



Testimony of
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Oil and Gas Leasing Program.

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I. Introduction

Chairwoman Murkowski, Ranking Member Cantwell and members of the Committee, good morning. My name is Athan Manuel, and I am the Director of Lands Protection for the Sierra Club. I am here representing the more than 2.4 million Sierra Club members and supporters who belong to more than 65 chapters and 450 groups nationwide. We are the largest and most influential environmental grassroots organization in the country. I am very appreciative of the opportunity to testify this afternoon regarding the Bureau of Ocean Energy Management's 2017-2022 OCS Oil and Gas Leasing Program.

In January 2015, the Department of the Interior and Bureau of Ocean Energy Management (BOEM) released the Draft Proposed Plan for the 2017-2022 OCS Oil and Gas Leasing Program. That draft included planning areas in the Gulf of Mexico, off the coasts of Alaska, and in the mid-Atlantic Ocean.

The Sierra Club was pleased when on March 15, 2016, the Obama Administration and Secretary Jewell heeded the call of tens of thousands of Americans up and down the East Coast and announced that the Atlantic planning areas were no longer part of the new draft of the 5-year plan.

Unfortunately the second proposal of the 2017-2022 Program still includes 13 potential lease sales: ten in the central and western Gulf of Mexico planning areas, and three proposed for Alaska in the Chukchi Sea, Beaufort Sea, and Cook Inlet.

The Sierra Club strongly opposes any leasing or drilling in the Outer Continental Shelf. Offshore drilling and leasing in the central and western Gulf or in Alaska would threaten billion dollar coastal economies, allow pollution and spills to continue to damage fragile and priceless coastal ecosystems, prolong our dependence on fossil fuels, and accelerate global climate disruption.

History has shown that offshore drilling leaves behind a dirty and dangerous legacy. The Gulf of Mexico has still not recovered from the 2010 BP Deepwater Horizon disaster, and oil continues to wash ashore on Gulf beaches from this spill and the nearly 150 that have occurred since 2012, while not surprisingly, commercial fisheries and marine populations have not fully rebounded.

Even if oil companies practice strict safety standards and prevent additional spills we cannot expect this to be resolved overnight. In fact, more than 27 years after the Exxon Valdez disaster, fisheries and marine mammal populations of Prince William Sound have still not yet recovered.

Even though some much needed reforms were enacted in the wake of the Deepwater Horizon disaster, new oil and gas leasing and drilling still leads to more pollution and more catastrophic spills. As the oil spill from Shell Oil's operations in the Gulf just last week further demonstrates, spill prevention and response technologies are lacking in even the most ideal of weather and infrastructure conditions.[1]

New offshore leasing and drilling is also at odds with fighting climate disruption and transitioning the United States off of fossil fuels. The May 6, 2014, National Climate Assessment is crystal clear: the planet is warming, and over the last half century, this change has been driven predominantly by the burning of fossil fuels like oil and gas.

The President has acknowledged that two-thirds of the world's existing fossil fuels must stay in the ground if we are to prevent the worst impacts of climate disruption. The Sierra Club and an overwhelming majority of the world's leading climate scientists agree.

If we are serious about avoiding the most catastrophic impacts of climate change, we have to transition onto clean, renewable energy sources and keep dirty fuels like oil and gas in the ground. That should start with protecting fragile areas and regions that have not yet been open to exploration.

President Obama and his administration have done more to combat climate change than any other in American history, and Sierra Club has called on him to extend this legacy by protecting the Gulf of Mexico and Arctic Ocean--like the Atlantic Ocean before it--from offshore drilling. The final 2017-2022 five-year plan has to be developed in the context of the administration's strong commitments to addressing climate change, including: the Paris Agreement to steadily and verifiably reduce carbon emissions by 28 percent by 2025, and hold the increase in global

temperature average to “well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels;”^[2] the President’s recognition that leaving oil in the ground is a critical component of limiting carbon emissions and meeting emission goals; [3] and commitments President Obama has made in the U.S.-Canada Joint Statement on Climate, Energy, and Arctic Leadership that the U.S. “play a leadership role internationally in the low carbon global economy over the coming decades, including through science-based steps to protect the Arctic and its peoples” and to protect at least 10% of Arctic marine areas by 2020.[4]

A simple and necessary way to do that is to not lease any areas in the Gulf of Mexico, Cook Inlet and the Arctic Ocean as part of the final 2017 - 2022 Outer Continental Shelf Oil & Gas Leasing Program.

II. Drilling is not compatible with our coasts, or our climate

Offshore drilling is too dirty to allow off of our coasts. According to the National Academy of Sciences, a single well produces between 1,500 and 2,000 tons of waste material including drill cuttings and drilling muds. This mud, which is produced and brought up during the drilling process, contains toxic lead, cadmium, and mercury. Other pollutants, benzene, arsenic, zinc and other carcinogens and radioactive materials are routinely released in “produced water,” brought up with the oil or gas. This pollution is not registered as spills, but rather is exempt from certain standards and considered a part of normal operations.

There is a significant threat of contamination with any oil and gas operation. Not only from spills, but from leaks that can often go undetected in offshore wells. BOEM estimates that well over 500,000 barrels of oil have leaked into American waters in the past 45 years, unreported.

Where drilling takes place, it’s a question if when, not if a spill will occur. There have been at least 347 large spills (more than 2,000 gallons) in the OCS since 1964. Smaller spills are a regular and chronically unaddressed occurrence. The results of an oil spill are often catastrophic for marine life and coastal economies. When oil reaches our beaches, it clings to every rock and grain of sand. As the Deepwater Horizon experience so amply demonstrated, even in calm waters thick with infrastructure, current cleanup methods are incapable of removing more than a small fraction of the oil spilled.

In fact, there is strong evidence that oil actually becomes more toxic over time, as it slowly degrades in the environment. Often, the last compounds to degrade are known human carcinogens.

Offshore drilling operations are especially vulnerable during hurricanes, a very real threat in the Gulf of Mexico where the majority of oil drilling occurs. In 2005, hurricanes Katrina and Rita caused 124 oil spills. Between the two storms, 741,000 gallons were spilled in the Gulf of Mexico.

The 2010 Deepwater Horizon oil spill dramatically demonstrated how drilling can destroy fishing and tourism industries, and cost rather than create jobs. The explosion itself took 11 lives and resulted in the longest lasting and most voluminous spill in history. More than 200 million gallons of oil were spilled in the Gulf of Mexico, affecting 16,000 miles of coastline and an estimated 68,000 square miles of Gulf waters.[5]

The National Wildlife Federation reports that “approximately 1,000 bottlenose dolphins have been found dead in an area stretching from the Florida panhandle to the Texas-Louisiana border. In 2014, dolphins were found dead at more than twice historic rates in this area. Dolphins in heavily oiled Louisiana were found dead at four times historic rates.”[8] *The New York Times* reported that “From 2002 to 2009, the Gulf averaged 63 dolphin deaths a year. That rose to 125 in the seven months after the spill in 2010 and 335 in all of 2011, averaging more than 200 a year since April 2010.”

Six years later, many businesses are still struggling to recover and approximately 10 percent of the oil from the BP rig is thought to still lie on the ocean floor in the Gulf of Mexico. The National Commission on the incident not only found inadequate knowledge of the coastal habitat before the spill, but unknown “human and natural impacts” of the spill.

The importance of coastal habitats and communities to our nation cannot be underestimated. Americans take almost two billion trips to the beach each year and spend billions of dollars in coastal communities. Our coastal recreation and tourism industry is the country’s second largest employer; for every one job in the oil and gas sector, there are 84 jobs in the region’s leisure and hospitality industries. According to the World Tourism & Travel Council, tourism in America employs over 14.7 million people, 10 percent of the American workforce, and accounts for 8.8 percent of the national GDP, bringing in \$1.3 trillion.

In addition to tourism, coastal economies are heavily reliant on commercial and recreational fishing. The two generate close to \$200 billion annually in sales and support more than 1.4 million jobs. Recent research by the University of South Florida’s College of Marine Science in St. Petersburg documents that tissue samples from both shallow and deepwater fish show large increases in concentrations of polycyclic aromatic hydrocarbons found in the oil, which affects fish health, behavior and reproduction.[6] Commercial crabbers have reported a drop in blue crab populations in the years after the disaster. Between 2011-2014 blue crab harvests were 20 percent lower than they were in the ten years prior to the disaster.[7]

Finally, oil and gas drilling accelerates global climate change, causing our planet’s temperatures to rise more quickly. Average global temperature has increased by more than 1.3°F over the last century.[9] Following a year of climate disasters – from droughts and wildfires to record heat and wildfires – it is clear that we cannot mitigate climate disruption with more of the same.

Areas that could be opened as part of the 2017-2022 Plan are already being impacted by rising sea levels, a problem that will only get worse if we do not get serious about fighting climate disruption and keeping fossil fuels in the ground.

It is estimated that every hour, the state of Louisiana loses a football field–sized area of land, wetlands and marshes.[10] The state is also home to some of our nation’s first climate refugees, the Biloxi-Chitimacha-Choctaw Tribe of Isle de Jean Charles.

The same is true on Alaska’s North Slope. Since the mid-20th century, Alaska and the Arctic have been warming about twice as fast as the global rate. Over the past five decades, average Alaska temperatures have increased by 3.4 degrees Fahrenheit, with the increases most pronounced in winter at 6.3 degrees.[11]

More than 26 villages and communities in Alaska are facing erosion problems, and an average of 4.6 feet has been lost each year since the mid-20th century on the North Slope, according to a U.S. Geological Survey report.[12] Both of these problems will get worse if the climate continues to warm.

Ironically, villages are not the only victims; onshore oil field infrastructure is also threatened by climate change.

III. Gulf of Mexico

For too long, the central and western Gulf of Mexico planning areas have been left vulnerable to oil and gas drilling. The 2010 Deepwater Horizon explosion, which killed 11 workers, is the most dramatic example of the problems and tragedies caused by the oil and gas industry and our dependence on fossil fuels. Problems with drilling continue to plague the Gulf, as just last week Shell spilled more than 88,000 gallons of oil 90 miles off the coast of Louisiana.

The onshore infrastructure needed to support the oil industry has also harmed the Gulf Coast. Dredging to create canals for pipelines has released the sediment that composes barrier islands. Freshwater plants have been contaminated with saltwater, killing the plant life that holds the soil in place. These depleted barrier islands have made the region more vulnerable during hurricanes, as there is less of a buffer zone between a storm and the mainland.

While we are acutely aware that drilling on existing leases in the Gulf of Mexico will not end overnight, it is crucial that the nation and especially the Gulf transitions away from fossil fuels and onto clean, renewable energy. Removing the central and western Gulf planning areas out of 2017-2022 OCS Oil and Gas Leasing Program is an ideal way to begin this transition.

IV. Alaska and America’s Arctic

The new leasing and drilling in the Arctic Ocean and Cook Inlet included in the current draft of the five-year plan is particularly troubling. This area is too sensitive, too ecologically important, and as Shell’s program’s multiple failures consistently demonstrated, too volatile for oil drilling. The waters of the Chukchi and Beaufort Seas are home to the entire U.S. population of polar bears, millions of migratory birds, and endangered Bowhead whales. Oil leasing threatens the

sustainability of this natural area and the livelihood and integrity of Alaskan Native communities. We simply should not be holding more leases in our Arctic waters.

As Shell Oil proved during its 2012 and 2015 exploratory drilling operations in the Chukchi Sea, operating in the remote Arctic is a reckless and risky proposition and a poor business decision.[13] In September 2012, [Shell's oil spill containment dome](#) was damaged during a failed sea trial in the mild conditions off the coast of Washington state.[14] After five days of failing to get the containment dome certified with Bureau of Safety and Energy Enforcement, it “breached like a whale” then sunk more than 120 feet; about 12 hours later, the crew of the Challenger managed to get the dome back to the surface and a BSEE official noted that, “basically the top half is crushed like a beer can.”[15] To end its 2012 season, Shell brought a national spotlight to the dangers of trying to drill in America’s Arctic Ocean when its drilling rig, the *Kulluk*, ran aground off the coast of Kodiak Island, Alaska.[16]

Shell proved the dangers and inability to drill in the Arctic Ocean again in 2015. During a certification exercise, Shell nearly lost control of another vessel[17] and on its way to the Arctic, Shell’s icebreaker containing the capping stack for well blowouts or other emergencies – the *MSV Fennica*, breached its hull and had to be sent back south for repairs.[18]

Even if we could extract oil safely, burning and releasing that much carbon into our atmosphere guarantees global climate disaster. The Arctic Ocean’s oil and gas deposits could generate as much as 17.75 billion metric tons of new carbon dioxide pollution.¹

The Arctic has proven to be especially vulnerable to climate disruption. It is warming twice as fast as the rest of the country and specialized wildlife are struggling to keep up. Permafrost is melting, shifting building foundations and roads. Wildlife migration patterns are changing, which means hunters must travel further and take longer to feed their families. Our last wild frontiers should be permanently protected, not opened to drilling that will destroy landscapes, hurt local communities, and fuel climate disruption.

It is not just hundreds of thousands of Americans or Alaskan Natives who think that drilling in the Arctic Ocean does not make sense--the oil industry seems to be losing interest in the Arctic Ocean as well. Last year, citing a lack of industry interest, BOEM canceled two lease sales for the Arctic proposed as part of the 2012-2017 five-year plan. Then, less than two weeks ago, a Freedom of Information Request made by Oceana showed that that ConocoPhillips, Eni and Iona Energy have relinquished all of their leases in the Chukchi Sea and Shell has relinquished more than 150. Public statements from the company confirm that it plans to relinquish all of its remaining leases except one. Together, the four companies will give up more than 350 leases, encompassing more than 2 million acres.

¹Assessment of Undiscovered Technically Recoverable Oil and Gas Resources of the Nation’s Outer Continental Shelf, 2011(Includes 2014 Atlantic Update). (2014, December). Retrieved May 2, 2016, from <http://www.boem.gov/2011-National-Assessment-Factsheet/>

Simply put, there is no logical or compelling reason to include Alaska in the final draft of the 2017-2022 five-year plan.

V. Time to transition away for offshore drilling towards 100 percent clean energy

A transition is underway around the world: away from outdated dirty fuels and towards abundant, local, and affordable renewable energy sources. In the years ahead, this transition is poised to improve the quality of life for millions, reduce harmful greenhouse gas (GHG) emissions, and help forge a world that is more just and equitable for both current and future generations.

The Sierra Club firmly believes that the technical solutions already exist, and that with these advances, achieving 100 percent renewable energy is both possible and affordable. Economically, clean energy has become directly competitive with dirty fuels. For instance, our wind resource potential is estimated at 4,223 gigawatts, roughly four times the generating capacity of the current United States electric grid. More than half of new added energy capacity in 2014—nationally and globally—came from clean energy sources. In the Gulf of Mexico alone, we have the potential to generate 340.3 gigawatts of electricity from offshore wind when placed within 30 meters of the shoreline.²

Renewable energy sources will help us end our centuries long addiction to fossil fuels. The National Renewable Energy Laboratory (NREL) recently completed a multi-year study to evaluate the future of renewable energy technologies in the United States.[19] The study found that renewable energy sources available today, like wind and solar, are capable of providing 80 percent of our electricity by 2050. Combined with a more flexible electric system, renewables could meet the contiguous United States' electricity demands every day and every hour of the day. As a result, we will reap substantial environmental benefits; renewable used will reduce greenhouse gas emissions, helping to combat climate disruption, while solar photovoltaic and wind plants use little to no water. In addition, the NREL found that the cost associated with this level of renewable generation is comparable to other “clean-energy” scenarios, such as nuclear or natural gas.

Likewise, in the transportation sector, we will increasingly shift to electrification of our vehicles so that they rely on little to no oil. Even on today's electricity sources, electric vehicles are lower in greenhouse gas emissions than conventional vehicles. As we shift to more renewable sources of power, electric vehicles become even cleaner over time.

It is not just a transition off of fossil fuels that can and must happen, but a just transition for the communities and economies in the Gulf, the Arctic, and around the country that have been harmed by our continued dependence on fossil fuels.

²Offshore Wind Energy. (n.d.). Retrieved May 04, 2016, from <http://www.boem.gov/Renewable-Energy-Program/Renewable-Energy-Guide/Offshore-Wind-Energy.aspx>

As we further establish a clean energy economy, we cannot leave behind the workers and communities who have worked the oil rigs, who have inhaled the pollution, and who have suffered the consequences of climate. We must ensure that our clean energy economy creates economic opportunities across the country and invests robustly in research, development, and deployment of 21st century energy technologies. Congress can help drive sustainable investment and job creation in regions where industry has long abused and abandoned the land, air, water and people. It can also help accelerate global clean energy innovation with the goal of making clean energy widely affordable.

VI. Conclusion

The Sierra Club strongly opposes new oil and gas leasing and drilling, and has repeatedly called for the central and western Gulf of Mexico, Cook Inlet, and the Arctic Ocean to be taken out of the final 2017-2022 OCS Oil and Gas Leasing Program. Drilling is too dirty and dangerous, and is incompatible with President Obama's Climate Action Plan or the wishes of coastal communities.

New and continued offshore drilling would also contribute to an already warming climate and help keep the United States dependent on fossil fuels. The United States is leading the world in the fight against climate disruption, and new offshore drilling and leasing would undercut that leadership. The best path forward, for the Gulf of Mexico, Alaska, and our climate, is to keep the oil and gas in the ground and remove these locations--like the Atlantic Ocean--from the 2017-2022 five year plan.

Thank you again for the opportunity to submit testimony on the Bureau of Ocean Energy Management's 2017-2022 OCS Oil and Gas Leasing Program.

Addendum I: Revenue sharing

The Sierra Club strongly opposes revenue sharing from offshore drilling on the Outer Continental Shelf. In 1947, the Supreme Court granted the federal government "paramount rights" to the Outer Continental Shelf.[20] Citing the federal government's essential role in commerce and national security, the Court gave it "full dominion of the resources of the soil under that water area, including oil." [21] This ruling was twice affirmed as states continued to bring claims to the OCS.[22]

Although our coastal waters belong to all Americans, revenue sharing would divert billions of dollars in federal revenue to just a handful of coastal states. Annual revenues from mineral leases on federal lands are one of the government's largest sources of non-tax income. Last year, revenues from offshore oil and gas leasing and production totaled nearly \$7 billion.[23]

Recent estimates place the deficit for this fiscal year at \$642 billion.[24] Several members of Congress have referred to this as the biggest, most fundamental challenge we face. [25] Yet in

a time of sequestration and budget challenges revenue sharing will deplete federal revenues and increase the deficit.

In addition to being ill-considered from a national economic perspective, revenue sharing would provide an incentive for coastal states to agree to new or additional offshore oil and gas development, development that could put booming local economies at risk. While only a few big oil companies will profit from drilling off of our coasts, all Americans stand to profit from keeping our oceans, beaches, and coastal economies clean and healthy.

Addendum II. Seismic Testing

While the Atlantic lease sale has been removed from the 2017-2022 Proposed Program, the process for allowing geological and geophysical (G&G) oil and gas exploration in the Atlantic continues to move forward on a separate regulatory track, based on an environmental review and Record of Decision issued by BOEM in 2014.

With Atlantic drilling off the table for years to come, BOEM should deny pending permit applications for G&G exploration in the Atlantic. Granting these exploration permits would allow seismic airgun blasting in the Atlantic that would cause large-scale harm to marine life in an area spanning from Delaware to central Florida. A significant body of scientific research has established that seismic airgun blasts cause harm to fish, invertebrates, and marine mammals. Just last month, 28 marine biologists who are experts on the critically endangered North Atlantic Right Whale sent a letter warning that Atlantic seismic surveys could jeopardize the survival of the species.

The Outer Continental Shelf Lands Act requires the Bureau to deny an exploration permit when the permit would “be unduly harmful to aquatic life.” Since the Atlantic Ocean is no longer included in the 2017-2022 plan, granting the exploration permits now would cause undue harm, and BOEM should deny the pending permit applications for the following reasons:

- New technology that is almost ready for commercial use may reduce the impacts of seismic exploration;
- Changed circumstances which prompted the Bureau to revisit its Endangered Species Act review, such as the designation of critical habitat for loggerhead sea turtles and right whales, should be fully analyzed in an Environmental Impact Statement to help the Bureau and the public better understand the risks and impacts of seismic exploration; and
- The Bureau should use new information, resulting from revised acoustic guidelines under development by the National Marine Fisheries Service, to assess the harm from seismic to marine mammals.

[1] <http://abcnews.go.com/US/wireStory/coast-guard-shell-line-leaks-88200-gallons-gulf-39081020>.

[2] Paris Agreement art. 2, ¶ 1(a), adopted Dec. 12, 2015, FCCC/CP/2015/L.9, available at <http://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>.

[3] See e.g., Remarks of President Barack Obama – State of the Union Address As Delivered (Jan. 13, 2016), <https://www.whitehouse.gov/the-press-office/2016/01/12/remarks-president-barack-obama-%E2%80%93-prepared-delivery-state-union-address> (“how do we make technology work for us, and not against us -- especially when it comes to solving urgent challenges like climate change?”); see also *Statement by the President on the Keystone XL Pipeline*, The White House (Nov. 6, 2015), <https://www.whitehouse.gov/the-press-office/2015/11/06/statement-president-keystone-xl-pipeline> (“[I]f we’re going to prevent large parts of this Earth from becoming not only inhospitable but uninhabitable in our lifetimes, we’re going to have to keep some fossil fuels in the ground rather than burn them and release more dangerous pollution into the sky.”)

[4] The White House, Office of the Press Secretary. U.S.-Canada Joint Statement on Climate, Energy, and Arctic Leadership (March 10, 2016), <https://www.whitehouse.gov/the-press-office/2016/03/10/us-canada-joint-statement-climate-energy-and-arctic-leadership>.

[5] Fikes, Ryan, Alisha Renfro, and Lacey McCormick. "Five Years & Counting Gulf Wildlife in the Aftermath of the Deepwater Horizon Disaster." National Wildlife Federation. National Wildlife Federation, 09 May. 2016. Web. 8 Apr.

[6] 6 years later, USF charting long-term effects of BP oil spill; Anastasia Dawson; *The Tampa Tribune*; April 18, 2016; <http://www.tbo.com/news/education/6-years-later-usf-charting-long-term-effects-of-bp-oil-spill-20160418/#sthash.FpD0zsg2.o5xATEaG.dpuf>: <http://www.tbo.com/news/education/6-years-later-usf-charting-long-term-effects-of-bp-oil-spill-20160418/#sthash.FpD0zsg2.o5xATEaG.dpuf> <http://www.tbo.com/news/education/6-years-later-usf-charting-long-term-effects-of-bp-oil-spill-20160418/#sthash.FpD0zsg2.dpuf>

[7] "DEEP WATER: The Gulf Oil Disaster and the Future of Offshore Drilling." National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling: 9. Jan. 2011. Web. 09 May. 2016. <<http://www.gpo.gov/fdsys/pkg/GPO-OILCOMMISSION/pdf/GPO-OILCOMMISSION.pdf>>.

[8] Fikes, Ryan, Alisha Renfro, and Lacey McCormick. "Five Years & Counting Gulf Wildlife in the Aftermath of the Deepwater Horizon Disaster." National Wildlife Federation. National Wildlife Federation, 30 Mar. 2015. Web. 09 May. 2016.

[9] United States Environmental Protection Agency, "Climate Change Indicators in the United States" (2013). Available at <http://www.epa.gov/climatechange/science/indicators/weather-climate/temperature.html>

[10] Resettling the First American 'Climate Refugees;' Coral Davenport and Campbell Robertson; *The New York Times*; May 3, 2016; http://www.nytimes.com/2016/05/03/us/resettling-the-first-american-climate-refugees.html?_r=0

[11] What climate change looks like in Alaska now; Yereth Rosen; *Alaska Dispatch News*; August 29, 2015; <http://www.adn.com/article/20150829/what-climate-change-looks-alaska-now>

[12] *Ibid*

[13] <http://www.bloomberg.com/news/articles/2015-09-28/shell-to-stop-exploring-offshore-alaska-on-regulations-costs> (Shell Oil spent more than \$7 billion on its Arctic operations and “failed to find any meaningful quantities of oil or natural gas.”)

[14] <http://articles.latimes.com/2012/jul/19/nation/la-na-nn-arctic-challenger-20120719>.

[15] <http://www.adn.com/article/20121203/shells-spill-containment-dome-was-crushed-beer-can-sept-testing>.

[16] <http://www.nytimes.com/2015/01/04/magazine/the-wreck-of-the-kulluk.html>.

[17] See <http://fuelfix.com/blog/2015/06/16/no-showstoppers-yet-for-shells-arctic-drilling-plans-federal-regulator-says/#33661101=0> (The tugboat Corbin Foss, which was anchored near the Arctic Challenger, dragged anchor amid gale-force winds).

[18] <http://fuelfix.com/blog/2015/07/07/shells-arctic-icebreaker-damaged-in-alaska/>.

[19] http://www.nrel.gov/analysis/re_futures/

[20] *United States v. California*, 332 U.S. 19, 38 (1947).

[21] *Id.* at 39.

[22] *United States v. Louisiana*, 339 U.S. 699 (1950) (rejecting Louisiana's claim to ownership of the seabed extending twenty-seven miles into the Gulf of Mexico); *United States v. Texas*, 339 U.S. 707 (1950) (rejecting Texas' claim to ownership of the seabed extending twenty-four miles into the Gulf of Mexico).

[23] Office of Natural Resources Revenue, “Reported Revenues: Federal Offshore in All Offshore Regions” (2013). Available at <http://statistics.onrr.gov/ReportTool.aspx>.

[24] Congressional Budget Office, “Updated Budget Projections: Fiscal Years 2013 to 2023” (2013). Available at <http://www.cbo.gov/publication/44172>.

[25] See e.g., Bonner County Daily Bee, “Crapo: Debt is biggest challenge” (2011). Available at http://www.bonnercountydailybee.com/news/local/article_ab88c336-d5f6-11e0-b530-001cc4c03286.html; News Room, “[Corker Says President's Budget 'Makes a Mockery of the American People', Fails to Address the Biggest Challenge Facing the Country](#)” (2012). Available at <http://www.corker.senate.gov/public/index.cfm/news?ID=90a01dbc-cde4-4a9c-ab07-0dbc78d414b9>.

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