

# [Effects of the exxon valdez oil spill engineering essay](https://assignbuster.com/effects-of-the-exxon-valdez-oil-spill-engineering-essay/)

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Natural gas, gasoline, kerosene, asphalt, and fuel oil are all byproducts of oil. We use these products daily. We use natural gas and kerosene to heat our homes. We use gasoline in our vehicle to ride on asphalt to get to work and home. Oil was first used in the fourth century by Chinese. Today we as a world have become depended on oil. Oil is drilled on every continent except Antarctica. We have a long history of drilling for oil but have we ever thought about the effects of drilling for oil has on the environment. In this paper I want to discuss the history of oil drilling, the effects of the Exxon Valdez on the Alaskan coastline, the impact of the explosion on the Deepwater Horizon oil rig and discuss some alternative source of energy. Petroleum or oil as it is commonly known as is a fossil fuel found underground deposits. In the beginning oil was found bubbling up to the Earth's surface from oil seeps. In the ancient world oil was used for lighting, as a lubricant, for caulking ships, and for jointing masonry for building. Oil had no economic value until the nineteenth century when drilling was first used as a method to obtain it. By the 1850s, crude oil was still skimmed it off the tops of ponds. Oil producers began to look for other ways to extract oil. In 1859, in Titusville, Pennsylvania, Edwin L. Drake and his crew drilled the first modern oil well. They struck oil almost 70 feet (21 meters) down. America's oil boom and the world's oil industry were launched (Oil Drilling). On March 24, 1989, the tanker Exxon Valdez ran aground on the Bligh Reef in Prince William Sound, Alaska. Eight of the eleven tanks on board were damaged. Within six hours, the Exxon Valdez spilled 10. 9 million gallons of crude oil into the sound. The oil covered over 1, 100 miles of Alaskan coastline (Exxon Valdez oil spill). In April of 1989 the shoreline cleanup began and continued until September of 1989. During 1990 and 1991 the cleanup continued in the summer months and the cleanup was to limited shoreline monitoring in the winter months. At the height of the response, more than 11, 000 personnel, 1, 400 vessels and 85 aircraft were involved in the cleanup. The world was shown images of oiled shorelines, dead and dying wildlife, many felt this was an insult to a pristine, ecologically important area of the world that was home to endangered wildlife. By March 30, the oil extended 90 miles from the spill site. In the end approximately 1, 300 miles of shoreline had oil on it; 200 miles were heavily or moderately oiled; 1, 100 miles were lightly or very lightly oiled. The diversity of the shoreline made the migration of the oil easy. The oil could be transported by the currents and tide from one place to another this fact made the finally cleanup more difficult (NOAA). ). The Deepwater Horizon oil spill is a large ongoing oil spill caused by an explosion on the Deepwater Horizon offshore on April 20, 2010. 126 workers on the platform were safely evacuated but 11 workers tragically lost their lives that day. The sinking of the platform caused crude oil to gush out of the riser. Attempts to shut down the flow failed when a safety device called a blowout preventer could not be activated. On April 28, government officials said there were three leaks and the well was spilling over 5, 000 barrels of oil a day. Some independent analyst estimated in the initial days of the accident the spill rate was in the range of 20, 000 to 100, 000 barrels of crude oil was leaking into the Gulf of Mexico per day. These numbers has made the Deepwater Horizon explosion by far the worst accidental release of oil in U. S. history. BP installed a containment system on the leaking well that was capturing 15, 000 barrels per day by June 9. June 15, 2010, the government team announced that flow rate increased to 35, 000 and 60, 000 barrels per day on June 3 when BP installed the containment cap (Deepwater Horizon oil spill). After nearly three months and many failed attempts BP has finally contained the oil leak. A custom-built cap finally cut off the oil flowing from BP’s broken well. The company hopes to leave it that way until crews can permanently fix the leak. That differs from the plan the federal government laid out a day earlier, in which millions more gallons of oil could be released before the cap is connected to tankers at the surface. Federal officials wary of making the well unstable have said the oil-capture plan would relieve pressure and may be the safer option (Jaclyn Gallucci). But what impact did the oil spill have on the wildlife in the marshlands of Louisiana and Mississippi? Louisiana lost between 20% and 50% of its oyster beds because of the Deepwater Horizon disaster (Elizabeth Weise). According to the National Wildlife Federations website five of seven species of sea turtles are found in the Gulf of Mexico, and all of these five are listed as endangered or threatened. The birds that cone in contact with the oil or even consume oil can have side effects such as: ulcers, diarrhea, kidney and liver damage, anemia and even death. Breathing in oil can lead to pneumonia, neurological damage and eventually cancer in birds also. The oyster and shrimp business is the only business for some of the people of the coastal regions. Shrimp, oysters and other seafood pump $2. 4 billion a year into the Gulf coast economy (National Wildlife Federation). The oil spill came at the height of the harvesting season. After the USDA has cleared the shrimp and oysters safe for consummation the general public is still skeptical about consuming the seafood from the gulf coast. After the devastation to the Alaskan coastline and the coastline of the Gulf of Mexico we have to look at alternative sources of energy. The source of energy should be environmental friendly. The first source of alternative energy is solar energy. Solar energy is one the most resourceful sources of energy for the future because it comes from the sun. The sun admits 35, 000 times more energy a year than can be used by a human. Solar energy is presently being used to power furnaces in homes and to heat outdoor swimming pools. On a larger scale use, solar energy could be used to power cars, plants, and space ships. Wind power is another source of energy that could be used without producing by-products that are harmful to nature. Harnessing the wind is dependent upon weather and location. The average wind velocity of Earth is around 9 m/sec. If a windmill is facing the wind a wind that is blowing 10mi/hr it could produce about 50 watts of power. Lastly, hydroelectricity comes from the damming of rivers and utilizing the potential energy stored in the water. As the water stored behind a dam is released at high pressure, its kinetic energy is transferred onto turbine blades and used to generate electricity. To use hydroelectricity is very costly upfront, building a dam, but the maintenance afterwards is low. In the United States approximately 180, 000 MW of hydroelectric power potential is available, and about a third of that is currently being harnessed (Alternative Energy Sources). The Exxon Valdez killed endangered species of animals on the Alaskan coastline in 1989. The long terms effects of the Deepwater Horizon are yet to be determined, but short term is evident. In the peak of the summer vacation season, the beaches from Florida to Louisiana are empty. In a bad economy this disaster has only made matters worse. We must utilize natural resource that will have no adverse effects on the environment and that are plentiful. If we have the ability to use the wind and sun for our energy needs why not use them? Reference PageAlternative Energy Sourceshttp://home. utah. edu/~ptt25660/tran. htmlDeepwater Horizon oil spillhttp://www. eoearth. org/article/Deepwater\_Horizon\_oil\_spillExxon Valdez oil spill http://www. eoearth. org/article/Exxon\_Valdez\_oil\_spillGallucci, Jaclyn. (2010). BP Oil Spill Update July 18: Leak Still Contained. http://www. longislandpress. com/2010/07/18/bp-oil-spill-update-july-18-leak-still-contained/National Wildlife Federation. (2010). How the Gulf Oil Spill Could Hurt Animals. http://www. nwf. org/News-and-Magazines/National-Wildlife/Animals/Archives/2010/Oil-spill-species. aspxNOAA http://response. restoration. noaa. gov/topic\_subtopic\_entry. php? 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