

BROKEN PROMISE #1

# The Extent of Environmental Impacts



Subhankar Banerjee

## The Promise

Oil development has negligible impacts on the environment.

## The Reality

Environmental impacts of oil development are pervasive and lasting, occurring at every stage of oil development and accumulating over time.

Oil companies and politicians insist that it is possible to explore and develop oil fields in Alaska without harm to wildlife and the environment. But oil development is inherently a dirty business. At every stage from exploration to production to transportation, oil development negatively impacts the environment. Impacts occur both in the present and at the source, as in the case of oil spills, as well as in the future and distant from the source, as when oil is shipped overseas, burned, and converted to greenhouse gases.

Some impacts that are not yet manifest will occur as a result of past activity, even if all oil and gas development ceased today.<sup>1</sup> For example, thousands of acres of tundra have been damaged by gravel pads and fill, and much of that gravel has been contaminated by oil spills. These environmental impacts could persist for centuries, especially if vegetation and contaminated sites are not restored.<sup>2</sup>

If oil development continues and expands, existing impacts will be exacerbated and new ones will only compound the environmental damage.<sup>3</sup> If development expands offshore, infrastructure and traffic, noise and air pollution, and oil spills, will impact previously undisturbed ecosystems, interfering with coastal and marine ecosystems and wildlife. The cumulative effects of so many sources of strain, especially when coupled with climate change, are extensive.<sup>4</sup>

### Impacts at every stage of development

Environmental impacts of oil development occur at every stage of development and include both direct and indirect effects. During exploration, impacts occur from heavy trucks driving across the tundra, damaging plants and permafrost, and disturbing wildlife.<sup>5</sup> Offshore, exploration creates noise impacts that can harm whales and other marine life many miles away.<sup>6</sup>

- ▷ Environmental impacts occur at every stage of oil development.
- ▷ Past impacts combine with current impacts to produce significant cumulative effects.
- ▷ Future development and expansion will only further compound cumulative environmental impacts.

At the production phase, more equipment, infrastructure and personnel are required, and impacts derive from multiple sources, including air and vehicle traffic; gravel pits and water withdrawals; roads, wells, pipelines, and power lines; construction dust and noise; exhaust from combustion engines; and oil spills, toxic fumes, and drilling wastes. Environmental impacts, especially oil spills, are also a concern during oil storage and transportation, whether by pipeline or tanker.

**“Whether the benefits derived from oil and gas activities justify acceptance of the inevitable accumulated undesirable effects that have accompanied and will accompany them is an issue for society...to debate and judge.”<sup>7</sup> National Research Council**



Pamela A. Miller



Exxon Valdez Oil Spill Trustee Council

Oil development activities also contribute to climate change,<sup>8</sup> which is affecting the Arctic more quickly and profoundly than other areas of the world. Arctic ecosystems are highly sensitive to change and pollutants in the Arctic persist longer than they do in warmer climates,<sup>9</sup> further exacerbating the cumulative effects of oil development in America's Arctic.

**"...we can produce more energy from my state without harming wildlife or the environment."<sup>10</sup>**

Senator Lisa Murkowski, April 29, 2008



National Oceanic and Atmospheric Association

## Past and present impacts

The following list describes just some of the ways the oil industry in Alaska has already harmed and continues to harm the environment as a result of past and current development activity.<sup>11</sup>

- Seismic trucks and other off-road travel damage vegetation and affect scenic views
- Off-road vehicles disrupt wildlife, especially in winter when bears are denning and animals are already under nutritional stress
- The noise of trucks and airplanes, construction, and oil production disturbs wildlife, affecting migration and other behavior
- Buildings, powerlines, pipelines, and other structures disrupt the migration of fish, birds, and caribou, and disrupt scenic views
- Gravel roads alter natural water flow and create dust, affecting air quality and roadside vegetation
- Ice roads require drawing millions of gallons of water from lakes and rivers
- Heated buildings melt permafrost
- Hundreds of vehicles, generators, and industrial operations burn diesel and emit other pollutants, including greenhouse gases
- Predator numbers increase near oil fields leaving prey more vulnerable
- The presence of humans and physical structures contributes to direct wildlife mortality
- Hundreds of spills of oil and other toxic substances occur each year<sup>12</sup>
- Drilling waste is discharged directly into coastal waters<sup>13</sup>

## Future impacts

The following additional impacts could compound with past and current impacts if oil development is allowed to expand to offshore areas such as the Beaufort and Chukchi Seas:<sup>14</sup>

- Offshore seismic testing will harm bowhead whales and other marine life
- Increased marine traffic and noise will stress coastal and marine wildlife
- Offshore oil and chemical spills will occur

Many impacts of oil and gas development remain unknown. The following are just a few examples recommended by the National Academy of Sciences for further research and study:<sup>15</sup>

- The extent to which fish, wildlife, and plants are contaminated by toxins
- The effects of ice roads on aquatic species and tundra
- The consequences of water withdrawals
- Air contamination and its effects
- Offshore oil spills

To suggest that oil exploration and production can be done with only minimal impacts to the environment is clearly a false promise. According to the National Academy of Sciences, if oil activity expands, the continuing accumulation of effects is virtually certain. Even if development does not expand, the lingering effects of past development will persist for centuries.<sup>16</sup>

*Subhankar Banerjee*

<sup>1</sup> National Research Council. (2003). Cumulative environmental effects of oil and gas activities on Alaska's North Slope. Washington, DC: National Academies Press, P. 155.

<sup>2</sup> National Research Council. pp. 90, 158.

<sup>3</sup> National Research Council. P. 11.

<sup>4</sup> As goes the Arctic, so goes the planet: Petition for rulemaking under the Clean Air Act to regulate greenhouse gas emissions from mobile and stationary sources to protect the health and welfare of the Arctic and the world. (2008, November). p. 40. <http://www.oceana.org/fileadmin/oceana/uploads/pacific/ArcticPetition-FINAL-lowres.pdf>.

<sup>5</sup> National Research Council. pp. 76, 84, 96, 117, 157.

<sup>6</sup> Jasny, Michael, J. Reynolds, C. Horowitz, A. Wetzler. (2005, November). Sounding the depths II: the rising toll of sonar, shipping and industrial ocean noise on marine life. Natural Resources Defense Council. p. iv. Retrieved July 2009 from website: <http://www.nrdc.org/wildlife/marine/sound/contents.asp>; National Research Council. P. 156.

<sup>7</sup> National Research Council. P. 11.

<sup>8</sup> ACIA, Impacts of a Warming Arctic: Arctic Climate Impact Assessment (2004). Cambridge University Press. Overview report, executive Summary. p. 2. Retrieved August 25, 2009 from: <http://amap.no/acia>.

<sup>9</sup> Nuttall, Mark. 2000. The Arctic is changing. Stephansson Arctic Institute, Akureyri, Iceland, in partnership with the EU Raphael Programme. P. 1. Last retrieved July 22, 2009 from website: <http://www.thearctic.is>.

<sup>10</sup> Murkowski, Lisa. April 29, 2008. Higher Energy Taxes, ANWR One Solution (speech given on Senate floor). Retrieved August 19, 2009 from website: <http://murkowski.senate.gov/public/index.cfm?p=Speeches>.

<sup>11</sup> National Research Council. pp. 6, 36, 40-41, 47-49, 67-68, 78-80, 117-118.

<sup>12</sup> Alaska Department of Environmental Conservation spill database. (1996-2009). Analyzed and compiled by Pam Miller, Northern Alaska Environmental Center.

<sup>13</sup> Trustees for Alaska. (2008, December 15). Villages, fishermen, and Cook Inletkeeper challenge EPA for allowing oil companies' toxic discharges. Press release retrieved from website: <http://www.trustees.org/Supporting%20Documents/CIGP%20press%20release%2012-15-08.pdf>.

<sup>14</sup> Harrould-Kolieb, Ellycia, J. Savitz, J. Short, M. Veach. (2009). Toxic legacy: long-term effects of offshore oil on wildlife & public health. <http://www.oceana.org/climate>. p. 25; Jasny, M. et. al. (2005, November). p. v.

<sup>15</sup> National Research Council. pp. 9,10,150-153.

<sup>16</sup> Ibid. P. 158.