

# **Ocean Climate Action Plan (OCAP)**

**“Blue New Deal”**

A Policy Framework for Developing the  
US Blue Economy in the 21st Century

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## **Executive Summary**

The COVID-19 pandemic and the subsequent economic shocks, coupled with the struggle for racial equity and the rapidly growing threats of the climate emergency, have converged to create a historic juncture in American history. It is imperative that major investments are made to promote robust economic growth that can lift the country out of recession and promote environmental justice, so that we can make America better than it was before the pandemic struck. These policies must be smart and forward-looking or else this once-in-a-generation opportunity to reshape our economy and remedy underlying social inequities will be wasted.

Now is the time to make bold and strategic investments that help decarbonize American industry, promote innovation that creates new jobs and businesses, and directly address the injustices that ravage the nation. The [Ocean Climate Action Plan \(OCAP\)—Blue New Deal](#)—is a policy framework to accomplish these goals, by developing the US blue economy in the 21st century with two principle objectives:

- 1. To use ocean and coastal resources to reduce greenhouse gas emissions and draw atmospheric CO<sub>2</sub> down to safe levels**
- 2. To enable coastal communities to more effectively and equitably adapt to climate impacts**

We use the World Bank definition of the blue economy, which defines it as the “sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystems.”

OCAP addresses four issue-areas:

- 1. Coastal Adaptation and Financing**
- 2. Clean Ocean Energy**
- 3. Ports, Shipping, and the Maritime Sector**
- 4. Sustainable Fisheries, Aquaculture, and Marine Biodiversity Conservation**

OCAP includes the best ideas from individuals and organizations across industry, academia, conservation, government, indigenous groups, communities at risk, and youth organizations (who will bear the brunt of future climate change impacts). The policy recommendations included in this document should appeal to all political viewpoints, as ensuring a healthy and vibrant ocean and coastal economy and ecology is firmly in the national interest. In fact, variants of many of the policies outlined in this document have already been introduced in legislation in the US House of Representatives or Senate, but have yet to become law.

Coastal states<sup>1</sup> contain most of the US population and produce most of the nation's GDP, and these figures will only grow over the coming decades.<sup>2</sup> However, with the combined climate impacts of ocean warming and related sea level rise, harmful algal blooms, and increased storm impacts, as well as ocean acidification and deoxygenation, the coastal regions of the US are particularly vulnerable to major disruptions that threaten large segments of the economy.<sup>3</sup>

In order to build coastal resilience and restore ocean health, new policies and investments are required that promote innovation in multiple key blue economy sectors. While climate change will impose significant costs on coastal communities across the US, developing a dynamic blue economy can reduce those costs and also provide significant opportunities for economic growth that will build sustainable new industries and create many new jobs.

In the Ocean Climate Action Plan justice and equity concerns are integral to the entire framework, with a special focus on generating broad-based prosperity that provides opportunity and recompense not only to the major population centers and wealthiest regions, but also to marginalized and disadvantaged communities, including communities of color, that tend to be at greater risk of pollution and climate impacts.

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<sup>1</sup> In the US coastal states are those adjacent to the Atlantic Ocean, Pacific Ocean, Gulf of Mexico, and the Great Lakes.

<sup>2</sup> Coastal shoreline counties produced 40% of the nation's total jobs and contributed 46% of the gross domestic product in 2016. In a [NOAA report](#) it was reported that 40% of the US population lives in coastal counties, a 39% increase in population in coastal shoreline counties was reported from 1970 to 2010, and an 8% increase in population was projected for 2010 to 2020.

<sup>3</sup> See the Fourth National Climate Assessment, [Chapter 8: Coastal Effects](#).

## I. Overview

### I.1. Background

Throughout 2019 individual members of Congress and many presidential hopefuls issued a slew of climate change proposals (including the Green New Deal) that generated significant media and public attention and discussion. However, these proposals were focused almost exclusively on terrestrial resources *with little attention paid to the oceans and coasts*. According to the most recent IPCC report on the Ocean and Cryosphere,<sup>4</sup> climate change is accelerating and the future for marine ecosystems and coastal communities is severely threatened if significant actions to both reduce atmospheric CO<sub>2</sub> levels and adapt to a warmer planet are not taken immediately. With most of America's population centers and economic growth concentrated in coastal areas, *any future national climate policy must have a strong blue economy focus*.<sup>5,6</sup>

To fill this policy gap, Jason Scorse, Director of the Center for the Blue Economy at the Middlebury Institute and David Helvarg, Executive Director of Blue Frontier, outlined what a climate policy that focused on ocean and coastal resources should include. They published their first article on the topic in March, 2019 in the online conservation science magazine Mongabay.<sup>7</sup>

Subsequently, they had dozens of conversations with leaders across the country and realized that a larger effort to build a national coalition and consensus for an **Ocean Climate Action Plan (OCAP)—Blue New Deal**—was needed. This culminated in the first OCAP meeting in Monterey, CA on October 18, 2019. The meeting was attended by 60 of the state's leading ocean and coastal experts, including representatives from industry, finance, academia, government, conservation groups, and youth activists. Keynote speaker California Controller Betty Yee emphasized how important developing the blue economy is for the state and how she is prioritizing aggressive climate policy to ensure California's continued economic prosperity. Controller Yee's speech was preceded by two representatives from Heirs To Our Oceans, a youth group dedicated to marine conservation. In addressing climate change, they emphasized that it is the younger generations who will bear the brunt of the energy and infrastructure decisions we make today.

The California meeting was followed by a national webinar on April 29, 2020 attended by over 750 people (a planned DC meeting was cancelled due to the pandemic). The event featured keynote presentations by Senator Jeff Merkley (D-OR), Congresswoman Deb Haaland (D-NM), Congressman Joe Cunningham (D-SC), and Ocean Heir Francesca de Oro from Guam.

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<sup>4</sup> See the IPCC Special [Report](#) on the Ocean and Cryosphere in a Changing Climate.

<sup>5</sup> See <https://www.worldbank.org/en/news/infographic/2017/06/06/blue-economy>.

<sup>6</sup> See OECD published a report on the ocean economy out to 2030, which includes a lot of information and the potential economic benefits of blue economy industries: <http://www.oecd.org/environment/the-ocean-economy-in-2030-9789264251724-en.htm>.

<sup>7</sup> See <https://news.mongabay.com/2019/03/putting-the-blue-in-the-green-new-deal-commentary/>.

In both the October and April meetings the discussions focused on four issue areas:

**1: Coastal Adaptation and Financing**

**2: Clean Ocean Energy**

**3: Ports, Shipping, and the Maritime Sector**

**4: Sustainable Fisheries, Aquaculture, and Marine Biodiversity Conservation**

The feedback from both of these meetings has been incorporated into this final report, along with input from environmental justice groups and impacted communities, a youth advisory council, and many leading conservation groups. These recommendations represent the collective wisdom of hundreds of the leading marine and coastal organizations, businesses, government officials, activists, and researchers across the nation.

The proposed investments outlined in the OCAP report are meant to form the basis for national legislation and policies that will make America a world leader in the innovative blue economy industries and community-based initiatives that will define the 21st century. These new investments will protect and sustain existing ocean-dependent businesses, while developing and expanding new ones, leading to new sources of well-paying and stable jobs, sustained economic growth, and the restoration of our most prized coastal and marine habitats.

Variants of many of the policies outlined in this document have already been introduced in legislation in the US House of Representatives or Senate, but have yet to become law. The Appendix includes an overview of legislation introduced from 2018 through spring 2020 that relates to OCAP's priorities, along with a gap analysis that assesses the missing pieces.

OCAP presents a unified and comprehensive vision for US ocean-climate policy that ensures that oceans resources are put to use to dramatically reduce atmospheric CO<sub>2</sub> levels, and that coastal communities across the country are able to effectively and equitably adapt to coastal climate impacts (including rising sea levels, greater frequency and intensity of storms and flooding, harmful algal blooms, and ocean acidification).

One of OCAP's central tenets—repeated throughout this document—is that investments and economic support must be made available to meet these needs, with special attention paid to and in collaboration with the most vulnerable communities of color, low-income groups, and tribal/Indigenous entities<sup>8</sup> in our coastal regions.

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<sup>8</sup> Throughout this document references to tribal and Indigenous entities is meant to be inclusive of a variety of governance institutions that include but are not necessarily limited to American Indian tribal governments (federally and non-federally recognized), Native Hawaiians, and other Indigenous groups within what are currently considered US territories.

## **I.2. Definition of the Blue Economy**

We use the World Bank definition of the blue economy, which defines it as the “sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystems.”<sup>9</sup> The blue economy is *not* synonymous with all economic activity that occurs on the oceans or uses of ocean resources, nor simply technological innovation involving ocean-based industries.

The blue economy represents a narrower band of economic activity that is restorative to ocean and coastal ecosystems and promotes broad-based economic opportunity. For example, offshore oil and gas extraction is *not* a blue economy activity, as it contributes greatly to greenhouse gas emissions and directly threatens marine habitats; nor are large fin-fish aquaculture facilities that require greater input of wild fish as feed than they produce in farmed output, thereby reducing fishery sustainability.

The dire threat of climate change requires this more precise definition of the blue economy so that investments and financing are channeled into the types of economic activity that mitigate greenhouse gases and ameliorate coastal climate impacts.

## **I.3. OCAP’s Boundaries**

The Ocean Climate Action Plan (OCAP)—Blue New Deal—is a policy framework to achieve two objectives:

- 1. To use ocean and coastal resources to reduce greenhouse gas emissions and draw atmospheric CO<sub>2</sub> back down to safer levels**
- 2. To enable coastal communities to more effectively and equitably adapt to climate impacts**

OCAP is focused on generating broad-based prosperity that provides opportunity and recompense not only to wealthier coastal regions, but also to marginalized and disadvantaged communities who, because they are more vulnerable, also tend to express greater concern about climate change. For example, recent polling found that 69% of Hispanics or Latinx are “alarmed or concerned” about climate change along with 57% of African Americans and 49% of Whites.<sup>10</sup> From a practical standpoint, OCAP is only achievable when it fully integrates the economy, the environment, and equity.

For the purposes of this document US oceans include the Atlantic, Pacific, Gulf of Mexico, and the Great Lakes region. However, OCAP does not address every issue that afflicts the nation’s

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<sup>9</sup> See <https://www.worldbank.org/en/news/infographic/2017/06/06/blue-economy>.

<sup>10</sup> <https://climatecommunication.yale.edu/publications/race-and-climate-change/>

seas, coastlines, and Great Lakes regions. Illegal fishing, invasive species, marine plastics, and many other issues present serious problems to the marine environment that require policy attention; but they are presently outside the scope of the OCAP framework.

#### **I.4. OCAP is Nonpartisan**

The Ocean Climate Action Plan is a nonpartisan document that represents the best ideas from across the political spectrum for ensuring the sustained strength of the US economy and conserving the nation's environmental legacy.

One of OCAP's core premises is that our ocean and coastal economies suffer from pervasive *market failure*<sup>11</sup>; many externalities from industry are not properly priced in the market, many offshore industries are currently being stymied due to regulatory uncertainty over property rights, and large gaps in information lead to inefficient decisions about ocean and coastal resource use. Correcting these market failures in order to spur rapid innovation in the blue economy is one of OCAP's top priorities. Ensuring that markets function efficiently is a deeply conservative objective.

At the same time, OCAP views correcting market failures as an incomplete solution to the climate challenge and the many social injustices that climate change exacerbates. Therefore, OCAP also pays close attention to environmental justice concerns<sup>12</sup>, and sees a need for large public investments in key blue economy sectors. Making the market system more equitable is a deeply liberal objective.

*Combined into a unified whole, OCAP contains both conservative and liberal economic philosophies that are mutually reinforcing.* Correcting market failure leads to more efficient, innovative, and sustainable economic growth, while smart public investments lead to even greater innovation, inclusion, and prosperity. Taking environmental justice concerns seriously ensures widespread participation in this new prosperity and greater social cohesion in a time of climate crisis, both of which are necessary and just.

#### **I.5. Blue Economy Financing Principles**

Developing the new blue economy for the US is going to require at minimum hundreds of billions of dollars of investment—both in new dollars and a redirection of existing capital flows. Not all of this money can come from the public sector; much of the investment will have to be funded by the private sector. In order to ensure that private sector money is channeled into truly sustainable

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<sup>11</sup> [Definition of market failure.](#)

<sup>12</sup> Environmental justice should be understood to mean issues of access as well as the management of environmental risk and harm.



projects, the US should join the International Platform on Sustainable Finance<sup>13</sup>, sponsored by the IMF and World Bank, as well as adopt the 14 principles outlined in the Declaration of the Sustainable blue economy Finance Principles.<sup>14</sup>

These principles include a precautionary approach to ecological risk, a diverse portfolio both with respect to types of projects as well as scale, and an emphasis on developing local projects that are transparent and collaborative. A commitment to these principles will help set the US on a course for true leadership in the new blue economy, and help create finance standards that direct capital to restorative and climate-friendly development.

## **I.6. Next Steps & Goals**

This Ocean Climate Action Plan, or Blue New Deal, presents a comprehensive framework for US ocean-climate legislation and policy that our coalition wants enacted at the federal level. The next step is to translate these priorities into actual bills in the House of Representatives and the Senate, and get them passed and signed by the President. In addition, complimentary legislation at the state level will be pursued.

In addition to legislative efforts, there is a tremendous amount that the President can do through Executive Orders, administrative actions, and choosing the right personnel to staff the key agencies that oversee our ocean and coastal resources and the Great Lakes region. OCAP takes an “all of the above” approach to policymaking and is actively pursuing all channels by which OCAP’s priorities can become federal and state policy.

A good way to stay connected to these efforts is through our websites and social media platforms, which are [summarized here](#). We look forward to working with everyone until OCAP’s priorities are the law of the land, and the US begins in earnest developing its blue economy from sea to shining sea.

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<sup>13</sup> See [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance\\_en#ipsf](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance_en#ipsf).

<sup>14</sup> See [https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/declaration-sustainable-blue-economy-finance-principles\\_en.pdf](https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/declaration-sustainable-blue-economy-finance-principles_en.pdf).

## **II. Issue Area #1: Coastal Adaptation and Financing**

### **Key Objectives**

**Objective #1:** *To ensure that low-income, vulnerable, and tribal coastal communities, as well as US territories, are provided with economic support to retreat from unstable shorelines and/or transition to climate resilient development.*

**Objective #2:** *To catalyze a large-scale dynamic living shorelines industry that employs hundreds of thousands of workers across the US and restores the nation's most threatened coastal ecosystems to provide climate resilience.*

**Objective #3:** *To reform the National Flood Insurance Program so that it is financially sustainable and promotes climate resilient development.*

**Objective #4:** *To significantly improve storm water management to reduce coastal flooding and pollution risks for coastal communities.*

### **Key Talking Points**

- Many shoreline communities must make plans to shift development back from the coastlines; armoring the shorelines is a temporary and costly solution that only delays inevitable retreat.
- Throughout the US living shorelines provide not only superior climate resilience than grey infrastructure, but generally at lower cost; in some cases, grey and green infrastructure are complementary and the best solution is a hybrid mix.
- Living shorelines not only offer protection for critical infrastructure and communities, but provide many ecological benefits, including cleaner water, increased biodiversity, and more greenspace, all of which have myriad health benefits and benefit the coastal tourist economies.
- The living shorelines industry can provide good high-paying jobs to Americans of all education levels, while restoring our nation's coastal habitats.
- The National Flood Insurance Program is broken—it doesn't promote sensible long-term climate resilient development nor is it financially sustainable.
- Poorly managed storm water systems are incredibly wasteful and inefficient, leading to increased flood risk and damages, as well as toxic pollution in coastal communities; improved systems can both save money and improve public health.

### **II.1. Introduction**

The policies and investments outlined in this section are for the purpose of ensuring that coastal communities across the country are able to effectively and equitably adapt to coastal climate impacts (rising sea levels, greater storm frequency/intensity, ocean acidification, and deoxygenation), and that economic support is available to all to guarantee these development

needs; it is imperative that special attention is paid to vulnerable, racially diverse, and low-income areas.

## **II.2. National Flood Insurance Program (NFIP) Reform**

Currently, NFIP is failing in multiple ways to adequately promote coastal resilience or promote social justice. The program as currently structured is not financially sustainable,<sup>15</sup> and it isn't promoting the type of innovation and forward-looking guidance to communities to allow them to use the best available science to promote climate resilient development in low-risk areas. The program's incentives are poorly constructed and require major reform; as currently construed NFIP represents the largest market failure in the coastal real estate sector.

The following are the OCAP's suggested changes to NFIP:

1. All NFIP policies should be priced based on accurate actuarial rates, and these actuarial tables should be updated every 5 years; for properties where accurate actuarial rates would represent a more than 15% increase in the insurance premium, these increases should be phased in over a period of 3-5 years, with lower-income groups given the most time to adjust to the higher rates (those who cannot afford the rate increases should be given priority for federal buyouts—see point #4 below).<sup>16</sup>
2. No new NFIP policies should be issued for properties built in areas at high risk for sea level rise and flooding.
3. The program should be required to use flood maps that have the best available scientific data on likely sea level rise and future storm impacts, and they should be updated every 5 years. Areas where climate impacts are likely to become worse over time should be flagged.
4. Payments to repetitive loss properties should be capped and these caps reduced significantly over a short time frame. Second home and vacation rental properties should be flagged.
5. Federal buyout programs should be greatly increased and 'sister cities' programs initiated that link inland communities, including adjacent counties, with coastal residents that seek to relocate. Such a system should include the transfer of development rights from coastal regions to other inland areas. Disadvantaged communities that face increased climate risks should be given priority for buyouts, with a goal of maximizing the number of properties bought out each year. A certain amount of the funding for buyout and managed retreat

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<sup>15</sup> The US Government Accountability Office stated in their [2019 High Risk Report](#) that "as of September 2018, FEMA's debt stood at \$20.5 billion despite Congress having canceled \$16 billion in debt in October 2017. Without reforms, the financial condition of NFIP could continue to worsen."

<sup>16</sup> The Biggert-Waters Flood Insurance Reform Act of 2012, which represented a rare moment of bipartisanship in this period, was largely repealed shortly after it was passed because some property owners were hit with very large increases in insurance premiums immediately after its passage. In order not to repeat this same mistake, special care must be paid to ensuring that those faced with higher premiums are given adequate time to respond, and also additional assistance where necessary.

should be designated to US island territories and tribal nations that face particularly severe climate impacts. All land that is bought out under these programs must be zoned for coastal resilience projects that provide public benefits, and no new residential and/or commercial development allowed. Assistance to local coastal governments should be made available to help mitigate the negative impacts to local property tax revenue as residents retreat from the coasts, during the transition period.

6. New federal funding to support the development of managed retreat plans and climate resilience should go to communities that have broad-based representation from all income, racial, and ethnic groups.
7. National mandatory disclosure laws should be put into place that require disclosure of past flood damages, money received by federal agencies for disaster relief, and the current flood risk/sea level rise profile for all residential and commercial properties to all potential buyers.

### **II.3. Promoting Living Shorelines**

OCAP views large scale restoration of living shoreline ecosystems—beaches, marshes, wetlands, eelgrass, kelp forests,<sup>17</sup> dunes, reef systems, etc.—as crucial for both mitigation and adaptation to climate change. Many of these ecosystems sequester large amounts of carbon, while also protecting critical infrastructure from storm impacts and sea level rise.<sup>18</sup> Living shorelines not only offer protection for critical infrastructure and communities, but provide many ecological benefits, including cleaner water, increased biodiversity, and more blue and green space, all of which confer myriad valuable emotional, social, and physical health benefits.

With the right incentives, the existing wetlands and estuary restoration industry can be expanded into a much larger and innovative living shorelines sector, with the potential to employ many thousands of additional US workers from all educational backgrounds. Engineers, planners, landscape architects, and coastal biologists are needed for this work, as well as laborers with specialized skillsets.

Currently, the impediments to the widespread development and scaling of living shorelines are primarily informational rather than economic.<sup>19</sup> Many insurance providers, individual actors, whether residential property owners or businesses, don't have sufficient experience with living shoreline infrastructure to adequately trust that they will protect their properties and provide long-term resilience, while there is vast operational data on hardened infrastructure, such as seawalls. This informational asymmetry is a major market failure in the coastal resilience sector, which

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<sup>17</sup> For the benefits of kelp forests for climate change see: <https://www.sciencedirect.com/science/article/pii/S2590332220302098>

<sup>18</sup> NOAA [study](#) finds 'living shorelines' can lessen climate change's effects.

<sup>19</sup> See [Tradable Permits for Shoreline Protection: Reshaping Regulation Under the Coastal Act for the Era of Sea Level Rise](#) prepared by the Center for blue economy and The Nature Conservancy.

OCAP seeks to correct. In addition, oftentimes it is a mix of green and grey infrastructure that provides the best overall value and coastal resilience.

OCAP's recommendations for promoting living shorelines nationally are:

1. Fund the Army Corps of Engineers to begin living shorelines demonstration projects in all regions of the US to test different living shorelines systems, and make all data publicly available. Also, charge the Corps with developing engineering standards for all categories of living shorelines. These standards will create a science-based and consistent set of performance metrics for living shorelines that can be used to compare different options against their grey infrastructure alternatives, and also include green-grey hybrid scenarios. (It is important to note that historically the Army Corps has been responsible for many coastal engineering projects that have been extremely detrimental to coastal ecosystems and coastal resiliency; the efforts noted above will help to shift the Army Corps in a more sustainable direction.)
2. Lift the Army Corps rule for the 'cheapest disposal' of dredged sediment, which is often then dumped out at sea; instead require all clean sediment dredged by the Corps to be put to beneficial reuse for coastal restoration in partnership with states.
3. Provide federal funding to state governments to develop living shoreline projects in all at-risk coastal counties; provide funding to monitor impacts on local fisheries.
4. Create a national database of public coastal armoring projects that includes living shoreline projects, grey infrastructure projects, and green-grey hybrids that is easily accessible and free to the public, with an opt-in option for private projects. This will allow for the analysis of different types of armoring with respect to effectiveness as well as cost. Responsibility for keeping the database current should fall on a new Living Shorelines Division within the Army Corps, in cooperation with coastal state agencies.
5. Engage Indigenous ecological land and ocean-based knowledge and practices on a regional basis to inform living shorelines demonstration projects.
6. Streamline and standardize 'blue carbon'<sup>20</sup> protocols for living shorelines so that developers and land owners can more easily apply for carbon credits in both state and national climate programs. Create a national map of coastal carbon hotspots to target for protection and restoration funding.
7. Require consideration of living shoreline alternatives in all National Environmental Policy Act environmental impact statements that address coastal storm barriers.
8. Provide federal funding to states for the development of living shorelines K-12 curriculum, and vocational and community college programs to develop the industry and train the new coastal ecosystem restoration workforce.

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<sup>20</sup> See <https://oceanservice.noaa.gov/facts/bluecarbon.html> and <https://www.thebluecarboninitiative.org/about-blue-carbon>.

9. Expand the Coastal Barrier Resources Act (CBRA) so that no federal money subsidizes development on what remains of our most fragile coastal habitats.

#### **II.4. Improving Storm Water Management**

Storm water has both climate mitigation and adaptation elements. Transporting water to cities is very energy-intensive,<sup>21</sup> and therefore, any water that can be stored during storms can reduce future energy use, which decreases greenhouse gas (GHG) emissions. In addition, damages from flooding due to storm water crises are very costly, and include public health impacts when sewage systems overflow or get backed up. Finally, pollutants from inland areas that end up in coastal ecosystems decrease overall system resiliency, which is already being strained by climate change.

OCAP's recommendations for promoting better storm water management are:

1. Require the installation of permeable surfaces in urban areas, which absorb storm water and recharge aquifers, that capture an 85th Percentile storm as a US EPA baseline standard in all states.
2. Create financial incentives to reduce erosion, nutrient runoff and flooding caused by agricultural practices by encouraging no-till soil management, riparian setbacks, dry farming, and other effective farming practices.
3. Fund the development of watershed restoration plans that take a comprehensive view on managing storm water.
4. Prioritize storm water management that protects low-income communities from property damage and health risks.
5. Maintain or enhance water quality for all National Marine Sanctuaries to ensure they act as "hope spots" for biodiversity in the face of climate change.

#### **II.5. Protecting Critical Coastal Infrastructure—transportation, energy, water, and communications**

Coastal climate change impacts that threaten critical infrastructure will severely harm the economies of coastal communities, and often disproportionately harm vulnerable populations, whose livelihoods are easily disrupted and often dependent on hourly wage labor. Many communities, especially smaller ones, do not have sufficient public funds to build more resilient infrastructure, and therefore, face a downward spiral of lower quality services, followed by property value declines and a lower tax base, and then a further diminished ability to adapt to climate change.

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<sup>21</sup> According to the [Center for Sustainable Systems, University of Michigan](#), "2% of total US electricity use goes towards moving and treating water and wastewater, a 52% increase in electricity use since 1996."

OCAP makes the following recommendations regarding critical coastal infrastructure:

1. Restrict siting of new critical infrastructure such as airports, power plants, sub-stations and waste water treatment plants in coastal areas at risk from sea level rise and storms, and provide federal matching funds to help relocate existing infrastructure to higher ground; prioritize protecting vulnerable communities and critical coastal ecosystems.
2. Link greater cost sharing for climate resilient investments from private developers with permitting for higher density development in already built and less risky areas (this higher density can help promote housing affordability).

### III. Issue Area #2: Clean Ocean Energy

#### **Key Objectives**

**Objective #1:** *To catalyze large scale deployment of offshore wind power in the US that rivals the EU.*

**Objective #2:** *To ensure that the approval process for offshore wind projects is both streamlined and that appropriate checks are put in place to protect critical offshore habitats—both above and below water—and biological and cultural diversity.*

**Objective #3:** *To ensure that a robust program of research, development, and incentives is created to determine the commercial viability and scalable deployment of additional renewable ocean energy systems such as wave, current, tidal, and thermal.*

#### **Key Talking Points**

- The US currently lags well behind the rest of the world in its offshore wind industry, with only one small project (off of Block Island) currently operating in all of US territory.
- The US has significant wind resources that can provide a large segment of 100% clean electricity for the nation that will help meet its climate goals, provide reliable low cost power, and foster energy independence.
- Offshore leases can provide billions of dollars to the federal government in new revenue while generating clean power and more jobs, including easily transferable jobs from the offshore oil and gas industry.
- Contrary to popular perception, most proposed offshore wind development in the US would not significantly impact coastal viewsheds or negatively impact property values.

#### **III.1. Introduction**

Mitigating climate change requires the rapid decarbonization of the US economy.<sup>22</sup> This requires both a reduction in fossil fuel use and a rapid increase in clean energy solutions. With respect to the former, *OACAP recommends an immediate moratorium on all new offshore oil and gas leases across the US*<sup>23</sup>. Not only do these projects threaten to increase our reliance on fossil fuel at a time when this dependence needs to be reduced, but oil spills pose great risks to coastal ecosystems and the economies that depend on them. Republican and Democratic leaders in coastal states oppose increased offshore drilling because they know that coastal property values and tourism are dependent on clean, healthy coastal waters.<sup>24</sup> Additionally, many current leases are tied to volatile

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<sup>22</sup> To limit global warming to 1.5°C, the IPCC [reports](#) that “global net human-caused emissions of carbon dioxide (CO<sub>2</sub>) would need to fall by about 45 percent from 2010 levels by 2030, reaching ‘net zero’ around 2050.”

<sup>23</sup> This is action that can be taken administratively without Congressional approval.

<sup>24</sup> Bipartisan letters, one led by New Jersey Republican [Frank LoBiondo](#) and the other led by Florida Republican [John Rutherford](#), were written to voice opposition to offshore oil and gas drilling and were each supported by 100 members of congress.



fossil fuel prices that create unpredictable revenue streams, which in a time of declining fossil fuel prices, do not produce the revenue windfall that they did in the past.

There is, however, support for increased offshore renewable energy development, which is clean, carbon-free, and doesn't pose significant risks to water quality, wildlife, and coastal economies. Despite having tremendous untapped wind energy potential on all coasts (which could power the entire US economy four times over)<sup>25</sup>, the US offshore wind energy industry lags far behind many of its closest competitors in the EU. Additionally, offshore wind energy can attract significant new investments particularly when scaled to 100 GW energy production. Producing 100 GW offshore wind energy will not only offset carbon emissions, it will also create new jobs in manufacturing, construction, and maintenance of offshore wind farms in coastal communities. Therefore, OCAPs policy recommendations have been written to support the strategic research, development, and investment necessary to scale and expand offshore wind energy.

### **III.2. Policies to Promote Offshore Wind Production in the US**

In order to rapidly accelerate the production of offshore wind energy OCAP makes the following recommendations:

1. Institute national guidelines for the siting of offshore wind turbines in federal waters (and the Great Lakes) that do not undermine the Navy, commercial navigation, regional planning agencies, National Marine Sanctuaries and Monuments, tribal/Indigenous sovereignty<sup>26</sup>, and/or the commercial fishing industry. Create transparent, and simple mechanisms to allow companies to rapidly develop offshore wind installations in federal waters. (Currently, the lack of clear and transparent guidelines for the transfer of federal offshore property rights to private industry is the primary market failure currently inhibiting the development of the US offshore wind industry.)
2. To the extent that marine spatial planning has already determined the best areas for offshore wind power in a region, keep those records updated with the best available science, and fill in any gaps in regions that have not yet been adequately mapped; the goal is to have all of the key usable offshore wind hotspots across the US mapped and leases made available immediately.
3. Develop offshore renewable targets for wind energy in all coastal states where offshore wind is competitive with other forms of renewable power. Governors can set these targets

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<sup>25</sup> In Europe there are [3,072 grid-connected offshore wind turbines](#), spanning 11 countries, which equals a total of 10,393 megawatts of capacity as of 2015. For a comparison, the United States has the potential for over [4,000 gigawatts](#) of offshore energy, which could power the country four times over if utilized.

<sup>26</sup> There have been examples in the recent past where terrestrial windfarms were sited in areas that conflicted with significant Indigenous cultural landscapes (see [this example](#) from during the Obama era). While this should be easily avoidable in federal waters, which are 3 miles+ off the coastline, precautions should nonetheless be put in place in order not to make the same mistakes.

through executive action or through a designated representative of Ocean Planning Bodies. Such targets should encourage upgrading transmission line infrastructure and offshore wind energy business opportunities in coastal communities.

4. Develop micro-power grids to link offshore renewable power to smaller and more isolated coastal communities and tribal and Indigenous nations. Linking these coastal communities to offshore power will build coastal energy resilience and community support for offshore projects.
5. Develop public outreach campaigns to educate the public about the low visibility impacts of fixed and floating turbines many miles off the coast to counter false narratives about negative wind power impacts.
6. Ocean Planning Bodies should consult with top EU industry leaders and governments who are leading the world in offshore wind production.
7. Provide federal funding to help upgrade electrical infrastructure in coastal areas to facilitate the spread of offshore wind production.

### **III.3. Other Forms of Offshore Renewable Energy (e.g. tidal, wave energy, and ocean thermal energy conversion)<sup>27</sup>**

Most offshore renewable energy technologies apart from wind are not yet economically and/or technically viable, but they may be in the near future. Federal R&D funds should be invested in other offshore renewable technologies, including pilot wave, tidal<sup>28</sup>, and deep water ocean thermal projects, with the goal of scaling by 2030 any technologies that meet strict life-cycle impact standards.

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<sup>27</sup> In addition, R&D funding for Ocean-based CO<sub>2</sub> Removal (CDR) technologies (e.g. macroalgae, ocean alkalinity enhancement, assisted upwelling, etc.) may be warranted if scientific consensus deems them viable, safe, and scalable; see <http://www.gesamp.org/publications/high-level-review-of-a-wide-range-of-proposed-marine-geoengineering-techniques>.

<sup>28</sup> See this document on Nova Scotia's tidal energy sector, which can be a model for the US: <https://energy.novascotia.ca/featured-stories/top-10-things-you-need-know-about-tidal-energy-nova-scotia>.

## IV. Issue Area #3: Ports, Shipping, and the Maritime Sector

**Key Objective:** *To rapidly accelerate the decarbonization of US ports and the shipping industry, and in doing so, dramatically improve air and water quality in adjacent communities.*

### **Key Talking Points**

- Air and water pollution from US ports presents a significant health threat to many US cities and adjacent, predominantly low-income, communities of color.
- Many ports, particularly in Los Angeles, Long Beach, and San Diego, are leading the way towards clean power and climate resilience.
- The US needs national standards to upgrade US ports both to meet our climate goals and to protect vulnerable communities from excessive pollution.
- We need US leadership and incentives to change shipping standards in design, fuels, and propulsion with the aim to decarbonize commercial shipping by 2050.
- Ports can serve as outstanding blue economy innovation hubs that strengthen the regional economy.<sup>29</sup>

### **IV.1. Introduction**

Currently, along with transporting 90 percent of imported consumer goods, US ports produce a significant amount of the nation’s air pollution and greenhouse gas emissions<sup>30</sup>—both from ships and the trucks/trains that transport the cargo inland. In coastal areas around the country, the communities that are located adjacent to ports are often low-income and/or communities of color, which bear the brunt of the elevated levels of air pollution.<sup>31</sup> In addition, GHG emissions from ships are growing as global trade increases. Therefore, continued innovation in the port and maritime sector should be viewed in the context of the larger industrial innovations in the transportation sector that must be accelerated in order for the US to meet its GHG reduction targets, as well as to promote environmental justice within its borders.

### **IV.2. OCAP’s Recommendations for Ports, Shipping, and the Maritime Sector**

In order to bring all US ports into the 21st century OCAP makes the following recommendations:

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<sup>29</sup> See the Port of San Diego’s Ocean Entrepreneurship Program: <https://www.portofsandiego.org/waterfront-development/blue-economy>.

<sup>30</sup> According to the [Third IMO Greenhouse Gas Study in 2014](#), “For the period 2007–2012, on average, shipping accounted for approximately 3.1% of annual global CO<sub>2</sub>.”

<sup>31</sup> See [Public Health Impacts section](#) of the ruling by the EPA for Control of Emissions From New Marine Compression-Ignition Engines at or Above 30 Liters per Cylinder.

1. Create national standards for Clean Air Action Plans at all US ports (based on the progress made by the Ports of Long Beach and Los Angeles).<sup>32</sup> These standards should include:
  - Matching federal grants for the electrification of US port infrastructure;
  - Production of emissions inventories at least every three years, which include emission reduction goals for criteria air pollutants and GHGs as well as an accompanying implementation plan;
  - Clean energy upgrading and decarbonization of all intermodal transport including tugs, cargo loaders, trucks, trains, and inland warehouse operations;
  - Making shore power available—and mandatory within 10 years—at all major container, bulk cargo, and cruise ports to reduce vessel idling; for certain vessel categories, such as tankers, and where shore power usage is impracticable, such as at anchorage, emission capture systems must be deployed and used in the near term;
  - Vessel speed reduction programs for ocean-going vessels to a maximum of 10 knots when entering sensitive areas to reduce emissions (and also reduce whale strikes);
  - Thorough involvement in the planning process by members of adjacent impacted communities to ensure public participation and reduce litigation.
2. Provide federal funds for investment in green infrastructure at ports and for goods movement activities, including zero-emission inland shipping loans and grants.
3. Fund job retraining and placement programs for port workers displaced by automation.
4. Link new renewable energy sources directly to ports/port infrastructure.<sup>33</sup> Also provide needed research and development grants and economic development assistance to states, cities, and small businesses to develop these green energy systems.
5. Adapt standards for US public port authorities to match or surpass the International Association of Ports and Harbors Environmental Ship Index program for clean ships.
6. Move beyond federal standards for low sulfur-emission fuels within US territorial waters. Instruct the EPA to set reduction in GHG emissions from shipping to achieve 50% reduction by 2035 and 100% by 2050.<sup>34,35</sup>
7. In the near term, require all ships operating in the US portion of the North American Emission Control Area to publicly report annual fuel consumption and GHG emissions, including CO<sub>2</sub> and methane, to support future federal, state, and local emission reduction policies.
8. Make American shipyards leaders in global innovation and competition by promoting production of zero emission vessels (ZEVs) and making ZEVs a requirement for all new Navy, Coast Guard, NOAA and other federal ship building projects by 2035.
9. Mandate that companies develop and implement a plan to transition all cruise ships that call on US ports to zero-life-cycle-emission vessels by 2030.

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<sup>32</sup> See the [San Pedro Bay Ports Clean Air Action Plan](#).

<sup>33</sup> See [NY State's plan](#) to link new offshore wind to ports; [solar power installations](#) at the Port of Seattle

<sup>34</sup> <https://www.portoflosangeles.org/environment/air-quality/environmental-ship-index>

<sup>35</sup> <http://www.imo.org/en/MediaCentre/HotTopics/GHG/Pages/default.aspx>.

10. Require that (where feasible), all ports install living shoreline defenses (or green-grey hybrid systems) instead of hard armoring in response to climate change impacts, and rely on the most up-to-date sea level rise forecasts.

## V. Issue Area #4: Aquaculture, Sustainable Fisheries, and Marine Biodiversity Conservation

### **Key Objectives**

**Objective #1:** *To support US fisheries, including those managed by tribal nations, adapt to climate impacts and maintain economic viability.*

**Objective #2:** *To catalyze rapid growth and innovation in a new sustainable seafood industry, which includes aquaculture, mariculture, and plant and cell-based seafood alternatives.*

**Objective #3:** *To establishing a network of Marine Protected Areas covering at least 30% of US Exclusive Economic Zone waters to provide public benefit and increase climate resilience.*

### **Key Talking Points**

- Current US fisheries policy was not designed with climate change in mind; it needs to be updated now that species are migrating to new regions as ocean waters warm and acidify.
- A new sustainable seafood industry has the potential to produce tens of thousands of new jobs, while improving environmental quality and the US trade balance.
- The economic and ecological value of the US system of Marine Protected Areas can be greatly enhanced with new climate standards for management, research, and designation.
- Marine Protected Areas not only promote climate resilience and improve fisheries, but are boons to regional tourism, as they improve biodiversity and ocean recreation options.<sup>36</sup>

### **V.1. Introduction**

Climate change poses unique challenges to the fishing industry, aquaculture, and the health of marine ecosystems that support these economic activities. With waters warming and ocean acidification and deoxygenation increasing, many species are moving to areas outside of their normal ranges, or are threatened by changes in their food supply.<sup>37</sup> In addition, pollutants from land-based sources, particularly agriculture, threaten these fish habitats, decrease their resiliency, and kill large numbers of fish through eutrophication every year. This makes both marine species management and fishing increasingly complex. Fishing is also a very energy-intensive industry, from the energy required to power the boats to the refrigeration needed to transport the product.

Aquaculture and plant and cell-based alternative seafood, all of which are relatively undeveloped in the US<sup>38</sup>, have the potential to produce large quantities of seafood for the US population, which would reduce pressure on wild fish catch, as well as the need for US seafood imports (thereby improving the US trade balance, while also reducing dependence on carbon-intensive and often illegal product riddled with labor abuses). In addition, alternative seafood production (under certain conditions—see below) can be very low or even net-negative in carbon emissions.

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<sup>36</sup> See: <https://www.americanprogress.org/issues/green/reports/2019/06/03/470585/marine-protected-areas-help-fisheries-ocean-ecosystems/>.

<sup>37</sup> See [this article](#) in Bloomberg; [this post](#) by the Environmental Defense Fund; and [this article](#) in Science Daily.

<sup>38</sup> See [NOAA U.S. Aquaculture Highlights from 2016](#).

Marine protected areas (MPAs) are also an important tool for sustaining fisheries and increasing biodiversity, which fosters climate resilience. Economic studies of the value of highly and fully protected MPAs show considerable returns on investment. Each \$1 invested in creating protected areas, can return up to \$20 in benefits, which include benefits to neighboring fisheries, reduced greenhouse gas emissions, the establishment of storm buffers, profitable eco-tourism opportunities, new MPA management jobs, and gains from new scientific discoveries.<sup>39</sup>

## **V.2. OCAP’s Recommendations for Aquaculture, Fisheries, and Marine Biodiversity Conservation**

To promote sustainable seafood production while protecting marine biodiversity, OCAP recommends the following policies:

1. Update the Magnuson-Stevens Act to help ensure that the fishery management process is adapting to, and planning for, the impacts of climate change, including adequate management of new, emerging, or migrating fisheries, early detection of shifting stocks, monitoring of bycatch, and promoting resilience of fish populations.
2. Create a Seafood Sustainability Index (SSI) that uses life-cycle analysis with true cost accounting (that includes the costs of externalities) to assess new seafood production technologies in the US—i.e. low-trophic aquaculture & mariculture, and alternative seafood.<sup>40</sup> Proposed projects could be scored similar to LEED certification, with tiers such as platinum, gold, etc.
3. Provide new federal funding for R&D for projects that score high on the SSI, as well as streamline regulatory approval to get new highly sustainable projects up and running quickly.
4. Provide new federal R&D funding to explore potential symbiotic links between agriculture and aqua/mariculture (e.g. using nutrient run-off from farms to grow algae).
5. Provide federal funds to distressed fishers to help them transition to harvesting new low trophic or farmed species (such as shellfish or sea vegetables), and funding to help develop new markets for these food products.
6. Increase habitat protection and restoration for marine species and ecosystems threatened by climate change and biodiversity loss (i.e. ensure that they have sufficiently large and safe migratory corridors, breeding sites, and nurseries), including the restoration of salt marshes, coral reefs, mangroves, and other habitats that act as essential fish nurseries.

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<sup>39</sup> See Brander et al. 2015, “The benefits to people of expanding Marine Protected Areas,” [available here](#).

<sup>40</sup> See <https://www.gfi.org/seafood> for a short discussion on ‘alternative’ seafood. An added benefit of alternative seafood is that the research and production can be done anywhere, so that inland states could directly benefit from this form of blue economic development.

7. Support the 30x30 global initiative<sup>41</sup> to protect 30% of our oceans by 2030 through a network of highly protected marine areas to build climate resilience.
8. Update the National Marine Sanctuaries Act to ensure that the Sanctuaries System is adapting to and planning for climate change, including mitigating and managing climate impacts to Sanctuary resources.
9. Engage Indigenous land and ocean-based knowledge and practices to inform conservation policies and projects within bio-regions, and work in conjunction with marine scientists in information gathering and marine fisheries policy development.<sup>42</sup>
10. Link aquaculture sites to emerging blue carbon markets in order to generate additional financial incentives.
11. Increase small-business loans and support for sustainable aquaculture, sustainable fishing, and alternative seafood startups; this could be accomplished through an expansion of USDA's Natural Resource Conservation Service, Farm Service Agency, Agriculture Research Service, and/or expanded Sea Grant programs.

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<sup>41</sup> See <https://www.woi.economist.com/the-need-to-protect-at-least-30-of-the-ocean-by-2030/>.

<sup>42</sup> For an excellent example of indigenous knowledge being deployed to build climate resilience off of the coast of Oregon see: <https://www.kcet.org/shows/tending-nature/episodes/protecting-the-coast-with-the-tolowa-dee-ni>.



## Appendix: Gap Analysis—Federal Legislation & OCAP Goals

This appendix analyses legislation introduced in the US Congress from 2018 to spring 2020 relating to any of the four OCAP issue areas, and assesses key legislative gaps.

### Issue Area 1: Coastal Adaptation and Financing

The coastal adaptation and financing issue area covers several sub-sections: National Flood Insurance Program (NFIP) reform, promoting living shorelines, improving storm water management, and protecting critical coastal infrastructure. The legislation introduced that relates to this issue area encourages pilot living shorelines, creating a database of living shorelines, funding coastal resilience in vulnerable communities, building a restoration workforce, and protecting coastal infrastructure. There is also legislation related to the NFIP reform that covers several recommendations, such as using more accurate flood maps, ensuring disclosure laws, limiting repetitive loss properties, and frequently updated actuarial rates. In total, this issue area is covered by fifteen different federal bills, twelve of which focus on coastal adaptation and resilience and three focused on flood insurance reform.

**National Flood Insurance Program (NFIP) Reform:** There were three bills related to flood insurance reform which are most related to the goals in this section. Three bills are particularly relevant ([H.R. 3167](#), [H.R. 3258](#), [H.R. 2874](#)); all touch on updating NFIP actuarial rates more frequently, using the most current flood maps, capping repetitive loss properties, and pushing for mandatory disclosure laws related to flood damages, disaster relief funds, and the current risk profile. No one bill we found touched on all of these, with the three bills each touching on one or two of these issues.

Because of these gaps, OCAP stands to help push for flood insurance reform more comprehensively and can help guide the reform in the future. *Some of the policy changes OCAP advocates that are not in current federal legislation include increasing buyout programs, initiating sister cities that link inland communities with coastal residents seeking to relocate, and allocating dedicated funding for managed retreat and buyout programs to island territories and tribal nations.*

**Living Shorelines:** Some recommendations within the living shorelines section are covered comprehensively by federal legislation. The OCAP recommendation that aims to fund state governments to develop pilot living shoreline projects in all at-risk coastal counties, has seven bills that address this ([H.R. 5589](#), [H.R. 3115](#), [S. 2452](#), [H.R. 3541](#), [H.R. 4093](#), [H.R. 1317](#), [H.R. 6288](#)). This indicates that it is a high priority of Federal bills. Two bills address creating a national database of living shoreline projects that is easily accessible and free to the public ([H.R. 5589](#), [S 110/H.R. 4062](#)) and one bill addresses focusing on establishing blue carbon protocols ([H.R. 5589](#)). Lastly, three bills touch on funding the development of living shorelines K-12 curriculum, and

vocational and community college programs to develop the industry and train the new coastal ecosystem restoration workforce ([H.R. 5102](#), [H.R. 5176](#), [S. 2452](#)).

Overall, federal legislation is active in the living shorelines sector and there are many proposed bills that address this topic. However, there are a few areas that are not yet covered by the bills reviewed. This can be an opportunity for OCAP to step in to fill some of these gaps. *A few topics not covered by the legislation but covered by OCAP include: funding the Army Corps of Engineers to begin living shorelines projects and to develop engineering standards for such projects, lifting the Army Corps rule for dredged sediment, including living shorelines alternatives into NEPA consideration for environmental impact statements, and the incorporation of Indigenous ecological knowledge into living shorelines planning.*

**Improving Storm Water Management:** There was no legislation found to touch on this topic fully. However, many of the overarching or other bills may touch on this topic indirectly.

**Protecting Critical Coastal Infrastructure:** Two main bills touched on this topic directly ([S. 778/H.R. 1716](#), [S. 1909](#)), with many of the living shorelines legislation and several overarching bills touching on this topic indirectly. OCAP's main objective in this section is to build resilience in disproportionately impacted vulnerable communities as they often do not have the resources to adapt to climate change, which existing bills do not comprehensively address.

## **Issue Area 2: Clean Ocean Energy**

Offshore renewable wind energy has many existing proposed policies which work towards parts of OCAP policy recommendations. These bills ([S. 3269](#), [S. 2660](#), [S. 2422](#), [S. 3135](#)) include energy workforce modernization, offshore wind energy lease amendments, and funds dedicated to research and development of offshore wind. *In order to scale the offshore wind industry, it is crucial to streamline the regulatory approval process for obtaining offshore federal wind leases.*

## **Issue Area 3: Ports, Shipping, and the Maritime Sector**

There are five recent bills which touch on this issue area. Three bills ([S. 4025](#), [S. 2302](#), [H.R. 6084](#)) focus on research and funding projects which test, evaluate, and deploy zero emission technologies in ports. One bill, [H.R. 7024](#), creates a funding program to reduce carbon and toxic air pollution by directly replacing diesel-burning equipment with zero-emission technology. This bill also pushes for shore power, port micro-grids, strong labor provisions to protect dockworkers from automation, and a prevailing wage for work funded through this program. The last bill, [H.R. 7304](#), establishes a grant program to incentivize port authorities to create climate action plans. This bill also emphasizes that environmental justice must be taken into consideration in these climate action plans.

Several individual ports are also leading the way for these efforts. Clean air action plans and climate action plans exist at several ports, such as the Los Angeles, Long Beach, and the San Diego Ports. Ports around the country are taking steps to reduce emissions in each of their own respective jurisdictions. *OCAP's recommendation to create national goals for the greening of ports are more ambitious than current proposed legislation.*

#### **Issue Area 4: Sustainable Fisheries, Aquaculture, and Marine Biodiversity Conservation**

The sustainable fisheries, aquaculture, and marine biodiversity issue area within OCAP aims to promote climate resilience for US fisheries, as well as enhance adaptive management of fisheries in the face of climate change. Generally, all proposed legislation in this issue area lacks intentional inclusion of historically underserved communities and indigenous groups. Additionally, no effort is made to integrate cultural and historical values that could improve climate resilience.

**Sustainable Fisheries:** There are several substantive bills proposed promoting sustainable and climate resilient fisheries which are directly connected to OCAP policy recommendations and policies that support the deployment of less impactful fishing practices and equipment ([H.R. 4679](#), [H.R. 1240](#)). Though these policies are generally strong and bipartisan, bills in line with OCAP fisheries recommendations are often vague in addressing impacts from climate change.

A recent bill that seeks to update the Magnuson-Stevens Act intends to relax restrictions giving fisheries managers more flexibility ([H.R. 3697](#)). However, there are existing proposals to increase federal funding and grants for the research and conservation of specific species, namely salmon and oysters ([H.R. 4723](#), [H.R. 5366](#)). Principles from these bills should be expanded and applied to regional fisheries management identifying climate change as a major threat ([H.R. 4679](#)).

Other proposed bills have sought to regulate equipment used in recreational fisheries to promote sustainability ([S. 1520](#), [S. 2960](#)). Similarly, these regulations and equipment upgrades could be applied to commercial fishery applications, ensuring best-practice technologies are being implemented.

*Moreover, current bills do not address already distressed fishing communities. Support in the form of small-business loans, grants, or retraining programs for fishermen to transition to low trophic level fishing must be included in future bills to relieve pressure on stressed fisheries and better serve local communities.*

**Aquaculture:** Although a burgeoning global industry, there are few bills to support the development of US aquaculture ([H.R. 5366](#), [H.R. 6191](#)). *In particular, as OCAP outlines, it will be important to fund and incentivize R&D, especially for new sustainable seafood that meets strict sustainability criteria, with funding targeted to the most sustainable projects. The lack of federal support and guidance for aquaculture has also left potential partnerships untapped; future legislation should include connecting sustainable aquaculture to local industries, as well as blue*

carbon markets. Finally, there are no current bills that support R&D in alternative seafood production, which is a key OCAP goal.

**Marine Biodiversity Conservation:** Conserving marine life is critical to fisheries, tourism, and coastal economies dependent on ocean resources. *Proposed legislation ([H.R. 1747](#), [S.754](#), [H.R. 4723](#)) has been introduced to control toxic algal blooms and regulate harmful chemicals in coastal habitats; however, these bills are weak in addressing impacts from climate change.*

### **Additional Policy**

Several bills were found to be overarching and related more broadly to OCAP. These bills do not necessarily connect to direct recommendations but instead add and expand on some of the main themes of the plan. There were several bills addressing climate action ([H.R. 9](#), [S. 2057](#), [H.R. 4051](#)), resiliency ([H.R. 1689/S. 763](#), [H.R. 2758](#)), environmental justice ([H.R. 3923](#), [H.R. 5842](#), [H.R. 5986](#)), and plastic pollution ([S. 2260](#), [H.R. 5845/S. 3263](#), [H.R. 5902/S. 3306](#)). In this sense, these issues help add to OCAP by expanding on issues that are not directly addressed in the plan. For example, OCAP has stated that plastic pollution may not directly be addressed by the plan but some people have pushed for plastics to be considered. By supporting plastic pollution legislation, OCAP can support these issues without directly addressing them.

### **All Related Legislation**

#### **Issue Area #1: Coastal Adaptation and Financing**

##### *Flood Insurance:*

<b>Policy Title</b>	<b>Date Introduced</b>	<b>Current Status</b>	<b>Sponsors</b>	<b>Brief Summary</b>
<a href="#">H.R. 2874 21st Century Flood Reform Act</a>	6/12/17	Passed House	Rep. Sean Duffy (R-WI)	To achieve reforms to improve the financial stability of the National Flood Insurance Program, to enhance the development of more accurate estimates of flood risk through new technology and better maps, to increase the role of private markets in the management of flood insurance risks, and to provide for alternative methods to insure against flood peril, and for other purposes.
<a href="#">H.R. 3167 NFIP reauthorization act of 2019</a>	6/10/2019	Introduced	Rep. Maxine Waters (D-CA)	Reauthorizes the NFIP through 2024. Includes flood mapping modernization and mitigation pilot programs and funding. Expands flood coverage, reduces fees for families and small

			(bipartisan support)	businesses. DOES NOT: Increase premiums in high-risk areas.
<a href="#"><u>H.R.3258 - Flood Insurance Integrity Act of 2019</u></a>	6/13/19	Introduced	Rep. Gus Bilirakis (R-FL)	This bill directs the Government Accountability Office (GAO) to review every four years the rate tables established by the Federal Emergency Management Agency (FEMA) for implementing the National Flood Insurance Program (NFIP). The GAO must determine whether (1) the chargeable premium rates for flood insurance coverage are actuarially sound, based on standard actuarial practices used in the private sector; and (2) such chargeable premium rates are sufficient to ensure the long-term financial sustainability of NFIP. The bill also directs the GAO to review annually the process for establishing and updating flood insurance rate maps and determine the degree of accuracy of the mapping process.

*Coastal Adaptation:*

<b>Policy Title</b>	<b>Date Introduced</b>	<b>Current Status</b>	<b>Sponsors</b>	<b>Brief Summary</b>
<a href="#"><u>S. 110/H.R. 4062 Digital Coast Act</u></a>	1/12/17	Passed Senate; Received in House	Sen. Tammy Baldwin (D-WI)/Rep. C. A. Dutch Ruppersberger (D-MD)	To help coastal communities better prepare for storms, cope with varying water levels, and strengthen coastal economic development planning efforts. Requires NOAA to create a digital coast program. The program must: (1) provide an online resource that integrates geospatial data, decision-support tools, training, and best practices to address coastal management issues and needs, and to enhance resilient communities, ecosystem values, and coastal economic growth and development; and (2) provide for the documentation, dissemination, and archiving of the data.

<a href="#">H.R.6288 - COASTS Act</a>	6/28/18	Introduced	Rep. Seth Moulton (D-MA)	To require research in coastal sustainability and resilience, to ensure that the Federal Government continues to implement and advance coastal resiliency efforts, and for other purpose. This bill directs the National Oceanic and Atmospheric Administration to award competitive grants to certain entities for (1) activities that strengthen coastal communities, and (2) restoration of coastal habitats to provide vital habitat for fish and strengthen the resilience of coastal ecosystems.
<a href="#">H.R. 1317 Coastal Communities Adaptation Act</a>	2/22/19	Introduced	Rep. Harley Rouda (D-CA)	Aims to improve the resilience of the built and natural environment to natural disasters and climate change using, among other measures, natural and nature-based features, and for other purposes.
<a href="#">S. 778/H.R. 1716 Coastal Communities Ocean Acidification Act</a>	3/13/2019	Introduced	Lisa Murkowski (R-AK) /Chellie Pingree (D-ME)	This bill requires the NOAA to conduct and update at least once every seven years an ocean acidification coastal community vulnerability assessment with a corresponding public report. The assessment must identify (1) US coastal communities that are most dependent on coastal and ocean resources that may be impacted by ocean acidification; (2) the nature of those communities' vulnerabilities, including the economic impact on local or regional commercial fisheries and recreational opportunities; and (3) key knowledge gaps where research could be devoted to better understand the possible ocean acidification impacts and possible adaptation strategies for the communities.
<a href="#">H.R. 3115: Living Shorelines Act of 2019</a>	6/5/19	Introduced	Rep. Frank Pallone Jr. (D, NJ), Sen. Kamala Harris (D,CA)	Bill to direct NOAA to make grants to state and local governments and NGOs to carry out climate-resilient living shoreline projects that protect coastal communities by supporting ecosystem functions and habitats with the use of

				natural materials and systems and for other purposes.
<a href="#">S.1909 - Resilient Highways Act of 2019</a>	6/19/19	Introduced	Sen. Kirsten Gillibrand (D-NY)S	To amend title 23 to ensure federal-aid highways and bridges are more resilient to mitigate the impacts of sea level rise and extreme weather events.
<a href="#">H.R. 3541 Coastal State Climate Preparedness Act of 2019</a>	6/27/19	Introduced	Rep. Carbajal (D-CA)	Would amend the Coastal Zone Management Act (1972) to require Secretary of Commerce to establish a coastal climate change adaptation preparedness and response program. Would provide grants for Coastal states to design and implement plans. (Specifically mentions establishing habitat buffer zones, providing climate refugia, restoring ecosystem function)
<a href="#">H.R. 4093 National Oceans and Coastal Security Improvements Act of 2019</a>	7/30/19	Introduced	Rep. Donald Beyer (D-VA)	Aims to create funds for coastal restoration, development, and management to prepare for coastal risks including sea level change, hurricanes, coastal economics changes etc. Also could be used as "enhancing" the resiliency of transportation, emergency response, water, and other infrastructure b/c of same risks as above.
<a href="#">S.2452 - Climate Stewardship Act of 2019</a>	9/10/19	Introduced	Sen. Booker, Cory A. (D-NJ)	Among other climate issues, this bill will: 1) Restore or protect over 2 million acres of coastal wetlands by 2030 to sequester carbon emissions and reduce coastal flooding. Coastal wetlands act as an important sponge during extreme weather events with heavy rainfall. For example, although New Jersey has lost more than 40 percent of its coastal wetlands, the wetlands remaining helped prevent \$625 million of property damage during Hurricane Sandy in 2012. 2)Reestablish the Civilian Conservation Corps to provide youth from low-income communities, indigenous communities, and communities of color with skills and

				work experience in forestry and wetlands restoration.
<a href="#"><u>H.R. 5102 Coastal Resilience Research and Education Act</u></a>	11/14/19	Introduced	Rep. Jimmy Pannetta (D-CA), Rep. Waltz (R-FL)	This would provide the National Oceanic and Atmospheric Administration (NOAA) the authority to designate public universities and colleges as National Centers of Excellence in Coastal Resilience Research and Education. This designation recognizes institutions exhibiting leadership in research and education focused on resilience and mitigating flooding and shoreline erosion. The legislation also formalizes collaborative partnerships with federal agencies, which ensure the sharing of science-based research, information and policy recommendations to the federal government to protect vulnerable coastlines.
<a href="#"><u>H.R. 5176 Climate Resiliency Service Corps Act</u></a>	11/19/2019	Introduced	Rep. Judy Chu (D-CA)	To amend the National and Community Service Act of 1990 to establish a climate resiliency service corps to help communities withstand and respond to changes in the earth's climate with respect to natural disasters, and for other purposes.
<a href="#"><u>H.R.5589 - Blue Carbon for Our Planet Act</u></a>	1/13/20	Introduced	Rep. Suzanne Bonamici (D-OR)	To establish an Interagency Working Group on Coastal Blue Carbon which will oversee the development of a national map of coastal blue carbon ecosystems, establish national coastal blue carbon ecosystem restoration priorities, assess the biophysical, social, and economic impediments to coastal blue carbon ecosystem restoration, study the effects of climate change, environmental, and human stressors on sequestration rates, and preserve the continuity of coastal blue carbon data.

Issue Area #2: Offshore Renewable Energy



Policy Title	Date Introduced	Current Status	Sponsors	Brief Summary
<a href="#">S 1769/HR 3068 Offshore Wind Jobs and Opportunity Act</a>	6/10/19	Introduced	Sen. Edward J Markey (D-MA)/Rep. William Keating (D-MA)	Aims to require the secretary of energy to establish an offshore wind career training grant program.
<a href="#">S. 2415 Wind Workforce Modernization and Training Act</a>	8/1/2019	Introduced	Sen. Joni Ernst (R-IA)	A bill to amend the Energy Policy Act of 2005 to establish a grant program for training wind technicians, and for other purposes. The proposed amendments are in reference to defining 'eligible entity' to mean a community college or technical school that offers a wind training program, establishing a competitive grant program, and funding authorization. Further, the amendment is to include a 'Veterans in wind energy' section to establish a wind program modeled after 'Solar Ready Vet' pilot program as well as a funding authorization.
<a href="#">S. 2422 Clean Energy Grid Act</a>	8/1/2019	Introduced	Sen. Jeanne Shaheen (D-NH)	This bill directs the Department of Energy (DOE) to address the integration of clean distributed energy into electric grids. Clean distributed energy means energy (e.g., solar and wind energy) that is generated on or near customer sites and interconnected with the electric grid. Specifically, DOE must study the status of integration of clean distributed energy into electric grids, identify issues requiring additional research or regulatory development, make grants for research proposals that address technical barriers identified in the study, establish and distribute to states best practices to encourage the integration of clean distributed energy into the grid, and convene a working group of stakeholders to address regulatory barriers to deployment of intelligent grid integration of clean distributed energy technologies. DOE may make grants to implement integration demonstration projects.

<a href="#">S 2660: Wind Energy Research and Development Act of 2019</a>	10/22/19	Introduced	Sen. Tina Smith (D-MN)	To establish a grant program for wind energy research, development, and demonstration. (Has specific section on offshore wind in legislation)
<a href="#">S. 2688 Technology Transitions Act</a>	10/23/2019	Introduced	Sen. Bill Casside (R-LA)	A bill to amend the Energy Policy Act of 2005 to establish an Office of Technology Transitions, and for other purposes. The Office of Technology Transition's mission should be a) to expand the commercial impact of research investments of the Department; and b) to focus on commercializing technologies that reduce greenhouse gas emissions and technologies that support other missions of the Department. Further, the goals of the Department should include reducing greenhouse gas emissions, ensuring economic competitiveness, enhancement of domestic energy security and national security, enhancement of jobs, and any other missions of the Department, as determined by the Secretary.
<a href="#">Draft: Growing Renewable Energy and Efficiency Now (GREEN) Act</a>	11/19/19	Draft Bill	Chairman Mike Thompson (D-CA)	The bill would promote renewables among other initiatives by : 1) Promote and incentivize the reduction of GHG emissions through new and existing tax benefits 2) Support the use of zero-emissions transportation and infrastructure - Ports! 3) Invest in green workforce through energy credits for manufacturers 4) Advance environmental justice through tax credits and research
<a href="#">S. 3135 Consortia-Led Energy and Advances Manufacturing Networks Act</a>	12/19/19	Introduced	Sen. Edward Markey (D-MA)	A bill to provide for the establishment of clean technology consortia to enhance the economic, environmental, and energy security of the United States by promoting domestic development, manufacture, and deployment of clean technologies, and for other purposes.
<a href="#">S. 3269 Clean Economy Act 2020</a>	2/11/2020	Introduced	Sen. Thomas Carper (D-DE),	A bill to set and meet a national goal of net-zero greenhouse gas emissions by 2050.

Issue Area #3: Ports, Shipping, and the Maritime Sector

Policy Title	Date Introduced	Current Status	Sponsors	Brief Summary
<a href="#">H.R. 6084 Water Power Research and Development Act</a>	3/04/2020	Introduced	Rep. Suzanne Bonamici (D-OR), Rep. Don Young (R-AK)	To provide for a program of hydropower, pumped storage, and marine energy research, development, demonstration, and commercial application, and for other purposes. Also takes steps to decarbonize maritime energy infrastructure, including port infrastructure.
<a href="#">H.R. 7024, the Climate Smart Ports Act</a>	5/27/2020	Introduced	Rep. Nanette Diaz Barragán (D-CA)	To direct the Administrator of the Environmental Protection Agency to establish a \$1 billion a year program to award grants to eligible entities to purchase, and as applicable install, zero emissions port equipment and technology, and for other purposes.
<a href="#">S. 4025 Expanding Maritime Environmental and Technical Assistance Program Act</a>	6/22/2020	Introduced	Sen. Edward Markey (D-MA)	A bill to authorize appropriations for the maritime environmental and technical assistance program and which authorizes an additional \$3 million for the META Program to research on zero-emission port and vessel technologies.
<a href="#">H.R. 7304 Climate Action Planning for Ports Act of 2020</a>	6/24/2020	Introduced	Rep. Lisa Blunt Rochester (D-DE)	Establishes a competitive grant program at EPA to incentivize port authorities and state, local, and tribal governments to create and implement climate action plans to reduce greenhouse gas emissions and other air pollutants at America’s ports. The bill directs EPA to prioritize grant applications that, among other factors, (1) take a regional approach to reducing greenhouse gas emissions at ports;

				(2) collaborate with near-port communities and environmental justice communities to develop the climate action plans; and (3) would have benefits beyond the port facilities, such as reducing offsite air pollutants from vehicles, equipment, and vessels.
<a href="#">S.2302 - America's Transportation Infrastructure Act of 2019</a>	7/29/2019	Introduced	Sen. John Barrasso (R-WY)	To amend title 23, United States Code, to authorize funds for Federal-aid highways and highway safety construction programs. Also includes \$370 million to coordinate and provide funding to test, evaluate, and deploy projects that reduce port-related emissions from idling trucks, including through the advancement of port electrification and improvements in efficiency, focusing on port operations, including heavy-duty commercial vehicles.

Issue Area #4: Sustainable Fisheries, Aquaculture, and Marine Biodiversity Conservation

Policy Title	Date Introduced	Current Status	Sponsors	Brief Summary
<a href="#">S.3138 AQUAA Act</a>	6/26/18	Introduced	Sen. Roger Wicker (R-MS)	This bill directs the Department of Commerce to establish an Office of Marine Aquaculture within the National Oceanic and Atmospheric Administration to coordinate regulatory, scientific, outreach, and international issues related to aquaculture. Commerce must establish a research and development program to award competitive, peer-reviewed grants to fund research and extension services, including to develop and evaluate methodologies to prevent, minimize, and mitigate potential adverse ecosystem and

				socioeconomic impacts of marine aquaculture.
<a href="#">H.R. 1240 Young Fisherman's Development Act 2019</a>	2/14/2019	Introduced	Rep. Don Young (D-AK)	This bill directs the National Sea Grant Office in the National Oceanic and Atmospheric Administration to establish a Young Fishermen's Development Grant Program to provide training, education, outreach, and technical assistance initiatives for young fishermen.
<a href="#">S. 754 National Fish Habitat Conservation Act of 2019</a>	3/12/2019	Introduced	Sen. Mike Crapo (R-ID)	This bill establishes the National Fish Habitat Board to (1) encourage partnerships among public agencies and other interested parties to promote fish conservation, (2) establish national goals and priorities for fish habitat conservation, (3) recommend to Congress entities for designation as a Fish Habitat Partnership, and (4) review and make recommendations regarding fish habitat conservation projects.
<a href="#">H.R. 1747 National Fish Habitat Conservation Through Partnership</a>	3/13/2019	Introduced	Rep. Robert J Wittman (R-VA)	Aims to encourage partnerships among public agencies and other interested persons to promote fish conservation (including fishing communities). Wants to establish "National Fish Habitat Board" with broad representation from many interested groups (tribal groups and fishing communities included).
<a href="#">H.R. 4679 Climate Ready Fisheries Act</a>	10/15/2019	Introduced	Rep. Joe Cunningham (D-SC)	To require the Comptroller General of the United States to submit to Congress a report examining efforts by the Regional Fishery Management Councils, the Atlantic States Marine Fisheries Commission, and the National Marine Fisheries Service to prepare and adapt United States fishery management for the impacts of climate change, and for other purposes.
<a href="#">HR 4723 Fish Act</a>	10/17/2019	Introduced	Rep. Jared Huffman (D-CA)	Aims to identify salmon conservation areas.

<a href="#"><u>H.R. 5366 Chesapeake Bay Oyster Research Act</u></a>	12/9/2019	Introduced	Rep. Anthony Brown (D-MD)	To require the Secretary of the Commerce, acting through the Administrator of the National Oceanic and Atmospheric Administration, to provide grants supporting research on the conservation, restoration, or management of oysters in the Chesapeake Bay.
<a href="#"><u>H.R. 5589 Blue Carbon for Our Planet Act</u></a>	1/13/2020	Introduced	Rep. Suzanne Bonamici	To establish an Interagency Working Group on Coastal Blue Carbon, and for other purposes. The group shall oversee the development of a national map of coastal blue carbon ecosystems, establish a national coastal blue carbon ecosystems, establish national coastal blue carbon ecosystem restoration priorities, as well as assess impediments to coastal blue carbon ecosystem restoration.

Additional Overarching Policy:

<b>Policy Title</b>	<b>Date Introduced</b>	<b>Current Status</b>	<b>Sponsors</b>	<b>Brief Summary</b>
<a href="#"><u>HR 1689/S 763 Climate Change Resiliency Fund for America Act 2019</u></a>	3/12/19	Introduced	Rep.Theodore E. Deutch [D-FL]	Not specific for coastal resiliency but could be applicable. Aims to create climate change advisory commission to develop recommendations, frameworks and guidelines for projects to respond to climate change
<a href="#"><u>HR 9 Climate Action Now Act</u></a>	3/27/19	Passed House	Rep. Kathy Castor (D-FL)	"To direct the President to develop a plan for the United States to meet its nationally determined contribution under the Paris Agreement."
<a href="#"><u>HR 2758 Safeguarding America's Future and Environment Act</u></a>	5/15/19	Introduced	Rep. Matt Cartwright (D-PA)	Aims to establish an integrated national approach to respond to ongoing and expected effects of extreme weather and climate change by protecting, managing, and conserving the fish, wildlife, and plants of the United States, and to maximize Government efficiency and reduce costs. Important section: "to establish an integrated national

				approach to respond to ongoing and expected effects of extreme weather and climate change by protecting, managing, and conserving the fish, wildlife, and plants of the United States, and to maximize Government efficiency and reduce costs, in cooperation with State, local, and Tribal Governments and other entities."
<a href="#">S 2057 National Climate Bank Act</a>	7/8/19	Introduced	Sen. Ed Markey (D-MA)	To establish a national climate bank.
<a href="#">H.R.3923 - Environmental Justice Act of 2019</a>	7/23/19	Introduced	Rep. Raul Ruiz (D-CA)	To require Federal agencies to address environmental justice, to require consideration of cumulative impacts in certain permitting decisions, and for other purposes.
<a href="#">S. 2260: Save Our Seas 2.0: Improving Domestic Infrastructure to Prevent Marine Debris Act</a>	7/24/19	Introduced	Sen. Dan Sullivan (R-AK)	In progress bill sponsored by Dan Sullivan (R, Alaska) to improve domestic infrastructure in order to prevent marine debris.
<a href="#">HR 4051 Climate Action Rebate Act 2019</a>	7/25/19	Introduced	Rep. Jimmy Panetta (D-CA)	To create a Climate Action Rebate Fund in order to efficiently reduce greenhouse gas emissions, provide a monthly rebate to the American people, encourage innovation of clean energy technologies and create new economic opportunities, ensure the resiliency of our infrastructure, assist with the transition to a clean energy economy, and leave a healthier, more stable, and more prosperous nation for future generations.
<a href="#">H.R.5845/S.3263 - Break Free From Plastic Pollution Act of 2020</a>	2/11/20	Introduced	Rep. Alan Lowenthal (D-CA)/Sen. Tom Udall (D-MN)	To amend the Solid Waste Disposal Act to reduce the production and use of certain single-use plastic products and packaging, to improve the responsibility of producers in the design, collection, reuse, recycling, and disposal of their consumer products and packaging, to prevent

				pollution from consumer products and packaging from entering into animal and human food chains and waterways, and for other purposes.
<a href="#"><u>H.R.5842 - Voices for Environmental Justice Act</u></a>	2/11/20	Introduced	Rep. Joseph Kennedy (D-MA)	To authorize the Administrator of the Environmental Protection Agency to award grants to entities to enable such entities to participate in decisions impacting the health and safety of their communities in connection with the release of certain hazardous air pollutants and the permitting of solid waste disposal facilities and hazardous waste facilities, and for other purposes.
<a href="#"><u>H.R.5902/S. 3306 - MICRO Plastics Act of 2020</u></a>	2/13/20	Introduced	Rep. Brian J. Mast (R-FL)/Sen. Jeff Merkley (D-OR)	To establish a microplastics pilot program, to test the efficacy and cost effectiveness of tools, technologies, and techniques (1) to remove microplastics from the environment; and (2) to prevent the release of microplastics into the environment.
<a href="#"><u>H.R.5986 - Environmental Justice For All Act</u></a>	2/27/20	Introduced	Rep. Raul Grijalva (D-AZ)	To restore, reaffirm, and reconcile environmental justice and civil rights, provide for the establishment of the Interagency Working Group on Environmental Justice Compliance and Enforcement, and for other purposes.



