

BROKEN PROMISE #10

# Fossil Fuels & Global Warming



## The Promise

Oil and gas can be developed safely and responsibly to provide a bridge to cleaner energy.

## The Reality

New oil and gas development will add more stress to a region already experiencing climate change impacts, and will exacerbate global warming.

Oil development interests insist that because “fossil fuels will continue to provide the majority of the world’s growing need for energy for decades to come,”<sup>1</sup> the continued development of new oil and gas resources is critical.<sup>2</sup> In fact, the continued expansion of oil and gas development, especially in environmentally sensitive places such as the Arctic Ocean, will only add to the threats Arctic ecosystems and cultures are facing and distract from the urgent need to address climate change.

## The primary source of greenhouse gas pollution is the burning of fossil fuels.

Petroleum consumption alone accounted for 44% of U.S. CO<sub>2</sub> emissions in 2006.<sup>3</sup> Scientists believe that to avoid catastrophic changes affecting climate and ultimately life on Earth, we must reduce CO<sub>2</sub> in the atmosphere to 350 ppm, down from current levels of 380 ppm.<sup>4</sup> Only by dramatically reducing the amount of fossil fuels we extract and burn for energy can we meet this goal. According to the Intergovernmental Panel on Climate Change this will require nations like the United States to reduce their carbon emissions by 20-35% below 1990 levels by 2020, and 80-95% below 1990 levels by 2050.<sup>5</sup>

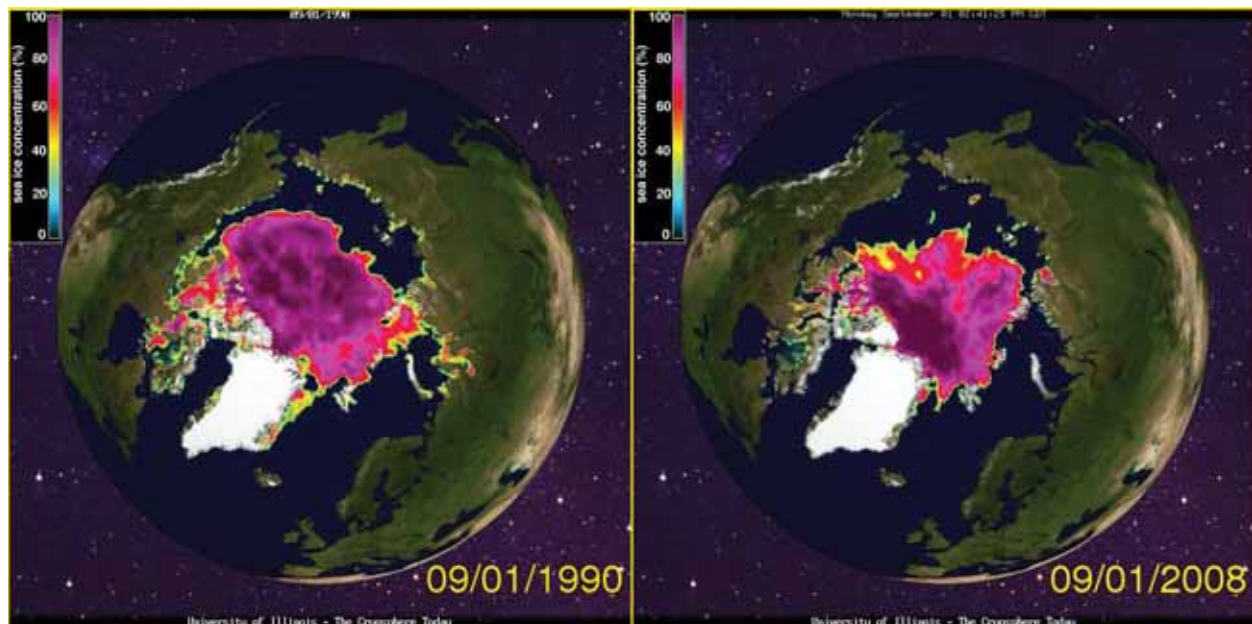
## Alaska is one of the top greenhouse gas-emitting states in the nation.<sup>6</sup>

Despite having one of the lowest populations, Alaska released in 2005 the equivalent of 79 tons of greenhouse gases per resident, which is more than three times the national average,<sup>7</sup> and fifteen times more pollution than the average passenger vehicle emits in one year.<sup>8</sup> More than half of Alaska's industrial source greenhouse gas emissions are generated by British Petroleum (BP Exploration Alaska), which operates most of the Prudhoe Bay oil fields.<sup>9</sup>

## Climate change is already impacting Alaska.

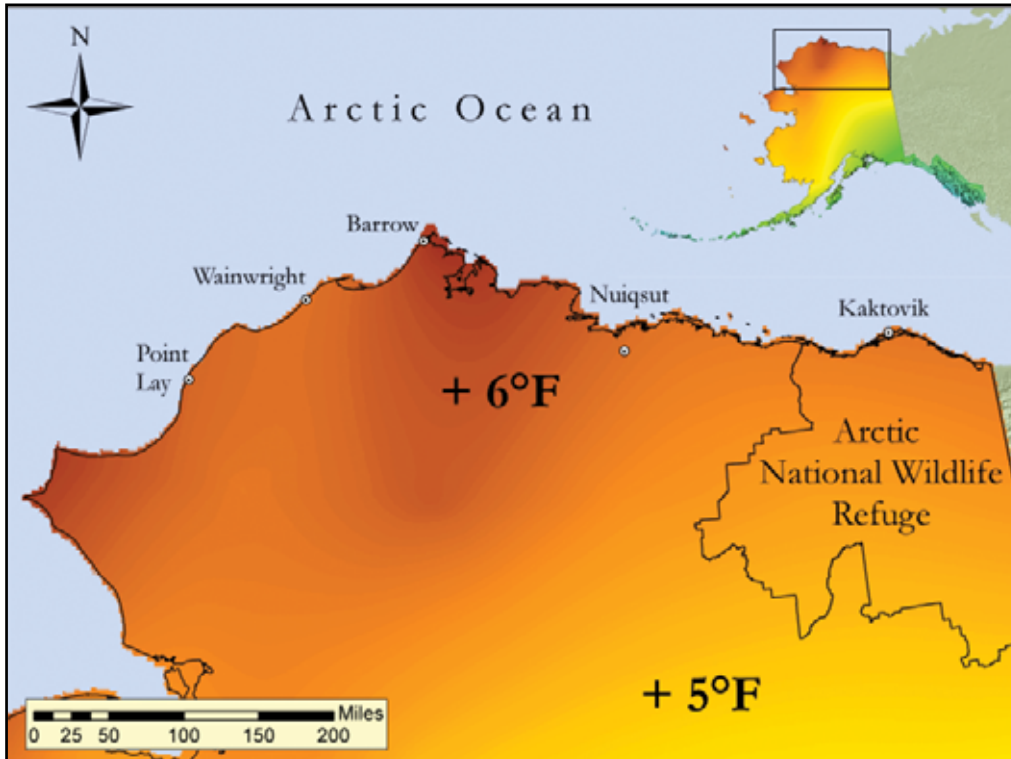
Arctic regions are warming at twice the rate of other places on Earth.<sup>10</sup> Such dramatic increases in temperature have resulted in profound and visible changes to Alaska's land, water, wildlife, and people.

- ▷ Oil and gas development is a major source of greenhouse gases and a significant cause of climate change.
- ▷ Climate change is already adversely impacting Arctic ecosystems and indigenous people in Alaska.
- ▷ Continuing to extract fossil fuels in the Arctic will only add stress to already vulnerable ecosystems and indigenous communities.



**Comparison satellite images of summer sea ice cover.**

Source: University of Illinois – The Cryosphere Today, <http://igloo.atmos.uiuc.edu/cgi-bin/test/print.sh>.



Arctic Alaska is already warming faster than other places in the world, and climate models predict temperatures will increase by as much as 6 degrees by 2040.

Among the more profound changes is the loss of sea ice, which is at the lowest levels in 800 years.<sup>11</sup> As a result of receding and thinning sea ice scientists have observed polar bears drowning and going hungry,<sup>12</sup> walrus forced onto land,<sup>13</sup> and sharp declines in numbers of ice-dependent sea birds.<sup>14</sup> Subsistence hunters have had to travel farther across thinner ice, and sometimes open seas, to access animals.<sup>15</sup> The loss of ice, coupled with melting permafrost, is accelerating coastal erosion, forcing communities to relocate, and threatening habitat for waterfowl, and caribou,<sup>16</sup> which are also important food sources for

indigenous people. Also due to coastal erosion, an emergency clean-up was required in 2007 to plug an old oil exploration well after more than 300 feet of shoreline was lost in a few months.<sup>17</sup>

As temperatures continue to rise and precipitation patterns change, scientists expect lakes and wetlands to dry, fires to increase, and plant and animal distributions to change.<sup>18</sup> These anticipated changes have significant health, social and economic implications for people living in the Arctic, and beyond.<sup>19</sup> What is happening in the Arctic affects not just the wildlife and

**According to current scientific consensus, it is the burning of oil (and other fossil fuels) that has contributed significantly to the Arctic's warming trend.<sup>20</sup>**

people living there, but also has implications for global weather patterns and the survival of species that migrate to the Arctic from other parts of the world.<sup>21</sup>

America's Arctic contains important onshore and off-shore feeding, denning, calving, nursery, nesting, staging, and molting habitats for hundreds of species and contains some of the world's last wholly intact ecosystems. If we do not address climate change in the Arctic, and elsewhere, 30 percent of the world's species and one-fifth of the world's ecosystems could be gone by 2050.<sup>22</sup> The result of such losses could affect agriculture, medicines and building materials sourced from plants, jobs, and ways of life that we now take for granted.<sup>23</sup> Even oil production on the North Slope could be impacted by warming temperatures, which have already reduced the number of days that ice roads can be used.<sup>24</sup>

Given what we know about the impacts of climate change to ecosystems, species, and cultures, it would be irresponsible to undertake new drilling activities that would accelerate such change and bring harm to wildlife and people.



U.S. Geological Survey

<sup>1</sup> <http://www.shell.com>. Online fact sheet. Our approach to climate change. Last visited May 22, 2009.

<sup>2</sup> Alaska Oil and Gas Association. (2009). OGA Straight Talk, Special Edition – Offshore Drilling. OCS Yes brochure. p. 2. [www.aoga.org](http://www.aoga.org).

<sup>3</sup> Energy Information Administration. Greenhouse gases, climate change, and energy. Retrieved August 29, 2009 from: <http://www.eia.doe.gov/bookshelf/brochures/greenhouse/Chapter1.htm>.

<sup>4</sup> <http://www.350.org/en/about/science>

<sup>5</sup> Intergovernmental Panel on Climate Change (IPCC). (2007). Summary for policymakers.

<sup>6</sup> Alaska Department of Environmental Conservation. (2008). Alaska greenhouse gas emission inventory. [http://www.climatechange.alaska.gov/docs/ghg\\_ei\\_rpt.pdf](http://www.climatechange.alaska.gov/docs/ghg_ei_rpt.pdf).

<sup>7</sup> Kizzia, Tom. (2008, January 22). Alaska plays significant role in world's warming. Anchorage Daily News.

<sup>8</sup> Driving one passenger vehicle 12,000 miles per year generates about 5.5 metric tons of carbon dioxide. Source: Environmental Protection Agency, Office of Transportation and Air Quality. (February 2005). Emissions Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle. EPA420-F-05-004. (<http://www.epa.gov/OMS/climate/420f05004.htm>).

<sup>9</sup> Kizzia, Tom. (2008, January 22). Alaska plays significant role in world's warming. Anchorage Daily News.

<sup>10</sup> United States Global Change Research Program. Global climate change impacts in the United States. Alaska region findings. <http://www.globalchange.gov>.

<sup>11</sup> Science Daily. (2009, July 2). Sea ice at lowest level in 800 years near Greenland. Journal reference: Macias Fauria et al. Unprecedented low twentieth century winter sea ice extent in the Western Nordic Seas since A.D. 1200. *Climate Dynamics*, 2009.

<sup>12</sup> Carlton, Jim. (2005, December 14). Is global warming killing the polar bears? The Wall Street Journal.

<sup>13</sup> Joling, Dan. (2007, October 6). Melting ice pack displaces Alaska walrus. Associated Press, USA Today.

<sup>14</sup> The black guillemot colony on Cooper Island off the northern coast of Alaska has declined sharply apparently as a direct result of climate change. Source: Alaska Conservation Foundation. Global Warming: Alaska on the Front Line. (March 2007). Brochure.

<sup>15</sup> In 2002, more than 100 stranded hunters from Shishmaref had to be rescued when the ice they were hunting on drifted too far from shore. DeMarban, Alex. (2009, August 29). Webcam helps Barrow hunters find whales. *Juneau Empire*. Published in Anchorage Daily News.

<sup>16</sup> Mars, J.C. and D.W. Houseknecht. *Geology*. July 2007. Quantitative remote sensing study indicates doubling of coastal erosion rate in past 50 yr along a segment of the Arctic coast of Alaska.

<sup>17</sup> Rosen, Yereth. (2007, July 25). Erosion may send Alaska oil wells into the ocean. Reuters.

<sup>18</sup> United States Global Change Research Program.

<sup>19</sup> Because of their deep concern for climate changes they have already observed, some Alaska Natives have joined indigenous people worldwide in a call for a moratorium on new oil and gas drilling through a declaration written and agreed to by participants in the Indigenous Peoples' Global Summit on Climate Change, April 2009, Anchorage, Alaska. <http://www.indigenoussummit.com/servlet/content/home.html>.

<sup>20</sup> Glick, Daniel. (2005). Degrees of Change. *Nature Conservancy magazine*. p. 45.

<sup>21</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). pp. 12-17.

<sup>22</sup> Intergovernmental Panel on Climate Change. (2007). Summary for policymakers. In: *Climate change 2007: impacts, adaptation, and vulnerability. Working group II contribution to the fourth assessment report of the Intergovernmental panel on climate change*. P. 792.

<sup>23</sup> United States Global Change Research Program.

<sup>24</sup> National Research Council. (2003). *Cumulative environmental impacts of oil and gas activities on Alaska's North Slope*. Washington, DC: National Academies Press. pp. 56-57.