity near the proposed pipeline route.[56]

To power the pipeline, KXL would require the construction of 20 pump stations — new permanent facilities ranging from 5 to 15 acres — to pump oil through the pipeline.[57] KXL would also require nearly 200 temporary access roads and several dozen permanent access roads.[58]

The actual construction of this pipeline would directly disturb 15,493 acres.[59] Astoundingly, the State Department claims that "[t]otal habitat loss due to pipeline construction would likely be small . . . ."[60] This 15,493 acre estimate fails to include the adjacent areas that would also inevitably be disturbed or the areas that would never be reclaimed in the event of a pipeline spill. The actual installation of the pipeline would require the utilization of massive amount of soil compacting heavy machinery, water withdrawals from sensitive waterways, air pollution, and intense noise resulting in enormous disturbances to the ecosystems along the proposed route.

The Department of Interior took issue with this minimization of wildlife impacts, noting that State "excludes many other project components" and that "[s]ince all project components will impact wildlife in some manner there should be a complete listing . . . ."[61] It urges the State Department to consider not only KXL's direct impacts but also all indirect impacts such as the spread of invasive plants, increased trash

---

[52] Rafael Barrientos et al., *Wire Marking Results in a Small but Significant Reduction in Avian Mortality at Power Lines: a BACI Designed Study*. PLoS One v.7(3) (2012), *available at* http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3291557/.

[53] *Id.*

[54] *DSEIS* at 2.1-1.

[55] *Id.* at 2.1-45.

[56] *BiOp* at 50.

[57] *DSEIS* at 2.1-1, 2.1-14.

[58] *Id* at 2.1-32.

[59] *Id.* at 2.1-13.

[60] *DEIS* at 4.6-6.

[61] Comment Letter from Willie Taylor, Director, Office of Environmental Policy and Compliance, U.S. Department of Interior to Genevieve Walker, NEPA Coordinator, U.S. Department of State, 9 (April 29, 2013).

and human waste, the risk of poaching, and increased wildfire risk.[62]

The wildlife impacts of all these ground disturbing activities would be devastating. The American burying beetle, black-footed ferret, northern swift fox, sage grouse, Sprague's pipit, and western prairie fringed orchid all may utilize habitat along the pipeline's path, and allowing the KXL pipeline to be built could cause significant harm to these already imperiled species. As discussed in greater detail in section III below, the agencies all too often rely on TransCanada's promised compliance with conservation measures to conclude that ground disturbance will not harm these species. Indeed, despite the massive amount of activity building this pipeline would entail, they determined that only the American burying beetle would be adversely impacted by this project.

The ground disturbance associated with building KXL would have massive impacts on plants and wildlife that cannot be waved away by promises that the various entities involved will cooperate with the weak conservation measures designed by the agencies. Unfortunately, the State Department and FWS seem more interested in giving KXL the green light than actually acknowledging its massive impacts on wildlife.

d. Impacts to Species Outside the Project Area

Keystone XL would not just threaten wildlife in the United States. In Canada, fish, mammals, birds and other wildlife face severe acute and chronic threats from tar sands development. And on a larger scale, wildlife around the world will feel the impacts as increased dependence on extreme dirty fossil fuels makes climate change more severe.

As discussed in greater detail in section III below, tar sands development destroys important habitat for millions of migratory birds that use the boreal forest as their nursery. Processing tar sands oil results in the creation of massive tailings ponds and birds that make the mistake of landing in these ponds face painful deaths. In addition, tar sands excavation entails the clearcutting of boreal forest and destruction of vast swaths of habitat relied upon by Canada's threatened woodland caribou, a species facing steep declines.

In addition to these direct impacts, tar sands extraction and building the KXL pipeline would have devastating climate impacts. Tar sands oil also releases more climate-changing greenhouse gas ("GHG") emissions than conventional crude. The U.S. Environmental Protection Agency ("EPA") has found that GHG emissions from Canadian tar sands are 82 percent greater than the average crude refined in the United States on a well-to-tank basis.[63] In its evaluation of KXL, the EPA noted that this tar sands pipeline would annually contribute the equivalent of seven coal-fired power plants worth of carbon *more* than average conventional crude.[64] Scientists predict that if we maintain our current greenhouse gas emissions trajectory, climate change will commit one-third of the world's animals and plants to extinction by 2050, and threaten up to two-thirds with extinction by the end of the century.[65] Such a catastrophic loss would irreversibly diminish biodiversity, severely disrupt ecosystems, and cause immense hardship for human societies worldwide. Tar sands oil is the most greenhouse gas intensive oil in the world,[66] and building the KXL pipeline would lock us into decades of reliance on dirty energy, keeping us from making the critical changes we must make now to slow climate change. Climate change is already harming species throughout the world. Polar bears in the Arctic and emperor penguins in the Antarctic are already facing major threats to their existence due to rapidly melting icecaps, but both the State Department and FWS have refused to

[62] *Id.* at 10.

[63] Comment Letter from Cynthia Giles, Assistant Administrator for Enforcement and Compliance Assurance, U.S. EPA, to Jose W. Fernandez and Kerry-Ann Jones, U.S. Department of State, 2-3 (July 16 2010).

[64] *Id.*

[65] *See generally* Thomas, Chris. et al., *Extinction Risk from Climate Change,* Nature (2004), *available at* http://www.nature.com/nature/journal/v427/n6970/full/nature02121.html and Core Writing Team, *Climate Change 2007: Synthesis Report*, Intergovernmental Panel on Climate Change (2007), *available at* http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm.

[66] David Biello, *How Much Will Tar Sands Oil Add to Global Warming,* Scientific American, January 23, 2013, *available at* http://www.scientificamerican.com/article.cfm?id=tar-sands-and-keystone-xl-pipeline-impact-on-global-warming.

engage in a meaningful analysis of the climate impacts of KXL on wildlife.

The State Department has asserted that KXL "is unlikely to significantly affect the rate of extraction in the oil sands . . . ."[67] This is simply not true. Industry has made plain that Keystone XL is essential to increasing tar sands production. "[W]ith KXL in place and operating at capacity, bitumen production could increase substantially and have a major effect on the overall supply/demand situation throughout the North American continent."[68] One prominent oil industry economist and executive stated, "[u]nless we get increased [market] access, like with Keystone XL, we're going to be stuck . . . ." [69] Despite the evidence, the State Department has refused to budge on its unfounded position,[70] and subsequently has not analyzed the significant impact of KXL on Canadian wildlife or wildlife already threatened by our warming climate, including polar bears, wolverines, Pacific walruses and many others.

III. Specific Impacts to Wildlife

a. Whooping Crane *(Grus americana)*

Whooping cranes *(Grus americana)* are an international symbol of effective conservation efforts. Each year they travel 2,400 miles from their wintering grounds around Aransas National Wildlife Refuge in Texas to their breeding grounds in Wood Buffalo National Park in central Canada, passing through Texas, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota and Montana and then reversing the route each fall.

> In the annals of conservation, the return of the Whooping Crane from the brink of extinction is one of the most fabled stories. In the 1940s, less than fifteen of these remarkable birds-the tallest in North America and the rarest species of crane in the world-remained . . . . At issue here is the threat of extinction to the non-captivity population of around 300.[71]

This population, the only self-sustaining wild group of whooping cranes, was estimated to contain only 215 members in 2006.[72] Almost all of KXL's route through Nebraska is within the migration corridor used by 90 percent of whooping cranes each year.[73] In Nebraska, the birds stop to rest and feed on the Platte, North and Middle Loup and Niobrara rivers.[74]

Endangered whooping cranes are one of the rarest and most cherished birds in North America, and they would face serious threats if KXL is built. The State Department has admitted that cranes "could be

[67] *DSEIS* at 1.4-6.

[68] Canadian Energy Research Institute Writers, Pacific Access: Part 1, Linking Oil Sands Supply to New and Existing Markets, Canadian Energy Research Institute, 28 (July 2012), *available at* http://www.ceri.ca/images/stories/part_i_-_impacts_of_oil_sands_production_-_final_july_2012.pdf.

[69] Nathan Vanderklippe and Shawn McCarthy, *Without Keystone XL, Oil Sands Face Choke Point,* The Globe and Mail, June 8, 2011, http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/without-keystone-xl-oil-sands-face-choke-point/article598717/.

[70] *DSEIS* at 1.4-1 ("Approval or denial of any one crude oil transport project, including the proposed Project, remains unlikely to significantly impact the rate of extraction in the oil sands . . . .").

[71] *Arkansas Project v. Shaw,* 2013 U.S. Dist. LEXIS 33258 at 7 (2013).

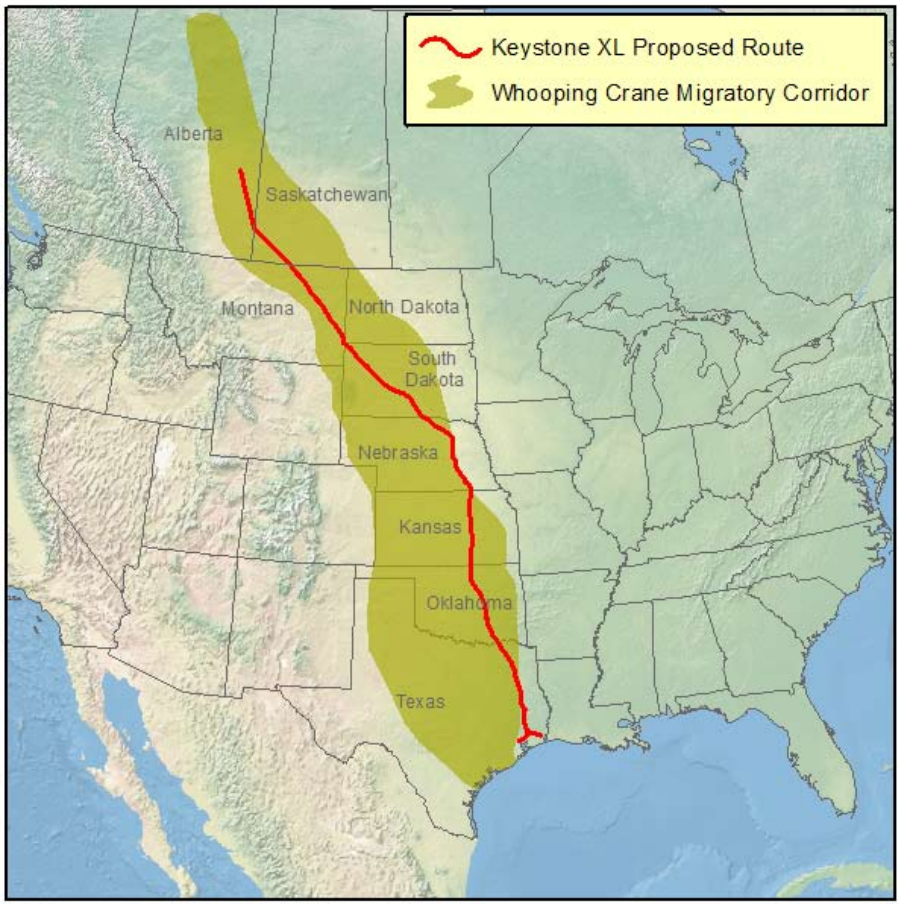
[72] *BA* at 3.0-13.

[73] *BA* at Figure 3.1.3-1.

[74] *DSEIS* at Appendix F, 1.

impacted by collisions with power lines associated with the proposed Project. The majority of the proposed Project route crosses the central flyway whooping crane migration corridor in South Dakota and Nebraska . . . ."[75] FWS's own analysis of the route "identified 74 locations within the primary migration corridor where new transmission lines could potentially increase collision hazards for migrating whooping cranes."[76] Astoundingly, the State Department and FWS have determined that analysis for these new transmission lines is not currently necessary and would allow this project to proceed while deferring analysis of power line collision hazards to local power providers, which should then consult with FWS at an unspecified later date.[77] Given that the agencies have plainly stated that "[p]ower lines associated with the proposed project are collision hazards to migrant whooping cranes," this is a reckless approach, especially considering the seriousness of the threat to whooping crane survival.[78]

Cranes are well known to be at risk from power lines. One study estimated that between 165 and 210 sandhill cranes, a relatively more abundant species, died as a result of collisions with two power lines crossing the Platte River.[79] With about 300 whooping cranes in the only wild, self-sustaining population in the world, the State Department is being exceedingly reckless in delaying complete analysis of the impacts of power lines, particularly given that they would not be constructed at all were it not for KXL. These power lines represent a serious threat to the survival and recovery of the whooping crane.



Further, whooping cranes imperiled by the expansion of tar sands production in Canada. They are listed as endangered in both the U.S. and Canada, but the State Department has refused to consider impacts to these species in Canada, erroneously stating that it does not have an obligation to do so.[80] The Endangered Species Act requires the agency to consider impacts to listed species both "directly and indirectly by the Federal action and not merely the immediate area involved in the action.[81] The failure of the agencies to consider these impacts is unlawful.

The endangered whooping cranes could face significant adverse impacts if they came in contact with tar sands tailing ponds in Alberta. Indeed, some evidence of this happening already exists. In 2006 three

---

[75] *DSEIS* at Executive Summary, ES-12.

[76] U.S. Fish and Wildlife Service, *Rationale for Concurrence with Species NLAA Determinations in the Final Biological Assessment for the Keystone XL Pipeline Project* (on file with author).

[77] *BA* at 3.0-21.

[78] *Id.* at 3.0-20.

[79] *Id.*

[80] U.S. Department of State, Supplemental Draft Environmental Impact Statement, 3-205, *available at* http://keystonepipeline-xl.state.gov/documents/organization/182272.pdf.

[81] 50 C.F.R. § 402.02

whooping cranes were seen on Nebraska's Platte River with stained bellies.[82] According to FWS's whooping crane coordinator, these cranes may have been oiled in a tar sands tailings pond in Alberta.[83] Given that more than 1,600 ducks died in the one tailings pond landing mentioned above, the risk of whooping cranes landing in tailings pond is a serious one that deserves thoughtful consideration. In finding and concurring that this project is not likely to adversely affect whooping cranes, the State Department and FWS abrogated their responsibility to this endangered and iconic species.

b. Pallid Sturgeon *(Scarphirhynchus albus)*

The endangered pallid sturgeon *(Scarphirhynchus albus),* a unique fish known for its dinosaur-like appearance and ability to live in large river systems, occurs near the proposed pipeline route in several rivers. This prehistoric fish can grow longer than 5 feet, may weigh more than 80 pounds and can live to be 100 years old.[84] Listed as endangered in 1990, pallid sturgeons are one of the rarest fish in the Missouri and Mississippi rivers due to wide-scale habitat modification such as dams.[85] Pallid sturgeon spend their days at the bottom of large, shallow, warm, silty and undammed rivers.[86]

KXL would cross through prime pallid sturgeon habitat both in the Missouri and Yellowstone rivers near areas occupied by the pallid sturgeon.[87] It would cross these rivers in the "Great Plains Management Unit," which was designated a federal management unit because it possesses "riverine reaches that are currently occupied habitats" and "represent the least degraded areas that retain the highest configuration of sandbars, side channels, and varied depths."[88] The pipeline would also cross the Platte, Niobrara and other rivers upstream of occupied sturgeon habitat in the Missouri and lower Platte in the "Central Lowlands Management Unit."[89] Clearly, a spill from the Keystone XL pipeline in or near these places has the potential to do substantial harm to pallid sturgeon.

Despite the obvious risk to the sturgeon from spills, FWS agreed with the State Department's determination that the project is not likely to adversely affect this imperiled fish,[90] in part because "if a significant spill event were to occur, federal and state laws would require cleanup."[91] Federal agencies were similarly dismissive of the potential impacts of a spill harming habitat in the analysis that preceded 2010's *Deepwater Horizon* catastrophe in the Gulf of Mexico.[92] The Kalamazoo spill, the first major U.S. tar sands oil spill,

[82] Petition from Earthjustice and Ecojustice to Secretary of the Interior Ken Salazar, [Corrected] Petition for Certification of Canada Pursuant to 22 U.S.C. § 1978 for Failing to Prevent or Mitigate the Impacts of Tar Sands Extraction on 130 Migratory Bird Species, Including Whooping Cranes, as well as on Woodland caribou, September 22, 2011, *available at* http://earthjustice.org/sites/default/files/TarSandsPellyPetitionSept222011CORRECTED.pdf

[83] *Id.*

[84] Missouri River Institute, *Fish*, http://mri.usd.edu/watertrail/FieldGuide/fish.html (last visited August 27, 2013).

[85] *Id.*

[86] *BA* at 3.0-25.

[87] *DSEIS* at 3.8-16.

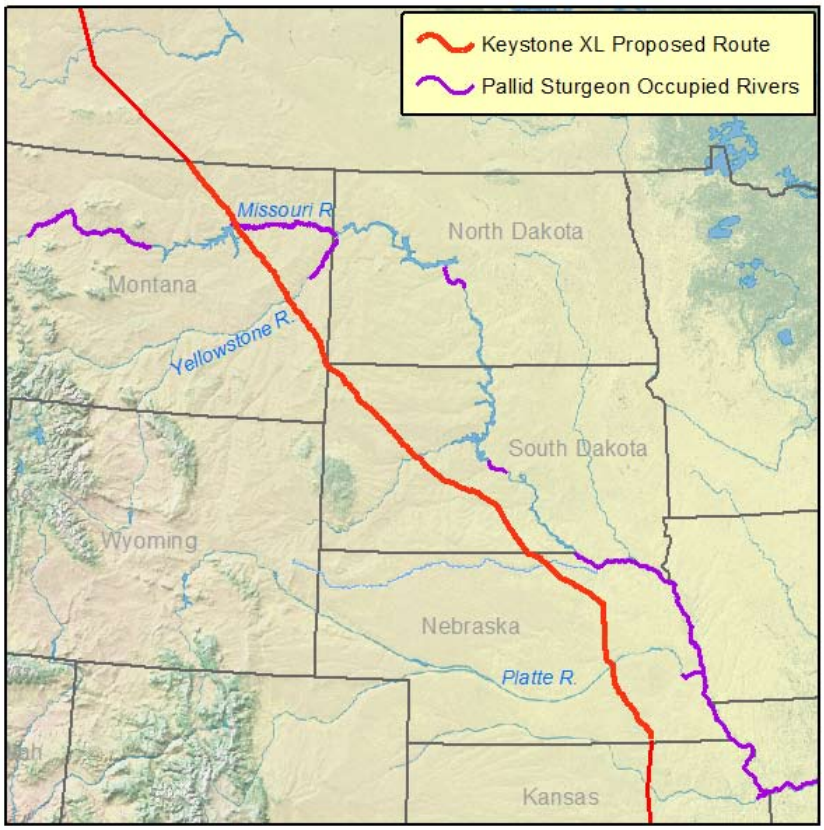
[88] U.S. Fish and Wildlife Service Northern Rockies Fish and Wildlife Conservation Office. *Draft Recovery Plan for the Pallid Sturgeon (Scaphirhynchus albus)*, 43 (2013).

[89] *Id.* at Figure 9.

[90] *BiOp* at 9.

[91] *BA* at 3.0-30.

[92] Jaclyn Lopez, *BP's Well Evaded Environmental Review: Categorical Exclusion Policy Remains Unchanged*, 37 Ecology Law Currents 93, 96 (2010)(In its evaluation of the risks of off-shore drilling activities, the now defunct Minerals Management Service came to the conclusion that an oil spill would weather and degrade before reaching the shore, thus having a minimal impact on the environment and wildlife.).



is still not cleaned up three years later and had a devastating impact on wildlife. In light of this history, it is not sufficient for State to simply claim that any spill will be cleaned up and therefore will not negatively impact this fish. The State Department recognizes that "exposure to crude oil could result in adverse toxicological effects to pallid sturgeon" but it dismisses these affects by noting that they are "unlikely due to the low probability of a spill."[93] Again, the State Department's own analysis found spills likely, directly contradicting its conclusion that the sturgeon was unlikely to be impacted by spills.

In addition to spills, KXL would harm the pallid sturgeon through massive water withdrawals for hydrostatic testing. In order to mitigate impacts from withdrawals, the State Department has proposed conservation measures, including using screens and controlling withdrawal rates.[94] TransCanada, however, is not strictly bound to these measures, leaving the endangered pallid sturgeon in a highly precarious situation.

c. America Burying Beetle *(Nicrophorus americanus)*

The endangered American burying beetle *(Nicrophorus americanus)* is a striking creature with a shiny black body and distinct orange-red markings, including matching orange-tipped antennae.[95] This remarkable beetle can smell a freshly deceased animal from up to two miles away.[96] A beetle pair will travel to the carcass, bury it, strip it of fur or feathers, roll it into a ball, and then cover it with oral and anal secretions that prevent mold and bacteria from growing.[97] This carcass then serves both a shelter and a food source for the pair's offspring.[98] The young beetles benefit from the attentive care of both parents.[99]

The America burying beetle's historic range once included 35 U.S. states, but this species was almost completely wiped out in the 20th century. Its endangerment was caused primarily by destructive grazing and farming practices, as well as by the extermination of top carnivores like the gray wolf and the resulting proliferation of mid-sized carnivores and scavengers that not only share the beetle's culinary interests

[93] *Id.*

[94] *Id.* at 3.0-31.

[95] Center for Biological Diversity, *Saving the American Burying Beetle,* http://www.biologicaldiversity.org/species/invertebrates/American_burying_beetle/index.html (last visited September 11, 2013).

[96] *BiOp* at 40.

[97] *Id.*

[98] *Id.*

[99] *Id.*

but can also reach carcasses faster.[100] Significant resources have been put into preventing the extinction of this species and now it is slowly recovering.

The American burying beetle is the *only* species that the agencies admitted was likely to be adversely affected by KXL.[101] The State Department found that construction activities would result in habitat loss, potential mortality to beetles crushed by construction traffic or exposed during excavation, disruptions in foraging and increased predation caused by artificial lighting, potential exposure to localized fuel spills, and compaction of soil reducing moisture levels resulting in death by desiccation.[102] This determination forced the State Department to consult formally with FWS, and FWS determined that construction would impact 326 acres of *prime* American burying beetle habitat.[103] FWS has issued an "incidental take statement" recognizing that constructing and operating the KXL pipeline is likely to injure or kill hundreds of these endangered beetles.[104]

In addition to impacts from ground disturbance, a spill from the KXL pipeline in American burying beetle habitat could impact the entire ecosystem because this remarkable beetle plays a crucial role in recycling nutrients, nourishing vegetation and keeping fly populations in check.[105] The recovery of this species has been slow and could be greatly impaired by a KXL spill. In its environmental impact statement, the State Department acknowledged that spills can have massive impacts on certain species.

> *[R]eproductive impairment caused by toxicity [that] could reduce an entire population or biological community, resulting in a significant environmental impact.* The impact is likely to be greater if the species affected have long recovery times . . .; limited geographic distribution in the affected area; are key species in the ecosystem; are key habitat formers (those animals that substantially contribute to the formation of an environment); or are otherwise a critical component of the local biological community or ecosystem.[106]

American burying beetles are just such a critical species, but the agencies have ignored that fact. Both the State Department and FWS have refused to consider spill impacts on the beetle.[107]

---

[100] *Id.*at 43.

[101] *BA* at 3.0-62, *BiOp* at 10.

[102] *BA* 3.0-56.

[103] *BiOp* at 57.

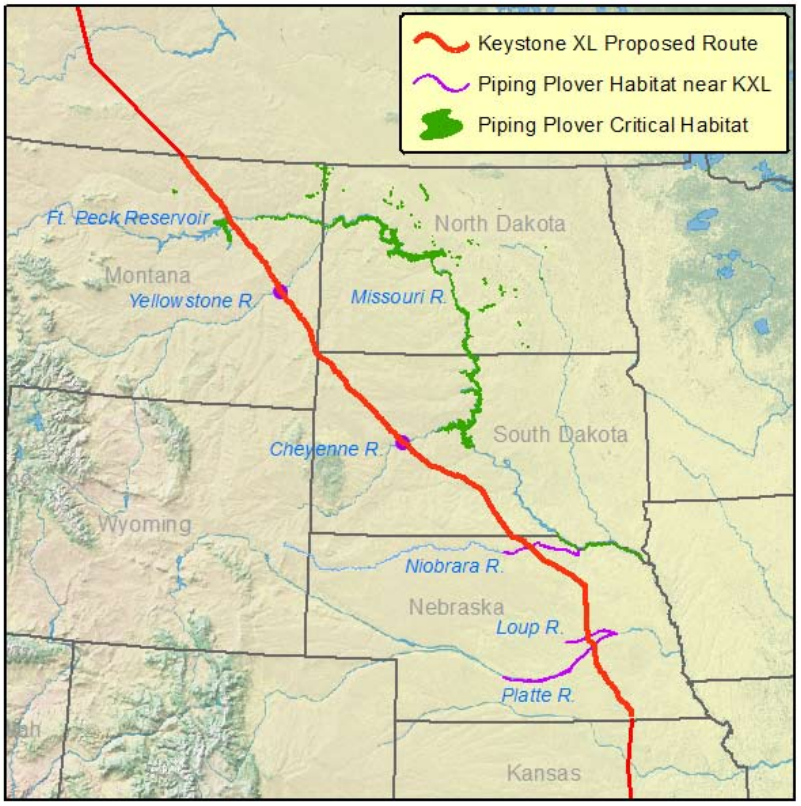
[104] *Id.* at 74.

[105] Center for Biological Diversity, *Saving the American Burying Beetle,* http://www.biologicaldiversity.org/species/invertebrates/American_burying_beetle/index.html (last visited September 11, 2013).

[106] *DSEIS* at 4.13-26 (emphasis added).

[107] *BiOp* at 65.

d. Piping Plover *(Charadrius melodus)*



The KXL route also cuts through habitat of the threatened piping plover *(Charadrius melodus)* in both Nebraska and Montana. Piping plovers are small shorebirds with a single black neck band, a stout orange bill,[108] and bell-like whistles.[109] Heavily hunted for their feathers in the late 19th century hat trade, these sand-nesting birds are now threatened by water-diversion projects, human disturbance, beach development and sea level rise. [110]

Piping plovers are known to nest within or near KXL's proposed route at the Platte, Loup and Niobrara rivers in Nebraska and in the Fort Peck Reservoir in Montana.[111] The State Department has admitted that piping plovers are susceptible to power line collisions and that the 378 miles of new power lines KXL would require would add to collision mortality of migrating piping plovers in addition to increasing predation from raptors by creating perches.[112] Despite these known impacts, the State Department is allowing TransCanada to move forward with this project and defer analysis on these impacts by telling electrical line providers they must consult with federal agencies at a later date.[113] As with whooping cranes and other species, the agencies also rely on weak conservation measures to justify their finding that this project is not likely to adversely affect the imperiled piping plover.[114]

e. Interior Least Tern *(Sternula antillarum)*

KXL would also cut across habitat of the endangered interior least tern *(Sternula antillarum)* in every state of its northern route — Montana, South Dakota and Nebraska.[115] At 9 inches across, least terns are the smallest members of the gull and tern family and, unlike gulls, they dive into the water to catch food.[116] With a black streak on their head, a forked tail and narrow pointed wings,[117] these charismatic migratory birds spend more than a third of

[108] U.S. Fish and Wildlife Service, Endangered Species, *Piping Plover,* http://www.fws.gov/mountain-prairie/species/birds/pipingplover/ (last visited August 27, 2013).

[109] Center for Biological Diversity, *Saving the Piping Plover,* http://www.biologicaldiversity.org/species/birds/piping_plover/index.html (last visited September 11, 2013).

[110] U.S. Fish and Wildlife Service, Endangered Species, *Piping Plover,* http://www.fws.gov/mountain-prairie/species/birds/pipingplover/ (last visited August 27, 2013).

[111] *Id.* at 3.0-66.

[112] *Id.* at 3.0-67-68.

[113] *Id.* at 3.0-68.

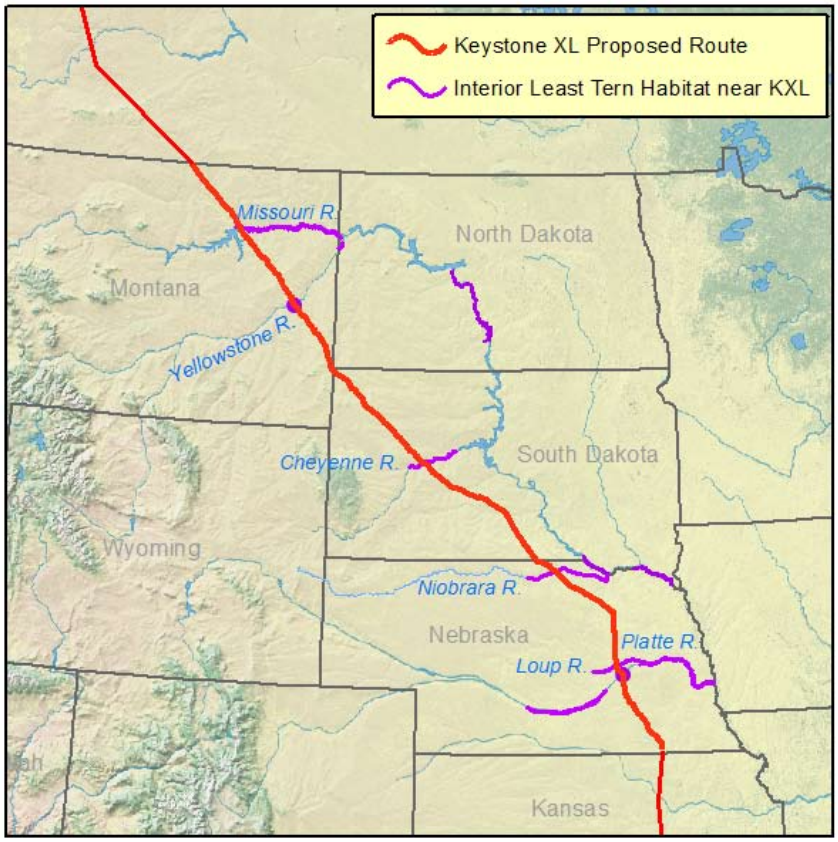
[114] *Id.* at 3.0-70.

[115] *Id.*at 3.0-6.

[116] U.S. Fish and Wildlife Service, Species Profile, *Interior Least Tern,* http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B07N (last visited September 11, 2013).

[117] *Id.*

the year at their breeding site in colonies of around 20 but up to 75 ground nests.[118] Interior least terns are imperiled due to alteration and destruction of riverine habitat, particularly as this destruction relates to their ability to find suitable nesting sites where they won't be disturbed.[119]



KXL would pass through important interior least tern breeding areas along the Yellowstone River in Montana, the Cheyenne River in South Dakota, and the Platte, Loup and Niobrara rivers in Nebraska.[120] The proposed pipeline could harm interior least terns through pipelines spills, disturbance during construction, habitat loss, and by creating the risk of power line collisions.[121] The State Department acknowledges that the "transmission line, electrical distribution lines, and substations could result in long-term increased bird collisions, bird predation, and habitat loss."[122] However, as with piping plovers, Sprague's pipits and whooping cranes discussed above and below, State has determined that this project can move forward without a complete analysis of these impacts because it has a commitment from power providers that they will consult with federal agencies in the future.[123] This commitment, coupled with additional weak conservation measures that would be implemented by other entities, are used to justify a "not likely to adversely affect" finding for the endangered least tern.[124] Given all the anticipated impacts of KXL to interior least terns and their habitat, this finding seems overly optimistic.

f. Black-footed Ferret (*Mustela nigripes)*

The black-footed ferret (*Mustela nigripes)* was considered extinct in the middle of the last century, but amazingly was rediscovered in South Dakota in 1964 and subsequently listed as endangered in 1966.[125] These primarily nocturnal and solitary animals remain extremely rare. The black-footed ferret is a slender animal with a black face mask, large ears, and short legs and is so well adapted to its prairie habitat that it is difficult to detect until it moves.[126] When the South Dakota population disappeared, biologists took the remaining wild black-footed ferrets discovered in Wyoming and bred them in captivity to save the species

[118] *BA* at 3.0-5.
[119] *Id.* at 3.0-6.
[120] *Id.*
[121] *Id.* at 3.0-8-11.
[122] *Id.* at 3.0-11.
[123] *Id.* at 3.0-10.
[124] *Id.* at 3.0-12.
[125] *BA* at 3.0-1.
[126] U.S. Fish and Wildlife Service, Species Profile, *Black Footed Ferret,* http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A004 (last visited September 11, 2013).

from extinction.[127] These efforts have been successful in preventing this species from going extinct, but the ferret's numbers remain extremely low.

The proposed KXL pipeline crosses through eight prairie dog towns in South Dakota and Nebraska, although it does not cross through known habitat for any of the reintroduced populations of ferrets.[128] Black-footed ferrets are dependent on prairie dogs as their main food source and prairie dog burrows also provide their only source of shelter.[129] The prairie dog towns that KXL would cross could serve as recovery habitat for this unique animal, but if construction of KXL is allowed to proceed, such recovery is unlikely. The State Department and FWS both failed to analyze whether KXL would impact potential reintroduction efforts to these habitats.

g. Northern swift fox *(Vulpes velox)*

The rare and imperiled northern swift fox (*Vulpes velox*) is another animal directly threatened by pipeline construction. This tiny fox, averaging 4-6 pounds with large ears and a bushy tail, was once abundant but was nearly wiped out by human activity. Swift foxes rely on open prairie and arid plain habitat and create dens within burrows in sandy soil on high ground,[130] presumably so they can keep an eye out for predators while guarding their young.

Shockingly, the agencies completely failed to do any analysis of impacts to the northern swift fox under the Endangered Species Act, despite the fact that it is federally listed as an endangered species.[131] The swift fox is also listed as a state-threatened species in South Dakota, endangered in Nebraska, a species of concern in Montana, and is a Bureau of Land Management sensitive species.[132] Swift foxes are threatened with habitat loss and alteration due to human activities and also are highly susceptible to collisions with cars.[133] Recent efforts by biologists to reintroduce them have met with some success, but KXL would cut directly through numerous areas where this imperiled fox has managed to get reestablished, and additional areas that could be suitable habitat in both eastern Montana and western South Dakota.[134]

The State Department has admitted that KXL's construction would disturb adult swift foxes because of noise and loss of feeding habitat.[135] More disturbingly, it has acknowledged that adults and their new offspring in dens along KXL's right-of-way could be killed when pipeline construction activities remove or collapse their dens.[136] Allowing KXL to proceed and cause the death of swift foxes while biologists in Montana and South Dakota work diligently to reintroduce this beautiful animal to its native ecosystem simply makes no sense. The complete failure of the agencies to consider impacts to this endangered fox under the Endangered Species Act, even though the State Department explicitly notes that KXL would harm the species, is dumbfounding.

---

[127] *Id.*

[128] *BA* at 3.0-3

[129] *Id.* at 3.0-2.

[130] *DSEIS* at 3.8-28.

[131] U.S. Fish and Wildlife Service, *Northern swift fox,* http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A010 (last visited August 27, 2013).

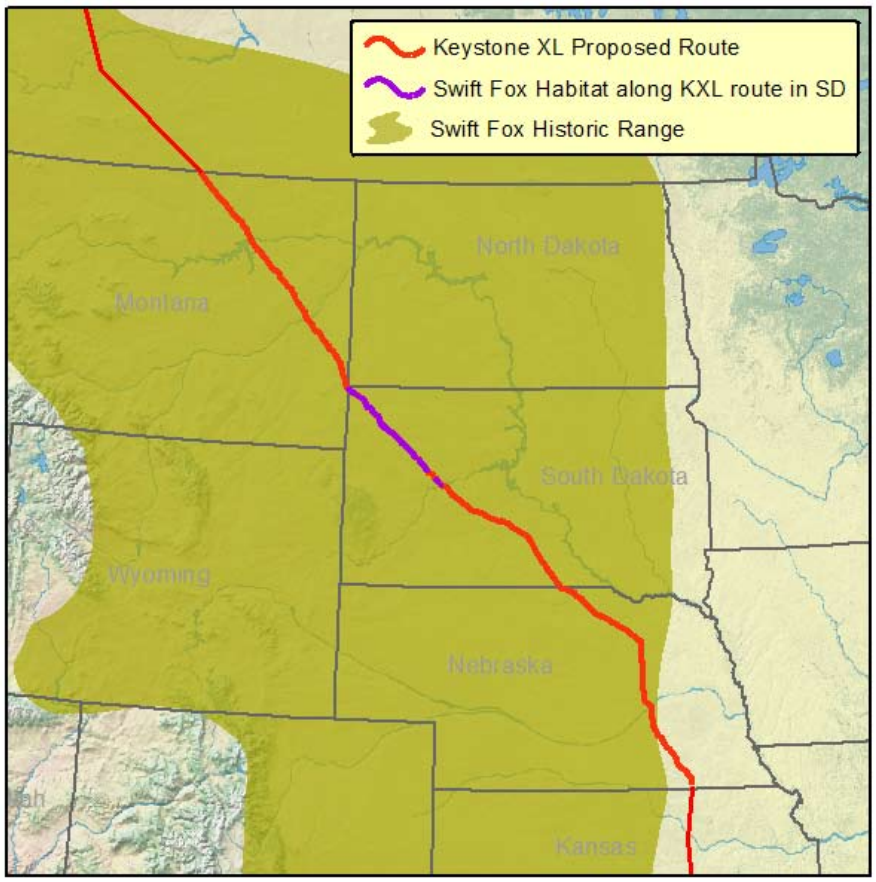
[132] *SDEIS* 3.8-28.

[133] *SDEIS* 4.8-28.

[134] *Id.*

[135] *Id.*

[136] *Id.*



h. Western Prairie Fringed Orchid *(Platanthera praeclara)*

Ground disturbance from KXL would also harm the threatened western prairie fringed orchid *(Platanthera praeclara)*, a nocturnally fragrant white orchid. This delicate and rare orchid lives in tallgrass prairies, meadows, fallow fields and ditches.[137] It has experienced a 60 percent decline due to the conversion of tallgrass prairie to agricultural land.[138] In Nebraska it is especially likely to be disturbed in its suitable habitat around Pump Stations 22, 23 and 24 along KXL's route.[139]

The State Department has admitted this orchid may exist in South Dakota but does not know because of inadequate surveying there.[140] The Department admits that ground disturbance such as clearing for construction and construction of ancillary facilities could "displace plant communities for the lifetime of the proposed Project" and that revegetation "could introduce or expand invasive species… potentially contributing to the decline of the western prairie fringed orchid."[141] Despite these admitted impacts, the agencies claim that with the implementation of a series of unenforceable conservation measures, this project is not likely to adversely affect this rare plant.[142] This finding is

[137] U.S. Fish and Wildlife Service, Endangered Species, *Prairie Fringed Orchids Fact Sheet,* http://www.fws.gov/midwest/endangered/plants/prairief.html (last visited August 27, 2013).

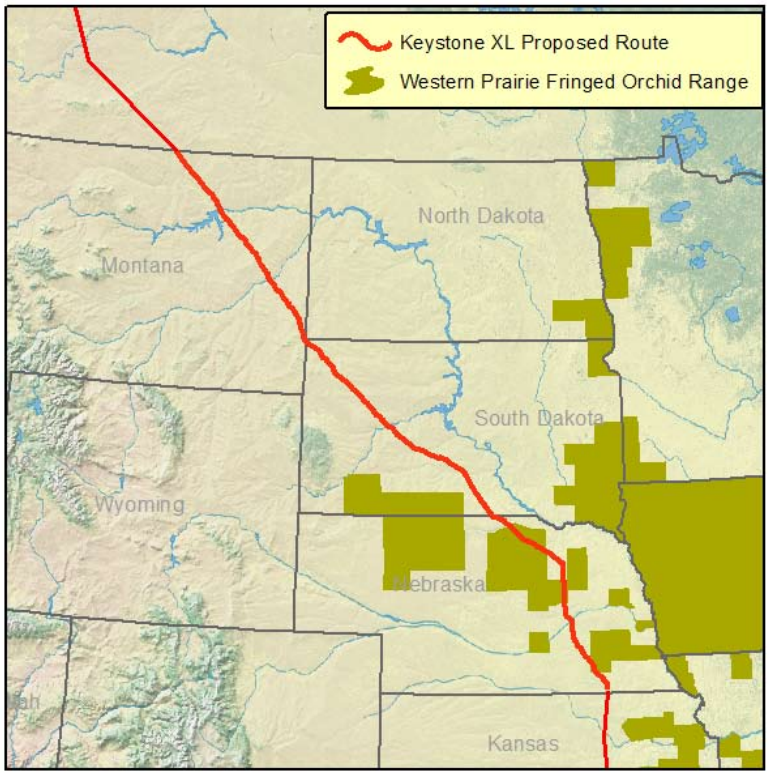
[138] *BA* at 3.0-70.

[139] *BiOp* at 31.

[140] *BA* at 3.0-70.

[141] *Id.* at 3.0-72.

[142] *BiOp* at 10.



inconsistent with the finding that invasive species resulting from KXL's construction could contribute to this species' decline. Further, the conservation measures the State Department and FWS base their finding on rely on TransCanada's staff to watch out for the orchid and, in a limited area, delineate avoidance areas.[143] Presumably none of these oil company employees are experts capable of identifying this plant in all its stages. Thus, in addition to the misplaced reliance on TransCanada to protect this plant, the agencies charged with analyzing the impacts of this project do not factor in the plant's growth cycle and the fact that it might be very difficult to detect at certain times of the year. In addition, this orchid relies on hawk moths for pollination, but the agencies have not considered impacts to these animals from herbicide spraying associated with maintaining the pipeline's right-of-way.

These kinds of oversights, combined with the lack of actual survey data for the orchid in South Dakota and the impacts the agencies admit exist, cast serious doubt on the validity of the "not likely to adversely affect" conclusion reached by the State Department and FWS.

i. Arkansas River Shiner (*Notropis girardi)*

In 2012 the environmental review process for the northern segment of KXL was separated from the southern segment, and now the southern segment is under construction while the northern segment remains under analysis and unapproved.[144] By separating the review processes for these two U.S. segments of KXL, the State Department piecemealed the project and dodged its requirement to consider the impacts of KXL on the threatened Arkansas River shiner (*Notropis girardi)*.

The Arkansas River shiner is a small and rare fish that needs turbid waters in broad, shallow and unshaded channels of creeks and small rivers.[145] This 2-inch fish requires 80 miles of river to complete its life cycle and is imperiled by habitat modification and destruction.[146] The southern segment of KXL crosses through its designated critical habitat along the North Canadian and South Canadian rivers in Oklahoma. Construction of the pipeline could harm the Arkansas River shiner by withdrawing its water and potentially spilling,[147] but by eliminating the southern segment from review, the agency tasked with protecting this little fish has effectively ignored KXL's impacts on the species and its critical habitat.

---

[143] *Id.* at 31.

[144] Paul W. Parfomak et al., *Keystone XL Pipeline Project: Key Issues,* Congressional Research Service, Summary (May 7, 2013), *available at* http://www.fas.org/sgp/crs/misc/R41668.pdf.

[145] Nature Serve Explorer, *Notropis Girardi,* http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Notropis+girardi (last visited September 11, 2013).

[146] Center for Biological Diversity, *Saving the Arkansas River Shiner,* http://www.biologicaldiversity.org/species/fish/Arkansas_River_shiner/index.html (last visited September 11, 2013).

[147] U.S. Fish and Wildlife Service, *Rational for Concurrence with Species NLAA Determinations in the Final Biological Assessment for the Keystone XL Pipeline Project* (on file with author).

j. Greater Sage Grouse *(Centrocercus urophasianus)*

The ground disturbance associated with this pipeline will have significant impacts on two species that are candidates for Endangered Species Act protection: the greater sage grouse and Sprague's pipit. Candidate species are those that FWS recognizes should be listed as threatened or endangered but it has not taken action on yet because their listing is precluded by other priorities.[148] The greater sage grouse (*Centrocercus urophasianus*) is a large, ground-dwelling bird with a long pointed tail that can weigh up to 7 pounds.[149] Male greater sage grouse put on a famously elaborate mating display in which they inflate bright yellow air sacks and prance about their strutting grounds or leks.[150] The greater sage grouse was listed as a candidate in 2010 because its numbers are significantly declining throughout the West, but their decline has been a concern for scientists for more than 90 years.[151] Greater sage grouse populations in the KXL project area have declined 20 to 27 percent in the past four decades.[152]

The State Department has acknowledged that 35 recently occupied leks within four miles of the pipeline route are especially vulnerable to construction activities in the spring because construction noise could displace breeding birds or disturb their nests, and construction traffic could result in direct mortality due to collisions.[153] Noise and other disturbances also greatly interfere with the greater sage grouses mating ritual.[154] Half of the pump stations in Montana are within four miles of confirmed active leks, and one South Dakota pipe yard is within just one mile of a continually inhabited lek.[155]

In addition to ground disturbance and associated noise, greater sage grouse could be seriously harmed by pipeline spills. KXL would cut through important greater sage grouse habitat, where at least 28 leks are active *each year*, along the pipeline route in both Montana and South Dakota.[156] The State Department admits that "a large spill event could result in an adverse effect on this species and its habitat…" but then goes

---

148 *Id* at 3.0-75.

149 *Id*.

150 U.S. Fish and Wildlife Service, Nevada Fish and Wildlife Office, *Greater Sage Grouse,* http://www.fws.gov/nevada/nv_species/sage_grouse.html (last visited September 11, 2013).

151 *BA* at 3.0-75.

152 *Id.* at 3.0-76.

153 *Id.* at 3.0-77-78.

154 *Id.* at 77.

155 *Id.* at 76.

156 *Id.* at 3.0-76.

on to dismiss this possibility as "unlikely due to the low probability of a spill, low probability of a spill coinciding with important sage grouse habitats, and low probability of a sage grouse contacting the spilled product."[157] The agency offers no analysis to substantiate these statements, and given that a significant portion of the pipeline route goes through prime greater sage grouse habitat, its conclusion is difficult to justify. The agency does not offer any studies on how greater sage grouse respond to an oil spill and whether they will flee the area or continue to inhabit the contaminated site. Given that KXL is expected to spill 1.9 times per year, it seems likely that this pipeline would, in fact, eventually spill in greater sage grouse habitat.

As with other species, the agencies relied on a litany of unenforceable conservation measures to reach their conclusion that KXL is not likely to adversely affect the species.[158] This conclusion represents a failure to protect one of the species that the agency knows may be most directly affected by KXL.

k. Sprague's Pipit *(Anthus spragueii)*

The other candidate species threatened by ground disturbance associated with KXL is the Sprague's pipit *(Anthus spragueii)*. This little bird was also designated as a candidate species in 2010, and its numbers are declining in a manner that makes FWS believe it needs to be listed as threatened or endangered.[159] Sprague's pipits have experienced an approximately 3 percent decline every year since 1980 in the United States due to habitat loss, degradation and fragmentation from a variety of causes including agriculture and energy development.[160] A migratory songbird identified by its melodic jingling song, the Sprague's pipit is endemic to grasslands, especially native prairies with relatively large areas of undisturbed habitat.[161] They are thought to occur along the pipeline route in both Montana and South Dakota. Notably, KXL would cross right through their breeding habitat in the North Valley Grasslands Important Bird Area and other high-quality breeding habitat in eastern Montana.[162]

The State Department admits that KXL would cross more than 200 miles of suitable habitat for the Sprague's pipit and that nests, eggs and young could be lost[163] as result of construction-related disturbance.[164] Still, the agencies rely on conservation measures such as reseeding and attempts at monitoring and avoidance to conclude that the project is not likely to adversely affect this imperiled prairie bird.[165] These conservation measures cannot diminish the fact that this pipeline crosses directly through important breeding

[157] *Id.* at 3.0-82.
[158] *Id.* at 3.0-82.
[159] *Id.* at 3.0-82.
[160] *Id.* at 3.0-83.
[161] *Id.* at 3.0-82
[162] *Id.*
[163] *Id.* at 3.0-84.
[164] *Id.* at 3.0-84.
[165] *Id.* at 3.0-86.

grounds,[166] and even if the measures are faithfully implemented, the construction of KXL would still have some effect on this species by cutting through its habitat.

Sprague's pipits would also be impacted by power lines servicing KXL. The State Department says that "[p]ower transmission lines may also increase the likelihood of collisions for Sprague's pipits since they typically have high, ringing flights during the spring and summer."[167] Instead of analyzing these impacts, the State Department points out that Keystone would not be directly constructing or operating these lines but that the company "would inform power providers of the requirements for ESA consultations . . . to prevent impacts to nesting Sprague's pipit."[168] This statement is problematic for two reasons. First, because the power lines would be constructed only to serve KXL, State does in fact have an obligation to analyze their impacts on wildlife. Secondly, State has acknowledged the collision threat of power lines to Sprague's pipet, but here they state that the Keystone will inform power providers of the need to prevent impacts to *nesting* pipets, not the high-flying pipets it has acknowledged are at risk of colliding with the power lines. State's failure to analyze these impacts, and FWS's endorsement of the weak conservation measures that would be implemented by Keystone,[169] leave significant questions about the actual impacts of KXL on this imperiled bird unanswered.

l. Woodland caribou

Canada's tar sands region is the epicenter of habitat for North America's iconic boreal woodland caribou.[170] Roughly one-third of Alberta's woodland caribou (around 2,315 adults) live in fixed home ranges in an area increasingly fragmented by tar sands extraction activities.[171] Woodland caribou are listed as threatened under Canada's Species at Risk Act[172] and are declining at an alarming rate in Alberta, in large part due to tar sands development fragmenting and polluting their habitat.

Only a relatively small portion of Alberta's massive tar sands reserve has been developed to date, although production and associated environmental impacts continue to increase. Even at this relatively low level of cumulative disturbance, woodland caribou herds in the region are in serious trouble. All of the woodland caribou herds in the tar sands region have declined more than 50 percent over the last three generations,[173] and face a high probability of extinction within 40 years.[174] The Cold Lake herd is particularly vulnerable to the impacts of tar sands extraction and

[166] *Id.* at 3.0-84.

[167] *Id.*

[168] *Id.* at 3.0-85.

[169] *BiOp* at 9.

[170] Global Forest Watch, *Canada Canada's Woodland caribou: Industrial Disturbances in Their Ranges and Implications for Their Survival* (January 2012), *available at* http://www.globalforestwatch.ca/pubs/2012Energy/01CaribouDisturbance/Caribou_Industrial_Disturbances_2012.pdf.

[171] D. Cichowski, *Status of the Woodland caribou (Rangifer tarandus caribou) in Alberta: Update 2010, Alberta Sustainable Resource Development, Alberta Wildlife Status Report No*. 30, 55 (2010) [hereinafter *Status of the Woodland caribou 2010*].

[172] Government of Canada, Species at Risk Public Registry, *Species Profile: Woodland caribou Boreal Population, available at* http://www.sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=636.

[173] *Status of the Woodland caribou 2010,* 25, 26-51.

[174] Athabasca Landscape Team, *Athabasca Caribou Landscape Management Options Report*, ii (2009), *available at* http://www.albertacaribouccommittee.ca/PDF/Athabasca-Caribou.pdf.

is tragically expected to fall below 10 individuals in less than 20 years.[175] Thirty-nine to 49 percent of individual caribou herd ranges in the tar sands area are already within 1,600 feet of some type of anthropogenic disturbance.[176] Current science on caribou population dynamics indicates that if a population is to persist, disturbed areas cannot encompass more than about one-third of a population's range.[177]

In 2011 a panel of 23 woodland caribou experts recommended that the relatively more intact habitat should be the focus of Alberta's land-use planning to create an overarching caribou protection plan.[178]

> [T]o conserve woodland caribou means dispensing with business as usual, which has demonstrably and repeatedly failed to meet caribou conservation needs . . . While it is tempting to regard predators as the culprits in the decline and demise of woodland caribou, the ultimate cause is human activities. . . . To proceed headlong with industrial exploitation in caribou range in the face of known uncertainties is to risk foreclosing on options. . . . Science suggests keeping caribou in the boreal forest is achievable. Society will need a new way of thinking — based on forethought and wisdom — to make it happen.[179]

Unfortunately, rather than curb tar sands extraction, Canadian authorities have announced their intent to embark on a massive and gruesome campaign to kill thousands of wolves in the name of saving caribou.[180] This approach is scientifically unsound: Caribou make up only 10 percent of the diet of wolves in the region.[181] Numerous studies echo the same sentiment. "While it is tempting to regard predators as the culprits in the decline and demise of woodland caribou, the ultimate cause is human activities."[182]

The State Department has refused to consider impacts to Canada's threatened woodland caribou.[183] FWS similarly ignores the impacts to Canada's woodland caribou, despite the abundance of research plainly showing the link between tar sands development and their rapid decline. The Endangered Species Act requires the agency to consider impacts to listed species both "directly and indirectly by the Federal action and not merely the immediate area involved in the action."[184] Caribou would clearly be indirectly impacted by KXL. Thus State and FWS are failing to comply with the mandates of the Endangered Species Act by ignoring their obligation to consider the impacts of approving KXL to Canada's iconic woodland caribou.

---

175 Schneider R., et al., *Triage for Conserving Populations of Threatened Species: The Case of Woodland caribou in Alberta,* 143 Biological Conservation 1603, 1607 (2010).

176 *Status of the Woodland caribou 2010,* 60.

177 Badiou, P. et al., *Keeping Woodland caribou in the Boreal Forest: Big Challenge, Immense Opportunity*, International Boreal Conservation Science Panel, 2 (2011), *available at* http://borealcanada.org/pr/documents/2011-07-11IBCSPCaribou-ScienceandPolicyBrief_FINAL.pdf [hereinafter *Big Challenge, Immense Opportunity*].

178 *Big Challenge, Immense Opportunity,* 11.

179 *Id.* at 2,3,6,7, and 8.

180 Canadian Press Writers, *Caribou Recovery Plan Near Oilsands May Target Wolves*, Canadian Press, September 12, 2011, *available at* http://www.ctvnews.ca/caribou-recovery-plan-near-oilsands-may-target-wolves-1.696155 (last visited September 11, 2013).

181 Virginia Morell, *Scat-sniffing Dogs Nose Out Clues to Caribou Decline,* Science Magazine, June 22, 2011, *available at* http://news.sciencemag.org/sciencenow/2011/06/scat-sniffing-dogs-nose-out-clue.html.

182 *Big Challenge, Immense Opportunity,* 4.

183 U.S. Department of State, Supplemental Draft Environmental Impact Statement, 3-205, *available at* http://key-stonepipeline-xl.state.gov/documents/organization/182272.pdf.

184 50 C.F.R. § 402.02.

Northern long-eared bat

m. Bats

The State Department has recognized that the KXL project area contains habitat for the following diverse array of bat species: big brown bat, eastern red bat, evening bat, fringed myotis, little brown myotis, long-eared myotis, long-legged myotis, silver-haired bat, Townsend's big-eared bat and western small-footed myotis.[185] The proposed KXL pipeline creates new threats to bats, but the agencies barely even consider the impacts on them even though many bat species are facing declines due to lost habitat, habitat loss and pesticide use associated with agriculture, and disease.

Specifically, power lines from KXL would create significant collision hazards for bats, but the State Department does not even consider this threat. Very little scientific research exists on the specific impacts of power lines on bats, the bulk of current research focuses on the impacts of wind turbines on birds, leading some researchers to call out the urgent need for power line analysis specific to bats.[186] Anecdotal evidence indicates that power line collisions kill millions of bats each year, thus these impacts are certainly worth considering.

The State Department's analysis for the northern long-eared bat (*Myotis septentrionalis*) is especially lacking. Under the terms of a settlement with the Center for Biological Diversity,[187] FWS must make a determination of whether protecting the northern long-eared bat as threatened or endangered under the Endangered Species Act is warranted in 2013.[188] The long-eared bat is a unique creature that forages along wooded hillsides and ridgelines and is much more solitary than other bats.[189] It is imperiled by logging, the conversion of forest land for agriculture and development, human disturbance, and other forms of habitat destruction.[190] The long-eared bat is found throughout the states KXL would cross, yet the State Department claims that "no summer or winter roosts are known or expected to occur in the proposed Project area" without mentioning whether or not any surveys occurred or providing any justification for its conclusion.[191] The agency provides no analysis of whether power lines may impact the population of this imperiled bat.

---

185 *DSEIS* at 3.6-9.

186 *See e.g.,* Craig Willis et al., *Bats are not Birds and Other Problems with Sovacool's (2009) Analysis of Animal Fatalities due to Electricity Generation*, Energy Policy (2009).

187 Center for Biological Diversity, *Landmark Agreement Moves 757 Species Toward Federal Protection*, http://www.biologicaldiversity.org/programs/biodiversity/species_agreement/index.html (last visited September 11, 2013).

188 Center for Biological Diversity, *Timeline of Required Species Protection Decisions*, http://www.biologicaldiversity.org/programs/biodiversity/species_agreement/index.html#timeline (last visited September 11, 2013).

189 Center for Biological Diversity, *Saving the Northern long-eared bat,* http://www.biologicaldiversity.org/species/mammals/northern_long-eared_bat/index.html (last visited September 11, 2013).

190 *Id.*

191 *DSEIS* at 4.8-6.

n. Migratory Birds Generally

Snow geese

The Migratory Bird Treaty Act declares that it is unlawful for any person to harm migratory birds.[192] Hundreds of miles of new power lines, in addition to spills and construction activities, are sure to cause some harm to the millions of migratory birds that rely on habitat within the KXL pipeline corridor, yet these impacts are continually diminished by the State Department in its review of KXL.[193] EPA specifically asked State to improve on its analysis by providing "additional information that would address potential impacts to *specific* migratory species, with an emphasis on already vulnerable species,"[194] but State ignored EPA's request. The State Department appears comfortable with allowing this project to move forward regardless of the impacts it will have on migratory birds.

The State Department's lackluster analysis of spill impacts on migratory birds was also an issue of concern to the U.S. Department of the Interior. In its comments on the State Department's most recent round of analysis it raised serious concerns about the quality of State's spill analysis for migratory birds, pointing out that the pipeline would cross through the North Valley Grasslands and Rainwater Basin Important Bird Areas and that an "oil spill in either of the areas could severely impact critical habitat for migratory birds . . . ."[195] The Department of the Interior also took issue with the State Department for ignoring impacts to terrestrial wildlife, saying "there is no acknowledgement of the potential impacts to wildlife in the event of spills or leaks."[196]

In addition to brushing aside spill risks, the State Department fails to give adequate consideration to the impacts of power lines on migratory birds, simply noting that the implementation of conservation measures will prevent KXL from resulting in significant impacts to migratory birds.[197]

Finally, the State Department and FWS have both refused to consider the significant impacts of tar sands development in Canada on migratory birds. Canada's boreal forests are the birthplace of billions of birds each year and the region is often referred to as North America's bird nursery. Approximately 300 different bird species breed in or migrate through habitat located in the heart of the tar sands area.[198] Those species include water and shore birds (including cranes, ducks, geese, sandpipers, egrets and herons) and insectivorous birds (including sparrows, thrushes, phoebes, flycatchers, chickadees, woodpeckers, wrens,

---

[192] 16 U.S.C. § 703.

[193] *DSEIS* at 4.6-3.

[194] Letter from Cynthia Giles, Ass't Administrator, Enforcement and Compliance Assurance, to Mr. Jose W. Fernandez, Ass't Secretary, and Dr. Kerri-Ann Jones, Ass't Secretary, U.S. State Department 8-9 (June 6, 2011) (emphasis added).

[195] Comment Letter from Willie Taylor, Director, Office of Environmental Policy and Compliance, U.S. Department of Interior to Genevieve Walker, NEPA Coordinator, U.S. Department of State, 6 (April 29, 2013).

[196] *Id.* at 12.

[197] *BA* at 3.0-85.

[198] Kari Lydersen, *Migratory Birds Endangered by Tar Sands Mining, Environmental Groups Report,* Washington Post, December 26, 2008, *available at* http://www.washingtonpost.com/wp-dyn/content/article/2008/12/25/AR2008122500928.html.

swallows and finches).[199] But the nursery is no longer safe for these birds: Tar sands mining requires the destruction of the vast swaths of forests that lie on top of the tar sands deposits and massive amounts of pollution are generated in tar sands processing. Liquid pollutants are stored in tailing ponds. In one horrible incident, 1,606 ducks landed in a tar sands tailing pond, got coated in the toxic chemical soup, and died.[200] Allowing the proposed KXL pipeline would result in increased development of Canada's tar sands and the agencies tasked with evaluating its impacts have failed to consider the full scope of impacts to migratory birds.

Conclusion:

The U.S. State Department and Fish and Wildlife Service have failed to properly consider the full range of impacts of the KXL pipeline on endangered species. By detailing the flaws in their analysis, this report reveals the many ways that KXL's impacts on the imperiled species are simply unacceptable.

Tar sands operations in Alberta, Canada

[199] Natural Resources Defense Council, *Danger in the Nursery: Impact on Birds of Tar Sands* (December 2008), *available at* http://www.nrdc.org/wildlife/borealbirds.pdf.

[200] CBC News Writers, *The Syncrude Duck Trial*, CBC News, August 20, 2010, *available at* http://www.cbc.ca/news/canada/edmonton/story/2010/03/24/f-edmonton-indepth-syncrude-ducks-trial.html.

APPENDIX A,

Background on Tar Sands and the Proposed Keystone XL Pipeline

I. The Problem With Tar Sands

Tar sands oil is different from conventional crude oil in many ways. Conventional crude is a liquid that can easily be pumped from underground deposits. In contrast, bitumen, the thick tar-like substance that tar sands oil is derived from, is a solid mass that cannot be easily pumped out of the ground.[201] Bitumen must be strip-mined or extracted from deep wells using energy intensive steam injections to liquefy it before pumping it to the surface.[202] The bitumen itself is too thick to move on its own and requires extra processing before it can be transported through pipelines.[203]

Tar sands oil production also requires massive amounts of water. Tar sands producers siphoned about 370 million cubic meters of water from the Athabasca River in 2011. [204] That's more water than the entire city of Toronto, with 2.8 million residents, uses annually.[205] According to industry, creating a barrel of oil from the tar sands can require up to 3.1 barrels of freshwater.[206]

Tar sands oil also releases more climate-changing greenhouse gas ("GHG") emissions than conventional crude. The Congressional Research Service ("CRS") identifies two main reasons for this:

> (1) oil sands are heavier and more viscous than lighter crude oil types on average, and thus require more energy- and resource-intensive activities to extract; and (2) oil sands are compositionally deficient in hydrogen, and have a higher carbon, sulfur and heavy metal content than lighter crude oil types on average, and thus require more processing to yield consumable fuels by U.S. standards.[207]

From well to tank, CRS determined that GHG emissions from Canadian tar sands oil average 70 to 110 percent higher than average U.S. fuel.[208]

II. The Keystone XL Pipeline

KXL crosses an international border, thus it requires a special permit from the president. TransCanada submitted its Presidential Permit application to the State Department in 2008.[209] Since then, opposition to this project has flourished. In 2009 thousands of people, including many landowners who live along the proposed pipeline's route, expressed their disapproval to the State Department.[210] In 2010 the State Department released a Draft Environmental Impact Statement ("DEIS"), a document promptly declared inadequate by the EPA.[211] Ten days later another tar sands pipeline spilled more than 1 million gallons of diluted bitumen into the Kalamazoo River, giving America its first taste of a catastrophic tar sands spill. In the summer of 2011 more than 12,000 KXL protesters made history when they encircled the White House and more than 1,000 peaceful protesters were arrested after

[201] The Pembina Institute, *Oilsands, Heavy Crudes, and the EU Fuel-Quality Directive*, 2 (March 2012), *available at* http://www.pembina.org/pub/2325.

[202] Natural Resources Defense Council, *Tar Sands Pipelines Safety* Risks, 5 (February 2011), *available at* http://www.nrdc.org/energy/files/tarsandssafetyrisks.pdf [hereinafter *Pipeline Safety Risks*].

[203] U.S. Department of Interior, Oil Shale and Tar Sands Draft Programmatic Environmental Impact Statement, Appendix B, 4 (February 2012).

[204] Ed Struzik, *Report: With Tar Sands Development, Growing Concern on Water Use,* Yale Environment 360, http://e360.yale.edu/feature/with_tar_sands_development_growing_concern_on_water_use/2672/.

[205] *Id.*

[206] *Id.*

[207] Richard K. Lattanzio, *Canadian Oil Sands: Life-Cycle Assessments of Greenhouse Gas Emissions,* Congressional Research Service, Summary (July 18, 2012), *available at* http://www.fas.org/sgp/crs/misc/R42537.pdf.

[208] *Id*.

[209] Natural Resources Defense Council, *Keystone XL Tar Sands Pipeline Timeline*, http://docs.nrdc.org/energy/files/ene_11110201a.pdf (last visited September, 2013).

[210] *Id.*

[211] *Id.*

the State Department released its final EIS and started the National Interest Determination process.[212] In January 2012 President Barack Obama finally stood up to Big Oil and denied the permit for the proposed pipeline, but then backed down in March by announcing his support for the southern segment of the pipeline.[213] TransCanada submitted a new application for the northern segment just a month later and started the review process anew.[214] The State Department issued a supplemental and still inadequate Draft EIS in the spring of 2013.[215]

A decision on this pipeline is expected in 2014. Pipeline proponents say KXL will create thousands of high-paying jobs, pave the path to energy independence and drive down oil prices, but offer little evidence to support these promises. After TransCanada told the State Department it would only hire 35 permanent employees to operate the pipeline the State Department concluded that "compared to the pipeline corridor population of approximately 268,000, the 35 new permanent employees associated with the proposed Project in these states would result in negligible impacts . . . ."[216] Similarly, the argument that KXL will lead to more energy independence does not pan out. Existing pipelines to the Midwest are nowhere near capacity; this pipeline is really about getting tar sands oil to the Golf Coast for export.[217] The proposed Keystone XL pipeline would allow Canadian tar sands producers to pipe fuel across America and then avoid U.S. taxes — taxes they have to pay when they deliver oil to the Midwest — by allowing TransCanada to deliver its product to tax-free international-zone refineries along the Gulf of Mexico.[218] Finally, by diverting oil from Midwest refineries to the Gulf Coast for export, the proposed Keystone XL pipeline would actually decrease the U.S. gasoline supply and lead to higher prices at the pump.[219]

---

[212] *Id.*

[213] *Id.*

[214] *Id.*

[215] *Id.*

[216] *DSEIS* at 4.10-24.

[217] *See generally* Oil Change International, *The Keystone XL pipeline will Lead to a Surplus of Heavy Crude Oil on the Gulf Coast that will be Exported, available at* http://priceofoil.org/content/uploads/2013/07/OCI_KXL-Crude-Exports_07-11-13.pdf.

[218] *See generally* Oil Change International and Natural Resources Defense Council, *Keystone XL Pipeline: Undermining U.S. Energy Security and Sending Tar Sands Oversees, available at* http://www.nrdc.org/energy/files/kxlsecurity.pdf.

[219] *See generally* Natural Resources Defense Council, *Keystone XL: A Tar Sands Pipeline to Increase Oil Prices, available at* http://www.nrdc.org/energy/keystone-pipeline/files/Keystone-Oil-Prices-Report.pdf.

BIOLOGICALDIVERSITY.ORG