

Land Facts

“Producing 1 million barrels of oil shale per day could require as much electricity as powering approximately 7 million homes.”

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March 2008

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These wildlands near Parachute, Colorado, could be replaced with an enormous complex of huge, pollution-spewing power plants unless Congress acts to protect the American West from risky dirty fuels development.

Don't Support Dirty Fuels: Oil Shale and Tar Sands Are Not America's Energy Answer

Oil shale and tar sands are increasingly being pursued by energy companies and their allies in Congress as alternatives to traditional fossil fuels. But the potential threats to people's health, communities, and our environment make extraction of these dirty fuels too dangerous to risk—especially when safer and more cost-effective solutions are already available, such as energy efficiency and alternative energy technologies. NRDC asks Congress to stop oil companies from racing to open public wildlands in the western United States to oil shale or tar sands production.

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Energy Industry Races to Tap Dirty Fuels in the West

The energy industry is chomping at the bit for another option to access wild federal lands to develop two types of dirty fuels: oil shale and tar sands. Oil shale is rock that produces oil when heated to extreme temperatures, while tar sands refers to an extremely heavy oil mixed with sand and clay. Oil shale can be found in Colorado, Utah, and Wyoming; Utah is the primary location of tar sands deposits in the United States. The destructive results of tar sands development in Canadian Boreal forests are well known, and now land in the United States is at risk for similar development.

Congress Must Press for Thorough Health and Safety Assessment

Despite the huge risks and unknowns, the 109th Congress sought to rush dirty fuel development on our public lands in Colorado, Utah, and Wyoming with the Energy Policy Act of 2005 (EPAAct). Because of arbitrary deadlines established by this law, the Bureau of Land Management (BLM) has already issued a Draft Programmatic Environmental Impact Statement in 2007 that would determine the future of 2.3 million acres of federally managed land in three states—even though there is not enough information available to assess all the environmental and community impacts that would result from dirty fuels development in these states. While we know a lot about tar sands development from operations in Canada, domestic oil shale development would utilize completely new technology that is still in the early stages of research.

Because of the lack of information about the impacts of dirty fuels, Congress in 2007 put dirty fuels regulations that would govern activities on public land on hold for one year. Congress should extend this halt beyond 2008. In the longer term, America must move toward a new energy policy—one not scripted or shepherded by the oil companies—that will bring efficiency, new technologies, and alternative energy sources to the marketplace instead of dangerous dirty fuels.

Dirty Fuel Development Is a Risky Business

Extracting oil from shale involves heating the rock to high temperatures and turning it to liquid—in essence, speeding up what takes nature millions of years to accomplish. While not proven to be a good source of gasoline without considerable additional processing, oil from shale can be used for diesel, kerosene, and jet fuel. The oil industry has been chasing after profitable ways to heat oil shale while it is still underground, so that it can be drilled like other oil. Mining of oil shale or tar sands may take place underground or on the surface of the land. But the complex mining process is fraught with unknowns, including some serious potential impacts on health, wildlife, and the environment.

Western Wildlands Threatened by Dirty Fuel Production

Most of America's oil shale and tar sands resources are found in the Green River formation, a geological area that covers 16,000 square miles in northwest Colorado, northeast Utah, and southwest Wyoming. The primary concentration of tar sands in the United States are on public land in eastern Utah. In the Green River formation, seven out of every 10 acres are public land managed by the federal government on behalf of the American people. Home to some of the most valuable wildlife habitat in the United States, the area supports an impressive array of wildlife, from mule deer and elk to mountain lions, black bears, bald eagles, and great horned owls. It also offers outstanding outdoor recreation opportunities, is home to many long-established rural communities, and provides residents with drinking water in this arid region. Recent efforts by Congress, the Bush administration, and the oil industry are designed to promote industrial energy development as the premier use of the Green River formation area.



Coal-fired power plants fill the air with pollution.

In the western United States, an enormous complex of huge coal-fired power plants would likely be needed to produce the energy required for dirty fuels development. Producing 1 million barrels per day will require the energy equivalent of roughly 10 giant new power plants and five giant new coal mines.¹ Power plants are the single largest industrial source of some of our nation's worst air pollutants, including sulfur dioxide, nitrogen oxides, carbon dioxide, and mercury. These pollutants increase asthma and emphysema, cause mercury poisoning, and can even lead to premature death.

Greenhouse gas emissions speed up global warming. Large coal-fired power plants needed for the production of dirty fuels would further increase levels of greenhouse gases, a concern with special importance in the American West. We already know from Canada's experience that tar sands oil production generates three times the amount of global warming pollution per barrel as conventional oil production because of the massive amounts of energy needed to extract, upgrade, and refine the oil. And global warming pollution related to tar sands is Canada's fastest growing point source of greenhouse gas emissions. Producing and using oil shale would similarly create far more greenhouse gases than conventional fuel. Scientists agree that the West is especially vulnerable to global warming, which will lead to more drought and flood events, the prospect of major wildfires, and changes in wildlife habitat and agriculture conditions.

Pollution could make water too dangerous to drink. Lands at stake for dirty fuels development are in the Colorado River watershed system and are linked to water that is used for drinking by humans, livestock, and wildlife, for irrigating agricultural land, and for outdoor recreation. Dangerous toxic elements such as arsenic, selenium, and boron released in the oil shale production process could leach into this important water system. In Canada, 30 square miles of land have been turned into holding ponds for toxic waste from tar sands production—raising concerns about potential groundwater contamination. One Canadian tar sands "pond" alone is 14 miles in circumference.



Tar sands surface mining in Canada creates huge tailing "ponds" filled with toxic slurry. Some of these ponds are so enormous that they can be seen from space with the naked eye.

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The race to tap dirty fuels threatens landscapes in both the United States and Canada. In Canada, only 10 percent of the water taken from the Athabasca River is returned to the river, with the majority of it either used or diverted to toxic waste ponds.

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The tar sands industry consumes enough natural gas every day to heat roughly 4 million American homes.

Extraction operations draw from the West's limited water supply. One of the many unknowns in the oil shale production process is how much water will be required. Producing 1 million barrels of oil from shale per day could require up to 300,000 acre-feet of water per year, enough to supply up to 365,000 families of four for one entire year.² This is an enormous amount of water in the arid West. In 1996, the BLM found that oil shale development in Colorado would reduce the annual flow of the White River up to 8.2 percent and would permanently erase or severely degrade nearly 50 percent of BLM stream fisheries, including that of the Colorado River cutthroat trout.³ In Canada, it takes between two and 4.5 barrels of water to produce one barrel of oil from the tar sands.

Wildlands are permanently demolished.

Dirty fuels production will require an entire industrial city of roads, pipelines, compressors, tanks, and drill rigs potentially spread out over thousands of acres—acres that are now important habitat for a wide array of sensitive wildlife, including elk, great horned owls, and bald eagles, and may also adjoin rural homes. In Canada, tar sands activities require such a complex of open pit mines, wells, roads, and pipelines that an area the size of Florida could be turned into an industrial landscape. In Canada, woodland caribou populations near tar sands development have dropped by 50 percent. In the American West, dirty fuel operations would forever change the wild nature of the land. In some areas, wells could be drilled into the landscape every 25 feet for miles, completely occupying the surface and destroying wildlife habitat, turning the area into an industrial wasteland. Hilly areas would have to be leveled, while nearly all vegetation would be removed.

America Should Support Clean Energy Solutions, Not Dirty Fuels

There are cleaner, better solutions to America's energy needs that can help protect wildlands and cut global warming pollution: energy efficiency and renewables. To immediately stem the development of dirty fuels in the American West, we must support better, cleaner measures to fuel our future energy needs without sacrificing our land, water, and air.



Underground *in-situ* mining of tar sands requires major industrial facilities that mar the surrounding landscape.

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¹ Bartis, James T., et al. "Oil Shale Development in the United States: Prospects and Policy Issues," Rand Corporation. 2005, p. 23.

² "Potential Ground Water and Surface Water Impacts from Oil Shale and Tar Sands Energy-Production Operations," Argonne National Laboratory, Report ANL/EVS/R-06/9. October 2006.

³ U.S. Bureau of Land Management, White River Resource Area Resource Management Plan, Final Environmental Impact Statement (June 1996) (available at <http://www.co.blm.gov/wrra/nepa.htm>).