

Written Testimony of Jacqueline Savitz, Senior Campaign Director, Oceana

Senate Committee on Environment and Public Works

“Oversight Hearing on the Use of Oil Dispersants in the Deepwater Horizon Spill”

August 4, 2010

Introduction

Good morning. My name is Jacqueline Savitz, and I am Senior Campaign Director for Oceana, a global ocean conservation organization based here in Washington, D.C. that works to restore and protect the world's oceans. Besides our headquarters in Washington DC, Oceana also has staff located in Alaska, California, Florida, Louisiana, Oregon, and Massachusetts, as well as international offices in Brussels, Belgium; Madrid, Spain; and Santiago, Chile. We have 400,000 members and supporters from all 50 states and from countries around the globe. Our mission is to protect our oceans and the fish and wildlife that depend on them.

Today, I will present testimony regarding the use of chemical dispersants in the Deepwater Horizon drilling disaster, as well as the lessons learned from the spill and the need to protect our oceans from threats posed by oil and gas development on the outer continental shelf of the United States.

The Deepwater Horizon Oil Spill

In the past three months, our nation has been shaken by an oil spill of unprecedented proportions. The Deepwater Horizon blowout and subsequent three months of oil flow rivals the worst accidental oil spills in world history. It has directly caused 11 deaths, and it has put an untold thousands of people out of work. It has shut down fisheries, and threatened businesses that depend on tourism in five states. While we are beginning to see the end of the spill itself, its impacts will continue, perhaps for decades.

Marine life affected by the spill ranges from the smallest marine zooplankton species which play an important role at the base of the food chain, to commercially important species of oysters, fish, crabs, and shrimp. It includes four endangered and one threatened species of sea turtles, as well as the prized Atlantic bluefin tuna, whose populations have been depleted by overfishing to about 10% of historic levels. One of only two spawning grounds on the planet for Atlantic bluefin tuna was marred during spawning season this year with a mixture of toxic oil and chemical dispersants at the exact time that the species tends to release its eggs. This habitat has continued to be contaminated through the hatching period and the most sensitive life stages of the Atlantic bluefin.

The blowout of the well occurred, and the spill continued, through a time period that is for many species a spawning, breeding, nesting and or hatching season. Oil, chemical dispersants, and drilling muds are all toxic to marine life. Some species are more sensitive than others; however, it is clear that larvae and juveniles of most species are the most sensitive life stages. For animals, such as sea turtles and bluefin tuna, which are already struggling to maintain their populations, the implications of this contaminated habitat could be devastating. Young may not survive long enough to bolster adult populations, and may not contribute reproductively as a result. For other species, the spill threatens to destroy habitat, deplete food sources, or otherwise shake up the balance of the ecosystem in ways that may have long term and even detrimental effects.

The effects of the spill on these species or on the complex marine ecosystem as a whole may not be known for decades, and the full effects may never be clear. The thousands of birds that have been found dead are likely indicators of thousands more that were never found. The same is true for sea turtles, marine mammals fish and invertebrates. Many animals affected by the spill won't be counted, some may drift about in the Gulf and many will likely be scavenged by other animals. The effects on populations may be difficult to determine for a number of reasons. For example, baselines are not always available, it can be difficult to assess population sizes, and other stresses on the species may cloud an assessment of the impacts of the spill.

However, the devastation that is apparent, the lost lives, the livelihoods that have been destroyed, and the marine life that have been affected, while perhaps just the tip of the iceberg, gives a clear indication that the benefits of offshore drilling do not justify the risks.

The remainder of this testimony focuses on the following points:

- **There is no way to create an effective response plan for a major oil spill.**
- **Dispersant use is a lose-lose proposition.**
- **Offshore drilling can not be done safely.**
- **We can make offshore drilling unnecessary.**
- **We can protect the oceans from oil while also improving the economy.**

There is no way to create an effective response plan for a major oil spill.

Once a blowout or other spill occurs, there are few if any effective solutions. Those that have been proposed and tried are not very effective. Only a small percentage of the oil that reaches the ocean waters can be recovered. And techniques such as burns, dispersant chemicals, barrier islands and booms are either ineffective, or have major down-sides, or both. The only effective way to prevent the devastation that follows an oil spill is to respond before it happens, and prevent it from occurring in the first place. Since this spill has shown so clearly that response capabilities are inadequate, the only sure way to prevent marine and other impacts is to say “no” to offshore drilling in the first place.

Dispersant use is a lose-lose proposition.

One lesson learned from the Deepwater Horizon disaster is that if drilling must proceed, at the very least there need to be effective oil spill response plans, devised *a priori*, before the drill hits the Earth's crust, not as part of the response process itself.

If the government insists on granting permits to drill, that permission should be conditioned on a demonstration that the companies asking for the rights to drill offshore have the capacity to prevent a spill, to contain a spill and to clean up a spill. None of these requirements were met in the case of the Deepwater Horizon permit, and it appears that the same is true for many ongoing offshore drilling operations, and planned drilling projects. This is unacceptable.

An effective response plan should not include activities that, in themselves, are harmful to the marine environment. The use of dispersant chemicals is perhaps the best example of this; however, on-site burns and the burning off of oil and gas collected, as was done in the Deepwater Horizon disaster are also examples of response activities that impact the marine environment. Each of these activities also has public health implications. In spite of the fact that they are not effective and that they cause collateral damage to marine life, these activities have, in the past, been considered sufficient to make up a response plan.

However, response activities that require further contamination of the water column, or that result in the release of undetermined amounts of air pollution such as particulate matter, carbon dioxide, and sulfur and nitrogen oxides, for example, is not a solution, it's just another piece of the original problem.

This is clearly the case with chemical dispersants. Dispersants do have an up-side. If applied within 24 hours of the spill, they are effective at dissolving the oil, and removing it from the surface, where it is otherwise a threat to diving birds, surfacing marine mammals and sea turtles. In doing so they prevent some of the oil from reaching land, where it would wash up on beaches and marshes, and pose risks to public health.

However, their use results in more oil being dissolved into the water column where fish and other marine life are continually exposed to it. As a result, dispersants increase the time period in which aquatic life is exposed as well as the areal extent of exposure in the water column¹. Because toxicity is a function of dose and time period of exposure, this increases the number of aquatic animals that are subjected to toxic conditions as well the degree of toxicity.

In addition to making the oil more available to marine life, dispersants themselves can be toxic to marine life, depending on the concentration. Moreover, the dispersant oil mixture can be more toxic than either of the two chemical mixtures alone, and in some cases their toxicity is synergistic, meaning that it is greater than the additive toxicity of the two mixtures. Furthermore, once the dispersant is mixed with oil, especially at depth, it is no longer possible to skim the oil or to collect any meaningful amount of it.

¹ National Research Council. 2005. Oil Spill Dispersants: Efficacy and Effects. The National Academies Press. 377pp.

Oil, dispersants, and their mixture can have a wide variety of both acute and chronic effects on marine life. Some exposure can be lethal, but for those animals that survive it, these chemicals can affect reproduction, growth, disease resistance, digestion, and a long list of other essential life processes. However, little is known about the toxicity of dispersants, including those that have been pre-approved for use by the Environmental Protection Agency. These chemicals have been tested on only a small subset of species, not necessarily inclusive of the most sensitive in a given drilling area. For example, data are not available on the full effects of these chemicals on the deepwater corals present near the drill site. These may be among the most sensitive species exposed to the chemicals, and they are slow growing. If affected by the chemical exposure they will take many years for them to recover.

The bottom line is that drilling permits have been systematically approved for thousands of wells based on response plans that are reliant on chemical solutions that are at worst, largely untested, and at best, toxic to the few marine animals on which they have been tested. Rather than providing an adequate response, this guarantees that there will be environmental impacts on marine life in the case of an oil spill, and spills are unfortunately much more common than one might think.

Offshore drilling can not be done safely.

Despite claims from many supporters of the industry, spills happen frequently, and not just from tankers. After the Montara spill, in 2009, a blowout in shallow water off the coast of Australia, which took more than two months to contain, it was clear that this could happen again and that it could happen in the United States. The technology being used in that case was not old-fashioned. It was the newest technology, the kind that many have argued is as safe and could not result in a spill. But it did result in the Australian spill, and about a year later, the newest technology again failed to prevent the devastating spill in the Gulf of Mexico.

Offshore drilling is a dangerous and dirty business. Besides the 11 lives and the 100 to 200 million gallons spilled in this case, the United States Minerals Management Service reports that there have been at least 21 offshore rig blowouts, 513 fires or explosions offshore and 30 fatalities from offshore oil and gas activities in the Gulf of Mexico since 2006².

Given what we now know about the inadequacy of spill response, the side effects of dispersant chemicals, and the frequency of spills, we would be remiss not to determine exactly how we replace our oil demand with clean energy.

² Minerals Management Service (2010).
<http://www.mms.gov/incidents/blowouts.htm>
<http://www.mms.gov/incidents/fatalities.htm>
<http://www.mms.gov/incidents/fireexplosion.htm>

We can make offshore drilling unnecessary.

Additional offshore oil drilling will not lower gas prices, and it will put many jobs at risk. In 2009, the United States Department of Energy (DOE) estimated that by 2030 gasoline prices would be \$3.88 per gallon if all the U.S. oceans were open for drilling – that’s just three pennies less than if previously protected ocean areas remained closed³.

Oil is a global commodity, therefore additional U.S. oil supply from additional offshore oil drilling would have to be significant enough to alter the global price of oil in order to impact local gasoline prices. The United States simply cannot produce enough oil from the limited resource in its offshore areas to make a difference on global oil prices. Yet at the same time, as we have seen, an oil spill can threaten the livelihoods of thousands of fishermen as well as those in the restaurant, hotel and other industries who rely on coastal tourism.

The only way to become truly energy independent is to end our addiction to oil and begin relying instead on clean energy. The United States Department of Energy (DOE) estimates that even if we opened all of the offshore areas to drilling, the U.S. would still import about 58% of its oil supply. Currently, about 62% of the crude oil supplied to the United States comes from foreign sources, with the top two suppliers being Canada and Mexico⁴. Importing more than half of our oil will not allow us to be energy independent, yet that is the best case scenario, even if we develop all of our offshore reserves.

The United States simply does not have enough domestic oil to reduce its dependence on imports, much less to fulfill its demand. The best way to eliminate foreign oil dependence is to eliminate dependence on oil itself by developing alternative sources, rapidly switching to plug-in and electric vehicles and phasing out oil consumption in other portions of our economy like home heating and electricity generation.

Preliminary analysis by Oceana has demonstrated that the economically recoverable oil and gas on the Atlantic Coast would provide less energy, for a greater cost and create fewer jobs than if the same resources were invested in developing offshore wind. Because offshore wind development is competitive with offshore oil for installation vessels, maritime expertise and other needs, developing both would be economically inefficient. This suggests that expanding drilling in the Atlantic is unnecessary and, in fact, counterproductive to the development of a clean energy economy.

Only 8% of the oil used in the United States comes from the Gulf of Mexico. This amount could be replaced by a combination of 1) increasing efficiency of home heating by shifting some oil heated homes to electric heat; 2) electrification of a portion of the U.S. vehicle fleet; 3) slowing ships to increase fuel efficiency and save costs; 4) shifting

³ United States Department of Energy (2010).
[http://www.eia.doe.gov/oiaf/archive/aeo09/pdf/0383\(2009\).pdf](http://www.eia.doe.gov/oiaf/archive/aeo09/pdf/0383(2009).pdf)

⁴ United States Department of Energy (2010).
[http://www.eia.doe.gov/oiaf/archive/aeo09/pdf/0383\(2009\).pdf](http://www.eia.doe.gov/oiaf/archive/aeo09/pdf/0383(2009).pdf)

the small amount of oil driven power generation to clean power, such as offshore wind; and 5) carefully increasing the use of advanced biofuels that come from non-food crops, prioritizing those with minimized energy costs. If we also begin to feed the electric grid with clean energy, from offshore wind, for example, these additional electricity demands will not have to be met by fossil fuels.

These steps could allow the U.S. to stop offshore drilling without increasing imports. If developed further they ultimately could also alleviate the need for imports from countries that are not U.S. allies.

Because there are clear options that, if developed, could allow us to accelerate our shift to a clean energy economy, we believe that a Blue Ribbon Panel of experts should be appointed and charged with developing a plan to make these changes as soon as possible. While the President's BP Deepwater Horizon Oil Spill and Offshore Drilling Commission is not charged with recommending alternatives to offshore drilling, the impacts of the Deepwater Horizon clearly demand that we ask these questions and find a way to break our oil habit. We should have the brightest minds in the U.S. engaged to develop a plan to fast-track the shift to clean energy.

We Can Protect the Oceans from Oil While Also Improving the Economy.

The subject of this hearing is the use of dispersant chemicals in the Deepwater Horizon oil spill. The decision to use dispersants is perhaps the best example of the many "lesser of two evils" decisions that have had to be made as a result of the Deepwater Horizon spill. This call had to be made without the benefit of a crystal ball. There is no calculus to allow scientists to compare the ecological benefits of dispersant use to its ecological costs, and come out with the "right" answer for the oceans. The decision is a trade-off between surface oil slicks and oiled shorelines, versus oil and dispersants in the water column. The result of the decision to use dispersants is more oil and dispersants in the water column and more exposure to fish and invertebrates that live in the oceans⁵.

This decision required the oceans and marine life to "take one for the team." The full effects of these actions may not be known for some time, if ever. However, it is important to recognize that this was not a "solution" or an "effective response." Rather it was a major detriment to our oceans, an insult following an already damaging injury.

The use of dispersants was just one of the "lesser of two evils" choices that result in harm to our oceans. There was the debate over burning oil off the water surface, or not burning it and the concerns about burning off the collected oil and gas because of the inherent and unmitigated air pollution it creates. There was the question of whether after the well was capped, whether the cap may need to be removed if there was a leak in the pipe which would mean more gushing oil into the ocean, to prevent a worse situation from developing around a new lead that may be identified. There has been a debate about the impacts of building barrier islands to stop oil flow into the marshes. There are concerns about the impacts to the marshes from all the additional activities needed for spill

⁵ National Research Council. 2005. Oil Spill Dispersants: Efficacy and Effects. The National Academies Press. 377pp.

response. The oceans and marine ecosystems have suffered from more than just an oil spill. They have borne the brunt of many lose-lose choices that were necessary once the oil hit the water.

If we are going to have to ask the oceans to “take one, or many, for the team” we should, in response, take all necessary measures to make sure the situation is not repeated. That means making sure there are no more oil spills, and no more situations where dispersant chemicals are considered the best option. Since the drilling process has been so clearly shown to be unsafe, unpredictable and damaging, the only way to effectively prevent this type of spill and the consequent additional impacts, is to stop offshore drilling.

Recommendations

With the potential to develop clean energy solutions that could reduce our need for oil, create jobs and build our economy, the prospect of ending offshore drilling could lead to major benefits. Doing so could reduce and ultimately end the need for debate over dispersants, and other “lesser of two evil” decisions. Oceana therefore makes the following recommendations:

Stop Offshore Drilling

We have learned from the Deepwater Horizon disaster that we are not prepared to respond to an oil spill. Techniques that have been promised in response plans have proven ineffective, and often, as in the case of chemical dispersants, are used only at the expense of the marine ecosystem. The insufficient response capabilities, combined with the inability to prevent spills and to fully restore ecosystems to pre-spill conditions justify a permanent ban on offshore drilling.

Stimulate Clean Energy Solutions

By stimulating clean energy solutions, such as solar power, onshore and offshore wind energy, geothermal energy and energy efficiency, we can replace the oil we would obtain from the Gulf of Mexico, and then some. In doing so we could alleviate the risks of offshore drilling while also strengthening the U.S. position in clean energy technology. One part of this should include stimulating the development of a clean energy manufacturing base in the Gulf Region to allow a transition of oil and gas workers to clean energy jobs. Developing these clean technologies and manufacturing the needed components in the U.S. would allow us to reduce imports and increase exports.

Appoint a Blue Ribbon Solutions Commission

A Blue Ribbon Panel of experts should be appointed and charged with developing a plan to make fast-track the shift to clean energy. While the President’s BP Deepwater Horizon Oil Spill and Offshore Drilling Commission is not charged with recommending alternatives to offshore drilling, the impacts of the Deepwater Horizon clearly demand that we ask these questions and find a way to break our oil habit.