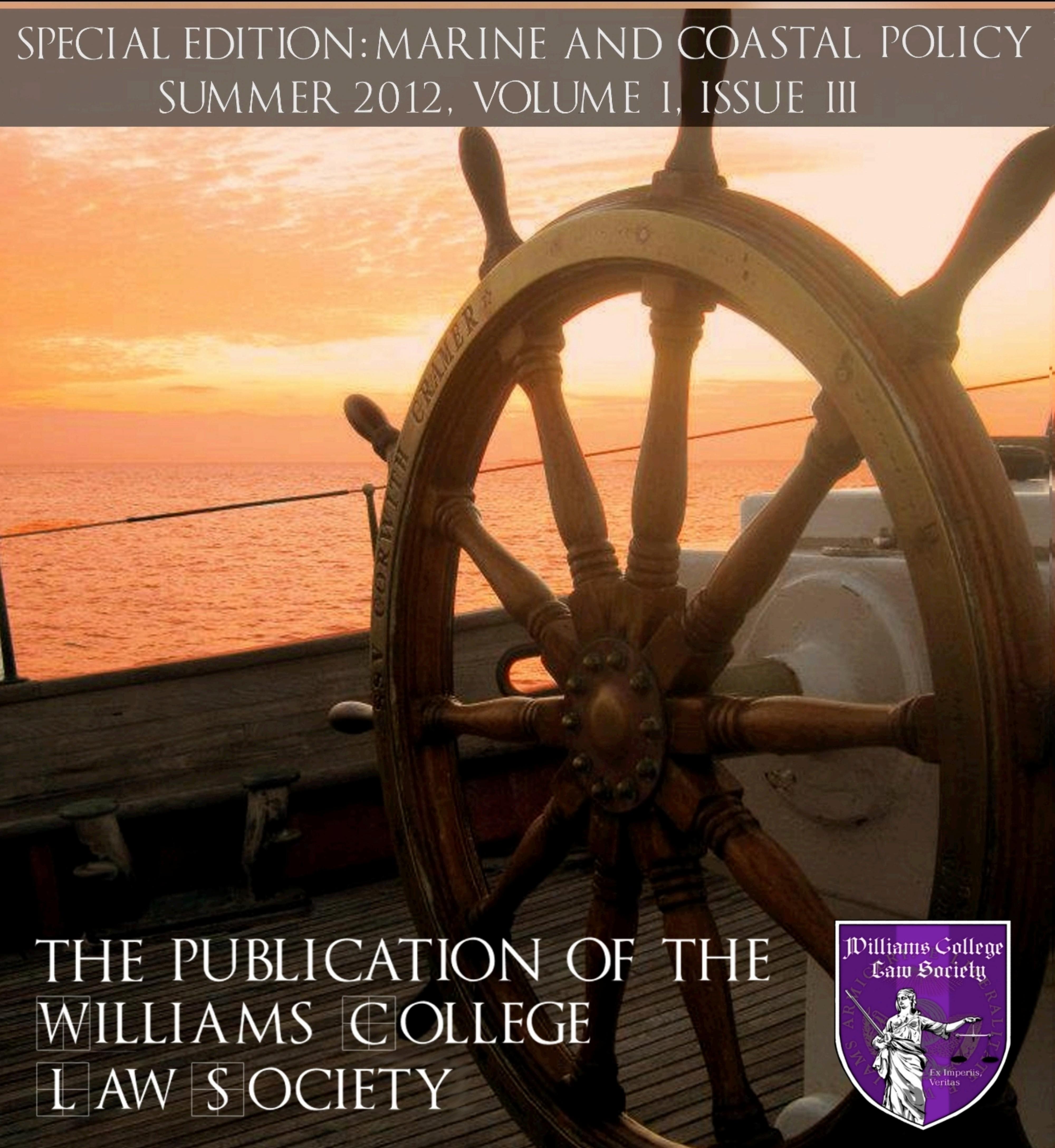
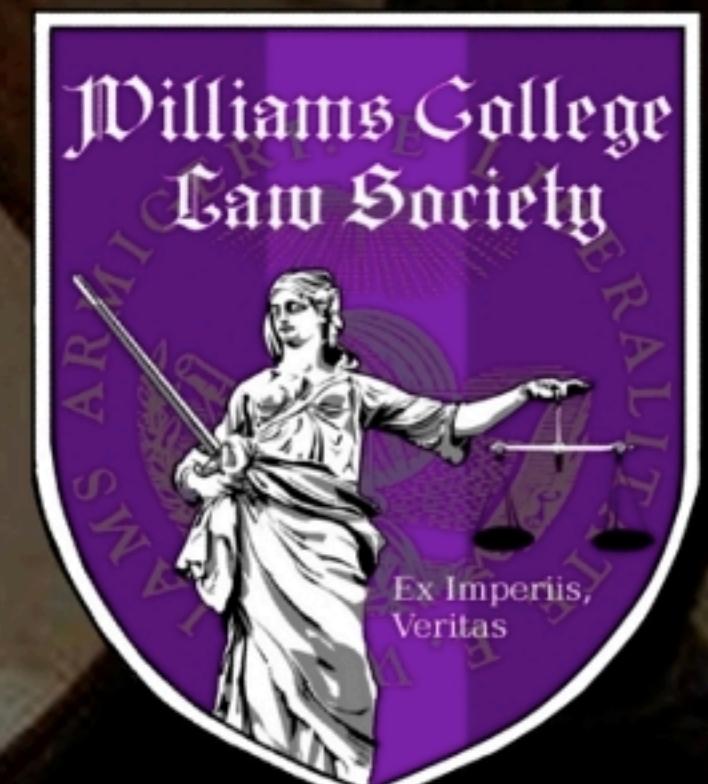


# WILLIAMS COLLEGE LAW JOURNAL

SPECIAL EDITION: MARINE AND COASTAL POLICY  
SUMMER 2012, VOLUME I, ISSUE III



THE PUBLICATION OF THE  
WILLIAMS COLLEGE  
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The WILLIAMS COLLEGE LAW JOURNAL is an interdisciplinary publication comprised of student essays that is devoted to the scholarly discussion of legal subjects. The mission of this publication is to provide a place where undergraduate students can discuss and examine the law, its role, the effects of law and policy, and the relationships of law and justice, as well as their experiences preparing for law school, a legal education, or their involvement in a legal field.

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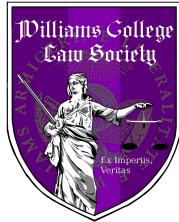
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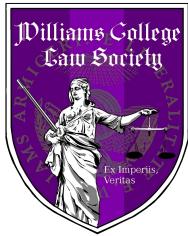


# WILLIAMS COLLEGE LAW JOURNAL

Volume I Issue III Summer 2012

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## LETTER FROM THE EDITOR

Dear Reader,

On behalf of the Williams College Law Society, I am pleased to present this Special Edition of the Williams College Law Journal. This issue has been the product of a semester's collaboration between the Williams College Law Society and the students of the Williams-Mystic Maritime Studies Program.

One of the fastest growing areas in law is in the field of marine law and policy. As deep-sea exploration continues, and our understanding of the ocean grows, our laws and policies are struggling to keep up. In the international world there are gaps in ocean law, especially in regards to resources and materials found on the ocean floor. In domestic law, with anthropogenic climate change, pollution, over exploitation of fish and other marine animals, our marine policies and laws are continuously debated and often inadequate. As we begin to understand more about climate change, and the effect that it has on our coastal habitats, people across the globe are thinking more about how our actions affect the earth, and in particular the oceans.

Roughly 80% of the world's population lives near the ocean, and about 90% of all international trade travels by sea. According to NOAA, one of every six jobs in the U.S. is marine-related, and over one-third of the U.S. GNP originates in coastal areas. In addition, the oceans provide at least 50% of the Earth's oxygen and 20% of the world's protein supply. It is estimated that 50-80% of all life on earth is found under the surface of the ocean. It is within this vast context that we try to understand the impact that the oceans have on us, and the influence that we have on it.

The articles in this edition range across various topics such as offshore drilling, marine ecological tampering and sea lions, as well aquaculture and genetic engineering. These are just a few examples of the many issues marine policy currently deals with. This edition of the Law Journal hopes to provide a window into some of these issues.

A warm thank you goes out to the editors and authors for their tireless work in bringing this issue of the Journal to fruition. Thanks also to the faculty and staff of Williams-Mystic, especially to Catherine Robinson Hall, Professor of Marine Policy, and to Dr. James Carlton, Program Director, for their advice and support. Without further delay, please enjoy this Special Edition.

Sincerely,

Emanuel McMiller  
Co-President  
Special Edition: Senior Editor

The Williams College Law Journal is published at least twice a year. Previous editions of the Law Journal can be found online on our website. The contents of this volume represent the opinions of the authors and not necessarily those of the editors, the Journal, the Williams College Law Society, Williams-Mystic Maritime Studies Program, or Williams College.

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## Fishing for Answers: Where to Draw the Line in Aquaculture? The Future of Genetically Engineered Salmon

Zara Currimjee  
*Williams College*

“The question of questions for mankind - the problem which underlies all others, and is more deeply interesting than any other - is the ascertainment of the place which man occupies in nature and of his relations to the universe of things.”

Thomas Henry Huxley, Evidence as to Man’s Place in Nature

“The ‘control of nature’ is a phrase conceived in arrogance, born of the Neanderthal age of biology and philosophy, when it was supposed that nature exists for the convenience of man.”

Rachel Carson, *Silent Spring*

### Introduction

Humans have been degrading the planet far faster than they are restoring it. Fish are highly valued as a commercial and nutritional resource, and the increasing demand of a growing human population is exhausting fish stocks. AquaBounty Technologies is a biotechnological company based in Waltham, MA dedicated to the improvement of productivity in aquaculture. For over two decades, AquaBounty has been working on a genetically engineered (GE) salmon.<sup>1</sup> Their product, the AquAdvantage Salmon, is said to be as organoleptic as the traditional Atlantic salmon, but it grows twice as fast as its conventionally farmed counterparts.<sup>2</sup> The fish reach market size in only eighteen months, making it a more cost-effective product for aquaculture farmers. Less feed is necessary, and more fish can be grown in the same amount of time.<sup>3</sup> If approved, AquaBounty’s product will be the first bioengineered animal authorized for human consumption.<sup>4</sup> This decision is crucial for the future of wild fish on our planet. While people are encouraged to eat more fish because of its nutritional content, wild stocks have been overly exploited and are now very low. Even if AquAdvantage Salmon seems like a promising solution, selected scientists, aquaculture farmers, and others fear it. Opposing consumers, environmental

<sup>1</sup> Important distinctions between GE and GM need to be made while talking about this product. “Here in the United States, the FDA believes that genetically modified organisms can be modified by other techniques besides recombinant DNA and so we reserve the term “genetically engineered” for those organisms that have been modified by recombinant DNA technology.”- Larisa Rudenko, September 20, 2010

<sup>2</sup> Telephone interview with Elliot Entis, cofounder of AquaBounty Technologies, Waltham, MA. (October 20, 2011)

<sup>3</sup> NPR interview with Anne Kapuscinski, Professor of Sustainability Science at Dartmouth College, Hanover, NH. Will FDA Approve Genetically Modified Salmon? (September 7, 2010)

<sup>4</sup> Transcript for the September 20, 2010 Veterinary Medicine Advisory Committee Meeting on AquAdvantage Salmon. Welcome by Joshua M. Sharfstein, Principal Deputy Commissioner pp-11

activists, Alaskan salmon fishermen and senators have termed AquaBounty's product, "Frankenfish."<sup>5</sup> Consumers fear the possible long-term health repercussions that this innovative product could have. Environmentalists staunchly protest the AquAdvantage salmon because of the risk of escape, the consequences that it would have on wild Atlantic salmon (which is listed as an endangered species), and of the lack of transparency in the FDA's regulatory process. Alaska senators also do not support the approval of AquaBounty's product. Even if the economic self-interest is undeniable, salmon is an integral part of their communities, which revolve around fishing and the sustainable use of resources in their ecosystem.

Upon looking into this issue and the trade-offs associated with it, AquaBounty's genetically engineered salmon should not be approved. Human beings have been struggling to find a balance between what is wanted and what is needed from nature. A technical solution won't solve world hunger or alleviate the pressure that wild fish stocks are currently enduring. The status quo isn't the most suitable panacea either, but the current situation could be improved through an increased focus on sustainable fisheries management programs.

## **Background**

The world is facing a major fishery crisis. There is a common misconception that the world's oceans are an abundant source of fish. Fish production is only significant in ten percent of the ocean; food from the sea predominantly comes from the continental shelf and upwelling regions. Over 70% of the world's fish species are either fully exploited or depleted and we are now "fishing down"<sup>6</sup> the food web.<sup>7</sup> Landings from global fisheries have shifted in the last forty-five years from large piscivorous fishes toward smaller invertebrates and planktivorous fishes. The oceans are being harvested at maximum sustainable yields and fish stocks won't be able to keep up with the increasing global seafood consumption.<sup>8</sup> And yet, for nutritional reasons, the U.S. government, in its new 2010 dietary guidelines, upped the recommended consumption of

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<sup>5</sup> Telephone interview with Bob King, legislative assistant- Arctic, Oceans, Fisheries, Coast Guard, Office of U.S. Senator Mark Begich, Washington, DC. (November 8, 2011)

<sup>6</sup> Term coined by Daniel Pauly et al. *Fishing Down Marine Food Webs*, Science 6 February 1998: 279 (5352), 860-863. [DOI:10.1126/science.279.5352.860].

<sup>7</sup> Food and Agricultural Organization (FAO) estimate

<sup>8</sup> 16 U.S.C. § 1851. National standards for fishery conservation and management

## Zara Currimjee

seafood to 8 oz. or more a week.<sup>9</sup> The U.N. reported that global food production would need to increase by as much as 100 percent by 2050 to meet the demand of an increasingly accelerating world population, and seafood, as a vital protein source, will have to be part of that.<sup>10</sup>

Aquaculture emerged as an industry fifty years ago. Aquacultural production increased from less than one million tons in 1950 to 51.7 million tons in 2006.<sup>11</sup>

Today, over half of the salmon consumed in the world comes from aquaculture, and with the projected rise in global seafood consumption, that proportion will keep increasing.<sup>12</sup> Aquaculture is not flawless; its rapid growth has been accompanied by significant environmental costs, such as the spread of diseases among wild fish, the release of biological pollutants into coastal waters, and the destruction of valuable habitats such as mangrove forests. With the current state of the world's fisheries, it no longer is a question of whether or not aquaculture is good, but of how it is being done.

The Massachusetts-based biotech company AquaBounty wants to take aquaculture a step further. Its unique and well-defined product is a genetically engineered Atlantic salmon with a rapid-growth phenotype, for use in commercial aquaculture.<sup>13</sup> AquaBounty's product is legally defined as a "Triploid hemizygous, all-female Atlantic salmon (*Salmo salar*) bearing a single copy of the  $\alpha$ -form of the opAFP-GHc2 rDNA construct at the  $\alpha$ -locus in the EO-1 $\alpha$  lineage."<sup>14</sup> AquaBounty has agreed that these Atlantic salmon, if approved, will be raised only in FDA-approved physically contained freshwater facilities.<sup>15</sup>

The technology behind the AquAdvantage Salmon consists of the insertion of the coding sequence from a chinook salmon (*Oncorhynchus tshawytscha*) growth hormone gene and the termination region of an antifreeze protein from the ocean pout (*Zoarces americanus*) into wild

<sup>9</sup> Dietary Guidelines for Americans 2010, U.S. Department of Agriculture, U.S. Department of Health and Human Services. [www.dietaryguidelines.gov](http://www.dietaryguidelines.gov) [<http://www.health.gov/dietaryguidelines/dga2010/dietaryguidelines2010.pdf>]. (November 21, 2011)

<sup>10</sup> United Nations, Sixty-fourth General Assembly, Second Committee, Panel Discussion. Food production must double by 2050 to meet demand from world's growing population, innovative strategies needed to combat hunger, experts tell second committee. [<http://www.un.org/News/Press/docs/2009/gaef3242.doc.htm>]. (November 21, 2011).

<sup>11</sup> Food and Agriculture Organizations of the United Nations, Fisheries and Aquaculture Department, State of World Aquaculture, [<http://www.fao.org/fishery/topic/13540/en>]. (October 9, 2011).

<sup>12</sup> Telephone interview with Dr. Alison L. Van Eenennaam, scientist in the Department of Animal Science, at the University of California, Davis, CA, USA. (November 18, 2011)

<sup>13</sup> [<http://www.aquabounty.com/technology/technology-296.aspx>]. (December 8, 2011)

<sup>14</sup> Briefing packet for AquAdvantage Salmon- Food and Drug Administration Center for Veterinary Medicine, Veterinary Medicine Advisory Committee. (September 20, 2010)

<sup>15</sup> Environmental Assessment for AquAdvantage Salmon. Aqua Bounty Technologies, Inc., Submitted to the Center for Veterinary Medicine, US Food and Drug Administration, For Public Display, Aug. 25, 2010 - product definition, pp-13

Atlantic salmon (*Salmo salar*) egg.<sup>16</sup> That gene “acts like a switch,” and that switch turns on the gene that produces the growth hormone. The modified salmon then produces the growth hormone in its tissues throughout the year, whereas conventional salmon only produce these hormones during the warmer times of the year.<sup>17</sup> As a result, the AquAdvantage salmon can grow twice as fast as conventional fish, and reach market size in eighteen months instead of three years. AquaBounty proposes to grow these fish in land-based containment facilities in Prince Edward Island, Canada, and Panama before bringing them to market in the United States.

AquaBounty Technologies was formed in 1991 under the name A/F Protein.<sup>18</sup> In 1993, when the company initiated discussions about seeking regulatory guidance for the approval of AquAdvantage salmon, only GE plants had a regulatory path set. The U.S. Department of Agriculture (USDA) was the lead agency regulating GE plants, under the Coordinated Framework for Regulation of Biotechnology.<sup>19</sup> AquaBounty petitioned for the FDA to be the lead regulator of GE animals and their proposal was accepted.<sup>20</sup>

AquaBounty’s salmon would not be the first GE animal to be approved by the FDA, yet to date, no GE animal has received regulatory approval for human consumption. The FDA makes clear that GE animals are not brand new to science. Genetic engineering is the process of using recombinant DNA techniques to introduce new traits, or alter the characteristics of an organism, or to enable the production of a useful biological substance.<sup>21</sup> It was initiated in the late 1970s and is well studied.<sup>22</sup>

The AquAdvantage Salmon issue is without precedent and has to comply with three standards for approval: animal safety, food safety, and effectiveness. Upon reviewing AquaBounty’s environmental assessment (EA), the FDA found no notable safety issues for humans or the animal itself. AquaBounty’s product also acts in accordance with the ‘effectiveness’ criterion, since it has been scientifically confirmed that the fish developing from

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<sup>16</sup> Id. at 11

<sup>17</sup> NPR interview with Anne Kapuscinski, professor of Sustainability Science at Dartmouth College, Hanover, NH. Will FDA Approve Genetically Modified Salmon? (September 7, 2010)

<sup>18</sup> Supra 2, at 1. (November 14, 2011)

<sup>19</sup> Supra 2, at 1. (November 14, 2011)

<sup>20</sup> Supra 2, at 1. (November 14, 2011)

<sup>21</sup> Dr. Alison Van Eenennaam, Department of Animal Science at the University of California, Davis, Department of Animal Science.

<sup>22</sup> Larisa Rudenko, Ph.D., DABT- public hearing.

these eggs have an enhanced growth rate compared to their conventional counterparts. All of those findings will weigh heavily in favor of approval in the FDA's decision.

This issue is still under review at the FDA. Throughout the regulatory process, the FDA has been critiquing and bringing back concerns to AquaBounty. Eliot Entis claims that his company has answered all of the FDA's questions. Now it is down, not to a matter of regulations, but of controversies.<sup>23</sup>

## **Rules/Law**

As biotechnology was revolutionized in the 1980s, the White House Office of Science and Technology Policy expanded the extent of the Coordinated Framework for the Regulation Of Biotechnology to encompass biotechnological products<sup>24</sup>. In 1993, AquaBounty Technologies petitioned for the FDA to direct the regulatory process, and their request was approved. The FDA uses forty-nine committees and panels to obtain independent, experienced knowledge and advice on scientific, technical, and policy matters to fulfill its mission to protect and promote public health. The Veterinary Medicine Advisory Committee (VMC) is one of them, and its function is to echo the mission and vision of the FDA in the regulatory process of AquaBounty's product.

In January 2009, the FDA issued regulatory guidelines, Guidance 187,<sup>25</sup> in which GE animals are defined as "animals modified by rDNA techniques, including the entire lineage of animals that contain the modification."<sup>26</sup> The rDNA construct meets the definition of a drug and is therefore subject to FDA regulations under the new animal drug provisions of the Federal Food, Drug, and Cosmetics Act (FFDCA) (21 USC 321 et seq.).<sup>27</sup> The FDA review of a new animal drug, like all major agency actions, complies with Section 1508.9 of the National Environmental Policy Act (NEPA), which mandates consideration of potential environmental effects. This separate standard for approval requires a detailed statement on probable environmental impacts to ensure the maintenance of environmental quality. Under NEPA, the

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<sup>23</sup> Supra 2, at 1. (November 14, 2011)

<sup>24</sup> Muir, Van Eenennaam (2001).

<sup>25</sup> CVM (2009). Guidance for Industry 187: Regulation of genetically engineered animals containing heritable recombinant DNA constructs. *US Food and Drug Administration*. Final Guidance.

January 15, 2009, Available at [www.fda.gov/cvm/Guidance/fguide187.pdf].

<sup>26</sup> Id. at page 3

<sup>27</sup> Definition of a drug in the Federal Food, Drug, and Cosmetic Act includes, "an article intended to affect the structure or any function of the body of animals".

FDA reviews and helps direct the preparation of EA documents and reviews data submitted by applicants. FDA regulations (21 CFR Part 25) detail how the agency will meet NEPA's requirements.

The EA is a public document that provides evidence and analysis for the FDA to decide to prepare a Finding Of No Significant Impact (FONSI) statement or whether an Environmental Impact Statement (EIS) is needed. AquaBounty's EA was prepared under the direction of Dr. Jane Staveley and certified by Dr. Ronald Stotish, President and CEO of AquaBounty Technologies.<sup>28</sup> The EA proposes the production and grow-out of AquAdvantage Salmon in Prince Edward Island, Canada and in a facility in Panama using a land-based culture system. Since these activities involve sites outside the United State and could affect the global commons, the Executive Order 12114 (21 CFR 25.60) is relevant to this case. This order was instituted in 1979 in deference to NEPA with the intention to respect the environment outside of the United States. This decree requires AquaBounty to rigidly enforce high standards of environmental protection within the US, but also abroad, in areas of FDA-approved facilities.

The development of AquAdvantage Salmon is overseen by the VMC, which has established a case-by-case, risk-based hierarchical approach to analyze the safety and effectiveness criteria compliant with FFDCA (21 USC 321 et seq.) and its enabling regulations (21 CFR 511 & 514). This approach proceeds through a series of investigations to characterize the potential hazards associated with the rDNA construct, the lineage of the GE animal, and the durability of its genotype and phenotype.<sup>29</sup> This information enables the VMC to determine the likelihood and potential severity of impacts on animal or human health and the environment. The general requirements of the FFDCA, which govern New Animal Drug Applications are listed under Section 512(b). The three standards for approval are: animal safety, food safety, and effectiveness. Those requirements are of the FFDCA, which governs the new animal drug applications under Section 512(b). Upon reviewing AquaBounty's EA, the FDA found no notable issues in terms of safety in relations to the animal and humans. AquaBounty's product also acts in accordance with the "effectiveness" criterion since it has been scientifically validated that the fish developing from these eggs grow at a faster rate than their conventional

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<sup>28</sup> Supra 2, at 1. (November 14, 2011)

<sup>29</sup> Supra 15, at 3. pp. 14

counterparts.<sup>30</sup> All of those findings will weigh heavily in favor of the approval of fish in FDA's decision.

### ***Sustainability and Food Security***

AquaBounty advertises its product as the future of salmon aquaculture.<sup>31</sup> The biotech company states that its mission is to play a significant role in "The Blue Revolution" by bringing together biological sciences and technology to work toward an industry capable of 'large-scale, efficient and environmentally sustainable production of quality seafood' and to ensure that the demand for high quality seafood is met.<sup>32</sup> Bernadette Dunham, director of the Center for Veterinary Medicine, and Ronald Stotish, AquaBounty CEO, think that this technology holds incredible promise, especially for the world's food supply. AquaBounty members argue that the farming and commercialization of AquAdvantage Salmon would be more economical and sustainable than the practice of raising land-based salmon domestically, especially considering that the U.S. imports seafood at the cost of a huge carbon footprint.

According to Dr. Alison Van Eenennaam, a leading animal scientist, the best way to save wild salmon is to not consume them.<sup>33</sup> She argues AquaBounty's salmon is currently one of the most sustainable solutions and there are no scientific reasons why their product is so regulated when conventionally farmed fish are not. Conventionally farmed fish are, in a sense, also genetically modified. The key to successful aquaculture production is the use of improved, genetically selected strains, and even if genes are not directly inserted into the species, classical genetic selection methods are used to select advantageous, economic traits of fish.

Aquaculture is not banned, and it would be illogical to ban it, as it would increase pressure on world fisheries. Yet the Alaska delegation does not see the AquAdvantage Salmon as a sustainable alternative to conventionally farmed salmon and is strongly opposed to the idea of using experimental biotech aquaculture to meet the increasing demand for salmon. Alaska is the largest producer of wild salmon, and last year their annual catch was estimated at about two hundred million fish. Such a catch would not have been possible without great preservation

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<sup>30</sup> Supra 25, at 5.

<sup>31</sup> [<http://www.aquabounty.com/products/products-295.aspx>]. (December 1, 2011)

<sup>32</sup> [<http://www.aquabounty.com>]. (December 1, 2011)

<sup>33</sup> Supra 12, at 3.

techniques and hatcheries to produce and then release the fish.<sup>34</sup> The state of Alaska prohibited farm fish in river and coastal waters to support their wild populations by advocating for proper management and their choice of regulation showed near record returns for salmon fisheries. Bob King acknowledges that the Alaskan economic self-interest cannot be denied but argues that there is more to it. The importance of salmon to the state's economy is relatively small compared to the oil and gas industries, but it is imbedded on a community level. A huge percentage of Alaskans financially rely on salmon and value it culturally and historically. Alaskan salmon fishermen not only fear the challenge of AquAdvantage Salmon in the market, but also the potential escape of these salmon into the wild and the subsequent disruption of wild stocks unable to compete. The Alaska delegation is fighting to preserve its natural ecosystem because they are conscious that once it is lost, it is lost forever.<sup>35</sup>

Colin O'Neil, a regulatory policy analyst for the Center for Food Safety, also rebuts AquaBounty's idea, arguing that the United States should represent the highest pillar of excellence in economic, environmental, and social sustainability.<sup>36</sup> He believes that successful approaches to management can be drawn from Alaska's fisheries management plans.

### ***Environmental Impact***

The regulatory review process for GE animals enables the VMC to determine the likelihood and potential severity of impacts on animal and human health and on the environment. Like all major agency actions, NADA approval triggers the requirement of an assessment of potential environmental impact of the action under NEPA. AquaBounty's environmental evaluation looks into the potentially affected environments, egg-production site, grow-out site, and disposal site; potential hazards include the escape, establishment, and spread of the GE salmon, and the consequences of those potential actions.<sup>37</sup>

The production, grow-out and disposal of AquAdvantage salmon under the conditions described in the EA are highly unlikely to cause any significant effects on the environment. The probability of escape, establishment, and spread of AquAdvantage salmon is extremely small due to "redundant containment" measures, including physical, physiochemical, geophysical, and

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<sup>34</sup> Supra 5, at 2.

<sup>35</sup> Id.

<sup>36</sup> Telephone interview with Colin O'Neil, Regulatory Policy Analyst, Center for Food Safety, Int'l Center for Technology Assessment, Washington, DC (November 1, 2011)

<sup>37</sup> Supra 15, at 3. pp. 14

biological ones.<sup>38</sup> The farms that will be growing the fish were strategically selected for their location: the environment surrounding the egg-production site in Canada is inhospitable to early-life stages of Atlantic salmon due to high salinity and water temperatures, and the environment of the grow-out site in Panama is inhospitable to all life stages of Atlantic salmon.<sup>39</sup> Another measure adequately set to mitigate the environment impact is biological containment, which is accomplished through the production of “all-female triploid fish”. William Muir’s research shows that the transgenic fish do not in fact have a mating advantage.<sup>40</sup> His findings suggest that the biotech fish will be purged by natural selection and that, accordingly, the risk of harm is low.<sup>41</sup> Elliot Entis assures that all the possible measures of security have been taken and argues, “unless the fish grow wings and reproduce via parthenogenesis, they are not going anywhere and their offspring will be non-existent.”<sup>42</sup>

Yet, the individuals staunchly against what they have titled ‘Frankenfish’ are highly concerned about the ramifications the GE salmon could have in the wild. Their worries come from the fact that conventionally farmed salmon escape all the time.<sup>43</sup> They maintain that when it comes to evaluating risk, the best place to start is often human failure. Several scientists, including Anne Kapuscinski, have been frustrated that the FDA's review of AquaBounty's proposal has not required the company to tackle the risk its growth-enhanced salmon, if escaped, could present to wild relatives. Kapuscinski, Professor of Sustainability at Dartmouth College, is apprehensive because even if each farm has redundant containment systems, future agency assessments would not be available to the public. Thus, she finds it necessary to study the broader effects now.<sup>44</sup>

Colin O’Neil and Eric Hoffman, environmental petitioners to the FDA, do not consider the selected farming locations in Panama and Canada as safe as AquaBounty contends them to be. They argue that with global warming, natural disasters are expected to be more frequent and powerful, and therefore the farms, which are located near navigable waterways, are prone to

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<sup>38</sup> Id.

<sup>39</sup> Supra 2, at 1. (November 14, 2011)

<sup>40</sup> Transcript for the Sept. 20, 2010 Veterinary Medicine Advisory Committee Meeting. pp-317

<sup>41</sup> Id.

<sup>42</sup> Email Correspondence from Elliot Entis, co-founder of AquaBounty Technologies, Waltham, MA, US. (November 2, 2011).

<sup>43</sup> Supra 36, at 8.

<sup>44</sup> Comments on Environmental Assessment for AquAdvantage Salmon and Briefing Packet on AquAdvantage Salmon for the Veterinary Medicine Advisory Committee

flooding.<sup>45</sup> Furthermore, they are also worried about escape and rebut Mr. Entis' explanation, arguing that even though the farming will take place inland, experience with salmon farming globally has shown that fish can escape from inland tanks and open-ocean farms through the pumps bringing water in and out.<sup>46</sup> Moreover, being located near water offers numerous opportunities for escape, such as pipes, leaks, wear-and-tear in tanks, human error, storms and, flooding. Bob King, a legislative assistant to Alaskan senator Mark Begich, affirms that despite all the protection, the history of invasive species has taught us that a lot of it happens through human negligence.<sup>47</sup>

Despite all the critics, Dr. Van Eenennaam maintains that there is no such thing as one hundred percent safe and claims the product is as secure as one could possibly make it. Dr. Van Eenennaam thinks the opposition's concerns are irrelevant since the fish will be grown inland, and therefore "what if" questions are not pertinent.

### ***Regulatory Process***

The controversy surrounding GE salmon explains the lengthiness of the regulatory process. Elliot Entis claims the difference is only one gene. No foreign protein is added to the AquAdvantage salmon and the only supplement is rDNA from another fish, the chinook salmon.<sup>48</sup> The EA shows scientific proof that there is no statistical difference in terms of allergenicity between the AquAdvantage Salmon, the conventionally farmed salmon, and the traditional Atlantic salmon. It also shows that AquaBounty's product is as organoleptic as its wild and conventionally farmed counterparts.<sup>49</sup> But even if scientists and AquaBounty claim that the product is safe, they have to prove it to the public to be able to sell it. Entis believes that over the past year, it has been more of a political issue than a scientific one. AquaBounty members believe if their product is not approved despite the VMC's assertion that the salmon is "as safe as food from conventional Atlantic salmon," it will be a triumph of bad policy over good science.<sup>50</sup>

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<sup>45</sup> Supra 36, at 8.

<sup>46</sup> Telephone interview with Eric Hoffman, Biotechnology Policy Campaigner, Friends of the Earth, Washington, DC (November 2, 2011)

<sup>47</sup> Supra 5, at 2.

<sup>48</sup> Supra 2, at 1. (October 20, 2011)

<sup>49</sup> Comments on Environmental Assessment for AquAdvantage Salmon and Briefing Packet on AquAdvantage Salmon for the Veterinary Medicine Advisory Committee, William Muir.

<sup>50</sup> Id. (November 14, 2011)

Entis and Van Eenennaam fear political concerns might be able to stop technological advancements. Entis argues that environmentalists are not the ones leading the opposition; rather, they are “fundamentalists of the left,” true believers in what cannot be proved but feels right. Like AquaBounty’s CEO, scientists in favor of the AquAdvantage salmon are concerned about the possible downturn caused by purely political apprehensiveness. If that were to happen, the ruling will set a precedent discouraging GE scientists.<sup>51</sup> The opposition argues this precedent will encourage the farming of other biotech species to follow and proliferate in the future.

The opposition has expressed its disquietude towards the transparency and regulatory system of the FDA. The overview of GE animals by the FDA differs in key aspects from the regulation of GE plants by the U.S. Department of Agriculture (USDA), the FDA, and the EPA. Unlike GE plants, GE animals are regulated by just one agency, the FDA.<sup>52</sup> Another crucial difference is transparency: under the FDA pre-approval confidentiality, information is mandated for intellectual protection unless the sponsor chooses to make the information public. GE salmon’s case is without precedent, and the opposition considers it a perfect example of the FDA’s misguided approach toward GE food labeling in general. As stated by FDA regulations, labeling is not required unless the GE product is “materially different.” Since the AquAdvantage Salmon is not substantially different from conventionally farmed and Atlantic salmon, labeling wouldn’t be required if the product were to be approved. The opposition argues that the FDA should be in business to give people full knowledge about what they eat and that a summary of the data upon approval of the product is not sufficient.<sup>53</sup>

## **Conclusion**

The unanimous conclusion of the FDA scientists is that the information available in AquaBounty’s EA document is substantial and reliable, the AquAdvantage Salmon is as safe as food from conventional Atlantic salmon, and there is a reasonable certainty of no harm to humans from the consumption of food from this animal.<sup>54</sup> Yet, the issue is still under review, and the FDA has yet to release a Finding Of No Significant Impact statement for the AquAdvantage salmon or whether it will require the preparation of an EIS.

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<sup>51</sup> Supra 12, at 3.

<sup>52</sup> Supra 36, at 8.

<sup>53</sup> Supra 46, at 10.

<sup>54</sup> Supra 2, at 1. (October 20, 2011)

From a scientific point of view, there are few analytical reasons why the AquAdvantage Salmon should not be approved as it meets the four standards set forth by the FFDCA: safe to the animal, safe for consumption, effective, and minimal environmental impact. It is also important to recognize that AquaBounty's product does not seem to show any abnormalities that aquaculture practices do not have. In some ways it could even sound like a better option: AquAdvantage Salmon is limited to inland growth and therefore implies a less intense disruption of highly diverse areas in oceanic waters, and the fish grow faster and therefore require less feed, among other reasons. AquaBounty's farming practices can be qualified as an upgraded, more technical version of conventional aquaculture.

Science is powerful, but it has its limits. What is scientifically right is not always the best solution, and science is most meaningful when put in context, especially in terms of environmental decision making. Considering the tragedy of the commons and possible trade-offs, AquAdvantage Salmon should not be approved. Many issues, such as exploitation, by-catch, and destruction of habitat are currently associated with fisheries. Another issue of utmost importance is the assumption of plenitude when it comes to fish stocks. This is a common misconception and the truth is that many species have been overfished to the point that it takes more labor and technology to catch the same amount of fish. A technical solution is not the answer to the fisheries crisis, and neither is AquaBounty's idea of sustainable fish production.

Aquaculture has developed as an industry, and it should not be taken a step further. A technological solution, as defined by Garrett Hardin, is one that demands little or nothing in the way of change in human values or ideas of morality.<sup>55</sup> GE salmon will not help raise awareness and concern about the fisheries crisis. Instead, it will add to the false impression of abundance by bringing cheaper fish into grocery stores. Human beings have been struggling to find a balance between what they want and what they need from nature. That instability, and the way Man prioritizes short-term private benefit despite long-term social costs, are reflected in the depletion of common natural resources. The importance we accord to something is positively correlated to our knowledge of it: "We value what we understand; we protect what we value."<sup>56</sup>

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<sup>55</sup> Garrett Hardin, *The Tragedy of the Commons*, Science 13 December 1968: 162 (3859), 1243-1248.  
[DOI:10.1126/science.162.3859.1243].

<sup>56</sup> Catherine Robinson Hall, personal communication (September 2011).

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Fish is recognized as the last wild food and has cultural, historical, and recreational significance that cannot be ignored.<sup>57</sup> The status quo isn't the best solution, and the harm that has been done is not entirely irrevocable. While recognizing this, the most efficient and ethical solution lies in properly managed fisheries plans, and the Agricultural Bill of 2012 should provide financial support to that end in other states such as Washington, Oregon, California, and Maine. Alaska's latest data show that with the right rules and well-managed techniques, the fisheries crisis could take a turn around.

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<sup>57</sup> Paul Greenberg, *Four Fish: The Future of the Last Wild Food*, The Penguin Press HC

## **The Lethal Take of California Sea Lions at the Bonneville Dam: Necessary Action or Extraneous Ecological Tampering**

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### **Introduction**

Sea lions and humans both eat salmon. Neither action is inherently wrong, though it is inherent that at some point they must conflict.

Such is the situation at the Bonneville Dam on the Columbia River, which runs between Oregon and Washington, where sea lions have in the last fifteen years preyed on the salmon who arrive and attempt to climb the fish ladder. If shooting fish in a barrel is easy, eating disoriented fish congregating to jump into a barrel is just as easy. The California sea lions, protected under the Marine Mammal Protection Act (MMPA), eat threatened and endangered salmon, protected under the Endangered Species Act, as well as the hatchery fish caught by fishermen. A 1994 provision added to the MMPA, Section 120, allows the lethal take of pinnipeds if they cause a “significant negative impact” on ESA-listed species.<sup>1</sup> Ostensibly, this would allow the National Marine Fisheries Service (NMFS) to authorize the killing of sea lions with an unfair advantage at the dam. However, Section 120 has proved litigious, as the Humane Society of the United States has challenged permit after permit issued by the NMFS. Acting out against the lethal take of California sea lions, the Humane Society contends that the killing is unwarranted given the existence of a host of other, more important factors facing salmon recovery including fishermen. Fishery advocacy groups and the NMFS contend that the law should sanction the lethal take of a few sea lions enjoying an unfair advantage at the dam, sea lions representing a minuscule percentage of a nearly recovered population.

In November 2010, in the first challenge to a NMFS permit for lethal taking of sea lions, *Humane Society v. Locke* determined that the “significant negative impact” of sea lions on ESA fish paled in comparison to the number taken by fishermen, a number deemed “insignificant” by the NMFS. The court remanded the issue to the NMFS for clarification. Since 2010, another permit, immediately challenged by the Humane Society, was redacted and a third round of application and review took place. On March 15, 2012 the National Oceanic and Atmospheric

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<sup>1</sup> Marine Mammal Protection Act, Section 120, 16 U.S.C. 1389 (1972).  
[<http://www.nmfs.noaa.gov/pr/pdfs/laws/mmpa.pdf>]. November 22, 2011.

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Administration re-authorized the killing of sea lions, only to be challenged again by the US Humane Society in a lawsuit filed on March 19. That case, *Humane Society v. Bryson*, has yet to go to court, but the Humane Society did ask for an injunction, which was denied on May 30, 2012.<sup>2</sup> The lawsuit continues. If Section 120 does not allow the take as it is written today, several members of Congress have taken steps to temporarily amend the law to allow the lethal take of sea lions at Bonneville Dam.

The issue is one of human and sea lion competition for resources: implicitly over fisheries resources and explicitly over ESA-listed species. In 1972, America signed its sympathy for marine mammals into law in the form of the MMPA. In 1994, Section 120 was appended as a way to get around the conflict between the MMPA and the ESA. That conflict has been put to the test at Bonneville, scrutinizing the inconsistencies inherent in the two acts and pitting the possibility of regulation against an act that legislated that Americans shall not kill marine mammals. The regulatory path out of the conflict at the dam involves the lethal take of sea lions, consistent with the size of their impact on salmon, a large population of California sea lions, and the unfair advantage that the dam has granted them. This take should not be unregulated, but reasonable lethal removal has proven itself necessary.

### **Background**

Two different historical and ecological arcs have collided in the problem at Bonneville Dam: the first composed of salmon, fisherman, and the dam itself and the second the California sea lions.

Native Americans traditionally fished for salmon along the Columbia prehistorically. Commercial fishing began around 1860 and continued until salmon populations began to decline below commercially viable levels, around 1960. Since the early 1970s, 80% of salmon caught on the Columbia have been hatchery-raised, and introduced in an attempt to mitigate mortality caused by habitat degradation and especially dams.<sup>3</sup> The Bonneville Dam was constructed in the late 1930s. In 1937 Franklin Roosevelt signed a bill ordering the dam built for “improving

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<sup>2</sup> US District Court, Portland. Preliminary Injunction Opinion. Case No. 3:12-cv-00642-SI. May 30, 2012. [[http://media.oregonlive.com/environment\\_impact/other/SeaLionRuling.pdf](http://media.oregonlive.com/environment_impact/other/SeaLionRuling.pdf)]. June 1, 2012.

<sup>3</sup> Bill Lang, “Columbia River,” [<http://www.ccrh.org/river/history.htm#fish>]. November 22, 2011.

navigation on the Columbia River, and for other purposes incidental thereto”<sup>4</sup> such as hydropower. The Bonneville Dam, coupled with the many dams upstream, provided yet another impediment to salmon migration. The Endangered Species List today contains more than ten species of salmon and steelhead that must pass through the fish ladder at Bonneville to spawn.<sup>5</sup> The Oregon and Washington Departments of Fish and Wildlife and the Idaho Department of Fish and Game manage the salmon. The Oregon DFW’s website states that the “overarching management objective is to meet conservation requirements while providing optimum sport and commercial fishing opportunities”<sup>6</sup>, denoting the profound and continued importance of fishing to the area and the DFW.

The California sea lion, a non-endemic predator to the Columbia River, appeared at the dam for the first time in the 1990s and 2000s. Sea lion hunting for both commercial use and as in a bounty program intended to protect fisheries peaked during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, resulting in tens of thousands of dead sea lions. In 1994, the MMPA was amended to include Section 120, allowing the lethal taking of pinnipeds that prey on endangered salmon, due largely to issues at the Ballard Locks in Seattle, which the section literally references.<sup>7</sup> Since 1972, sea lion populations have rebounded and since the early 1990s, sea lions have been seen on the Columbia River. In 2001 they were recognized by fishermen and the NMFS as an issue at Bonneville Dam. This has put the MMPA and the ESA in conflict as a species protected by one preys on a species protected by the other. Their coexistence at the dam in the last decade has put in conflict those who believe that sea lions present an unreasonable risk to salmon populations and those who believe that the return of the sea lions is merely the return of natural order.

The issue of sea lion predation at Bonneville bloomed after 2001, causing a cascade of actions and reactions, which reached a high point in *Humane Society v. Locke* in 2010. Data presented in that case gives the number of sea lions observed by the US Army Corps of Engineers at the dam by Fisheries officials to range year-by-year from 30 in 2001 to 106 in 2003 and down to 69 in 2007,<sup>8</sup> and it has since climbed to 89 in 2010.<sup>9</sup> In 2006, in response to the

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<sup>4</sup> Bonneville Project, 16 U.S.C. Chapter 12B (1937) [<http://uscode.house.gov/download/pls/16C12B.txt>]. November 22, 2011.

<sup>5</sup> U.S. Fish and Wildlife Services. “ESA Listings and occurrences for Oregon.” [[http://ecos.fws.gov/tess\\_public/pub/stateListingAndOccurrenceIndividual.jsp?state=OR](http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrenceIndividual.jsp?state=OR)]. November 22, 2011.

<sup>6</sup> Oregon Department of Fish and Wildlife. “Columbia River Fisheries.” [<http://www.dfw.state.or.us/fish/OSCRP/CRM/>]. November 13, 2011.

<sup>7</sup> Marine Mammal Protection Act, Section 120, 16 U.S.C. 1389, (1972).

<sup>8</sup> Humane Society v. Locke, 626 F3d 1040, 1044 (9<sup>th</sup> Cir. 2010).

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continued pressure by sea lions on migratory fish, Oregon, Washington, and Idaho filed an application to lethally remove sea lions under Section 120 of the MMPA. This action followed attempts at non-lethal removal, including “seal bombs, cracker shells, rubber buckshot, and vessel chase”<sup>10</sup> that have consistently proven ineffective. In March of 2008, the states were granted permission to kill sea lions under Section 120 by the NMFS.<sup>11</sup> That same day the Humane Society of the United States brought suit against the NMFS, and through them NOAA and the Department of Commerce. The Washington and Oregon DFW intervened as defendants. The case was originally argued in the US District Court—Oregon in 2009, where the Humane Society lost. The Humane Society appealed, and in April 2009 the Humane Society successfully sued for an emergency injunction based on the “irreparable harm” that would be caused by killing sea lions, though trapping and transport was allowed by the court.<sup>12</sup>

In November of 2010, the Ninth Circuit Court of Appeals decided in favor of the Humane Society. In order to fit the case into the arc of the issue, a brief summary is necessary here. Section 120 of the MMPA demands that in order for lethal force to be used, sea lions must have a “significant negative impact on the decline or recovery of salmonid fishery stocks.”<sup>13</sup> The court decreed that the government’s decision to issue a permit under that section ran afoul of the Administrative Procedures Act, which states that agency action cannot be “arbitrary or capricious.”<sup>14</sup> Despite the large amount of leeway that is traditionally given to the agencies in interpretation of laws, the court based its decision on the fact that “commercial, recreational and tribal fisheries are authorized to take between 5.5 and 17 percent of listed salmonids, depending on the size of the run in any particular year.”<sup>15</sup> This number, which has been consistently deemed “insignificant” by the NMFS, is up to four times as high as the maximum take of 4.2% by sea

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<sup>9</sup> Oregon DFW, Washington DFW, Idaho DFG, “Request for Marine Mammal Protection Act Section 120 Authorization to Remove California Sea Lions from the Columbia River.” August 18 2011. Pp 5. Received from Doug Hatch via email, November 14, 2011.

<sup>10</sup> Robin Brown, et al. “Field Report: 2011 Pinniped Research and Management Activities At and Below Bonneville Dam.” [<http://www.nwr.noaa.gov/Marine-Mammals/Seals-and-Sea-Lions/upload/Sec-120-states-11-rpt.pdf>]. November 22, 2011. Pp. 1-2.

<sup>11</sup> James Lecky. “Written Testimony on H. R. 946.” June 14, 2011.

[<http://naturalresources.house.gov/UploadedFiles/LeckyTestimony06.14.11.pdf>]. November 22 2011. Pp. 6.

<sup>12</sup> Humane Society v. Gutierrez, emergency motion. 523 F.3d 990 (2008). [[http://scholar.google.com/scholar\\_case?case=6544828043769127997&hl=en&as\\_sdt=2&as\\_vis=1&oi=scholar](http://scholar.google.com/scholar_case?case=6544828043769127997&hl=en&as_sdt=2&as_vis=1&oi=scholar)]. November 22, 2011.

<sup>13</sup> Marine Mammal Protection Act, Section 120, 16 U.S.C. 1389, (1972).

<sup>14</sup> Administrative Procedures Act Chapter 7, 5 U.S.C. 706(2)(A) (1946) [<http://www.nmfs.noaa.gov/pr/pdfs/laws/apa.pdf>]. November 22 2011.

<sup>15</sup> Humane Society v Locke, 626 F3d 1040, 1045 (9<sup>th</sup> Cir. 2010).

lions. The court ruled, therefore, that “NMFS’s action is inadequately explained and must be remanded under the APA”<sup>16</sup> due to an inconsistent use of the “significant negative impact” test. The case did not close the door on further permitting, but it did demand that better rationale be used in determining whether sea lion predation was “significant,” especially when compared to sport and commercial fishing.

Several months later, on May 13, 2011, the National Marine Fisheries Service granted a second permit to the States to take sea lions.<sup>17</sup> On September 12, the States submitted a new application under Section 120, and the NMFS convened a task force. The task force met on October 24, and decided in favor of the application 14-2.<sup>18</sup> Concurrent with the most recent application, the House Natural Resources Committee chairman Doc Hastings (R-WA) submitted a bill in the United States House of Representatives that amended Section 120 of the MMPA. House Bill 3069 amends subsection (f) of Section 120 of the MMPA to give “Temporary Marine Mammal Removal Authority” for five years, allowing any taking of California or Stellar sea lions that interfere with fisheries of any kind on the Columbia River. Stellar sea lions, an endangered species, have been seen at the dam in growing numbers in the last few years. This mandate is limited only by a yearly take of 1% of the potential biological removal level, the number of incidental deaths of a species allowed each year under the MMPA.<sup>19</sup> The bill abolishes all of the current requirements under Section 120, adds Stellar sea lions as well as gives an exemption from review under the National Environmental Policy Act.

The issue of sea lion and salmon interaction at the Bonneville Dam has, in the last decade, gone through a heated debate. The Humane Society has been successful in fouling any large-scale efforts to combat sea lion predation, with only thirty-seven sea lions killed in total during the 2008 season, the only season that lions died.<sup>20</sup> On March 15, 2012 NOAA granted a

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<sup>16</sup> Humane Society v Locke, 626 F3d 1040, 1055 (9<sup>th</sup> Cir. 2010).

<sup>17</sup> National Oceanic and Atmospheric Administration. “Wash and Ore. Authorized to remove salmon-eating Calif. sea lions.” May 13, 2011. [<http://www.nwr.noaa.gov/Newsroom/Current/upload/05-13-2011.pdf>]. November 22, 2011.

<sup>18</sup> NMFS’ Pinniped-Fishery Interaction Task Force. “Facilitator’s Final Report.” October 24 2011. [<http://www.nwr.noaa.gov/Marine-Mammals/Seals-and-Sea-Lions/upload/Sec-120-TF-Rpt-2011.pdf>]. November 22, 2011.

<sup>19</sup> H.R. 3069, 112th Congress: Endangered Salmon and Fisheries Predation Prevention Act. (2011). [<http://www.govtrack.us/Congress/bill.xpd?bill=h112-3069>]. November 22, 2011.

<sup>20</sup> Lecky. “Written Testimony on H. R. 946.” Pp. 4.

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permit to the states to kill sea lions.<sup>21</sup> The Humane Society, as expected, followed quickly with a lawsuit. *Humane Society v. Bryson* has yet to go to court, but a district judge denied an injunction sought by the Humane Society because the “balance of hardships and the public interest” did not tip in their favor.<sup>22</sup> This late May ruling says little about what will happen in the courtroom later in 2012.

### **Laws**

Several laws control the issue at the Bonneville Dam and the pathway to the removal of sea lions, the most important being the Marine Mammal Protection Act. Auxiliary to that act in the light of this issue are the Administrative Procedures Act, the Endangered Species Act, and the National Environmental Policy Act. The pertinent case law consists of *Humane Society v. Locke* (2010), which offers crucial interpretation of each statute mentioned above in regard to the issue at the Bonneville Dam. The remand handed down by the Ninth Circuit Appellate Court has yet to be tested again in court with new facts, and this consideration will appear below.

The original 1972 Marine Mammal Protection Act did not include any provision for the intentional taking of any marine mammal. In 1994 the Act was amended to include Section 120 due to issues at the Ballard Locks in Seattle. The section allows taking of sea lions requiring several tests and criteria to be met: (1) the sea lions must be “individually identifiable”, (2) they must cause “a significant negative impact on the decline or recovery of [endangered] salmonid fishery stocks”, (3) a Pinniped-Fishery Interaction Task Force must be established, (4) public notice and comment must take place by way of the Federal Register, and (5) due diligence must be done to “demonstrate that no feasible and prudent alternatives exist and that the applicant has taken all reasonable nonlethal steps without success.”<sup>23</sup> This long list of requirements contrasts sharply to House Bill 3069, which temporarily does away with all of these requirements on the Columbia River in favor of a single restriction, that the take cannot exceed “one percent of the annual potential biological removal [PBR] level.”<sup>24</sup> The PBR is produced each year in accordance with the MMPA, and is defined by the act as “the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing

<sup>21</sup> Oregon Department of Fish and Wildlife. “California Sea Lion Management.” [<http://www.dfw.state.or.us/fish/SeaLion/>]. June 1, 2012.

<sup>22</sup> US District Court, Portland. Preliminary Injunction Opinion.

<sup>23</sup> Marine Mammal Protection Act, Section 120, 16 U.S.C. 1389, (1972)

<sup>24</sup> H.R. 3069, 112th Congress: Endangered Salmon and Fisheries Predation Prevention Act. (2011).

that stock to reach or maintain its optimum sustainable population.”<sup>25</sup> In 2011, 1% of the PBR was 91.<sup>26</sup> Under Section 120 currently, however, several criteria must be met.

*Humane Society v. Locke* took a close look at the phrase “significant negative impact,” applying this test to the Administrative Procedures Act (APA). This act requires that actions by an agency must not be “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”<sup>27</sup> The Humane Society successfully argued in *Humane Society v. Locke* that the NMFS decreed the 4.2% sea lion take to be “significant” while the take of fisherman, was four times as high and not deemed “significant.”<sup>28</sup> The court deemed this inconsistency under the APA sufficient to remand the application to the NMFS. The validity of the comparison between fishermen and sea lions--fishermen throw back wild fish with un-notched fins while sea lions do not discriminate between notched and un-notched--as well as the actual take of fishermen have been debated extensively during and since the case.

The Endangered Species Act (ESA) protects the endangered salmon that the sea lions prey on, ostensibly putting the Act in direct conflict with the MMPA. Though the ESA outlaws the “take” of endangered species it certainly does not make predation illegal. But the ESA allows the Secretary to “protect such species, whether by predator control, protection of habitat and food supply, or other conservation practices.”<sup>29</sup> In the case of the sea lions, then, the MMPA effectively halts “predator control” contingent on a Section 120 application. The ESA and the MMPA are therefore at odds, with Section 120 offering a narrow and historically unstable bridge between their contradictions.

The National Environmental Policy Act, finally, may have bearing on the issue at the Bonneville Dam. The Act requires federal agencies to prepare an environmental assessment to prove that the agency action will not cause “significant impact” to the human environment.<sup>30</sup> This act is the mechanism for regulating agency action that might affect the human environment, and can only be bypassed after a “Finding of No Significant Impact” (FNSI). When *Humane*

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<sup>25</sup> Marine Mammal Protection Act, Section 3, 16 U.S.C. 1362, (1972)

<sup>26</sup> Telephone Interview with Sharon Young, marine issues field director for The *Humane Society of the United States*, Washington, D. C. (November 3, 2011).

<sup>27</sup> Administrative Procedures Act Chapter 7, 5 U.S.C. 706(2)(A) (1946).

<sup>28</sup> Humane Society v. Locke, 626 F3d 1040, 1057 (9<sup>th</sup> Cir. 2010).

<sup>29</sup> Endangered Species Act Sect. 4, 7 U.S.C. § 136 (1973). [<http://www.nmfs.noaa.gov/pr/pdfs/laws/esa.pdf>]. November 22, 2011.

<sup>30</sup> National Environmental Policy Act Sect 102. 42 U.S.C. 4331 (1969) [<http://epw.senate.gov/nepa69.pdf>]. November 22, 2011.

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*Society v. Locke* was filed, the Humane Society held that the NMFS's FNSI was an error, and gave several reasons that the lethal removal of sea lions could either positively or negatively affect the human environment. The court rejected all of these arguments, upholding the decision of the NMFS not to prepare an EIS.<sup>31</sup> The threat of a required EIS continues to loom and will potentially be a part of any future lawsuit.

### **Analysis**

This section will outline the arguments and counter arguments for two sides: those who wish to use lethal removal of sea lions from the Bonneville Dam area, and those who oppose lethal removal. Multiple opinions exist about how, precisely, the removal will be carried out in order to curtail salmon predation. Those parties in favor of the lethal removal of sea lions include the NMFS, the treaty fishing tribes,<sup>32</sup> and fishermen. The single party that stands adamantly opposed to the lethal taking of sea lions is the United States Humane Society, backed by many sympathizers among the general public. Below, six arguments and their rebuttals appear. The first three are the most salient arguments made by the parties advocating for the lethal taking of sea lions, and the latter three represent the three major arguments of the opposition.

A major argument of those wishing to regulate sea lions with lethal force is that sea lions are the single source of salmon mortality that is not regulated by the federal government under its ESA power. Habitat is managed, fishing is managed, but the take by sea lions is not. The problem, according to this side, is growing and should be proactively managed as this testimony on a house bill states: "At present, resources managers are not permitted to take proactive measures to prevent smaller, manageable problems from growing into major ones."<sup>33</sup> Bruce Buckmaster, board member of fisheries advocacy group "Salmon for All" and a member of the federal Pinniped–Fishery Interaction Task Force, said in an interview that he saw the take of sea lions and the take of fisherman to be analogous, and yet fishermen are heavily regulated and sea lions are not.<sup>34</sup> The argument goes that fishermen could be easily halted in case of a small run, while halting sea lions involves an extensive process, and one that *Humane Society v. Locke*

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<sup>31</sup> Humane Society v. Locke, 626 F3d 1040, 1057 (9<sup>th</sup> Cir. 2010).

<sup>32</sup> Associated Press, "Tribes encourage sea lion kills to help salmon," *The Seattle Times*, July 29, 2011. [[http://seattletimes.nwsource.com/html/localnews/2015761573\\_aposealionssalmon.html](http://seattletimes.nwsource.com/html/localnews/2015761573_aposealionssalmon.html)]. November 22, 2011.

<sup>33</sup> Robin Brown "Written Testimony on H. R. 946." June 14, 2011.

[<http://naturalresources.house.gov/UploadedFiles/BrownTestimony06.14.11.pdf>]. November 22, 2011. Pp 3.

<sup>34</sup> Telephone Interview with Bruce Buckmaster, board member of Salmon for All, Astoria, OR (November 1, 2011).

effectively prevented indefinitely. Thus, because of the growing nature of the problem and the fact that it is currently not regulated, lethal taking of pinnipeds should be allowed. This argument is based on the “growing” nature of the problem, but is also largely a qualitative comparison appealing to morality: fishermen are regulated, why should not analogous sea lions be submitted to an analogous regulation?

The Humane Society successfully countered this argument in *Humane Society v. Locke* with the contention that the “significant negative impact” said to be caused by sea lions pales in comparison to the fishing take deemed insignificant by the NMFS.<sup>35</sup> That is, they rely on quantitative measures to counter this argument. Those who wish to protect the lions see the other side’s argument about the rightfulness of killing sea lions to derive from little more than the fact that they are not regulated. This argument, for the Humane Society, misses several important points, the most important of which is the extent of the impact. This argument made precedent in *Humane Society v. Locke*. Sharon Young, the Marine Issues Field Director for The Humane Society of the United States and a member of the federal Pinniped–Fishery Interaction Task Force, noted in an interview that the facts are vital to this case.<sup>36</sup> She pointed out the 2011 data produced by the Army Corps of Engineers using visual counting methods that the salmonid consumption rate has declined since its high of 4.2% of the run in 2007 to 1.6% in 2011. This represents a declining issue and not a growing issue for the Humane Society. Indeed, the facts won them a major lawsuit and attempt to contradict the other side’s argument about the growing problem and folly of failing to regulate sea lions.

A second major argument of those seeking lethal takings of sea lions is that the problem has been created by humans in the form of the dam, upsetting the natural balance, and that therefore a human solution to the problem is also warranted. The fact that the sea lions can take endless salmon essentially without effort as the salmon mill about seeking the fish ladder represents an unnatural problem that humanity has created, and that it would be irresponsible not to react. Bruce Buckmaster noted that humans have essentially put “golden arches over the dam” with free food for any sea lions wishing to eat.<sup>37</sup> The states’ most recent Section 120 application of August 18, 2011 made the argument in different words: “the hydro-modification of the river has altered the natural predator-prey relationship to artificially favor predatory California sea

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<sup>35</sup> *Humane Society v. Locke*, 626 F.3d 1040, 1045 (9<sup>th</sup> Cir. 2010).

<sup>36</sup> Telephone Interview with Sharon Young.

<sup>37</sup> Telephone Interview with Bruce Buckmaster.

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lions.”<sup>38</sup> This warrants corrective action by the government, just as many other corrective actions have been taken under the ESA. Doug Hatch, the Senior Fishery Scientist for the Columbia River Inter-Tribal Fishing Commission and a member of the federal Pinniped–Fishery Interaction Task Force, noted in an interview that lethal sea lion control would remove an “unfair advantage.”<sup>39</sup> Hatch also noted, however, that the complexity of the natural world remains an issue, noting, “we don’t really know what the effect of lethally removing sea lions might be.”<sup>40</sup> Though Hatch remains a strong proponent of the taking of sea lions, he does realize that effects of a corrective action in an ecological setting are always unstable and difficult to predict. Nonetheless, the anthropogenic problem should have anthropogenic solutions.

In response, the other side contends that the ecology of the site is more complicated than this argument would lead you to believe. The Humane Society notes that pinnipeds historically existed up to Celilo Falls, just above today’s dam, eating salmon. They cite Lewis and Clark’s journals to prove this.<sup>41</sup> Sharon Young counters that before one starts to kill natural predators of the salmon one should fully understand the complete range of factors affecting the recovery of the ESA salmon.<sup>42</sup> Young contended that before the NMFS begins to worry about the anthropogenic issue caused by the dam, they should be worried about the other, bigger anthropogenic issues for salmon. The most salient example is fishermen, according to Young, who in 2010 were allowed 13% of ESA fish but killed 17%.<sup>43</sup> This sort of problem strikes Young as a much more important factor affecting the recovery of the fish, and one that belies the other side’s argument about the need for a anthropogenic solution as if the sea lions were the only factor in salmon recovery.

A third contention of those who would like to lethally remove sea lions at the Bonneville Dam is that the MMPA is an unreasonable law without any way to de-list species like the ESA, and that section 120 is so cumbersome that it is useless. The failure of the laws to respond in a reasonable manner to the real world is entirely a question of morality, but one that several

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<sup>38</sup> Oregon DFW, Washington DFW, Idaho DFG, “Request for Marine Mammal Protection Act Section 120 Authorization.”

<sup>39</sup> Telephone Interview with Doug Hatch, Senior Fishery Scientist for the Columbia River Inter-Tribal Fishing Commission, Portland, OR (November 14, 2011).

<sup>40</sup> Id.

<sup>41</sup> Lewis. Journal Entry for February 23, 1806.

<sup>42</sup> Telephone Interview with Sharon Young.

<sup>43</sup> Sharon Young “Written Testimony on H. R. 946.” June 14, 2011.

[<http://naturalresources.house.gov/UploadedFiles/YoungTestimony06.14.11.pdf>]. November 22, 2011.

Washington and Oregon Congressmen are currently attempting to push through the US Congress currently in the form of an amendment to the MMPA. Bruce Buckmaster noted, for example, that there was no consideration in the original MMPA for de-listing when an animal reaches its optimum sustainable population (OSP), suggesting to Buckmaster that it is no longer in need of protection.<sup>44</sup> Buckmaster also opined that section 120 of the MMPA is written with several “wonderful catch-22s,” such as that the animals must be individually identifiable yet still cause an impact rivaling that of fishermen. For Buckmaster and the NMFS, this contradiction of scale makes it impossible for section 120 to be used to protect salmon. Buckmaster noted that he has “no confidence that it will stand all legal challenges” with the current state of law.<sup>45</sup> Thus, sponsor Doc Hasting (R-WA) and cosponsors Norman Dick (D-WA), Jaime Herrera Beutler (R-WA), Kurt Schrader (D-OR), Michael Simpson (R-ID), and Greg Walden (R-OR) have proposed an emergency exemption to the MMPA for the Columbia River to bypass the frustrating law.<sup>46</sup>

The Humane Society responds to these arguments in several ways, including pointing out the slippery slope that is created by such legislation and that section 120 was not designed for a situation like that at the Bonneville Dam. Young suggested that the new legislation was a “troubling thing” that seemed, to her, to be a systematic attack on the protections afforded to marine mammals by the MMPA that may continue.<sup>47</sup> In her testimony to the Natural Resources Committee on June 10, 2011, Young noted that the bill would “lead to a form of vigilante response” not seen since the passage of the MMPA.<sup>48</sup> In addition, the Humane Society contends that Section 120 of the MMPA, the only provision for the intentional “take” of sea lions, was not meant for a situation like that at the Bonneville Dam. Having served on the committee that fashioned Section 120 from 1992-1994, Young noted in her testimony that

In stark contrast to the situation at Ballard locks [where sea lions were effectively taking the entirety of a minuscule run of fish], the majority of fish that run in the Columbia River are not ESA-listed and even the listed runs number in the tens of thousands of fish and are generally increasing in size. Fishing that results in the death of the listed fish is still permitted and the proximal threat is not predation.<sup>49</sup>

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<sup>44</sup> Telephone Interview with Bruce Buckmaster.

<sup>45</sup> Id.

<sup>46</sup> H.R. 3069, 112th Congress: Endangered Salmon and Fisheries Predation Prevention Act. (2011).

<sup>47</sup> Telephone Interview with Sharon Young.

<sup>48</sup> Young. “Written Testimony on H. R. 946.”

<sup>49</sup> Young. “Written Testimony on H. R. 946.”

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The deadlock at Bonneville, argues Young, is the intended outcome of Section 120, which was fashioned to make sure that all other causes of fish mortality were taken into account before the lethal taking of sea lions was considered.

The three arguments and their rebuttals above form the core of the argument for the lethal taking of sea lions, under the current Section 120 or by way of amendment. Below are the three major arguments for upholding the illegality of the practice, as well as the rebuttal of the other side.

The central argument used by the Humane Society comes from the language of Section 120 and was legitimized by the United States Court of Appeal for the Ninth Circuit in 2010's *Humane Society v. Locke*. As described above and alluded to several times, in order for the lethal take of sea lions to occur they must be causing a "significant negative impact."<sup>50</sup> This measure of significance, by way of the APA, is lawfully comparable to other takes moderated by the significance test. The most salient is the NMFS's yearly determination of what amount of fisheries' activity will have a significant or insignificant impact on ESA listed fish. On a regular basis, NMFS deems takes well in excess of sea lion predation levels, which peaked at 4.2%, to be insignificant to fish recovery.<sup>51</sup> In 2008, according to Young's testimony on June 10, 2011, Columbia River fisheries incidentally killed 16% of ESA fish, well over a quota of 11%. In 2009 10.2% of ESA were killed, under quota, and in 2010 17% were killed, over the quota of 13%.<sup>52</sup> In 2010, this comparison won *Humane Society v. Locke* relief for the sea lions. There is no reason to believe that this method of comparison will be overturned.

The counter-argument made by those wishing to lethally remove sea lions initially held that the two shouldn't be compared, but this was scrapped after *Humane Society v. Locke*. The prevailing argument today centers around the method of measurement. Both takes, those caused by sea lions, and those incidentally caused by fishermen through catching and throwing back, are relatively inaccurate estimations made by the Army Corps of Engineers and the NMFS, respectively. Two ways have been used to measure the take of sea lions at the dam: though visual counting of the sea lion predation from a nearby platform, and by bioenergetic modeling. The former method has given number up to but never exceeding 4.2% of the run. The latter method,

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<sup>50</sup> Marine Mammal Protection Act, Section 120, 16 U.S.C. 1389, (1972).

<sup>51</sup> Plaintiff-Appellant's Reply Brief, USCOA for the 9<sup>th</sup> Circuit, No. 08-36038. Pp. 1.

<sup>52</sup> Young. "Written Testimony on H. R. 946."

however, has given a number between 10-20% of the run.<sup>53</sup> The undercount is accounted for by predation out of sight of the viewing platform, or predation that is simply missed. Bioenergetic modeling, given that the sea lions can eat 2-4 fish a day and the number of animals and number of days at the dam, suggests that the take is much higher. Doug Hatch estimated the take in 2011 to be 20,000 fish or higher for the survival of the animals present, or 10% or more of run. Hatch did mention that it would be difficult to arrive at this number experimentally and that bioenergetic modeling relies on an accurate sea lion abundance estimate, which has been difficult to procure.<sup>54</sup> However, the decision of the court in *Humane Society v. Locke* did go out of its way to mention bioenergetics data despite that fact that its introduction to the case was immaterial because the NMFS would have issued the Section 120 permit even without it. The decision of court stated that: “Plaintiffs have not demonstrated that NMFS’s estimates are arbitrary or capricious under the APA. We therefore uphold the agency’s use of bioenergetic modeling.”<sup>55</sup> Regarding the incidental take by fishermen, Hatch and others contend that the numbers used by the Humane Society are high, alleging instead that the Technical Advisory Committee for interstate compact for Wash and Oregon has shown that the death from fishing activities on ESA fish is around 1.5%, rather than the higher 10.2-17% mentioned by the Humane Society. The Humane Society’s numbers are the take of non-ESA species, which though caught along with hatchery fish are then released. The mortality rate for this action is not 100%, but in fact only around 10%, resulting in 1.5% of ESA run that actually die due to commercial and recreational fishing in the lower river.<sup>56</sup> Stuart Ellis, Harvest Management Biologist for the Columbia River Inter-Tribal Fish Commission, called this 1.5% the “average non-Indian fishery impact of [ESA-listed] spring Chinook.”<sup>57</sup> In recent years, allowed take has ranged from 9-13% of the salmon run. The 1.5% is based on the fact that fishermen are required to throw ESA-listed fish back into the river, resulting in estimated casualty rates of 10% for sport fishing and 14.7% for commercial tangle-net fishing.<sup>58</sup> If these new numbers—which exclude tribal fishing—are taken into account the NMFS’s determinations of “significant” in fact make sense, and the take of sea lions under Section 120 should be allowed.

<sup>53</sup> Telephone Interview with Doug Hatch.

<sup>54</sup> Id.

<sup>55</sup> Humane Society v Locke, 626 F3d 1040, 1058 (9<sup>th</sup> Cir. 2010).

<sup>56</sup> Email Correspondence with Stuart Ellis, Harvest Management Biologist for the Columbia River Inter-Tribal Fish Commission, Portland, OR (November 29, 2011).

<sup>57</sup> Id.

<sup>58</sup> Id. (May 8, 2012).

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A second argument, related to the first, against the lethal taking of sea lions is that the issue pales in comparison to other factors affecting salmon, and the sea lion issue is a red herring that distracts attention from other sources of mortality ultimately to the benefit of fishermen. In the case of salmon, the major problems are the dam, fishermen, hatchery fish, and habitat degradation. Sharon Young cited the fact that current fishing is tied to run size rather than a fixed maximum, introduced walleye that eat salmon eggs, and the mismanagement of hatchery salmon as more pressing issues affecting the salmon recovery.<sup>59</sup> When pressed on the apparent contradiction between the ESA and MMPA, she noted that they in fact work together because the elimination of the sea lion scapegoat forces the NMFS to focus on the more significant problems affecting salmon recovery.<sup>60</sup>

The other side rebuts that this Humane Society's argument is based on several assumptions, the most pressing of which is the true size of sea lion take. Bioenergetic models suggest a 10-20% take of the ESA-listed species run, a number that counters any argument about the insignificance of sea lions even given the other difficulties encountered in attempting to manage salmon species while continuing to support fishing per their mandate. In addition, the ESA has given the NMFS license to protect ESA-listed species "whether by predator control, protection of habitat and food supply, or other conservation practices."<sup>61</sup> Predator control is an important piece of the effort to rehabilitate salmon stocks.

The Humane Society makes a third and final argument that any attempt to lethally take sea lions will prove ineffective given the constant flux of individuals to and from the dam. Contrary to the belief that there are several repeat offenders, any lethally removed sea lions will be replaced by others.<sup>62</sup> For this argument the Humane Society relies on a 2010 report by the Army Corps of Engineers on returning sea lions. The report found that "The percentage of CSL [California sea lions] returning each year was at least 19.2%, 51.2%, 77.1%, 62.3%, 65.6%, 66.2%, 69.8%, and 34.6% for 2003 through 2010, respectively."<sup>63</sup> If the inverse of these numbers is calculated, they show that up to 65.4% of sea lions at the Bonneville Dam in 2010 were new to the dam. Thus, even if all the sea lions at the dam were killed one year, many more

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<sup>59</sup> Young. "Written Testimony on H. R. 946."

<sup>60</sup> Telephone Interview with Sharon Young.

<sup>61</sup> Endangered Species Act Sect. 4, 7 U.S.C. § 136 (1973).

<sup>62</sup> Telephone Interview with Sharon Young.

<sup>63</sup> Robert J. Stansell et al., "Evaluation of Pinniped Predation on Adult Salmonids and Other Fish in the Bonneville Dam Tailrace, 2008-2010," 20. Received from Sharon Young via email, November 22, 2011.

would arrive the next.

This argument is countered by both the fact that these numbers overestimate the percentage of new sea lions and that a small percentage of the sea lions seen in Astoria at the mouth of the river make it to the dam. As the identification of sea lions is difficult, an undercount of returning sea lions is inevitable. In addition, though the number of returning sea lions has dropped to 34.6%, a substantial number of sea lions are returning animals and cause substantial harm. Doug Hatch also noted that only 10% of sea lions branded at Astoria make it to the dam, showing that the dam population is a small number compared to the total sea lion population in the Columbia.<sup>64</sup> Also, the number of sea lions at the dam is minuscule in comparison to the total population of sea lions, around 300,000 and growing at a 4% rate, and even small in comparison with the sea lions on the Columbia River only.<sup>65</sup> Hatch's argument gestures to the larger picture surrounding the issue at the Bonneville Dam, namely the large number of sea lions on the West Coast. The argument does, however, speak at a more general level than the Humane Society's contention that directed lethal force will solve little in the long run.

These six arguments and their rebuttals form the substance of the two sides of the ongoing issue of California sea lion predation at the Bonneville Dam.

## **Conclusion**

The issue at the Bonneville Dam is currently being discussed in two venues: the NMFS's permitting process and the United States Congress. House Bill 3069 passed through committee on October 5, 2011, but has not yet been passed by Congress. Despite losing *Humane Society v. Locke*, these multiple attempts to obtain the ability to lethally take sea lions show the passion involved and its at least perceived importance to fishing interests and the NMFS.

At the root of the problem is the existence of the dam, which has thrown off any semblance of natural balance. This same dam has produced the real problem: the scarcity of salmon on the Columbia. With plenty of salmon there would be plenty for predators and humans alike. This observation, however, does not lighten the burden on contemporary actors to find a reasonable path, so to speak, around the dam. No party has contended that the problem is not anthropogenic. The disagreement hinges on the extent to which humans can interfere with

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<sup>64</sup> Telephone Interview with Doug Hatch.

<sup>65</sup> Id.

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California sea lions, a species protected by a major piece of national legislation.

Human solutions to natural problems are always fraught. As Doug Hatch noted, “we don’t really know what the affect of lethally removing sea lions might be.”<sup>66</sup> What we do know, however, is that sea lion population has rebounded precipitously since the passage of the MMPA.<sup>67</sup> We know that though sea lions were present in the Columbia historically, California sea lions were not.<sup>68</sup> We know that between 19.2 and 77.7% of sea lions sighted at the dam were repeat offenders in the last 8 years.<sup>69</sup> We also know that Section 120 of MMPA, passed by Congress in 1994, was written in order that “the Secretary may permit the intentional lethal taking of pinnipeds in accordance with this section.”<sup>70</sup> Disregarding my innate sense of the wrongness of killing a marine mammal, and siding with the reasonability of the fishermen and the NMFS though I have never myself fished, I believe that limited lethal take of sea lions that will reduce though not eliminate sea lion predation is morally correct and reasonable.

The next question is which pathway, by way of Section 120 permit or Congressional legislation, is best to accomplish this goal. Section 120 requires a “significant negative impact” on ESA-listed fish, and my research suggests that proving this is not an impossibility in court if bioenergetic modeling is allowed in *Humane Society v. Bryson*. Section 120 offers several checks to the NMFS’s power to kill sea lions: it requires the sea lions to be “individual identifiable,” for a task force to be established, public notice and comment, and due diligence done to test non-lethal tactics.<sup>71</sup> All of these are reasonable and do not preclude to effective action. The Doc Hastings bill 3069 expunges all of these requirements for five years, as well as gives a NEPA exemption. This seems excessive and like a return to, in Sharon Young’s words, “a form of vigilante response.”<sup>72</sup> Sea lion populations seem to be checking themselves, as evidenced by their reduced growth rate,<sup>73</sup> and the problem seems to have plateaued.<sup>74</sup> There is no reason, then, to eliminate all built-in checks and advance with only the conscience of the NMFS and a 1% of potential biological removal level limit to guide them. If another round of litigation

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<sup>66</sup> Telephone Interview with Doug Hatch.

<sup>67</sup> National Marine Fisheries Service. “California Sea Lion: U.S. Stock.”

<sup>68</sup> Lyman, et al. Pp. 3.

<sup>69</sup> Stansell et al., 20.

<sup>70</sup> Marine Mammal Protection Act, Section 120, 16 U.S.C. 1389, (1972).

<sup>71</sup> Marine Mammal Protection Act, Section 120, 16 U.S.C. 1389, (1972).

<sup>72</sup> Young. “Written Testimony on H. R. 946.”

<sup>73</sup> Telephone Interview with Doug Hatch.

<sup>74</sup> Stansell et al., 20.

fails to recognize sea lions as a significant problem, given bioenergetic modeling and a closer examination of what percentage of ESA fish are actually killed and not simply caught and released by fishermen, congressional action should be taken to amend Section 120 for reasonable use at the Bonneville Dam and in other situations along the west coast, and not to establish a five year bypass of all oversight.

As the population of California sea lions grows again they will prey on species important to American society, as expressed through the ESA, as well as fishing resources. A mediating process between that society and the sea lions must exist, one that allows the preservation of resources as well as the robustness of the sea lion population as a whole. That process today seems to be Section 120, and whatever imperfect state it may now be in, over this bridge the mediating parties must pass.

## **The Post-Deepwater Horizon Moratorium's Economic Impact On and OffShore Coastal Louisiana**

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### **Introduction**

The BP *Deepwater Horizon* oil spill on April 20, 2010, one of the worst accidental environmental disasters in history, is a stark reminder of our dependence on oil and that addiction's consequences on the natural world. An estimated 4.9 million barrels of oil leaked from the Macondo into the Gulf of Mexico (GOM), harming wildlife and wetlands alike.<sup>1</sup> As of April 20, 2011 (date of original report), over 2,000 workers continue to clean up the spill.<sup>2</sup> Presently (June 2012), BP reports that 928,611 barrels of liquid waste and 48,128 tons of solid waste have been removed from the Louisiana Coast, although it expects the clean up response to be "deemed operationally complete in 2012."<sup>3</sup> The spill's impact on the GOM region, mainly Louisiana, is undeniable. In addition to fisheries and oyster beds contaminated by oil, the Department of the Interior (DOI) instituted a six-month moratorium on offshore drilling, exploratory operations, and issuing or reviewing new deepwater drilling permits on May 30th, 2010, to review offshore drilling regulations and safety standards. The moratorium had widespread negative effects on local businesses, especially in Port Fourchon, Louisiana, which supports offshore deepwater drilling operations. Other local businesses affected by the *Deepwater Horizon* spill like fisheries continue to lose product as a result of the spill.

In response to the moratorium, *Hornbeck Offshore Services L.L.C.*, (Hornbeck) a Delaware-based limited liability company which "owns and operates a fleet of Jones-Act compliant vessels that support deepwater and ultra deepwater exploration in the Gulf of Mexico," filed for an injunction against Ken Salazar, Secretary of the Department of Interior (DOI), the DOI, and Robert "Bob" Abbey, then-acting director of the Mineral Management Service (MMS) and the MMS, on June 7th, 2010, claiming the moratorium was "arbitrary and

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<sup>1</sup> Restore the Gulf.gov. One year later – Mississippi. [<http://www.restorethegulf.gov/release/2011/04/09/one-year-later-mississippi>]. April 9, 2011.

<sup>2</sup> Restore the Gulf.gov. One Year Later Press Pack. [<http://www.restorethegulf.gov/release/2011/04/10/one-year-later-press-pack>]. April 10, 2011.

<sup>3</sup> BP Gulf Update. Response Update: Fact Sheet. [[http://www.bpgulfupdate.com/external/content/document/4699/1469635/1/RESPONSE\\_FactSheet\\_FINAL\\_Feb\\_23.PDF](http://www.bpgulfupdate.com/external/content/document/4699/1469635/1/RESPONSE_FactSheet_FINAL_Feb_23.PDF)]. February 23, 2012.

capricious.”<sup>4</sup> Judge Martin Feldman of the U.S. District Court of Eastern Louisiana ruled a preliminary injunction to repeal the initial moratorium on June 22nd, 2010. However, the DOI invoked a second moratorium on July 12th, 2010, expiring November 30th, 2010. The case, *Hornbeck Offshore Services L.L.C. v. Salazar*, remains in the Louisiana Eastern District Court, despite the protests.

In between the moratorium, the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE, a division of the DOI) “launched the most aggressive and comprehensive reforms to offshore oil and gas regulation and oversight in U.S. history.”<sup>5</sup> These reforms included, but were not limited to, increased oversight for drilling safety including new standards for blowout prevention technology, enhanced workplace safety, and a reorganization of the MMS to prevent conflicts of interest. However, no legislation in response to the spill has emerged.<sup>6</sup>

BOEMRE began issuing deepwater permits on February 28, 2011, in response to the utilization of capping stacks complying with revised standards for blowout prevention. Drilling business is returning slowly to the GOM, but service companies such as Hornbeck claim they are losing business because of global competition. The government stands by its decisions, claiming that new regulations will prevent another disaster on the scale of *Deepwater Horizon* and citing the economic loss of local communities. Caught in the middle are local businesses that support offshore drilling rigs and their employees who are not sure they will be able to survive in this “state of atrophy.”<sup>7</sup>

The government weighed widespread and possibly permanent economic damage to tourism, fisheries, and coastal economies against temporary economic losses. Although oil companies may lose money in the short run, increased regulations resulting from the moratorium will pay off in the long run. They will prevent the costs associated with another catastrophe and subsequent disorganized, inefficient cleanup efforts. *Deepwater Horizon* demonstrated that the industry could not self-regulate. Thus, additional regulations would benefit all parties in the case.

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<sup>4</sup> Hornbeck Offshore Services, L.L.C. v. Salazar, et al., 2:10-cv-01663 (Louisiana 2010) [<https://ecf.laed.uscourts.gov/cgi-bin>ShowIndex.pl>].

<sup>5</sup> Bureau of Ocean Energy Management, Regulation, and Enforcement. Reorganization and Regulatory Reform. May 13, 2011 [<http://www.boerme.gov/ReorganizationRegulatoryReform.htm>].

<sup>6</sup> Broder, John M., Krauss, Clifford. *Regulation of Offshore Rigs is a Work in Progress*. April 17, 2011. [[http://www.nytimes.com/2011/04/17/us/politics/17regulate.html?\\_r=2&nl=todaysheadlines&emc=tha2](http://www.nytimes.com/2011/04/17/us/politics/17regulate.html?_r=2&nl=todaysheadlines&emc=tha2)].

<sup>7</sup> Telephone Interview with Jim Adams, President of Offshore Marine Organization (OMSA), New Orleans, LA (April 15, 2011)

The moratorium succeeded in preventing another spill catastrophe and its associated losses and took a major step to ensure against another spill and its environmental and ecological consequences.

## **Background**

On April 20th, 2010, the now-infamous BP *Deepwater Horizon* semi-submersible drilling unit, flagged in the Republic of the Marshall Islands, exploded due to a blowout and killed eleven rig workers. After the initial incident, national and state agencies rushed to contain the oil released from the Macondo Prospect well.<sup>8</sup> Although images of oil-saturated birds and wetlands remain the popular symbols of the spill's damage, the oil spill also carried disastrous economic losses for drilling companies and local businesses supporting drilling operations, particularly in Louisiana. On May 21, 2010, President Barack Obama established the National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling (the Commission), an independent, non-partisan entity, to conduct a "thorough review of this event" and report within thirty days "additional precautions and technologies...required to improve the safety of oil and gas exploration and production operations on the outer continental shelf."<sup>9</sup><sup>10</sup> The Commission's report, peer-reviewed by the National Academy of Engineering, "Increased Safety Measures for Energy Development on the Outer Continental Shelf" (the Report), recommended "a series of steps immediately to improve the safety of offshore oil and gas drilling operations in Federal waters and a moratorium on certain permitting and drilling activities until the safety measures can be implemented and further analyses completed."<sup>11</sup> Specifically, the Report recommended:

A number of specific measures designed to ensure sufficient redundancy in the blowout preventers (BOPs), to promote the integrity of the well and enhance well control, and to facilitate a culture of safety through operational and personnel management.<sup>12</sup>

Consequently, Ken Salazar issued a six-month moratorium on all deepwater drilling on

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<sup>8</sup> David Barstow, David Rohde, and Stephanie Saul. *Deepwater Horizon's Final Hours*. [<http://www.nytimes.com/2010/12/26/us/26spill.html>]. December 25, 2010.

<sup>9</sup> National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. About the Commission. March 17, 2011. [<http://www.oilspillcommission.gov/page/about-commission>].

<sup>10</sup> U.S. Department of the Interior. Increased Safety Measures for Energy Development on the Outer Continental Shelf. May 27, 2010.

[<http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&PageID=33598>].

<sup>11</sup> Id.

<sup>12</sup> Id.

May 30, 2011, halting the operation of the thirty-three wells. In addition to ordering currently open deepwater wells to safely cease operations, the moratorium also prohibited the opening of new wells, even if the company had a permit for doing so. The first drilling moratorium defined “deepwater” as drilling at a depth greater than 500 feet, whereas “shallow water” defined drilling at a depth less than 500 feet.<sup>13</sup>

The DOI also instituted the moratorium to investigate oil-drilling regulations. After the *Deepwater Horizon* incident, questions arose when the emergency spill plan for the BP-owned, Transocean-operated drilling rig contained clauses for protecting Arctic animal life from oil spills. “There are no walruses, sea otters, or sea lions in the Gulf. BP's plan also listed as an emergency responder a marine biologist who had been dead for years, and it gave the Web address of an entertainment site in Japan as an emergency source of spill-response equipment.”<sup>14</sup> The MMS (reorganized into the BOEMRE as a consequence of the spill) conducted sixteen fewer inspections than required by then-current policy on the *Deepwater Horizon* since January 2005. The *Deepwater Horizon* rig had been cited for six “incidents on noncompliance,” including one issued in September 19, 2002, concerning the blowout preventer. However, the MMS lauded *Deepwater Horizon* as an “industry model for safety” in 2009. These inconsistent reports caused the government to overhaul offshore drilling regulations.<sup>15</sup>

A recent United States Coast Guard (USCG) and BOEMRE investigation into the *Deepwater Horizon* incident published on April 25, 2011, found “numerous systems deficiencies.” These included “poor maintenance of electrical equipment that may have ignited the explosion, and lack of training of personnel on when and how to shutdown engines and disconnect the MODU [mobile offshore drilling unit] from the well to avoid a gas explosion and mitigate the damage from an explosion and fire. These deficiencies revealed Transocean's failure to institute an effective safety management system and instill a culture that emphasizes and ensures safety contributed to this disaster.”<sup>16</sup> Furthermore, the USCG found that “this failure

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<sup>13</sup> U.S. Department of the Interior Minerals Management Service. Notice to Lessees and Operators of Federal Oil and Gas Leases in the Outer Continental Shelf Regions of the Gulf of Mexico and the Pacific to Implement the Directive to Impose a Moratorium on All Drilling of Deepwater Wells. NTL No. 2010-N04. (May 30, 2010). [<http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=33716>].

<sup>14</sup> The Gulf of Oil, National Geographic, October 2010, p.50

<sup>15</sup> Associated Press. Review: Oil Rig Inspections fell short of guidelines. [<http://www.timesnews.net/articles.php?id=9023118>]. May 16, 2010.

<sup>16</sup> U.S. Coast Guard. Report of Investigation into the Circumstances Surrounding the Explosion, Fire, Sinking and Loss of Eleven Crew Members Aboard the Mobile Offshore Unit *DEEPWATER HORIZON* In the GULF OF

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illustrates the need to strengthen the system of U.S. Coast Guard oversight of foreign-flagged MODUs, which as currently constructed is too limited to effectively ensure the safety of such vessels.”<sup>17</sup>

The moratorium upset the companies that supported deepwater drilling. When drilling rigs in the GOM stopped drilling operations, companies such as Hornbeck lost their customers. In response, Todd Hornbeck, CEO of Hornbeck Offshore Services L.L.C., filed for an injunction (*Hornbeck Offshore Services L.L.C. v. Salazar, et al.*) against the Department of the Interior on June 7th, 2010. Hornbeck claimed that his fleet of U.S. Jones Act vessels suffered irreparable damages due to drilling time lost by the moratorium. Hornbeck found that the Report indicated that twenty-seven or twenty-nine rigs inspected were in compliance with government regulations. The other two only reported minor infractions. Thus, Hornbeck claimed that there is no reason to implement an overreaching act on offshore drilling.<sup>18</sup>

On June 22nd, 2010, Judge Martin Feldman of the U.S. District Court in the Eastern District of Louisiana granted a preliminary injunction lifting the moratorium.<sup>19</sup> The government then quickly appealed to the Fifth Circuit Court of Appeals on June 25th, 2010, but was denied. In response, the Department of Interior issued another drilling suspension on July 12th, 2010, which would last until November 30th. This second moratorium differed from the first in that it did not base its restrictions on drilling depth, but rather on the basis of drilling configurations and technologies.<sup>20</sup> Judge Feldman ruled on February 3rd, 2011, that Salazar and the DOI acted in contempt of court by issuing this second moratorium, stating that the government acted with “determined disregard” of the original injunction.<sup>21</sup> As compensation, the plaintiffs were granted the right to “set the amount of attorneys’ fees they seek as a civil contempt sanction.”<sup>22</sup> This amount has yet to be set, and the case remains as pending litigation in the Eastern Louisiana

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MEXICO April 20-22, 2010. Published in the public domain on April 25, 2011.  
[<https://www.hsl.org/?view&doc=141214&coll=limited>].

<sup>17</sup> Id.

<sup>18</sup> Supra 4, at 32.

<sup>19</sup> Gutierrez, Carl. Judge Blocks Offshore Drilling Moratorium [<http://www.forbes.com/2010/06/22/judge-blocks-offshore-drilling-moratorium-markets-equities.html>]. June 22, 2010

<sup>20</sup> U.S. Department of the Interior. News Release: Secretary Salazar Issues New Suspensions to Guide Safe Pause on Deepwater Drilling. July 12, 2010. [<http://www.doi.gov/news/doinews/Secretary-Salazar-Issues-New-Suspensions-to-Guide-Safe-Pause-on-Deepwater-Drilling.cfm>]

<sup>21</sup> Calkins, Laurel B. U.S. in Contempt Over Gulf Drill Ban, Judge Rules. [<http://www.bloomberg.com/news/2011-02-03/u-s-administration-in-contempt-over-gulf-drill-ban-judge-rules.html>]. February 3, 2011.

<sup>22</sup> Supra 4, at 32.

District Court.<sup>23<sup>24</sup></sup> Judge Feldman has been vocal in the interim, issuing a statement on February 17th, 2011, that although the second moratorium has lifted, permits are still not being processed. He accused the government of indefinitely postponing permits, stating, “the government is under a duty to act by either granting or denying a permit application within a reasonable time. Not acting at all is not a lawful option.”<sup>25</sup> However, the BOEMRE issued its first deepwater drilling permit compliant with new drilling quickly thereafter to Noble Energy on February 28th, 2011.<sup>26</sup> At the time of this writing, thirty-two deepwater drilling permits for fourteen wells “subject to containment” had been approved by the BOEMRE.<sup>27</sup>

Although companies like Hornbeck are vocal about financial losses incurred as a result of the moratorium, there is another sector heavily impacted by the moratorium: smaller, more local communities providing services to drilling rigs. With “88% of offshore rigs located on Louisiana’s Outer Continental Shelf,” offshore drilling generates large amounts of taxes and jobs on and offshore.<sup>28</sup> A report assessing the economic effects of the moratoria released by Greater New Orleans, Inc., (GNO, Inc.) a regional non-profit economic development agency, estimated that the thirty-three offshore deepwater drilling rigs in operation pre-moratorium generated 13,465 to 24,156 jobs on and offshore.<sup>29</sup> In addition, the report estimated that taxes and royalties on the thirty-three operational rigs would generate between \$9,868,799 to \$16,864,585 for the state of Louisiana.<sup>30</sup> The oil industry is critical to the local Louisiana economy, whose other industries, such as fishing, have been endangered by land loss accelerated by frequent hurricanes. The unemployment rate of Louisiana has increased from 6.7% in April 2010 pre-spill to 8.2% as of November 2010. This increase cannot be directly attributed to the moratorium, as the

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<sup>23</sup> Id.

<sup>24</sup> E-mail correspondence with U.S. Department of Justice, Public Affairs. May 13, 2011.

<sup>25</sup> Tapsoott, Mark. Federal judge to Salazar: Stop stalling those drilling permits.

[<http://washingtonexaminer.com/blogs/beltway-confidential/2011/02/federal-judge-orders-salazar-act-drilling-permits-within-month>]. February 17<sup>th</sup>, 2011.

<sup>26</sup> Bureau of Ocean Energy Management, Regulation and Enforcement. News Release: BOEMRE Approves First Deepwater Drilling Permit To Meet Important New Safety Standards in Gulf of Mexico. February 28, 2011. [<http://www.boemre.gov/ooc/press/2011/press0228.htm>].

<sup>27</sup> Bureau of Ocean Energy Management. Status of Drilling Permits & Plans Subject to Enhanced Safety Environmental Requirements in the Gulf of Mexico. May 12<sup>th</sup>, 2011.

[[http://www.gomr.boemre.gov/homepg/offshore/safety/well\\_permits.html](http://www.gomr.boemre.gov/homepg/offshore/safety/well_permits.html)].

<sup>28</sup> Information originally obtained through e-mail Correspondence with Emily Danielson. Research Associate, Greater New Orleans Inc., New Orleans, LA. (April 4, 2011).

<sup>29</sup> Greater New Orleans Inc., A Study of the Economic Impact of the *Deepwater Horizon* Oil Spill – Part 2: Moratoria. January 13, 2011. [<http://gnoinc.org/press-releases/economic-impact-study-reveals-challenges-created-by-drilling-moratoria>].

<sup>30</sup> Id.

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*Deepwater Horizon* spill impacted fishing and tourism industries. Furthermore, the high number of workers temporarily employed to clean up oil may affect the numbers.<sup>31</sup> Despite this, the report finds that local businesses have been negatively impacted by the moratorium.

The spill had wide implications for other coastal businesses such as fishing and tourism. Specifically, an economic report by GNO, Inc. estimated that fisheries would lose between \$59,223,674 to \$88,835,512 in 2011 alone, and potentially \$115,096,658 to \$172,644,988 over the next three years.<sup>32</sup> However, this report took “into account short-term ecological effects,” but not “long-term ecological effects or the changes in market demand for Gulf seafood.” Thus, the spill could yield even higher losses than predicted.<sup>33</sup>

### Rules/Law

The underlying laws of the moratorium lie in the Code of Federal Regulations, Title 30, Chapter II, and § 205.172, clauses b) and c). In essence, the regulations mandate that the Regional Supervisor may direct an SOO (Suspension of Operations) when “b) activities pose a serious threat of serious, irreparable, or immediate harm or damage. This would include a threat to life (including fish or other aquatic life), property, any mineral deposit, or the marine, coastal, or human environment” and “c) when necessary for the installation of safety or environmental protection equipment.”<sup>34</sup> With this authority, Ken Salazar authorized the moratorium. While Hornbeck Offshore Services does not dispute this legal authority, it does not believe the actions instituted under this authority were appropriate.

The suit initiated by Hornbeck draws its statutory framework from the Administrative Procedure Act (APA, 5 U.S.C. §§ 702, 704). The APA authorizes courts to review agency actions determined “unlawful and [to] set aside final agency action, findings, and conclusions found to be...arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A).

Hornbeck also examines the Outer Continental Shelf Lands Act (OCSLA). Enacted in

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<sup>31</sup> Id.

<sup>32</sup> Greater New Orleans Inc., A Study of the Economic Impact of the *Deepwater Horizon* Oil Spill – Part 1: Fisheries. January 13, 2011. [<http://gnoinc.org/news-events/gno-inc-unveils-oil-spill-economic-impact-study>].

<sup>33</sup> Id.

<sup>34</sup> Part 250 – Oil and Gas and Sulphur Operations in the Outer Continental Shelf. 30 C.F.R. § 250.172. [<http://law.justia.com/cfr/title30/30-2.0.1.2.26.html>]. April 14, 2011.

1953 to authorize federal leasing of the outer continental shelf (OCS) for oil and gas development beyond the state territorial sea belt, the OCSLA claims that “the outer Continental Shelf is a vital national resource reserve held by the Federal Government for the public, which should be made available for expeditious and orderly development, subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs”; 43 U.S.C. § 1344(a). Hornbeck interprets this statement as the government striking a balance between environmental responsibility and the development of natural resources. The OSCLA also authorizes the Secretary to call for “the suspension or temporary prohibition of any operation or activity, including production, pursuant to any lease or permit... (B) if there is a threat of serious, irreparable, or immediate harm or damage to life (including fish and other aquatic life), to property, to any mineral deposit...to the marine, coastal, or human environment...” 43 U.S.C. § 1334(a)(1)(B).

Like 30 C.F.R. § 250.172, Hornbeck acknowledges the authority of the OCSLA, but accuses both the DOI and the MMS of failing to demonstrate “factual information that addresses the statutory standard that requires a suspension or temporary prohibition to be based on a showing of ‘a threat of serious, irreparable, or immediate harm or damage to life...to property’” in the Report.<sup>35</sup> In addition, Hornbeck questions the Report’s peer review. Six out of the seven experts from the National Academy of Engineering released a statement claiming that while they “broadly agree with the detailed recommendations in the report,” they “do not agree with the six-month blank moratorium.” Furthermore, they noted, “A moratorium was added after the final review and never agreed to by the contributors.”<sup>36</sup> Overall, Hornbeck uses these facts to argue that the moratorium was indeed “arbitrary and capricious.”<sup>37</sup>

## **Analysis**

### **Government**

According to BOEMRE’s website, the BOEMRE instituted a series of “aggressive, comprehensive” reforms to improve the safety of offshore drilling after *Deepwater Horizon*. First and foremost is enhanced drilling safety, which includes NTL-06 (“NTL – Notice to

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<sup>35</sup> Supra 22, at 36.

<sup>36</sup> David Hammer. Experts seek to clarify their views on drilling moratorium. [[http://www.nola.com/news/gulf-oil-spill/index.ssf/2010/06/experts\\_seek\\_to\\_clarify\\_their.html](http://www.nola.com/news/gulf-oil-spill/index.ssf/2010/06/experts_seek_to_clarify_their.html)]. June 9, 2010.

<sup>37</sup> Supra 22, at 36.

Lessees and Operators of Federal Oil and Gas Leases, Outer Continental Shelf (OCS)"). Instituted on June 18th, 2010, NTL-06 requires companies to prepare response plans to worst-case blowout scenarios, calculate the amount of the volume of a worst-case daily discharge rate, and describe measures necessary to contain such a blowout.<sup>38</sup> In addition, the "Drilling Safety Rule" required that permits meet new standards for design, casing, and cementing which a professional, independent engineer must certify.<sup>39</sup> NTL-10, instituted November 8th, 2010, required "all drill operators to submit a statement signed by an authorized company official that asserts that the operator has complied with all regulations."<sup>40</sup>

Furthermore, BOEMRE instituted a Workplace Safety Rule on September 30, 2010, to "develop and maintain Safety and Environmental Management System (SEMS)" for offshore oil and gas operators to adhere to.<sup>41</sup> BOEMRE also established an Investigations and Review Unit on June 23, 2010, to investigate allegations of misconduct, respond to high priority issues including spill incidents, and assist in implementing the reorganization of BOEMRE.<sup>42</sup> A new recusal policy for BOEMRE was created for employees to report "real and perceived conflicts of interest."<sup>43</sup> A large change was the review of the use of National Environmental Policy Act (NEPA) categorical exclusions for deepwater operations. Essentially, categorical exclusions mean that federally funded deepwater project permits could pass without an Environmental Impact Assessment (EIS).<sup>44</sup> BOEMRE also underwent reorganization, leading to the establishment of the Office of Natural Resources Revenue (ONRR) on October 1st, 2010, and the establishment of the separate Bureau of Ocean Energy Management (BOEM) and the Bureau

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<sup>38</sup> U.S. Minerals Management Service. NTL No. 2010-N06. June 18, 2010.

[<http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&pageid=35724>].

<sup>39</sup> Bureau of Ocean Energy Management, Regulation, and Enforcement. Fact Sheet: The Drilling Safety Rule. September 30, 2010.

[<http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=45792>].

<sup>40</sup> Bureau of Ocean Energy Management, Regulation, and Enforcement. NTL No. 2010-N10. November 8, 2010. [<http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=70560>].

<sup>41</sup> Bureau of Ocean Energy Management, Regulation, and Enforcement. Fact Sheet: The Workplace Safety Rule. September 30, 2010.

[<http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=45791>].

<sup>42</sup> Bureau of Ocean Energy Management, Regulation, and Enforcement. Press Release: Bromwich Launches Investigative/Compliance Team to Spur Reform, Restructuring of Offshore Oil and Gas Regulation. June 23, 2010. [<http://www.doi.gov/news/pressreleases/Bromwich-Launches-Investigative-Compliance-Team-to-Spur-Reform-Restructuring-of-Offshore-Oil-and-Gas-Regulation.cfm>].

<sup>43</sup> Bromwich, Michael R. Policy Regarding Interference with the Performance of Official Duties and Potential Conflicts of Interest. August 30, 2010. [<http://www.boemre.gov/PDFs/Recusalmemo0830.pdf>].

<sup>44</sup> Supra 5, at 32.

of Safety and Environmental Enforcement (BSEE) on January 19th, 2011.<sup>45<sup>46</sup></sup> Finally, BOEMRE charted the Ocean Energy Safety Advisory Committee (OESC) on February 8th, 2011, to “advise the Secretary of the Interior, through the director of the Bureau of Ocean Energy, Management, Regulation, and Enforcement, on a variety of issues related to offshore energy safety.” The OESC consists of scientific, engineering, and technical experts.<sup>47</sup>

Although the DOI and BOEMRE both failed to provide a direct representative to discuss the issue, a former employee of the MMS who specialized in coordinating Geographic Information Services (GIS) databases and environmental assessment, was reached for comment.<sup>48</sup> The employee performed an EIS in accordance with NEPA on the new drilling regulations drafted by the BOEMRE, such as new blowout preventers.<sup>49</sup> He and his colleagues found that the new drilling regulations and technology implemented would have no significant environmental impact. When asked on the effectiveness of the new regulations, he commented after hesitation that it was a “big step forward.”<sup>50</sup> He especially noted that oil-drilling companies’ emergency plans were now subject to evaluation by independent engineers, as opposed to previous review by engineers employed by oil companies. Prior to the *Deepwater Horizon* spill, engineers within oil drilling companies evaluated emergency plans. He also noted that all drilling rigs were now subject to the highest industry standards established by the American Petroleum Institute (API). When asked for his opinion on the effects of the moratorium and new regulation on local oil companies, he remarked that it was a “tough situation,” and he did not have a definite answer to the complaints issued by oil advocates.<sup>51</sup>

Zak Smith, a staff attorney for the National Resource Defense Council (NRDC), was reached for comment. When asked about the effectiveness of new legislation, particularly the reorganization of the MMS into the BOEMRE, he likened the change to “rearranging the deck

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<sup>45</sup> U.S. Department of the Interior. Press Release: Interior Establishes Office of Natural Resources Revenue. October 1, 2010. [<http://www.doi.gov/news/pressreleases/Interior-Establishes-Office-of-Natural-Resources-Revenue.cfm>].

<sup>46</sup> Bureau of Ocean Energy Management, Regulation, and Enforcement. Fact Sheet: The BSEE and BOEM Separation. January 19, 2011.

[<http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&pageID=119590>].

<sup>47</sup> Bureau of Ocean Energy Management, Regulation, and Enforcement. Ocean Energy Safety Advisory Committee. May 13, 2011. [<http://www.boemre.gov/mmb/EnergySafety.htm>].

<sup>48</sup> Bureau of Ocean Energy, Management, Regulation, and Enforcement. Members of the OCS Science Committee. May 12, 2011. [<http://www.boemre.gov/eppd/scicom/2005/Appendix%2011-ATTENDEES.pdf>].

<sup>49</sup> Environmental Protection Agency. National Environmental Policy Act (NEPA). [<http://www.epa.gov/compliance/nepa/>]. April 5, 2011.

<sup>50</sup> Telephone Interview with EPA representative, *environmental assessment specialist*, Herndon, VA (April 14, 2011).

<sup>51</sup> Id.

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chairs on the Titanic,” referring to what he perceived as conflicts of interest inherent in the organization.<sup>52</sup> A main part of his argument was how the government receives a substantial portion of its non-tax revenue from drilling royalties. In 2010, the federal government made \$2.55 billion off oil royalties.<sup>53</sup> However, he believed that the employees of BOEMRE are full of good intent, but are overwhelmed with work and “institutional momentum.”<sup>54</sup> That is, with the drive to keep on giving out permits. In addition, he noted that the reorganization of the MMS into the BOEMRE came from the executive department, and that no comprehensive legislation had been passed since the *Deepwater Horizon* spill.<sup>55</sup> And whereas BOEMRE must weigh environmental responsibility while promoting economic exploitation of offshore resources, oil companies have one incentive: to drill oil to appease their shareholders. Thus, in a cost-benefit analysis, they may find it more profitable to flout safety regulations in order to drill gas as quickly as possible. He believed that oil companies and businesses were not threatened by the moratorium, as he believed they had the financial assets to survive. Finally, he believed that the recommendations of the Commission's final report remained to be enforced.<sup>56</sup>

Although the new regulations appear to make substantial progress in preventing another *Deepwater Horizon*, the lack of transparency from the BOEMRE and other government organizations create doubt as to whether these changes will be long-lasting or even enforced.

### ***Large-scale oil service companies (Hornbeck)***

Larger companies that support drilling operations such as Hornbeck (who reported its first quarterly loss in six years) stated that the moratorium irreparably hurt their business.<sup>57</sup> Jim Adams, president of the Offshore Marine Service Organization (OMSA), agreed. Adams represents offshore service vessels (OSVs), which include vessels that transport drilling fluids, muds, and crewmembers to and from drilling rigs under cabotage laws. According to Adams, the

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<sup>52</sup> Telephone Interview with Zak Smith, Staff attorney for the National Resource Defense Council (NRDC), (April 21, 2011).

<sup>53</sup> Offices of Natural Resource Revenues. Total Reported Royalty Revenues – 2010 Accounting Full Year. September 30, 2010.

[<http://www.onrr.gov/ONRRWebStats/StateAndOffshoreRegions.aspx?state=OG&yeartype=2010&dateType=AY>].

<sup>54</sup> Supra 52, at 41.

<sup>55</sup> Goldston, David. Casting Oil Upon the Waters: The House Drilling Bills. May 2, 2011.

[[http://switchboard.nrdc.org/blogs/dgoldston/casting\\_oil\\_upon\\_the\\_waters\\_th.html](http://switchboard.nrdc.org/blogs/dgoldston/casting_oil_upon_the_waters_th.html)].

<sup>56</sup> Supra 52, at 41.

<sup>57</sup> Quillen, Kimberly. Hornbeck Offshore Services posts first-quarter loss. May 5, 2011. [[http://www.nola.com/business/index.ssf/2011/05/hornbeck\\_offshore\\_services\\_pos\\_1.html](http://www.nola.com/business/index.ssf/2011/05/hornbeck_offshore_services_pos_1.html)].

definition of OSVs has expanded with the industry over the past fifteen years, and even includes anchor handlers and medium and light construction vessels.<sup>58</sup> OMSA, based in New Orleans, works with local OSVs and is active in Washington, DC.<sup>59</sup>

When asked about the effects of the moratorium, Adams immediately replied that it irreparably injured both the present and the future domestic oil industry. Noting that the moratorium created a “state of atrophy,” Adams stated that bigger, more strategic vessels left the GOM during the moratorium due to large operating costs. In his view, the moratorium decapitalized and displaced a world-class work force that originally supplied 30% of the country's oil.<sup>60</sup> According to BOEMRE's website, offshore operations account for “15 percent of America's domestic natural gas production and about 27 percent of America's domestic oil production.”<sup>61</sup> Stressing that oil is a global business, he claimed that businesses can and will leave the Gulf to drill in other countries such as Brazil.<sup>62</sup> Indeed, oil-drilling companies such as Noble Energy Corp. and Diamond Offshore are committing drilling rigs to countries such as Brazil, Egypt, and Nigeria.<sup>63</sup> Adams emphasized that although business and drilling rigs may move to other countries workers in the States will be left behind. He also predicted that higher gas prices and possible shortages might occur, as dependence on foreign oil sacrifices the predictability and stability of domestically produced oil.<sup>64</sup>

Adams was also critical of the government's handling of the moratorium, believing that the deepwater/shallow water distinction was too heavy-handed. Instead, he suggested that the government should have implemented an ongoing risk-analysis of wells currently in operation, and designated many different classes of drilling rigs. For instance, he suggested that less-established and extremely deep wells such as *Deepwater Horizon*'s Macondo well be shut down, but while better-understood deep and shallow water wells should be allowed to operate and expand unimpeded. However, Adams conceded that the regulations drafted after the *Deepwater*

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<sup>58</sup> Telephone Interview with Jim Adams, President of Offshore Marine Organization (OMSA), New Orleans, LA (April 15, 2011).

<sup>59</sup> Id.

<sup>60</sup> Id.

<sup>61</sup> Bureau of Ocean Energy, Management, Regulation, and Enforcement. Offshore Energy and Minerals Management (OEMM). May 12, 2011. [<http://www.boemre.gov/offshore/>].

<sup>62</sup> Supra 58, at 42.

<sup>63</sup> Rapoza, Kenneth. Why U.S. Oil Rigs Left Gulf of Mexico for Brazil. [<http://blogs.forbes.com/kenrapoza/2011/03/23/as-us-oil-rigs-leave-for-brazil-permits-and-prices-only-factor/>]. March 23, 2011

<sup>64</sup> Supra 58, at 42.

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*Horizon* spill (including the blowout preventers) were “solid advancements,” although he maintained that the process was neither transparent nor efficient.<sup>65</sup> He also criticized the government for its lack of cooperation with oil companies who would be most affected by the new regulations. Adams also claimed that the government disregarded regulatory efforts drafted within the industry.<sup>66</sup>

Adams ultimately labeled the moratorium a deliberate attempt by the government to downsize the domestic oil industry. He emphasized that the industry was growing before the spill. Before *Deepwater Horizon*, thirty-three deepwater wells in the Gulf of Mexico were operational, and between forty three to forty five deepwater drills in the Gulf of Mexico were projected to operate in 2011. He hoped that business would resume, and that the domestic oil industry, which he described as a vibrant industry for creating jobs and advancing technology, would not stay “tied up to the dock.”<sup>67</sup>

### ***Small-scale local Businesses***

According to an interview with a Greater Lafourche Port Commission (GLPC) representative and the research provided by Greater New Orleans (GNO), Inc., the moratorium negatively impacted local businesses supporting oil drilling rigs. The oil industry is considered a “high multiplier” industry because large amounts of oil revenue remain in the local community.<sup>68</sup> Thus, the moratorium not only stops revenue for oil companies, but the halted drilling activity also removes local business activity. Unlike local businesses, oil companies can afford to keep their workers underemployed to a certain extent, as it is more expensive to retrain their rig workers. Underemployment may occur for other reasons, such as anticipating a permit’s approval and altruistic reasons such as supporting employee’s families. On the other hand, local businesses are forced to drastically downsize when drilling stops.<sup>69</sup>

Take the example of Port Fourchon, a port servicing almost all offshore oil drilling rigs in the Gulf. In an interview with a representative of the GLPC, “a political subdivision of the state of Louisiana” which maximizes the flow of trade and commerce, the representative claimed that business had dried up for secondary companies in the Port which offered services such as

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<sup>65</sup> Id.

<sup>66</sup> Id.

<sup>67</sup> Id.

<sup>68</sup> Supra 29, at 36.

<sup>69</sup> Supra 29, at 36.

providing drilling fluids, tank cleaning, and helicopter services to transport workers to and from offshore rigs.<sup>70</sup><sup>71</sup> Although the representative could not give any hard numbers, a 2008 economic impact study on the GLPC website found that Port Fourchon provides \$1,501 million in business sales, \$351.4 million in household earnings, 8,169 jobs, and at least \$12,053,899 in tax revenue for local governments in the Houma, Louisiana MSA (Metropolitan Statistical Area).<sup>72</sup> The GLPC is also engaged with community and infrastructure efforts such as the construction of an elevated LA 1, the restoration of a Forest Ridge with dredge extracted for boat slip construction, coastal restoration for the Barataria and Terrebonne estuaries, and boat access for recreational and commercial fishermen.<sup>73</sup><sup>74</sup><sup>75</sup><sup>76</sup> The moratorium indirectly affected all of these efforts by reducing business in the greater community. Despite the recent approval of drilling permits, the Port is “still very much affected.”<sup>77</sup> Although new permits have been issued, preparing a rig to drill is a long process. When asked whether or not the pace of permit approval was enough to save local businesses in the region, the GPLC representative could only say “we'll have to wait and see.”<sup>78</sup>

One example of a Port Fourchon business is Hydro Carbon Flow Specialists, which leases large vacuum systems to drilling rigs. These vacuum systems allow the rigs to pick up any scraps in order to comply with zero-discharge protocol. Ronnie Landry, Vice President of Operations, noted, “60% of his business was generated with deepwater.”<sup>79</sup> Although he knew “things would slow down or change” after *Deepwater Horizon*, he did not foresee the moratorium, which he likened to “a death sentence.”<sup>80</sup> Although his company normally made \$7

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<sup>70</sup> Greater Lafourche Port Commission. About us. May 13, 2011. [<http://www.portfourchon.com/overview.cfm>].

<sup>71</sup> Telephone Interview with Anonymous, *Assistant to Port Fourchon Director Chett Chisson*, Galliano, LA (April 13, 2011).

<sup>72</sup> Greater Lafourche Port Commission. The Economic Impacts of Port Fourchon on the National and Houma MSA Economies. April 2008. [[http://www.portfourchon.com/site100-01/1001757/docs/port\\_fourchon\\_economic\\_impact\\_study.pdf](http://www.portfourchon.com/site100-01/1001757/docs/port_fourchon_economic_impact_study.pdf)].

<sup>73</sup> Greater Lafourche Port Commission. Maritime Forest Ridge. May 12, 2011. [<http://www.portfourchon.com/explore.cfm/maritimeforestrid/>].

<sup>74</sup> Greater Lafourche Port Commission. Public Launches. May 12, 2011. [<http://www.portfourchon.com/explore.cfm/publiclaunches/>].

<sup>75</sup> Greater Lafourche Port Commission. Charter Fishing. May 12, 2011. [<http://www.portfourchon.com/explore.cfm/charterfishing/>].

<sup>76</sup> Supra 71, at 44.

<sup>77</sup> Supra 71, at 44.

<sup>78</sup> Supra 71, at 44.

<sup>79</sup> Telephone Interview with Ronnie Landry, VP of Operations for THE Hydro Carbon Flow Specialists, Morgan City, LA. April 21, 2011.

<sup>80</sup> Id.

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to \$12 million a year in gross revenue, he has struggled to make \$4 million since the spill. When asked about the new regulations, he likened the new permit application to a “cat and mouse game,” saying that companies do not know what to write in their permits, and are then denied and asked to include more information by BOEMRE.<sup>81</sup> He suggested that the government was disguising its reluctance to permit. He also believed in the importance of a strong, stable domestic drilling industry, saying “domestic commodities make you stronger.”<sup>82</sup> When asked if he believed that oil companies would move to drill in other countries, he replied, “no doubt about it.”<sup>83</sup>

He also questioned the government's decision to institute a moratorium. He noted that train or airplane crashes do not cause a complete shutdown of their respective industries, and viewed the moratorium as a move by the government to control the oil industry. Mr. Landry also showed a large sympathy to workers in the region. He was quick to note that the largest tragedy were the eleven lives lost in the *Deepwater Horizon* explosion. He especially extended his sympathies to Louisiana fishermen whose fisheries and profits were destroyed by the spill, and who were not receiving compensation from BP.<sup>84</sup>

When asked about the new regulations, he noted that “change is always good,” but feared government overseers of permitting who had no experience in the industry.<sup>85</sup> He ended by saying that the *Deepwater Horizon* spill was a “wake up call that needed to happen,” but “couldn't say that it wouldn't happen again.”<sup>86</sup>

Local fishing economies remain damaged. An interview with Dean Blanchard, owner of Dean Blanchard Seafood Inc., a wholesale distributor of shrimp and fish, confirmed the losses predicted by the GNO, Inc. report. Blanchard claimed that ever since the spill, he has lost “\$40,000 to \$50,000” a day, and emphasized that that figure has not changed since the spill.<sup>87</sup> He primarily blamed BP for his losses, claiming that their “greedy and careless” actions led to the spill of “oil all over the place...and now livelihoods are destroyed.”<sup>88</sup> When asked about the future of his business, he said that he “may divert into the hotel business...I can't supply my

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<sup>81</sup> Id.

<sup>82</sup> Id.

<sup>83</sup> Id.

<sup>84</sup> Id.

<sup>85</sup> Id.

<sup>86</sup> Id.

<sup>87</sup> Interview with Dean Blanchard, owner of Dean Blanchard Seafood Inc., Grand Isle, LA. May 11, 2011.

<sup>88</sup> Id.

customers.”<sup>89</sup> And Blanchard may be lucky, as the GNO Inc. report found diminishing fisheries might cause unskilled fishermen and their boats to be “stranded assets.”<sup>90</sup>

## **Conclusion**

For better or for worse, oil remains essential to the American economy. The argument for increased domestic oil production is valid: resource self-sufficiency is inherently more secure, especially in light of recent turmoil in the Middle East. However, the methodology for oil extraction before *Deepwater Horizon* was unsafe. Although many industry workers and spokespeople claim that oil companies already have an incentive to prevent catastrophic spills (no oil for customers), *Deepwater Horizon* demonstrated that this incentive was not strong enough. Investigations conducted after the spill uniformly found that every system in place to prevent the spill, mechanical or procedural, had failed. The oil industry's self-regulation to prevent and react to disaster proved to be woefully inadequate. Coupled with the environmental and economic impact on fisheries in U.S. territory, the government could not maintain its trust in the industry, and made changes accordingly.

Although the economic impacts of the moratorium were significant, they were necessary. Another catastrophic spill would have exacerbated each party's existing financial stress. Parent oil companies would have lost additional capital and product, the government may have had to divert resources towards another reactionary cleanup, and companies like hotels which accommodate drilling rig workers would have been directly and indirectly affected by the spill. Finally, customers would suffer.

However, the government should not be entirely blamed for its heavy-handed approach. The initial failure of oil companies to prevent and contain spills, coupled with a trusting government created disastrous circumstances necessitating change.

Currently, permits are being issued, though companies will not recover quickly. Expenses from the moratorium will remain, but the ever-present demand for domestic oil will bring back money to the region. The only remaining pressing issue is the fact that the spill has produced no substantial legislation at the time of writing. The new regulations and reforms have all come from the Executive Branch. Legislation providing industry oversight to prevent another

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<sup>89</sup> Id.

<sup>90</sup> Supra 32, at 37.

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*Deepwater Horizon* must be passed. Until then, the Executive Branch, particularly BOEMRE, remains limited in its ability to balance environmental protection and resource extraction. BOEMRE must receive more funding, oversight, and inner reorganization in order to truly protect the region against another *Deepwater Horizon*.

### Present Day (June 2012)<sup>91</sup>

*Hornbeck v. Salazar* reached a judgment on August 3, 2011.<sup>92</sup> Judge Feldman ruled in favor of the plaintiffs (Hornbeck) and against the defendants (Ken Salazar, DOI, Michael Bromwich, and BOEMRE).<sup>93</sup> Specifically, Judge Feldman found the defendants in civil contempt of the Court's Order of Preliminary Injunction.<sup>94</sup> Consequently, the defendants were ordered to reimburse the plaintiffs \$528,801.18 in legal fees in reasonable attorney's fees and \$444.33 for costs.<sup>95</sup> Michael Bromwich filed a notice of appeal on October 3, 2011, and the case is now in the US Court of Appeals (case number 11-30936).<sup>96</sup>

Deepwater and shallow water permits continue to be approved by the government. The most recent Gulf Permit Index (GPI+) released by GNO, Inc. found that in April 2012, 13 deepwater permits were issued (a 86% increase from the historical (3-years prior to *Deepwater Horizon*) monthly average), and 7 shallow water permits were issued (a 53% decrease from the same historical average).<sup>97</sup> The average approval time for a permit in April 2012 was 102 days, a 67% increase from the historical average of 61 days.<sup>98</sup> In addition, the federal government received \$4.06 billion from all domestic oil royalties in 2011, compared to \$2.56 billion in 2010.<sup>99</sup>

However, this increase in drilling activity is not enough for local businesses. A recent

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<sup>91</sup> The original version of this paper was written in May 2011, but has been updated to include recent developments.

<sup>92</sup> Hornbeck Offshore Services, L.L.C. v. Salazar et al :: Justia Dockets and Filings. June 25, 2012.

[<http://dockets.justia.com/docket/louisiana/laedce/2:2010cv01663/141146/>]

<sup>93</sup> Hornbeck Offshore Services, L.L.C. v. Salazar et al Document 280 :: Justia Docs. August 3, 2011.

[<http://docs.justia.com/cases/federal/district-courts/louisiana/laedce/2:2010cv01663/141146/280/>].

<sup>94</sup> Id.

<sup>95</sup> Id.

<sup>96</sup> Hornbeck Offshore Services, L.L.C. v Salazar et al Document 290 :: Justia Docs. October 3, 2011.

[<http://docs.justia.com/cases/federal/district-courts/louisiana/laedce/2:2010cv01663/141146/290/>].

<sup>97</sup> The Gulf Permit Index: A Report on New Well Permit Issuance and Plan Approvals. April 30, 2012.

[<http://gnoinc.org/wp-content/uploads/GPI+-2012.05.09.pdf>].

<sup>98</sup> Id.

<sup>99</sup> Office of Natural Resources. States and Offshore Regions Statistics (Gulf Offshore, 2011).

[<http://www.onrr.gov/ONRRWebStats/StateAndOffshoreRegions.aspx?state=OG&yeartype=FY&year=2011&dateType=AY>].

GNO, Inc. report (March 2012) investigating the lingering local economic impacts of the moratorium found that 41% of regional businesses are not making a profit, 50% have laid off workers, and 46% have moved all or some of their operations away from the Gulf of Mexico.<sup>100</sup> As a result, grassroots' efforts such as the Gulf Economic Survival Team (GEST) have arisen to help streamline the permit approval process in order to "meet the urgent national needs of job creation, increased tax revenues, and higher economic growth – as well as increased energy security."<sup>101</sup> Because rig counts are still at pre-moratorium levels, and the current GOM oil production is still 30% lower than 2010 projections, the GEST organizes petitions and mailings to Capitol Hill urging a quicker permit approval process.<sup>102</sup>

The government continues to reorganize and provide aid in response to *Deepwater Horizon*. On October 1, 2011, the BOEMRE reorganized into the Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE).<sup>103</sup> While the BOEM is responsible for offshore leasing, resource evaluation, and reviews of oil and gas exploration plans, the BSEE is responsible for the safety and environmental oversight of offshore oil and gas operations.<sup>104</sup> The DOI continues projects to restore natural resources in the Gulf region, including a recently drafted three phase Gulf Coast Incident Management Team Plan.<sup>105</sup> However, an Oil Spill Commission report released on April 17, 2012 found that Congress has passed no legislation to create self-funding regulatory programs, to make regulatory changes permanent, or to fund testing of oil spill containment technologies.<sup>106</sup>

Overall, the Gulf of Mexico region is undeniably doing better now than it was this time a year ago. While the author maintains his original position on the necessity of the moratorium, he remains critical of the government's continued response to the region. Although changes such as the BOEMRE's reorganization are positive, the government's inability to issue permits for

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<sup>100</sup> Greater New Orleans, Inc., The Impact of Decreased and Delayed Drilling Permit Approvals on Gulf of Mexico Businesses. March 1, 2012. [<http://gnoinc.org/wp-content/uploads/The-Impact-of-Decreased-Drilling-permit-Approvals-on-Gulf-of-Mexico-Businesses-GNO-Inc.-Re-released-2012.3.1-FINAL.pdf>].

<sup>101</sup> Gulf Economic Survival Team | Our Position. June 25, 2012. [<http://www.gulfeconomicsurvival.org/our-position>].

<sup>102</sup> Gulf Economic Survival Team | Facts & Figures. June 25, 2012. [<http://www.gulfeconomicsurvival.org/facts-and-figures>].

<sup>103</sup> Bureau of Ocean Energy Management, Regulation, and Enforcement. Reorganization of BOEMRE. October 1, 2011. [<http://boemre.gov/>].

<sup>104</sup> Id.

<sup>105</sup> GCIMT Phase III Response Activities Completion Plan. May 10, 2012.

[<http://www.restorethegulf.gov/release/2012/05/10/gcimt-phase-iii-response-activities-completion-plan>].

<sup>106</sup> Oil Spill Commission. Assessing Progress. Implementing the Recommendations of the National Oil Spill Commission. April 17, 2012. [<http://oscation.org/wp-content/uploads/OSCA-Assessment-report.pdf>].

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continued drilling in a timely manner and its failure to produce any legislation supporting these efforts are inexcusable. While the DOI's efforts to restore natural resources are crucial, as they provide continued revenue and benefits to the region, the government must dedicate equal resources to restoring and ensuring responsible domestic oil production in the Gulf.

# Interview with Dennis Nixon

*Marine Policy Professor and Lawyer*

by Emanuel McMiller

*A marine lawyer by training, Dennis Nixon is a member of the Maritime Law Association of the United States and the Rhode Island Bar. His areas of research include coastal zone law and management, fisheries law and management, and admiralty law with a focus on marine pollution law and marine insurance. He is the former Marine Policy Professor for Williams-Mystic, and is currently a Professor of Marine Affairs and Associate Dean at the University of Rhode Island School of Oceanography. He also currently serves as Legal Counsel and Risk Manager for the University National Oceanographic Laboratory System, investigating legal issues that affect oceanographic research. He graduated from Xavier University with a Bachelors Degree in History in 1972, and went on to receive his Juris Doctorate from the University of Cincinnati in 1975, and a Master in Marine Affairs from the University of Rhode Island in 1976. In the following interview, which took place on April 11<sup>th</sup>, 2012, he addresses the growth and importance of marine policy as well as some issues in maritime law.*

## **Why did you decide to go to law school, and did you ever imagine that you would be a professor?**

No actually, I didn't. I was interested in boats. From my earliest memories, the street in front of my house would flood in a big rainstorm, and I used that as an opportunity to test new boats I had been building, and float them around at age 7. Boats were always a fascination. I was a college sailor.

I had intended to go to graduate school for history and become a history professor, because the coolest guy I met in college was my history professor. But my father convinced me that at that time there a huge oversupply of history Ph.D.s and I would be a very well educated cab driver. And I thought well, the other cool guy I knew was my uncle who taught me sailing, [and] who was a lawyer. I didn't really see any



connection between law and the water at that point. But I went off to law school, and I thought it was sort of marginally interesting until in my second year, I was doing research on a paper and I stumbled across the Journal of Maritime Law and Commerce. And it was literally one of those moments when the light was shining through the casement window in the basement. [And I thought], this is it. This is my career. I can do boats and law at the same time.

So then I took all the courses I could at that law school (admiralty law, international law, and so on) that were related to being a practitioner. And then when I finished law school, I realized that I needed to know more about my client, which I viewed as the oceans. [So] I came to Rhode Island for what I thought was one year to get a Master in Marine Affairs so I could learn more about marine science and ocean engineering and marine resource economics and so on. I was then offered a job to go to Washington to work as an attorney for the National Marine Fisheries Services on international fisheries treaties. But at that time, a few people had gone on leave [and] they needed someone to fill in for one year at URI. So I stayed for what I thought was one year. I found out that I really enjoyed teaching [and] so at the end of the year when they said [I] could stay for another year doing something else, I tried that. And so 36 years later, I've had a full career here at the University of Rhode Island.

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### **What are the most memorable cases you have worked with?**

I've had the excitement of working on two cases that went before the International Court of Justice at The Hague in the Netherlands.

One was the U.S.-Canada boundary case, in which I worked on one of the briefs, and the other was the Tunisia versus Libya offshore boundary case in which basically the Tunisians convinced the Libyans to stop invading them if they could find a neutral hearing spot to resolve their offshore boundary questions. That was a very exciting case to work on because we actually were helping to stop a war at the time.

A couple of really cool pollution cases I got to prosecute. [With] the World Prodigy Tanker Oil spill in 1989, I was literally taken from the university. The attorney general of the state asked the president of the university if I could be seconded to the AG's office, to help prosecute that case because they didn't have anybody in the AG's office who understood admiralty law.

And then in 1996, when the North Cape oil spill came, I helped the U.S. Attorney prosecute the federal case, and actually in court got to hold the check for the 15 million dollars in damages that the defendant had to pay at the sentencing hearing.

I helped the Congress in the mid 1980s with the revision of Fishing Vessel Law as it related to injured fishermen, and the compensation scheme that was available. I basically spent a full year working on a study for them, traveling around the country to all the major fishing areas. It was hugely educational for me to learn more about what goes on in the Gulf of Mexico, the Northwest, the Southeast, and just spent time in each region of the country and then worked on a change of federal law that became part of the laws that fishermen work under today involving when they have to file notice of when they've been injured on a vessel and so on, so that was a cool thing.

I have a ton of other examples, but those are probably some of the biggest highlights.

### **Are there any issues or debate currently that you consider to be the most important and possibly controversial in your area of law?**

Well I think the biggest one right now, is whether or not the United States will actually, finally ratify the Law of the Sea treaty that was first offered for signature in 1982. For whatever reason, there's been a couple members of Congress who've opposed ratification of the treaty despite the fact, that everyone from environmental groups to the Pentagon to the oil industry, all think ratification is in the United States' interest to do so. And I think the reason it will happen today is because of climate change. The Arctic Ocean ice cap is receding to the point where it's going to be possible this summer to explore for offshore oil and gas north of Alaska. And the reason I think this will make us interested in signing the Law of the Sea Treaty is that there is a provision within the treaty that allows a country that has [done] a fair amount of research to prove the degree of slope on the continental shelf and the kinds of sediments that's really a prolongation of the continental shelf, [to] make claims as far as 300 miles offshore if [they've] got the right geology. We're now thinking of the Arctic as the place where most of the remaining oil and gas in the world is located. And the reason that's the case, the sediment, the decayed plant life, [that turn into oil and gas] in the Gulf of Mexico came from the Mississippi river. In the case of the Arctic, there are at least three rivers, the size of the Mississippi that flow northward into the Arctic Ocean. And based on that historic record, we're pretty confident that there are very large oil and gas deposits to be discovered there. And so for that reason, it's basically going to be a financial decision, I think, to finally ratify that treaty.

### **You are the legal advisor and risk manager for the University National Oceanographic Laboratory System. Can you describe your role and responsibility there?**

Well, for example, I'll be attending the annual

meeting of the Research Vessel Operators of the U.S. and I will be presenting for them an annual update on the insurance side of their business [including] some recent cases that have occurred in admiralty law that have affected their operation, discuss[ing] some issues legislatively that are related to vessel operations, and basically be[ing] there as an advisor to all the different operators who typically end up having some very interesting legal problems over the course of the year. And these include everything from sort of mundane somebody slips and falls in the galley and is injured [and] how is that compensated to some really fascinating bits of operational law.

I was working late at the office one night in September and I got an email [telling me to] call the marine superintendent at one of our institutions. So I called them right back, and they'd just received a radio signal of a buoy that had gone adrift, that had been placed in the deep ocean by the University of Washington. The problem was that it was within the Exclusive Economic Zone of India. It was about 170 miles off the Indian coast. And the captain wanted to go in and pick up the buoy and retrieve it for Washington, but the vessel did not have a research vessel clearance to go inside the 200-mile zone of India, so he was calling home to see what to do. So I had to have the knowledge of the treaty in my head, and all the operational rules for oceanographic vessels because I was now giving real time advice to a captain on a ship in the Indian Ocean who didn't want to get arrested but wanted to go and retrieve this 100-thousand dollar buoy, that's become adrift. I pointed out to him that if he turned off all the automatic instruments onboard the ship that routinely record things like depth and temperature and salinity and so on, and ceased all oceanographic operations as soon as they got near the 200 mile zone, and they entered all that information into the log book, they would just become another vessel that has a right of innocent passage through the exclusive economic zone of India. And if they were apprehended while picking up the buoy, they could say that there were removing what would have been a hazard to navigation that they had come across and since they had the right crane onboard to pick it up out

of the water, they were just providing a public service to avoid this danger for any shipping in India's waters. So they went in, they picked it up, they got out, and fortunately they were never even questioned by the Indians.

**We've started seeing this trend of more exploration along the ocean floor at greater depths. How do you see the field of marine policy growing, as our search for resources grows and expands into the ocean?**

Well James Cameron's dive [to the bottom of the Marianas Trench], and really all the hubbub of the 100<sup>th</sup> anniversary of the Titanic highlight the fact that the oceans are becoming much more transparent. That 2/3rds of the ocean's surface that used to be considered opaque are now becoming transparent, as we have the technology particularly with remotely operated vehicles.

One thing that I know [is that] we do not have anything like an adequate legal regime for ownership of resources that are found on the ocean floor. They're trying to use old principles of admiralty law involving salvage but it's not really salvaging a ship when it's embedded in the ocean floor somewhere. There are legitimate questions of ownership. When you look at a Spanish shipwreck full of gold, is the gold Spanish, or I would argue does it really belong to the Mayan Indians it was stolen from back in Ecuador. And so, right now we're operating in pretty much an international legal vacuum in a lot of these cases. It clearly is one of those times where it would be appropriate to convene an international convention to try and come up with a good bit of international law to have some rules for the wrecks that are found beyond national jurisdiction so we can have one set of rules for the world to operate under.

**How important is it to have a background in science if someone is going into the field of marine or environmental policy?**

Well today, I'm the associate dean of a major oceanographic school without a degree in marine science. But I have taken courses in oceanography and I have made it my job to

## Interview with Dennis Nixon

understand what scientists are looking for in the ocean, so I have by osmosis kind of like an honorary masters degree in marine science based on always working to provide the platforms and tools that they have to do their work, I pretty much know the questions they're trying to get answered. I've had to devote a lot of my time to becoming conversant [in] the tools of the trade, and learning what the issues are in learning as much as I can about the science of the oceans.

And so [while] you do need some science background, I don't know if you need a Masters or a Ph.D. I found that the training I got in the marine affairs program with just some courses in oceanography but also courses in marine resource economics and ocean engineering was really very helpful. If you want to work in aviation law, you better well be a pilot. I've sailed about 3,000 miles offshore on various kinds of vessels so I know what it's like being at sea, trying to do science at sea, or just sailing at sea. And so, I'm familiar with the oceans because I've made it my life to be a lawyer seaman and that gives you some credibility when talking with people who are dealing with vessel related problems.

You have to straddle the boundary. I'm a member of the Maritime law Association of the United States, and one thing that characterizes that group is all of the members typically have not just experience in law, but they have some significant maritime experience as well, either they've done the navy, coast guard, merchant marine, or in my case just many thousands of miles of being at sea in a variety of different kinds of vessels.

**After BP Oil Spill there was a lot of resentment towards lawyers in the affected area. One of the fishermen you spoke with stated that they hated lawyers, and that they were outsiders who didn't understand the problems and the culture. How do you deal with those perceptions of lawyers in your daily job?**

In many cases when you have a spill like that, you had lawyers coming out of the woodwork, who relocated to coastal Louisiana, who didn't

know anything about the way of life there, and basically were there to collect a big fee for themselves. I think that behavior should be criticized. It is vulture-like. I think however, if your goal is to learn something about the legal and political issues of a particular region or industry or whatever, and you become involved in that particular sector of the economy, that's a different kind of lawyer.

Lawyers can be seen (and there certainly are a significant percentage of them) that are basically nothing more than leeches on the system, but I think in general the role of law can be a very responsible one to help society move forward. We've got a lot of conflicting issues, and it takes lawyers to figure out ways that you can manage those conflicts in a reasonable way, and let everybody work together in a crowded place like the world's oceans.

**There's been some debate on President Obama's National Ocean Policy as to whether it's good for fishermen, or whether it's bad. As a maritime lawyer, what are your thoughts on that?**

The part that's been criticized is the so-called sectors, in which individual ports and groups of fishermen are given significant quotas to manage in ways they best see fit with the provisos that they will try to reduce by-catch and [make] an effort give greater productivity to the fishery. Those that are opposed to the sectors program are actually those that have frankly been part of the problem over the years and frankly do not see the future of how to bring greater value to the amount of fish we have left in the ocean. There's no question that most of our nation's stocks are nearly fully or over exploited, and you have to be much more careful in commercial fishing today than you were in the past. Those who get involved in sectors are willing to accept that we have been guilty of overfishing, we have been guilty of habitat destruction, we have been guilty of tremendous waste of by-catch, and are willing to accept that reality, and perhaps accept a smaller slice of pie in exchange for the fact that they get to continue to fish.

So it's deemed controversial by those who say "I got into fishing because I didn't want to follow any rules. I didn't want to work on land with all those rules." It turns out that fishing is one of the most regulated industries in the United States and they're not happy about that, but my response is, it's a common property resource, and it's proven difficult to manage, and right now this is sort of the last hope, I think, for the U.S. commercial fishing industry in many regions of the country. So I'm definitely in favor of the sector program as part of the National Ocean Policy which is a very well thought out document I thought, and one that's been tough to implement because there's so many elements to it but it's definitely a step in the right direction.

### **What are the qualities that you feel that the best lawyers in the field possess or should possess?**

One of the things they teach you in law school is called "Thinking Like A Lawyer". And I'll tell you that was about the most valuable thing I learned. It is the ability to look at a complex situation and analyze it, to figure out what's important and what's not, and try to slice through the external layers. Focus on the important issues, and then how you can have a positive impact on getting to the right conclusion to that problem. So it's an analytical method of thought. Just take the emotion out of it. How do we get to where we need to be? How do we get to yes on the important issue? That's part one.

And part two is the communication skills both in writing and when called upon to speak, the ability to communicate to all levels of people. Not just to the justices of the Supreme Court, but to be able to go in front of an angry mob of fisherman, to go in front of a group of folks at the New York Yacht Club, to speak to insurance executives in London, you got to have the ability to recognize who your audience is, and target your remarks for that level of audience.

### **What advice do you have for students who are interested in marine policy?**

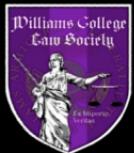
I think the overwhelming advice I have is may

you be as lucky as I have been in finding a job that I find interesting. Sometimes I cannot tell if I'm working or not. If it's the sort of job you would do anyway because you find it so inherently interesting, don't worry about what your starting salary is, don't worry about the number of hours you have to put in, work at something you find really interesting and everything else just sort of falls into place afterwards.

I really haven't applied for hardly any jobs [but] I have a bewildering array of titles and positions right now, and each time it's people saying you're the right person, we need you to do this job for us. And it's because if you convey the excitement for what you're doing, other people want you on their team.

There's so many cool issues out there right now, whether it's the challenges of attempting to wrestle between aquaculture and capture fisheries, or whether it's looking at the challenges of what's happening in the Arctic with further development of oil and gas, and what will likely be a rich fishing area when the ice continues to recede. I like being at that intersection of the water and the land, because that's really where the complications begin, and it makes it interesting, it makes it fun.





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