

# HOW ONE CALIFORNIA AQUARIUM IS DEVELOPING AN OCEAN CONSERVATION STRATEGY WITH GLOBAL IMPACT

MARGARET SPRING\*

*This article discusses the ways in which the Monterey Bay Aquarium is pursuing its mission “to inspire conservation of the ocean”—including and beyond its visitor programs and education initiatives. The Aquarium is reshaping the global seafood supply chain by integrating its scientific research with the Aquarium’s growing influence in ocean policy. With the world’s life-sustaining aquatic ecosystems in decline, there is no time to lose.*

## I. URGENCY FOR ACTION

Over the past 20 years, numerous government and independent experts have consistently documented ocean threats, and noted the erosion of societal benefits as growing human needs strain the ocean’s living systems.<sup>1</sup> The ocean, with its vast diversity of habitats, is essential for human survival: It generates at least half the oxygen we breathe. Ocean currents regulate Earth’s climate by mixing heat and precipitation between the tropics and the poles.<sup>2</sup> The ocean also buffers us from the full impact of greenhouse gas emissions, global temperature rise, and intensifying weather events.<sup>3</sup>

---

Copyright ©2018 Margaret Spring.

\* Margaret Spring, J.D., Duke Law, 1992, spent the next 20 years after law school graduation in Washington before joining the Monterey Bay Aquarium in 2013 as Chief Conservation Officer and Vice President of Conservation & Science. In her current role, she is reshaping the global seafood supply chain by integrating its scientific research with the Aquarium’s growing influence in ocean policy.

1. See generally Pew Oceans Comm’n, *America’s Living Oceans Charting a Course for Sea Change*, A REPORT TO THE NATION RECOMMENDATIONS FOR A NEW OCEAN POLICY, 1 (May 2003), [http://www.pewtrusts.org/~media/assets/2003/06/02/full\\_report.pdf?la=en](http://www.pewtrusts.org/~media/assets/2003/06/02/full_report.pdf?la=en); U.S. Comm’n on Ocean Policy, *An Ocean Blueprint for the 21st Century*, FINAL REPORT, 1 (Sept. 2004), [https://oceanconservancy.org/wp-content/uploads/2015/11/000\\_ocean\\_full\\_report-1.pdf](https://oceanconservancy.org/wp-content/uploads/2015/11/000_ocean_full_report-1.pdf); National Ocean Council, “National Ocean Policy 2016 Annual Workplan (Jan. 2016).

2. *Weather and Climate*, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, <http://oceanexplorer.noaa.gov/facts/climate.html> (last visited Mar. 27, 2018).

3. The First Global Integrated Marine Assessment, *World Ocean Assessment I: Chapter 5. Sea-Air Interactions*, UNITED NATIONS OCEANS AND LAW OF THE SEA, 1 (2016), [http://www.un.org/Depts/los/global\\_reporting/WOA\\_RPROC/WOACompilation.pdf](http://www.un.org/Depts/los/global_reporting/WOA_RPROC/WOACompilation.pdf) (“Half of

Additionally, the ocean provides us with sustenance—both nutritional and economic. More than 1 billion people rely on fish as their primary protein source, and over 3 billion count on seafood to provide a significant percentage of their protein intake.<sup>4</sup> The ocean is a massive driver of global commerce, including a marine transportation system that enables a majority of US imports and exports.<sup>5</sup> The ocean also inspires technological innovation; for example, the design of the bioWAVE turbine, a potential source of clean energy, was inspired by the motion of algae in ocean waves.<sup>6</sup>

Today, federal fisheries in the United States are a bright spot in global fishery management policy. This wasn't always the case—in the late 1990s, many US stocks were overfished, some to the point of collapse.<sup>7</sup> But in 2006, bipartisan reforms to the Magnuson-Stevens Fishery Conservation and Management Act—the primary law on fishery management in federal waters—put our nation's fisheries on the path to recovery and sustainability.<sup>8</sup>

Globally, the United Nations (UN) has identified a pressing need for international action to address threats to the ocean.<sup>9</sup> In September 2015, the UN created the first Sustainable Development Goal for the ocean, and in June 2017 held its inaugural Ocean Conference, in which the Monterey Bay Aquarium participated.<sup>10</sup>

Now more than ever, we need to build bridges across borders and sectors to protect the ocean resources that sustain us. Mounting demand for seafood is driving overfishing, destroying marine habitats,

---

the Global Net Primary Production of the world is by phytoplankton and other marine plants, uptaking CO<sub>2</sub> and releasing oxygen.”).

4. U.S. Comm'n on Ocean Policy, *An Ocean Blueprint for the 21st Century*, FINAL REPORT, 1, 33 (Sept. 2004), [https://oceanconservancy.org/wp-content/uploads/2015/11/000\\_ocean\\_full\\_report-1.pdf](https://oceanconservancy.org/wp-content/uploads/2015/11/000_ocean_full_report-1.pdf) (“More than three billion people derive at least one-fifth of their needed protein from freshwater and saltwater fish, and in some parts of the world, fish provide the sole source of animal protein.”).

5. *Id.* at 192 (“The U.S. marine transportation system is the nation's link to global commerce and an essential and growing component of the national economy.”).

6. *About Us*, BIOPOWER SYS., <http://bps.energy/about> (last visited Mar. 27, 2018).

7. Brad Plumer, *How the US Stopped Its Fisheries from Collapsing*, VOX (May 8, 2014, 1:01 PM), <https://www.vox.com/2014/5/8/5669120/how-the-us-stopped-its-fisheries-from-collapsing>.

8. U.S. Comm'n on Ocean Policy, *supra* note 4, at 276 (“While amendments to the Magnuson–Stevens Act have helped reverse fishery declines, additional changes will be necessary to manage fisheries in a sustainable manner over the long term.”).

9. *Working together, 'we can ensure that our oceans remain healthy as our blue home' – UN Chief*, UNITED NATIONS, <https://news.un.org/en/story/2017/06/559042-working-together-we-can-ensure-our-oceans-remain-healthy-our-blue-home-un-chief> (last visited Mar. 27, 2018).

10. Press Release, Monterey Bay Aquarium, Monterey Bay Aquarium will be a 'Voice for the Ocean' at UN Ocean Conference June 5-9 in New York (May 30, 2017), <https://newsroom.montereybayaquarium.org/press/UN-Ocean-Conference>.

and disrupting the ocean food web.<sup>11</sup> Over half the world's fish stocks are fully exploited, meaning they are at their maximum sustainable catch limits; approximately 30 percent are considered overexploited.<sup>12</sup> Illegal fishing and bycatch threaten the survival of tuna, sharks, seabirds, and sea turtles.<sup>13</sup> If this trend continues unchecked, it may become impossible for wild fish stocks to help feed the world's human population—projected to reach 9.7 billion by 2050.<sup>14</sup>

Overfishing is not the only challenge our ocean faces. Plastic pollution increasingly threatens ocean ecosystems, wildlife and human health.<sup>15</sup> Approximately 8.8 million tons of plastic flows each year from land to sea<sup>16</sup>, where it ensnares and poisons marine life while introducing toxins to our seafood. Additionally, when agricultural runoff enters coastal waters, nitrogen from the fertilizer causes algae blooms that ultimately deplete the dissolved oxygen needed by other marine life, creating oceanic “dead zones.”<sup>17</sup> Oil spills and unsustainable coastal development pose additional threats to marine ecosystems.<sup>18</sup>

Global climate change—the overarching environmental challenge of this century—compounds the effects of each stressor by altering sea level, ocean temperature, species distributions, oxygen levels, and

---

11. U.S. Comm'n on Ocean Policy, *supra* note 4, at 22 (“Marine aquaculture has the potential to supply a significant part of the ever increasing domestic and global demand for seafood. However, two major concerns must be addressed: environmental problems associated with some aquaculture operations . . . and a confusing, inconsistent array of state and federal regulations that hinder private sector investment.”).

12. FAO, THE STATE OF THE WORLD'S FISHERIES AND AQUACULTURE 38 (2016), <http://www.fao.org/3/a-i5555e.pdf>.

13. See U.S. Comm'n on Ocean Policy, *supra* note 4, at 302. (“More recently, FAO has adopted a number of International Plans of Action that elaborate on the Code and address weaknesses in existing regulatory schemes involving such issues as the bycatch of seabirds and sharks.”).

14. See FAO, *supra* note 12, at 80.

15. Douglas Meyer et al., *An Ocean of Opportunities: Inspiring Visitors and Advancing Conservation*, THE OCEAN PROJECT (January 2015), [TheOceanProject.org/reports](http://TheOceanProject.org/reports) (follow “Comprehensive Surveys” hyperlink; then follow “America, the Ocean, and Climate Change (2009)” hyperlink).

16. Jenna R Jambeck et al., *Plastic Waste Inputs from Land into the Ocean*, 347 SCI. 768–771 (2015), <http://science.sciencemag.org/content/347/6223/768>.

17. The First Global Integrated Marine Assessment, *supra* note 3, at 32 (“The combined effects of hazardous substances, marine debris, oil and eutrophication (including the large and growing number of dead zones) resulting from the input of harmful material, waste and excessive amounts of nutrients into the ocean therefore represent a significant pressure on marine biodiversity.”).

18. See U.S. Comm'n on Ocean Policy, *supra* note 4, at 241 (“Commercial and recreational vessels can be the source of many pollutants in the marine environment including waste discharges, air pollution, and chemical and oil spills.”).

ocean acidity.<sup>19</sup> Human-caused changes to ocean chemistry compromise marine ecosystems and our food supply.<sup>20</sup>

At this critical moment, many solutions to these major ocean threats are within our grasp, but government and scientific experts need broader outreach to help turn the tide. Aquariums are well positioned to lend their trusted voices and engage the public to support conservation action—the scientific research, policy advocacy, public education, and business influence needed to move the needle in the direction of sustainability.

That process includes defining sustainability as it relates to critical ocean threats. For example, Seafood Watch defines environmentally sustainable seafood as seafood from fished or farmed sources, that can maintain or increase production without jeopardizing the structure and function of affected ecosystems.<sup>21</sup> It uses this definition to help consumers and businesses make sustainable purchasing decisions.

Market research indicates that the general public looks to, and expects, aquariums and zoos to provide credible and actionable information on complex topics such as climate change, plastic pollution, and seafood sustainability.<sup>22</sup> In response, aquariums worldwide are evolving in their missions to take on more active conservation roles. Many have launched initiatives to promote public awareness of environmental issues and undertake field conservation work.<sup>23</sup> Some are moving from informing people to mobilizing them—and a few, including the Monterey Bay Aquarium, are taking direct action to promote science-based changes, both in policy and in the marketplace.<sup>24</sup>

---

19. The First Global Integrated Marine Assessment, *supra* note 3, at 2 (discussing the “[i]mpacts of anthropogenic climate change”).

20. *Climate Change 2014 Synthesis Report*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1, 40–45, [http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_All\\_Topics.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_All_Topics.pdf) (“Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history.”).

21. MONTEREY BAY AQUARIUM, *Seafood Watch Program/Seafood*, FISHCHOICE.COM, <http://www.fishchoice.com/seafood-program/seafood-watch-program> (“Seafood Watch defines sustainable seafood as seafood from sources, whether fished or farmed, that can maintain or increase production without jeopardizing the structure and function of affected ecosystems”).

22. Cynthia L. Vernon, *Why Zoos & Aquariums Matter: Assessing the Impact of a Visit to a Zoo or Aquarium*, RESEARCHGATE, 1, 3 (Apr. 2016) (“Visitors believe zoos and aquariums play an important role in conservation education and animal care.”).

23. *See id.* at 6 (“That led AZA, together with the Institute for Learning Innovation (ILI), a non-profit leader in research on learning in free-choice learning settings, and the Monterey Bay Aquarium, to undertake a major research initiative and seek funding from the National Science Foundation (NSF).”).

24. *Press Kit*, MONTEREY BAY AQUARIUM SEAFOOD WATCH, 1, 29 (Apr. 2013),

## II. A LEGACY OF OCEAN CONSERVATION ACTION AT THE MONTEREY BAY AQUARIUM

More than 30 years of experimentation at the Monterey Bay Aquarium, under the leadership of Executive Director Julie Packard, have laid the groundwork for a larger community of aquariums to engage in meaningful conservation action.<sup>25</sup>

The vision for the aquarium began in the late 1970s, when a group of marine scientists, local residents, and members of the David and Lucile Packard Foundation of Los Altos, California, formed the Monterey Bay Aquarium Foundation.<sup>26</sup> Initial construction costs for the Aquarium, which ultimately totaled \$55 million, were provided through a one-time personal gift from David and Lucile Packard.<sup>27</sup> On October 20, 1984, the Monterey Bay Aquarium opened its doors in a state-of-the-art building, formerly a derelict cannery from the industrial heyday of the sardine-packing era, on Monterey's historic Cannery Row.<sup>28</sup>

Led by the vision of Aquarium Executive Director Julie Packard, Aquarium staff have witnessed the power that up-close-and-personal experiences with wildlife has to inspire visitors. In many cases, it motivates them to take personal action for ocean conservation. Over the decades, the organization has increasingly invested in ocean health in Monterey Bay and beyond. Aquarium's simple mission statement, "to inspire conservation of the ocean," continues to drive the organization.<sup>29</sup>

The Aquarium's best-known conservation program, Seafood Watch, began in 1997 with a single exhibit and has since expanded to reach a global audience.<sup>30</sup> In the course of developing "Fishing for Solutions," an exhibit focused on conservation issues surrounding

---

<http://www.seafoodwatch.org/-/m/sfw/pdf/press/mba-seafoodwatch-press-kit.pdf> ("The Monterey Bay Aquarium's Seafood Watch program works to broaden awareness of the links between the seafood on our plates and the health of our oceans as it helps consumers and businesses choose seafood that supports environmentally responsible fishing and fish farming practices.").

25. *Id.* at 30 ("Through the efforts of Monterey Bay Aquarium's Seafood Watch program and the broader sustainable seafood movement, major seafood buyers are embracing the move to sustainable sourcing.").

26. *See Our History*, Monterey Bay Aquarium, <https://www.montereybayaquarium.org/about/our-history> (last visited Feb. 19, 2018).

27. *Id.*

28. *Id.*

29. *Press Kit*, *supra* note 24, at 30.

30. *Id.* at 4.

fishing and aquaculture practices,<sup>31</sup> the Aquarium committed to serving only seafood from environmentally responsible sources—in its own restaurant and catering services, and to its exhibit animals.<sup>32</sup> As the Aquarium publicized this change, visitors asked for copies of its approved seafood list.<sup>33</sup> In 1999, the Aquarium formalized its public engagement by launching the Seafood Watch program, including a website and the Aquarium’s first consumer pocket guide.<sup>34</sup>

#### A. *Engaging Business to Transform the Marketplace*

Over the past two decades, Seafood Watch has helped lead a market transformation toward sustainable seafood, across North America and around the world. During this time, leading retailers, distributors, and food service companies—including Whole Foods Market, Safeway, Target, ARAMARK and Compass Group—have made sustainable seafood commitments, working with the Monterey Bay Aquarium and allied conservation organizations.<sup>35</sup>

Today, the Seafood Watch program is a trusted authority on fisheries and aquaculture within the global sustainable seafood movement. Using science-based standards, the program makes recommendations on which seafood sold in North America is a Best Choice (green), which is a Good Alternative (yellow), and which to Avoid (red).<sup>36</sup> Ratings are generated through Seafood Watch assessments, which use a robust and objective scoring methodology to evaluate the environmental sustainability of seafood products.<sup>37</sup>

Seafood Watch ratings demonstrate the current environmental performance of global fisheries and aquaculture; they also indicate areas for improvement for producers and governments. Seafood Watch maintains over 1,400 recommendations<sup>38</sup> that encompass approximately 85% of the seafood products on the U.S. market by

---

31. *Id.*

32. *Id.*

33. *Id.*

34. *Id.*

35. *Press Kit*, *supra* note 24, at 5.

36. *Id.* at 4.

37. MONTEREY BAY AQUARIUM, *Seafood Watch Program/Seafood*, *supra* note 21, (“Sustainable aquaculture farms and collective industries: 1. Have robust and up-to-date information on production practices and their impacts (or lack of impacts) publically available;”).

38. *Monitoring and Evaluation System*, MONTEREY BAY AQUARIUM 1, 11 (Sept. 2017), <http://www.montereybayaquarium.org/-/m/51DB8442BBF548FDB33884DDCBA2A70E.pdf> (“Seafood Watch also maintains over 1400 recommendations that demonstrate the current environmental performance of global fisheries and aquaculture and indicate deficiencies for producers and governments.”).

volume.<sup>39</sup> Because 90% of the seafood sold in the U.S. is imported, Seafood Watch ratings can influence fishing and aquaculture practices globally.<sup>40</sup>

The Aquarium's expertise on these issues receives increasing recognition at an international level. In June 2017, at the invitation of the United Nations, Monterey Bay Aquarium Director of Global Fisheries and Aquaculture Jennifer Dianto Kemmerly presented on the state of world fisheries at the UN Ocean Conference.<sup>41</sup> That same year, in partnership with the Carnegie Endowment for International Peace, the Aquarium launched a new international sustainable seafood initiative.<sup>42</sup> In the Southeast Asia Fisheries and Aquaculture Initiative, the Aquarium works with regional governments and seafood producers in Thailand, Indonesia, Myanmar, Vietnam, and the Philippines to overcome obstacles to sustainable seafood production.<sup>43</sup>

We have seen that businesses and consumers continue to look to the Monterey Bay Aquarium for timely, informed advice on sustainable fishery and aquaculture topics, including policy issues. In response to the rising demand for information, the Aquarium's Seafood Watch program is assessing more fisheries and farms, resulting in a growing number of seafood product recommendations. The Aquarium also supports Seafood Watch business partners that aim to advance effective fishery and aquaculture management, including strong standards in U.S. and international fisheries law.

The next step is to build global market demand for sustainable seafood through increased international engagement. The Aquarium is in a position to apply its nearly 20 years of experience with Seafood Watch both to maintain demand in the United States, and to recommend improvement strategies in critical regional markets such as Japan, Chile, Indonesia and China. At the same time, the Aquarium is leveraging its reputation and political relationships to enhance the

---

39. MONTEREY BAY AQUARIUM SEAFOOD WATCH, <https://www.seafoodwatch.org/seafood-recommendations/consumer-guides> (last visited Feb. 26, 2018).

40. *Overview of the U.S. Seafood Supply*, SEAFOOD HEALTH FACTS 1, 1 (<https://www.seafoodhealthfacts.org/printpdf/seafood-choices/overview-us-seafood-supply> (“Over 90% of the seafood consumed in the U.S. is imported from other countries around the world.”)).

41. Monterey Bay Aquarium Seafood Watch, *Big Moments for Seafood Watch in 2017*, SEAFOODWATCH BLOG (Jan. 2018), <http://blog.seafoodwatch.org/post/169323316201/big-moments-for-seafood-watch-in-2017>.

42. *Id.*

43. *Id.*

traceability of the global seafood supply chain and increase U.S. leadership in the global fight against illegal, unregulated and unreported fishing.

In recent years, sustainable seafood programs, including Seafood Watch, have responded to a business need to act on reports of human rights abuses in the global seafood supply chain. The Conservation Alliance for Seafood Solutions—a network of worldwide conservation groups, including Seafood Watch, that works with businesses throughout the supply chain—expanded its definition of seafood sustainability to include economic and social concerns.<sup>44</sup> In collaboration with the Sustainable Fisheries Partnership and Liberty Asia, Seafood Watch now maintains a Seafood Slavery Risk Tool.<sup>45</sup> The tool provides information and actionable advice for seafood buyers, to help them constructively address forced labor in the global seafood industry by identifying potential risks of human rights abuses in their own supply chains.<sup>46</sup>

### *B. Influencing Policymakers to Advocate for Ocean Conservation in the US*

In 2004, as Seafood Watch was still in its formative years, the Aquarium also created an ocean policy program<sup>47</sup> which advocated for changes in ocean conservation policy and law recommended by two national-level ocean commissions.<sup>48</sup> Aquarium Executive Director Julie Packard, along with Aquarium Trustees Leon Panetta and Jane Lubchenco, served as members of the Pew Oceans Commission and worked with other thought leaders, including those from the US Commission on Ocean Policy, to set a course allowing the Aquarium to make unique and valuable contributions to ocean conservation policies.

---

44. Conservation Alliance for Seafood Solutions, *A Common Vision for Sustainable Seafood*, SOLUTIONSFORSEAFOOD.ORG 1, 9, <http://solutionsforseafood.org/wp-content/uploads/2014/10/A-Common-Vision-for-Sustainable-Seafood.pdf>.

45. *About Us*, SEAFOOD SLAVERY RISK TOOL, <http://www.seafoodslaveryrisk.org/about/> (last visited Mar. 28, 2018).

46. *Human Rights Risk Tool for Seafood*, SEAFISH (Jul. 2017), available at [http://www.seafish.org/media/1700964/hrrtsbriefing\\_july2017.pdf](http://www.seafish.org/media/1700964/hrrtsbriefing_july2017.pdf).

47 Formerly referred to as the Center for the Future of the Ocean.

48. Julie Packard, *Aquariums as a Force for Change: New Roles for Conservation and Social Impact*, ASS'N OF SCI. TECH. CTRS. (Mar. 30, 2009), available at <http://www.astc.org/astc-dimensions/aquariums-as-a-force-for-change-new-roles-in-conservation-and-social-impact/>.



Over the next decade, the policy program employed the Aquarium's influence and credibility to help implement the recommendations of both ocean commissions at the state and federal levels.

In California, the Aquarium helped successfully implement a law establishing the nation's first statewide network of marine protected areas (MPAs).<sup>49</sup> The Aquarium mobilized public support for the science-based process that led to the designation of over 100 new MPAs along the California coast.<sup>50</sup> The Aquarium also participated in the MPA network's strategic, science-based design process.

Another focus of the policy program related to President Barack Obama's 2010 executive order establishing a national ocean policy, as recommended by both ocean commissions.<sup>51</sup> In order to promote the development and implementation this executive order, the Aquarium joined with a coalition of partners at the national level.<sup>52</sup>

These and other landmark policies and legislation, primarily related to US fishery laws, marked progress toward the recovery of US fisheries, the expansion of marine protected areas, and the reduction of illegal fishing on the high seas.<sup>53</sup> In addition, the Aquarium's work with research partners has helped create policies that have tightened protections for at-risk ocean wildlife, including southern sea otters, Pacific bluefin tuna, and sharks.<sup>54</sup> For example, the Aquarium sponsored a state law banning the trade of shark-fin products in California—a major step in the global movement to reverse the devastating decline of shark populations.<sup>55</sup>

---

49. *Id.*

50. *Id.*; see John Kirlin et al., *California's Marine Life Protection Act Initiative: Supporting Implementation of Legislation Establishing a Statewide Network of Marine Protected Areas*, 74 OCEAN AND COASTAL MGMT. 3 (Mar. 2013).

51. Exec. Order No. 13,547, 75 Fed. Reg. 43,021 (Jul. 22, 2010), available at <https://www.federalregister.gov/documents/2010/07/22/2010-18169/stewardship-of-the-ocean-our-coasts-and-the-great-lakes>.

52. See *About Us*, JOINT OCEAN COMMISSION INITIATIVE, <http://www.jointoceancommission.org/en/About.aspx> (last visited Feb. 17, 2018).

53. Packard, *supra* note 48.

54. *Id.*

55. Press Release, Monterey Bay Aquarium, *Monterey Bay Aquarium Applauds Federal Decision Supporting California Ban on Sale of Shark Fins*, (Feb. 5, 2017), <https://newsroom.montereybayaquarium.org/press/monterey-bay-aquarium-applauds-federal-decision-supporting-california-ban-on-sale-of-shark-fins>.

### III. TAKING OCEAN CONSERVATION FROM LOCAL TO GLOBAL: PACIFIC BLUEFIN TUNA CASE STUDY

The Aquarium has advanced policy actions in the Monterey Bay region and greater California, which constitute the Aquarium's identity and base. It has also engaged with ocean conservation policy nationally and internationally. This effort necessitates cultivating ocean champions among decision makers throughout the US and the world, as well as participating as key members of international and regional decision and advisory bodies.

The Aquarium's involvement in the management of Pacific bluefin tuna is one example of its "local to global" strategy. Aquarium leaders identified this species as a major conservation failure in need of intervention through policy, markets, and science. The population of Pacific bluefin tuna has declined by more than 95 percent since commercial fishing began.<sup>56</sup> To help stabilize the population, the Aquarium set a goal to secure international agreement on an effective, science-based rebuilding plan for this remarkable ocean predator.<sup>57</sup>

Because the Aquarium and its collaborators had been generating novel research on these animals for more than a decade, they were able to draw upon extensive expertise. Through years of cooperative field research, involving tagging and tracking the wild population's movements across the Pacific, Aquarium scientists established collaborative relationships with researchers in Japan. Team members had also engaged with the governmental and scientific bodies charged with the species' conservation and management.

In recognition of the Aquarium's longstanding scientific and policy expertise in this area, Aquarium representatives were appointed as advisers to the US negotiating bodies.<sup>58</sup> In addition, in January 2016, the Aquarium and Stanford University's Hopkins Marine Station co-hosted the Bluefin Futures Symposium, informally convening scientists and fishery managers from around the world to map out solutions.<sup>59</sup> Through these roles and relationships, the Aquarium built bridges with

---

56. *Bluefin Tuna: Conservation*, MONTEREY BAY AQUARIUM, <http://www.montereybayaquarium.org/conservation-and-science/our-priorities/thriving-ocean-wildlife/bluefin-tuna#conservation> (last visited Mar. 28, 2018).

57. *Id.*

58. Julie Packard, *Director's Note*, MONTEREY BAY AQUARIUM SHORELINES (Spring 2018), available at <https://www.montereybayaquarium.org/members/shorelines/shorelines-spring-2018/directors-note>.

59. BLUEFIN FUTURES SYMPOSIUM, <http://www.bluefinfutures2016.org> (last visited Mar. 28, 2018).

the Japanese government, the US government, fisheries scientists, and fishermen to bring focused attention to the management of Pacific bluefin tuna.

In August 2017, at the annual meeting of the Northern Committee of the Western and Central Pacific Fisheries Commission—the body responsible for managing tunas and other highly migratory species across the western Pacific Ocean—international delegates discussed ways to recover the population of Pacific bluefin tuna after years of decline.<sup>60</sup> In the final push before this key international meeting, the Aquarium rallied nearly 200 chefs around the world to demand action by Pacific nations,<sup>61</sup> and worked with former Secretary of State John Kerry to publish a similar call to action.<sup>62</sup> Ultimately, the international delegates took a major step forward by agreeing to recover the population to a sustainable level and establishing a long-term management plan.<sup>63</sup>

The Commission heard the voice of the international community, and committed to a meaningful and binding recovery plan that includes rebuilding the bluefin stock from its current level (2.6 percent of the historical population) to a sustainable level (20 percent of the historical population) by no later than 2034.<sup>64</sup> The agreement was a significant and encouraging departure from the previous stance of this Commission and, if implemented appropriately, will aid the recovery of Pacific bluefin tuna.<sup>65</sup> While this is an important milestone, however, the work is not done. The Aquarium will continue to engage in the

---

60. *Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean: Northern Committee's Thirteenth Regular Session Summary Report*, W. & CENT. PAC. FISHERIES COMMISSION (Aug. 28 – Sep. 1, 2017), available at <https://www.wcpfc.int/system/files/NC13%20Summary%20Report%20adopted%20-%20Final%20%28Update%29-clean.pdf>.

61. Press Release, Monterey Bay Aquarium, *Until Government Adopts a Science-based Recovery Plan Nearly 200 Top Chefs and Culinary Leaders Say “No” to Pacific Bluefin Tuna*, (Aug. 23, 2017), <https://newsroom.montereybayaquarium.org/press/until-governments-adopt-a-science-based-recovery-plan-nearly-200-top-chefs-and-culinary-leaders-say-no-to-pacific-bluefin-tuna>.

62. MONTEREY BAY AQUARIUM, *ohn Kerry: It's Time to Act for Pacific Bluefin Tuna*, CONSERVATION AND SCI. AT THE MONTEREY BAY AQUARIUM (Aug. 23, 2017), <https://futureoftheocean.wordpress.com/2017/08/23/john-kerry-its-time-to-act-for-pacific-bluefin-tuna>.

63. W. & CENT. PAC. FISHERIES COMMISSION, *supra* note 60, at 40–48.

64. *Id.*

65. *Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean: Northern Committee's Twelfth Regular Session Summary Report*, W. & CEN. PAC. FISHERIES COMMISSION (Aug. 29 – Sep. 2, 2016), available at [https://www.wcpfc.int/system/files/0\\_NC12%20Summary%20Report%20-%20adopted%20on%2002Sep2016-Rev.02%20%2809Dec2016%29.pdf](https://www.wcpfc.int/system/files/0_NC12%20Summary%20Report%20-%20adopted%20on%2002Sep2016-Rev.02%20%2809Dec2016%29.pdf).

stock assessment and rebuilding process to ensure that ensure that the path to Pacific bluefin tuna recovery leverages the best-available science.

#### IV. AQUARIUMS' UNIQUE ROLE: UNDERSTANDING AND SHAPING PUBLIC PERCEPTIONS OF CONSERVATION

What do aquariums bring to ocean conservation that other institutions may not? This question is being actively tested by aquariums nationwide, who have a unique opportunity, and responsibility, to influence the next generation's views about ocean conservation.

Like many visitor-serving institutions, aquariums must be attentive to changing circumstances that could affect their mission and rely on social research (on visitors and others) to help them understand how best to attract and engage audiences. The Monterey Bay Aquarium's social research is drawn from our roughly 2 million annual visitors and tracks public attitudes about aquariums and ocean conservation.<sup>66</sup> The goal is to understand how to meet people where they are, then engage them to take action in service of the Aquarium's mission "to inspire conservation of the ocean."

Knowing how people think about ocean conservation is critical to achieving the Aquarium's mission. To that end, the Aquarium was one of the founding partners of a project ("The Ocean Project") to track public perceptions about ocean-related issues such as climate change, plastic pollution, and habitat protection.<sup>67</sup> Since 2009, The Ocean Project has conducted three national surveys.<sup>68</sup> One notable finding: Visiting an aquarium tends to ignite a temporary spark of concern, inspiring an emotion-based interest in helping address major threats to the ocean, whether at the individual or the collective level.<sup>69</sup>

According to The Ocean Project's 2014 summary of public opinion research, the US public's knowledge and concern about ocean issues have remained consistently low over the years, with interest spiking only in reaction to major events like the *Deepwater Horizon* oil

---

66. MONTEREY BAY AQUARIUM, COMMUNITY IMPACTS: SOCIAL AND ECONOMIC BENEFITS CREATED BY THE NON-PROFIT MONTEREY BAY AQUARIUM (2014), <https://www.montereybayaquarium.org/-/m/pdf/about-us/monterey-bay-aquarium-community-impacts-2014.pdf?la=en>.

67. DOUGLAS MEYER ET AL., THE OCEAN PROJECT, AN OCEAN OF OPPORTUNITIES: INSPIRING VISITORS AND ADVANCING CONSERVATION, 1 (2015), <http://theoceanproject.org/wp-content/uploads/2017/08/OceanOfOpportunities-SummaryReport2015.pdf>.

68. *Id.*

69. *Id.* at 4.

spill.<sup>70</sup> But the research reveals some silver linings. Most people want to be a part of the solution to ocean problems, even if they do not view those problems as urgent.<sup>71</sup> They have a very high level of trust in aquariums, zoos, and museums as sources of information—more than they do in nongovernmental organizations, and much more than in government.<sup>72</sup> Respondents have the least trust in government at the federal level.<sup>73</sup>

That finding was corroborated by a separate 2013 survey by the public opinion research firm Fairbanks, Maslin, Maullin, Metz and Associates, which focused on voters' attitudes toward plastic pollution in California waterways.<sup>74</sup> The survey found that 79 percent of California voters trust the Monterey Bay Aquarium as a messenger—more than all other listed government agencies and NGOs.<sup>75</sup> Perhaps most importantly, people strongly believe aquariums, zoos, and museums should suggest specific ways they can take action to help solve environmental problems.<sup>76</sup>

## V. MOBILIZING THE NEXT GENERATION FOR OCEAN CONSERVATION

US demographics are changing rapidly, and aquariums and similar institutions are paying close attention.<sup>77</sup> The success of a visitor-serving, conservation-focused institution depends on the ability to inspire the up-and-coming wave of conservation actors who make up a large part of its audiences. Pew Research reports that more than one in three American workers are Millennials, born between 1981 and 1997.<sup>78</sup> In 2015, this group eclipsed Generation X as the largest demographic in the US workforce.<sup>79</sup> To effectively reach them, one first needs to understand how they communicate and what they value.

---

70. *Id.* at 3.

71. *Id.*

72. *Id.* at 3.

73. *Id.*

74. *See generally* FAIRBANKS, MASLIN, MAULLIN, METZ AND ASSOCIATES, CALIFORNIA MARINE DEBRIS SURVEY, 1 (2013).

75. *Id.* at 8.

76. *Id.* at 13.

77. JOHN H. FALK ET AL., WHY ZOOS AND AQUARIUMS MATTER: ASSESSING THE IMPACT OF A VISIT TO A ZOO OR AQUARIUM 5 (2007).

78. Richard Fry, *Millennials Surpass Gen Xers as the Largest Generation in U.S. Labor Force*, PEW RES. CTR. (May 11, 2015), <http://www.pewresearch.org/fact-tank/2015/05/11/millennials-surpass-gen-xers-as-the-largest-generation-in-u-s-labor-force/>.

79. *Id.*

One important data source is a national study of youth attitudes and behavior toward ocean conservation, conducted by the David and Lucile Packard Foundation in partnership with Edge Research.<sup>80</sup> The study found that, in general, Millennials are more attracted to aquariums that are taking action for ocean conservation.<sup>81</sup> This is why aquariums know that it is important to “walk the talk” on the issues they target.<sup>82</sup> For example, as the Monterey Bay Aquarium increased its messaging about ocean plastic pollution, it removed all single-use plastic from its in-house café and restaurant, and supported successful state and federal bills restricting the use of ocean-polluting plastic microbeads in personal care products.<sup>83</sup>

The Edge Research study also found that Millennials believe more in the power of individuals, acting together and alone, to make changes.<sup>84</sup> They do not count on governments to do so, nor do they see NGOs as effective.<sup>85</sup> Within this important group, change begins at the peer-to-peer level.<sup>86</sup> Therefore, it is also important to engage Millennials in their “natural habitat” of digital and social media. While Millennials have the energy and the passion to make a difference, the study showed, ocean conservation issues are not yet a part of their trending conversations.<sup>87</sup> To help elevate topics in ocean conservation, the Monterey Bay Aquarium and other aquariums are using issues that resonate, like plastic pollution and marine life protections, as entry points to more complex topics like climate change and overfishing.

Monterey Bay Aquarium is reaching a growing number of Millennials through social media channels such as Facebook<sup>88</sup>,

---

80. See generally LISA DROPKIN ET AL., THE DAVID & LUCILE PACKARD F., AMERICAN MILLENNIALS: CULTIVATING THE NEXT GENERATION OF OCEAN CONSERVATIONISTS (2015), <https://www.packard.org/wp-content/uploads/2015/06/US-Millennials-Ocean-Conservation-Study.pdf> (conducting research on millennials’ attitudes toward ocean conservation).

81. *Id.* at 27.

82. *Id.*

83. Kera Abraham Panni, *We’re Making a Difference for the Ocean in Sacramento*, MONTEREY BAY AQUARIUM (FEB. 13, 2018), <https://futureoftheocean.wordpress.com/2015/10/08/were-making-a-difference-for-the-ocean-in-sacramento/>.

84. DROPKIN, *supra* note 80, at 7.

85. *Id.*

86. *Id.*

87. *Id.* at 5.

88. Monterey Bay Aquarium, FACEBOOK, <https://www.facebook.com/montereybayaquarium/> (last visited April 20, 2018).

Twitter<sup>89</sup>, Instagram<sup>90</sup>, and Snapchat.<sup>91</sup> Through playful language and compelling, uplifting visuals, the Aquarium's social media team aims to cultivate ongoing relationships with current and potential supporters. This helps to reinforce the Aquarium's brand identity and, ultimately, to encourage its online audience to support the Aquarium's ocean conservation mission.

For example, during the 2017 March for Science, the Aquarium staged a Facebook Live stream of a penguin enrichment walk, calling it "March of the Penguins for Science."<sup>92</sup> Aquarium staff held science-related signs as five resident African penguins waddled through our Kelp Forest gallery.<sup>93</sup> This was one of the Aquarium's most popular Facebook posts, reaching more than 4.5 million views.<sup>94</sup> The penguin parade was covered by national news outlets including The Hill, CBS and NBC, as well as popular digital media websites such as Mashable and Cutropolis.<sup>95</sup>

Additional guidance for aquariums comes from a recent report, prepared for the International Association of Amusement Parks and Attractions, which cautions that there is growing public concern for animals in managed setting such as aquariums, zoos, theme parks and sanctuaries.<sup>96</sup> Before these institutions can effectively engage the public in conservation action, they must first prove a deep commitment to the welfare of the animals in their professional care:

"There is considerable research that demonstrates that the public (and especially Millennials) values the work that zoos and aquariums do in field conservation. But first they need to understand the good care you provide to the individual animals at your zoo or aquarium. Then, and only then, can you communicate about the good work you do in animal rescue and field conservation."<sup>97</sup>

---

89. Monterey Bay Aquarium (@MontereyAq), TWITTER, [https://twitter.com/MontereyAq?ref\\_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor](https://twitter.com/MontereyAq?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor) (last visited April 20, 2018).

90. Monterey Bay Aquarium (@montereybayaquarium), INSTAGRAM, <https://www.instagram.com/montereybayaquarium/?hl=en> (last visited April 20, 2018).

91. Monterey Bay Aquarium, SNAPCHAT, <https://www.snapchat.com/add/montereyaq> (last visited April 20, 2018).

92. Monterey Bay Aquarium, *March of the Penguins for Science*, FACEBOOK LIVE (Apr. 27, 2017), <https://www.facebook.com/montereybayaquarium/videos/10155185097032482>.

93. *Id.*

94. *Id.*

95. *Id.*

96. JIM HEKKERS ET AL., INT'L ASS'N OF AMUSEMENT PARKS & ATTRACTIONS, ANIMALS IN PROFESSIONAL CARE: HOW TO UNDERSTAND AND RESPOND TO ANIMAL WELFARE TRENDS AND ISSUES 3-4 (2017).

97. *Id.* at 11.

The Association of Zoos and Aquariums (AZA), of which the Monterey Bay Aquarium is a member, provides animal care manuals to ensure “outstanding animal health and welfare” practices at AZA-accredited institutions.<sup>98</sup> By communicating the stories of compassionate, science-based care at aquariums and zoos, these institutions can strengthen their relationships with Millennials and others concerned about animal welfare in managed settings. The Monterey Bay Aquarium recently launched a new webpage dedicated to these stories.<sup>99</sup>

Another important demographic the Monterey Bay Aquarium plans for is the growing Latino population. Latinos have become increasingly influential, both in the US marketplace and in political circles; they are California’s largest ethnic group, and comprise 52 percent of children age 17 or younger.<sup>100</sup> The California Legislature has a new majority of moderate Democrats, many of whom represent majority-Latino constituencies, and some are leaders on environmental issues linked with human health and welfare.<sup>101</sup> One example from this new generation of elected leaders is Assembly member Eduardo Garcia, whom the Aquarium honored with its 2018 California Ocean Champion Award.<sup>102</sup> During his acceptance speech, Garcia made a strong connection between climate change and public health in the inland community he represents.<sup>103</sup> The growing Latino demographic represents an opportunity for aquariums in California, and across the US, to better communicate the links between ocean health and the health of our communities.

## VI. CASE STUDY: CALIFORNIA’S PLASTIC BAG BAN

In June 2016, the Monterey Bay Aquarium launched an outreach effort to defend California’s first-in-the-nation statewide ban on

---

98. ASS’N OF ZOOS & AQUARIUMS, *Animal Care & Mgmt.*, <https://www.aza.org/animal-care-management> (last visited Mar. 22, 2018).

99. MONTEREY BAY AQUARIUM, *Strengthening the Heart of our Animal Care*, <http://www.montereybayaquarium.org/support-us/ways-to-give/animal-care-center-donate> (last visited Mar. 22, 2018).

100. PUB. POL’Y INST. OF CAL., *CALIFORNIA’S FUTURE: POPULATION* (2016), [http://www.ppic.org/content/pubs/report/R\\_116HJ3R.pdf](http://www.ppic.org/content/pubs/report/R_116HJ3R.pdf).

101. Dan Walters, ‘Mod squad’ Growth Offsets Democratic Supermajorities, THE SACRAMENTO BEE (Nov. 29, 2016), <http://www.sacbee.com/news/politics-government/politics-columns-blogs/dan-walters/article117849183.html>.

102. MONTEREY BAY AQUARIUM, *Honoring our 2018 California Ocean Champions: Assembly members Eduardo Garcia and Mark Stone*, CONSERVATION & SCI. AT THE MONTEREY BAY AQUARIUM (Feb. 21, 2018), <https://futureoftheocean.wordpress.com/2018/02/21/honoring-our-2018-california-ocean-champions-assemblymembers-eduardo-garcia-and-mark-stone/>.

103. *Id.*



disposable plastic carryout bags—by urging voters to affirm Proposition 67 on the November 2016 ballot.<sup>104</sup> The ballot referendum aimed to uphold California’s existing bag ban, adopted in 2014.<sup>105</sup> The ban was put on hold when out-of-state plastic bag manufacturers forced it to a public vote.<sup>106</sup> Proposition 67 asked Californians to vote “yes” to allow the enacted ban to go into effect.<sup>107</sup>

The Aquarium’s campaign in support of Prop. 67 included a temporary exhibit urging action, a blog and podcast series, a playful public service announcement, and a social media video starring our resident Laysan albatross.<sup>108</sup> To engage the entire community, we also developed a new educational web page in both English and Spanish.<sup>109</sup>

Onsite and offsite promotional events included a science-policy forum at the California State Capitol and a public science summit in Los Angeles.<sup>110</sup> The Aquarium engaged college students who took the campaign to six campuses around the state, reached out to hundreds of thousands of voters on social media, and the Aquarium ran ads in key markets.<sup>111</sup> The issue was confusing, and our outreach made it simpler for voters to understand. The other partners in the campaign included state government officials, celebrities and environmental nonprofits, such as Environment California, Heal the Bay and Surfrider.<sup>112</sup>

Ultimately, the proposition to maintain the plastic bag ban prevailed at the polls, and single-use plastic carryout bags are now a

---

104. MONTEREY BAY AQUARIUM, ACT FOR THE OCEAN: CONSERVATION AND SCIENCE REPORT 5 (2016) [hereinafter *Conservation and Science Report*].

105. CAL. LEGISLATIVE ANALYST’S OFF., PROPOSITION 67 REFERENDUM TO OVERTURN BAN ON SINGLE-USE PLASTIC BAGS (Jul. 18, 2016), <http://www.lao.ca.gov/ballot/2016/Prop67-110816.pdf>.

106. Patrick McGreevy, *California’s Plastic-Bag Ban put on Hold by Ballot Referendum*, L.A. TIMES (Feb. 24, 2015), <http://www.latimes.com/local/political/la-me-pc-california-plastic-bag-ban-20150223-story.html>.

107. CAL. LEGISLATIVE ANALYST’S OFF., *supra* note 105.

108. See Aylin Woodward, *Battle of the Bags at Monterey Bay Aquarium*, OUT OF THE FOG (Nov. 6, 2016), <http://outfog.com/2016/11/06/battle-of-the-bags-at-monterey-bay-aquarium>; Press Release, Monterey Bay Aquarium, *Monterey Bay Aquarium’s New Podcast Series Explorers Plastic Pollution* (Oct. 17, 2016), <https://newsroom.montereybayaquarium.org/press/plastic-podcast-series>; Monterey Bay Aquarium, *California Voters: YES on Prop 67—and NO on Prop 65—for a Plastic-free Ocean!*, YOUTUBE (Oct. 13, 2016), <https://www.youtube.com/watch?v=CWBPz3Knriw>.

109. MONTEREY BAY AQUARIUM, *Ocean Plastic Pollution*, [www.montereybayaquarium.org/plastics](http://www.montereybayaquarium.org/plastics) (last visited Mar. 22, 2018).

110. Press Release, Monterey Bay Aquarium, *The Science that Backs California’s Plastic Bag Ban—Science Summit October 12, 1pm-4pm*, (Oct. 07, 2016), <https://newsroom.montereybayaquarium.org/press/plastic-bag-ban-science-summit>.

111. *Id.*

112. *Id.*

thing of California's past.<sup>113</sup> The ban will dramatically reduce the number of plastic bags used, currently estimated at 15 billion plastic bags per year.<sup>114</sup>

This event is just an example of what one aquarium can accomplish. As a collective, aquariums and zoos can deliver on a larger promise: to raise a collective voice on ocean conservation.<sup>115</sup> The Aquarium's experiences to date and plans for the future may serve as a useful road map for other institutions as they consider expanding their roles in conservation action.

## VII. SCALING UP: A COLLECTIVE VOICE FOR CONSERVATION ACTION

An increasing number of US aquariums are engaging in ocean conservation in their exhibits, education programs, and research. Together, they have great potential to advance a wide range of conservation initiatives, bringing to ocean conservation issues a broader audience appeal that could help bridge political and regional divides.<sup>116</sup>

To that end, the Monterey Bay Aquarium is one of several organizers of a voluntary pilot collaboration among aquariums to achieve a greater collective impact than any one institution acting alone.<sup>117</sup> The Aquarium Conservation Partnership (ACP), now comprising 22 aquariums with a total of almost 25 million annual visitors, aims to focus aquarium action on a discrete set of impact goals while also serving as a "strategic table" around which aquariums can share best practices in conservation leadership.<sup>118</sup> The organization was designed to promote aquarium engagement in policy action in particular, and to leverage the aquariums' credibility and influence with decision-makers to accelerate government action and business leadership.<sup>119</sup>

---

113. See OFFICE OF THE SECRETARY OF ST. OF CAL., STATEMENT OF VOTE: NOVEMBER 8, 2016 GENERAL ELECTION (2016), <http://elections.cdn.sos.ca.gov/sov/2016-general/sov/2016-complete-sov.pdf>.

114. See CAL. LEGISLATIVE ANALYST'S OFF., *supra* note 105 at 12 (seeking to prevent most grocery stores, convenience stores, large pharmacies, and liquor stores from providing single-use, plastic, carryout bags).

115. See JOHN H. FALK ET AL., *supra* note 77 at 3.

116. *Id.*

117. See AQUARIUM CONSERVATION PARTNERSHIP (2017), <https://www.seattleaquarium.org/document.doc?id=2375>.

118. *Id.*

119. *Id.*

ACP members selected plastic pollution as the primary focus of the partnership's pilot phases (2016–17 and 2018–19).<sup>120</sup> It serves as a forum to help aquariums identify, advance, and enact science-based policy solutions that reduce the sources of plastic pollution in ocean and freshwater ecosystems.<sup>121</sup> ACP efforts will also inform and facilitate aquarium policy action toward other conservation goals, such as championing protections for critical ecosystems, conserving threatened shark and ray species, and improving seafood sustainability.<sup>122</sup> The Association of Aquariums and Zoos (AZA), an accreditation and membership organization, coordinates with ACP and is engaging the broader community of US aquariums and zoos to advance research and action toward conservation.<sup>123</sup>

#### VIII. LESSON LEARNED: CONSERVATION IS A CORE BUSINESS STRATEGY

Even given the well-established success of the Monterey Bay Aquarium's exhibits and education programs, creating an aquarium-based conservation effort was not without risk. For example, a 2012 *New York Times* article described how aquariums and zoos were navigating the potential conflict between public trust and climate leadership.<sup>124</sup> The story underscores the political tension aquariums and zoos must navigate as they attempt to balance roles as both attractions and conservation authorities.<sup>125</sup>

But without taking that risk, institutions lose relevance and trust with the next generation. The Monterey Bay Aquarium has engaged with political issues by using audience data and strategically building on its core strengths: a strong reputation and scientific credibility. The results to date have shown an aquarium can have a conservation agenda and still keep the public's respect.<sup>126</sup> Survey data, from research conducted for the Aquarium's internal use by IMPACTS Research and

---

120. *Id.*

121. *Id.*

122. *Id.*

123. *Id.*; see also Mary Ellen Collins, *One Voice*, ASS'N OF ZOOS & AQUARIUMS, <https://www.aza.org/one-voice> (last visited Mar. 27, 2018).

124. Lisa Kaufman, *Intriguing Habitats, and Careful Discussions of Climate Change*, N.Y. TIMES (Aug. 26, 2012), <https://www.nytimes.com/2012/08/27/science/earth/zoos-and-aquariums-struggle-with-ways-to-discuss-climate-change.html>.

125. *Id.*

126. See JOHN H. FALK ET AL., *supra* note 77 at 12.

Development, indicate a high level of public trust in the Aquarium—not only to provide accurate information, but also to take conservation action.<sup>127</sup>

As the Aquarium’s credibility as a conservation actor inched up over the past three years, so did the percentage of respondents who consider the Monterey Bay Aquarium the best and most admired aquarium in the United States.<sup>128</sup> The lesson is clear: Not only can an aquarium take positions on ocean conservation, but the public also expects them to do so.

Today, guided by new research, conservation action is now an essential part of the Monterey Bay Aquarium’s business strategy. The Aquarium continues to prioritize its reputation as one of the world’s great aquariums, engaging visitors through exhibits, and continuing its investment in husbandry research and development. However, serious conservation work is also central to the Aquarium’s future as both a conservation organization and a business.

For positive change to occur, a durable constituency must be built that will work to protect and restore the world’s life-sustaining aquatic ecosystems. This vision—to engage and activate people in a meaningful, long-term relationship—may take many forms, whether asking people to join, to give or to act. These forms of engagement are mutually reinforcing: contributions motivate visits, visits motivate action, and action motivates contributions. Doing meaningful conservation work that builds brand loyalty and respect is the best business investment the Aquarium, and other institutions, can make.<sup>129</sup>

Market research clearly shows that the most financially successful nonprofit, visitor-serving organizations are those that pursue their missions aggressively and demonstrate to the public that they are both principled and strongly committed.<sup>130</sup> Although public attitudes about conservation vary across global cultures, we believe people everywhere seek a common vision of a sustainable future on Earth—one that is

---

127. MONTEREY BAY AQUARIUM, MONTEREY BAY AQUARIUM: GUEST EXPERIENCE METRICS KEY PERFORMANCE INDICATORS (2017).

128. *See id.* (graphing monthly survey responses from 2016 to 2017).

129. Packard, *supra* note 48.

130. Colleen Dilenschneider, *Cultural Organizations Highlighting Mission Outperform Those Marketing as Attractions*, COLLEENDILEN.COM (Nov. 25, 2015), <https://www.colleendilen.com/2015/11/25/cultural-organizations-highlighting-mission-outperform-those-marketing-as-attractions-video/>; *see also* Colleen Dilenschneider, *Nonprofit Recognition: What Matters More To Visitors Than Your Tax Status*, COLLEENDILEN.COM (Jan. 20, 2016), <https://www.colleendilen.com/2016/01/20/nonprofit-recognition-what-matters-more-to-visitors-than-your-tax-status-data/>.

practical and attainable, and one in which they can play a part. The protection of marine ecosystems, and the wise use of their resources, should be embedded in any vision of sustainability. Aquariums can guide audiences around the world to make a difference for people, our planet, and the wildlife with which we share it.

Since the 2016 presidential election, the federal administration is now threatening decades' worth of nonpartisan ocean conservation gains.<sup>131</sup> The Monterey Bay Aquarium and aquarium partners are responding through our bipartisan relationships and reputations as a trusted authorities on ocean issues.<sup>132</sup> Together, the aquariums are defending such gains as marine protected area designations and the current Magnuson-Stevens Act, which enables strong, science-based US fishery management.<sup>133</sup> The Monterey Bay Aquarium will continue to encourage California's leadership on issues such as climate change and plastic pollution, engage the private sector and US aquarium partners, and galvanize Aquarium audiences to take action on behalf of the ocean and our planet.

With global ecosystems in decline, there is no time to lose. By understanding their audiences, aquariums can craft meaningful messages that appeal to people's interests and help them be part of the solutions. These are big challenges, and much is yet to be seen about the potential for impact. But decades of data analysis and risk-taking have taught the Monterey Bay Aquarium and its leaders that conservation isn't just about fieldwork. Policy change, business action and behavior changes are the primary goals because they, in the end, will have lasting impacts on ocean health and human wellbeing, as envisioned when the United Nations established the new Sustainable Development Goal for the ocean.

---

131. Michael Conathan, *Trump's War on Oceans*, CTR. FOR AM. PROGRESS (Jun. 8, 2017), <https://www.americanprogress.org/issues/green/news/2017/06/08/433823/trumps-war-oceans/>.

132. AQUARIUM CONSERVATION PARTNERSHIP, *supra* note 117.

133. *Magnuson-Stevens Act: Upholding a Legacy of Success*, MARINE FISH CONSERVATION NETWORK, <http://conservefish.org/healthy-oceans/magnuson-stevens-act-upholding-a-legacy-of-success/> (last visited April 2, 2018).

**Acknowledgments**

This article reflects over thirty years of innovation at the Monterey Bay Aquarium, under the leadership of executive director Julie Packard. I wish particularly to express my appreciation to my writing partner, Kera Abraham Panni, who was indispensable in the development, editing, and timely completion of this article. I also thank my colleagues Jim Hekkers, Cynthia Vernon, Mimi Hahn, Megan Snedden and Aimee David for their contributions to this body of work.