

# Ocean-Climate Elements: Congressional Action Plan from the Select Committee on the Climate Crisis



## Introduction

This week, the House Select Committee on the Climate Crisis released its sweeping report of recommendations for climate policy, “Solving the Climate Crisis: The Congressional Action Plan for a Clean Energy Economy and a Healthy, Resilient, and Just America” (1).

Addressing the climate crisis is the most important action we can take for the ocean, which is under threat from warming, decreasing oxygen levels, and acidification. To phase out greenhouse gas pollution no later than 2050 and limit warming within 1.5 degrees Celsius over pre-industrial levels, it is necessary to enact policies that can achieve ambitious emissions reductions across sectors of the economy, from transportation and electricity to industry and agriculture. Likewise, it is necessary to build the resilience of communities and ecosystems to the unavoidable impacts of climate change—and to ensure justice for communities that are facing not only historic and ongoing social and economic inequalities but also increased risks from climate impacts.

The Select Committee report offers a legislative roadmap to help create a country that is free from greenhouse gas pollution and resilient to the effects of climate change. Notably, the plan also recognizes the important role that the ocean can play in mitigation and adaptation. By reducing greenhouse gas pollution, increasing the climate resilience of human communities, and allowing ecosystems to adapt to changing ocean conditions, ocean-based measures are critical elements in the toolbox of climate policy.

This fact sheet compiles and categorizes the major ocean-specific climate policies—as well as the coastal community-specific climate policies—that the report recommends across its more than 500 pages, which include actions such as electrifying ports, restoring wetlands, and increasing offshore wind. Other report elements are relevant to the ocean more indirectly; this sheet, however, focuses specifically on:

1. **Protecting and restoring blue carbon ecosystems;**
2. **Scaling up offshore renewable energy;**
3. **Reducing emissions from shipping and ports;**
4. **Reducing emissions from offshore oil and gas;**
5. **Advancing marine protected areas;**
6. **Combating ocean acidification, harmful algal blooms, and hypoxia;**

7. **Protecting coastal infrastructure and communities against climate impacts such as sea level rise and flooding;**
8. **Creating climate-ready fisheries;**
9. **Advancing ocean-climate justice;**
10. **General ocean-climate recommendations.**

Several recommendations are cross-cutting and appear in the most relevant category. These are direct quotes from the report.

## 1. Protecting and restoring blue carbon ecosystems *(Note: See also Section 5)*

### **Pursue RDD&D for the most promising technologies to address emissions and advance resilience in specific sectors**

*Recommendation:* Congress should increase funding and initiatives for specific technologies critical to the resilience and decarbonization of the power, transportation, industry, building, and agriculture sectors, as well as natural and technological carbon removal. The gaps differ by sector and are described in more detail in other sections of this report. Some priority areas include:

- Natural climate solutions: Lifecycle accounting of the climate impacts and carbon benefits of wood use and products, including biomass; measurement and evaluation of forest restoration, forest health and wildfire behavior, and carbon sequestration on U.S. lands, forests, and soils; and understanding climate impacts and benefits of blue carbon ecosystems. (pp. 217–218)

### **Increase funding for the National Park Service and other land management agencies to lift up America’s national parks and public lands as part of the climate solution**

*Recommendation:* Congress should direct the National Park Service to identify national parks landscapes eligible for native

reforestation, reestablishment of native grasslands, and restoration of natural coastal infrastructure to maximize carbon storage and provide funding to carry out these projects. (p. 438)

### Restore lost and degraded ocean and wetland ecosystems

*Recommendation:* Congress should restore lost and degraded wetlands as one component of a comprehensive climate strategy. This should include (1) directing NOAA to identify national restoration priorities that would produce the highest rate of carbon sequestration and ecosystems benefits and providing funding for these efforts; (2) increasing funding for existing NOAA and EPA grant programs to provide financial and technical assistance to restore degraded nonfederal wetlands for climate mitigation and resilience; and (3) increasing federal investments in coastal and riverine ecosystem restoration, including NOAA’s Office of Habitat Conservation, NOAA’s National Estuarine Research Reserve Program, EPA’s National Estuary Program, and FWS’s Coastal Program. (p. 467)

### Advance understanding of ocean and coastal ecosystems’ climate benefits

*Recommendation:* Congress should support and invest in increased scientific understanding of the impacts of climate change on the ocean, wetlands, and other blue carbon ecosystems as well as the climate benefits these blue carbon ecosystems can provide. This should include (1) directing NOAA and the National Academies of Science, Engineering, and Medicine to assess the potential for an Advanced Research Project Agency-Oceans; (2) codifying and focusing NOAA’s Digital Coast program on the most important data gaps; (3) directing an interagency working group to research and map coastal wetlands, maintain data relating to blue carbon ecosystems, and better understand how to maximize their carbon sequestration and climate benefit potential; (4) improving data and monitoring efforts through other programs, such as NOAA’s Integrated Ocean Observing System, National Estuarine Research Reserves, National Sea Grant Program, and EPA’s National Estuary Program; and (5) reauthorizing the National Oceanographic Partnership Program as a mechanism for funding critical ocean research and supporting public-private partnerships. (p. 477)

### Expand research on the ocean carbon cycle

*Recommendation:* Congress should increase funding for NOAA to expand research on the ocean carbon cycle, including the effects of declining marine mammal and fish populations on blue carbon sequestration. (p. 478)

## 2. Scaling up offshore renewable energy

### Create an investment tax credit to deploy more offshore wind energy projects and continue investing in research and development

*Recommendation:* Congress should provide a long-term extension of the Section 48 ITC for offshore wind energy projects. Congress should provide a direct pay option for clean energy tax credits. (p. 41)

*Recommendation:* Congress should reauthorize and expand DOE research, development, and demonstration of offshore wind energy technologies. (p. 41)

### Research and deploy marine and hydrokinetic energy

*Recommendation:* Before it expires in 2021, Congress should pass a longer-term extension of the PTC for marine and hydrokinetic energy resources to provide greater certainty for potential investors. Congress should provide a direct pay option for clean energy tax credits. In the section of the report titled “Protect and Restore Ocean and Wetland Ecosystems for Climate Mitigation and Resilience,” the majority staff for the Select Committee outlines policy recommendations to ensure that deployment of marine and hydrokinetic energy infrastructure protects the marine environment, including sensitive species. (p. 45)

*Recommendation:* Congress should expand research, development, demonstration, and deployment of marine and hydrokinetic energy by expanding funding for DOE’s Water Power Technologies Office (p. 45)

### Modernize the National Interest Electric Transmission Corridors program

*Recommendation:* Congress should amend the Federal Power Act so that the goals of the National Interest Electric Transmission Corridors program are to help achieve national climate goals, including enhancing the development, supply, or delivery of onshore and offshore renewable energy. (p. 52)

### Develop a National Offshore Wind Transmission Plan

*Recommendation:* Congress should provide funding for DOE to analyze the existing onshore and offshore transmission system to identify what the requirements would be to connect 50 GW of offshore wind. DOE should identify the environmental and economic benefits of developing offshore transmission. Consistent with recommendations elsewhere in this report about a national electric infrastructure strategy,

FERC should develop a National Offshore Wind Transmission Plan. (p. 59)

*Recommendation:* Consistent with the National Offshore Wind Transmission Plan, Congress should provide loan guarantees for public-private partnerships to upgrade coastal grid infrastructure for offshore wind projects by investing in transmission and interconnection facilities. (p. 59)

*Recommendation:* Congress should direct FERC to conduct a rulemaking to break down barriers to the interconnection of offshore wind facilities. Congress should also direct FERC to develop a cost allocation methodology for offshore wind transmission facilities. (p. 59)

### Ensure that U.S. territories can take advantage of renewable energy

*Recommendation:* Congress should expand OCSLA [Outer Continental Shelf Lands Act] to apply to U.S. territories, establish a process for offshore wind leasing, and provide dedicated funding for coral reef conservation. (p. 79)

### Make energy-efficient offshore wind servicing vessels eligible for federal loan guarantees

*Recommendation:* Congress should amend the Title XI loan guarantee program to include wind turbine installation vessels to incentivize the manufacture of vessels that will be needed to service a growing offshore wind industry. These vessels should meet the International Maritime Organization's Energy Efficiency Design Index (EEDI) standards. The EEDI standards require that new ships meet a minimum energy efficiency standard per capacity mile for reference ships based on ship type and size. The energy efficiency standard becomes more stringent every five years.

Federal support for projects should be conditioned on recipients meeting strong labor standards (including Buy America/n and Davis-Bacon prevailing wage requirements), complying with all labor, environmental, and civil rights statutes, and signing community benefit agreements and project labor agreements, where relevant. (p. 141)

### Pursue RDD&D for the most promising technologies to address emissions and advance resilience in specific sectors

*Recommendation:* Congress should increase funding and initiatives for specific technologies critical to the resilience and decarbonization of the power, transportation, industry, building, and agriculture sectors, as well as natural and technological carbon removal. The gaps differ by sector and

are described in more detail in other sections of this report. Some priority areas include:

- Power sector: Grid-scale and long-duration storage, smart grid technologies, offshore wind, next-generation nuclear, marine and hydrokinetic energy, integration and deployment of distributed energy resources and non-wires alternatives, reduction of soft costs (costs associated with permitting, construction, operation, and maintenance) for clean energy projects, and energy generation technologies, infrastructure, and materials that are more resilient to climate impacts. (p. 217)

### Scale up ocean-based renewable and marine energy while minimizing impacts on marine mammals, fisheries, ocean ecosystems, and cultural resources

*Recommendation:* Congress should encourage DOI to take a regional approach to offshore planning and leasing and direct the agency to require that such development avoids and minimizes environmental impacts and conflicts with ocean wildlife, ecosystems, cultural resources, and other marine activities to the maximum extent practicable by (1) thoughtfully siting projects with input from multiple stakeholders, including scientists and other ocean users; (2) taking appropriate precautions when constructing and operating offshore renewable energy projects; and (3) committing to understanding and protecting marine life. (p. 470)

## 3. Reducing emissions from shipping and ports

### Significantly increase funding for DOE transportation electrification grants

*Recommendation:* Congress should amend EISA Subsection (a)(6)(A) to expand grant eligibility for "shipside or shoreside electrification for vessels" to include ground support equipment at ports, including drayage trucks. Drayage trucks are heavy-duty trucks that transport containers to and from ports and intermodal railyards. (p. 125)

### Provide federal grant support or loans for deployment of alternative fuel infrastructure for medium- and heavy-duty vehicles

*Recommendation:* Congress should pass legislation authorizing DOT to offer competitive grants or loans to state, local, and tribal governments to install alternative fuel infrastructure,

such as charging and hydrogen fueling stations, capable of servicing medium- and heavy-duty vehicles. Federal support for projects should be conditioned on recipients meeting strong labor standards (including Buy America/n and Davis-Bacon prevailing wage requirements), complying with all labor, environmental, and civil rights statutes, and signing community benefit agreements and project labor agreements, where relevant. Priority should go to projects that will reduce harmful air pollution in environmental justice communities and other disproportionately exposed communities, including communities near port facilities. (p. 126)

#### Significantly increase federally supported research, development, demonstration, and deployment to reduce emissions in the shipping sector

*Recommendation:* Congress should increase funding for META to make decarbonization of the U.S. shipping sector and seaports a top priority. MARAD could use META to research innovative hull designs, advanced propulsion systems and materials, alternative liquid fuels, and other zero-emission vessel technologies. (p. 137)

#### Ensure low-carbon shipping fuels are eligible for credits under the renewable fuel standard or a future low carbon fuel standard

*Recommendation:* Congress should ensure that qualifying shipping fuels are eligible for credits under the RFS or a future Low Carbon Fuel Standard, assuming the fuels meet all applicable standards. (p. 137)

#### Provide grants to expedite port electrification, reduce emissions from port operations, and upgrade ports for offshore wind development

*Recommendation:* Congress should increase funding for DOT and/or EPA grant programs to (1) support retrofitting or replacing diesel vehicles, drayage trucks, and other equipment at ports; (2) upgrade the nation's inland ports and seaports to improve rail access and support ship-to-shore power; and (3) prepare coastal port infrastructure to service offshore wind development. Priority should go to projects that will reduce harmful emissions in environmental justice communities and communities disproportionately exposed to air pollution. Project developers should engage representatives from near-port communities early in the planning process. (p. 139)

*Recommendation:* Congress should consider crafting legislation to require vessels to plug into shore power where available and when feasible. (p. 139)

## 4. Reducing emissions from offshore oil and gas

### Set ambitious national goals for reducing methane emissions from the oil and gas sector and direct EPA and BLM to issue new rules to achieve those goals

*Recommendation:* Congress should pass legislation establishing a national methane pollution reduction goal for the oil and gas sector of 65% to 70% by 2025 and 90% by 2030, relative to 2012 levels, and directing EPA and BLM to conduct rulemakings to achieve those reductions from new and existing oil and gas operations. The rules should require active monitoring for methane leaks throughout the system and, at minimum, cover methane emissions from oil and gas production, including new and existing offshore petroleum and natural gas production facilities; gathering and boosting; processing; transmission and distribution; storage; and equipment that handles liquefied natural gas (LNG). The rules should provide a clear pathway and criteria for EPA and BLM to recognize and approve the use of new advanced leak detection techniques upon their development. The legislation should set a clear and urgent timeline for promulgation and implementation of the rules. (p. 198)

### Invest in orphaned oil and gas well reclamation and remediation on federal and nonfederal land

*Recommendation:* Congress should establish a reclamation fund to remediate and reclaim orphaned oil and gas wells. This fund should provide funding for federal land management agencies to reclaim and restore orphaned wells on public lands and waters as well as for states, tribes, and territories to restore abandoned wells on state, private, tribal, and territorial lands. This program should establish strong reclamation standards for abandoned well sites both onshore and offshore and prioritize climate and biodiversity benefits. (p. 298)

### Prohibit new offshore oil and gas leasing

*Recommendation:* Congress should prohibit any new offshore oil and gas leasing in any region of the Outer Continental Shelf. Additionally, Congress should codify and strengthen drilling safety standards for existing wells, prohibit high-intensity seismic testing in any region of the Outer Continental Shelf outside of those areas that were available for sales in the 2017-2022 Outer Continental Shelf Oil and Gas Leasing Proposed Final Program, implement reporting requirements for failures of critical safety systems, improve monitoring of pollution near wells, and strengthen bonding and reclamation requirements for all offshore oil and gas development. (p. 484)

*Recommendation:* Congress should prohibit funding R&D programs for the commercial development of methane hydrates for natural gas. (p. 484)

### Reform the offshore oil and gas royalty system and close loopholes for oil and gas companies

*Recommendation:* Unless and until the prohibition on new offshore oil and gas leasing and development takes effect, Congress should amend OCSLA to implement a royalty rate of no less than 18.75% for all offshore oil and gas production, regardless of water depth. Additionally, Congress should end royalty relief for offshore development, including repealing the loophole in the Deepwater Royalty Relief Act that has allowed fossil fuel companies to avoid paying offshore oil and gas royalties. (p. 493)

## 5. Advancing marine protected areas

### Protect at least 30% of all U.S. lands and ocean areas by 2030, prioritizing high-quality conservation

*Recommendation:* Congress should establish a national goal of protecting at least 30% of all U.S. lands and ocean areas by 2030, prioritizing areas with high ecological, biodiversity, and carbon sequestration value. Reaching this goal will require a comprehensive effort that involves working collaboratively with tribes, state governments, private landowners, and local communities. The Department of the Interior (DOI), in consultation with other land management agencies, should undertake a landscape-level evaluation, including the ocean, of priority conservation targets and consult with and increase funding for Landscape Conservation Cooperatives. This national 30x30 effort should also support and empower tribal nations and local communities, including environmental justice communities, early in the process to identify, develop, and implement strategies to protect and restore the natural places that are most essential and at risk, ensuring that this goal is achieved in a way that recognizes the geographic, social, and cultural diversity of the country.

Congress should prioritize conserving designated lands and waters through high-value protection designations and avoid designations that keep lands and waters open to industrial and extractive uses. On lands, this 30x30 effort should include incentives for high-quality conservation on private lands; encourage cross-jurisdictional collaboration at a landscape level with states, tribes, and local governments; expand the number and size of national parks, national monuments, and national wildlife refuges on public lands; establish wildlife corridors; and protect wilderness-quality lands managed by the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS). DOI and other land management agencies

should maintain protective measures for current Wilderness Study Areas; these areas should be a priority for congressional wilderness designation. For the ocean, Congress should emphasize Marine Protected Areas (MPAs) such as marine reserves, fully protected marine reserves, marine preserves, and Marine National Monuments. (p. 431)

*Recommendation:* Congress should direct relevant federal agencies to develop a National Nature Assessment. This comprehensive and periodic report should provide policymakers and the public with clear and actionable information on the condition of America's natural areas, wildlife, wildlife habitat, ocean health, watersheds and wetlands, and other natural systems. This National Nature Assessment should track and report on the nation's progress toward meeting a 30x30 goal. (p. 431)

### Protect and conserve existing ocean and wetland ecosystems

*Recommendation:* Congress should establish a national goal of protecting at least 30% of U.S. ocean areas and coastal wetlands by 2030, including increasing MPAs while working to balance the needs of fisheries management systems. This effort should include (1) reauthorizing and increasing funding for NAWCA; (2) codifying the National Fish Habitat Partnerships; (3) codifying a strong federal "no net blue carbon loss" policy; (4) directing NOAA to establish and identify Coastal Carbon Areas of Significance to ensure the protection and enhancement of such coastal areas and provide guidance to relevant federal agencies to avoid adverse impacts and threats to these areas; (5) fully funding CELCP and expanding the program nationwide; (6) increasing federal investments and prioritizing climate and ecological benefits in ocean, coastal, and riverine conservation programs, including NOAA's Office of Habitat Conservation, NOAA's National Estuarine Research Reserve Program, EPA's National Estuary Program, and FWS's Coastal Program; (7) directing NOAA to provide technical assistance to enhance coastal management and climate change programs in the territories and submit an annual report to Congress on wetland conditions and climate change in the territories; (8) directing agencies to prioritize avoiding destruction of wetlands in flood-prone areas that help diminish the likelihood of flooding and erosion; and (9) preventing private wetland conversion to development, through easements, incentives, and regulation. (p. 466)

## 6. Combatting ocean acidification, harmful algal blooms, and hypoxia

### Address ocean and coastal acidification and biodiversity decline

*Recommendation:* Congress should increase federal research, monitoring, forecasting, mitigation, and adaptation efforts for ocean and coastal acidification. As part of this effort, Congress should designate NOAA as the lead federal agency responsible for implementing a government-wide response to ocean and coastal acidification, establish an Advisory Board to strengthen our understanding of the socio-economic effects of ocean acidification, direct the NAS to conduct a study on the effects of ocean acidification on estuaries, require NOAA to conduct and update vulnerability assessments, and incentivize innovative research on ocean acidification. (p. 471)

*Recommendation:* Congress should direct the relevant federal agencies to carry out a program to award prizes competitively for the purpose of stimulating innovation to advance the understanding of coral reef systems, including those in the territories, and prioritize programs that address communities, environments, or industries that are in distress due to coral reef damage or decline. Priority programs should advance the development of scientific research and monitoring to better understand the causes of coral reef decline, including ocean acidification; the development of adaptation options to alleviate economic harm and job loss caused by damage to coral reef ecosystems; measures to help vulnerable communities; and adaptation and management options for impacted communities and tourism industries. (p. 471)

*Recommendation:* Congress should reauthorize the Coral Reef Conservation Act and direct NOAA to periodically update the National Coral Reef Resilience Strategy to address the continuing and emerging threats to the resilience of U.S. coral reef ecosystems. The relevant federal agencies should produce Federal Coral Reef Action Plans to outline coral reef conservation and restoration activities. (p. 471)

*Recommendation:* Congress should establish a new grant program to support the development of State Coral Reef Action Plans and to help states to carry out coral reef management and restoration strategies. (p. 471)

*Recommendation:* Ocean acidification and other marine climate change impacts will affect marine mammals. Congress should direct NOAA to identify and monitor marine mammal species and populations that will be harmed by climate change impacts, as well as develop and implement a conservation management plan for each of these species. (p. 471)

### Address harmful algal blooms and hypoxia

*Recommendation:* Congress should address harmful algal blooms by (1) reauthorizing the Harmful Algal Bloom and Hypoxia Research Control Act to increase authorizations for NOAA and add specific authorizations for EPA and other agencies; (2) clarifying that scientific assessments of marine and freshwater harmful algal blooms required under current law should have a regional focus, as HAB species and their impacts vary significantly from region to region; (3) establishing pilot programs to improve forecasting and monitoring of HABs and hypoxia with the Integrated Ocean Observing System; (4) rapidly scaling up research, development, and deployment of technologies to prevent, control, and mitigate HABs; (5) creating a separate authorization for research on hypoxia to recognize the distinct effects on our marine ecosystems; and (6) increasing grant funding available to coastal states, tribes, and communities to reduce the risk of harmful algal blooms and respond to harmful algal blooms when they occur. (p. 472)

### Expand and sustain federally supported research on climate change impacts on natural and human systems

*Recommendation:* Congress should direct USGCRP to ensure that the full range of climate change impacts on natural and human systems are considered in NCAs, including national and regional impacts not explicitly mentioned in the GCRA but included in recent assessments, as well as emerging climate change impacts like ocean acidification. (p. 524)

## 7. Protecting coastal infrastructure and communities against climate impacts such as sea level rise and flooding

### Increase the resilience of the nation's ports and harbors to climate impacts

*Recommendation:* Congress should fully fund the Harbor Maintenance Trust Fund and continue to allow fees to pay for projects to increase the resilience of U.S. ports and harbors. (p. 142)

*Recommendation:* Congress should ensure that future investments in U.S. ports and harbors, including HMTF expenditures on waterside infrastructure improvements, prioritize long-term climate resilience. Congress should direct an existing federal interagency entity, such as the MitFLG, to coordinate implementation and prioritization of federal investments to prepare ports and harbors for the effects of sea level rise, more frequent severe coastal storms, and other climate change impacts. Project developers should engage

representatives from port and harbor communities early in the planning process. (p. 142)

### Fully integrate green infrastructure and nonstructural flood risk reduction in feasibility studies for federal flood risk management infrastructure

*Recommendation:* Congress should ensure that USACE investigates the full range of cost-effective potential solutions as part of congressionally-authorized federal flood risk studies, including nonstructural options such as buying out and relocating willing property owners and communities that are exposed to repeated and increasing flood losses; elevating and floodproofing structures, where appropriate; and restoring intact, functioning, and healthy coastal and riverine ecosystems that can reduce flood impacts and provide other benefits, including mitigating erosion and enhancing water quality, recreation, and intrinsic community well-being. USACE should also evaluate less structural, engineered measures such as setback levees and ecosystem restoration. The feasibility study process should provide for meaningful public engagement, particularly for environmental justice communities, whose input should help determine the strategies that will be implemented to address flooding. The process also should factor in the economic value of co-benefits for nature-based solutions for reducing flood risks, such as community outdoor recreation, carbon sequestration by restored wetlands, and cooling by urban afforestation programs. (p. 183)

*Recommendation:* Congress should direct USACE to provide a report to Congress on federally authorized and non-federally operated flood damage reduction projects that are in poor condition and may benefit from repair, removal, rehabilitation, or replacement with nature-based features and green infrastructure. (p. 183)

*Recommendation:* Congress should direct USACE to apply consistent cost-share requirements for natural infrastructure projects and nonstructural projects that “restore or protect natural resources, including streams, rivers, floodplains, wetlands, or coasts, if those efforts will reduce flood risk.” (p. 183)

### Establish an ecosystem services valuation system to support resilient communities

*Recommendation:* Congress should direct USACE to conduct a study and report back to the Congress on ways to evaluate ecosystem benefits for flood risk reduction projects, including the direct value of floodwater retention, other impacts of flood risk reduction, and indirect values of reduced cost and maintenance, water quality, habitat, recreation, and tourism. (p. 185)

### Advance innovative green infrastructure techniques to manage pollution and reduce climate risks

*Recommendation:* Congress should direct the EPA to establish centers of excellence for innovative stormwater and floodplain management for research, development, and deployment of technical assistance on green infrastructure that is relevant to the geographical region; collaborate with institutions of higher education, states, local governments, territories, and tribes; and provide training on innovative stormwater and floodplain management. (p. 191)

### Enhance the Watershed and Flood Prevention Program

*Recommendation:* Congress should increase funding to the Watershed Protection and Flood Prevention Program to help states, local governments, tribes, and territories overcome barriers to watershed-scale resilience planning and collaboration to address flood, drought, and erosion risks. (p. 353)

### Expand real-time Earth monitoring and data collection for public safety and climate risk modeling

*Recommendation:* Congress should increase funding and use of new and emerging technologies to accelerate the creation and deployment of high-resolution land surface and seafloor maps, including maps of Insular Areas, and to support nationwide mapping of climate-influenced hazards, including intense rainfall, sea level rise, flood, wildfire, landslide, drought, and extreme heat. (p. 378)

### Provide skilled technical assistance to support state, local, tribal, and territorial planning, resilience, and adaptation

*Recommendation:* Congress should require states, local governments, tribes, and territories to develop and obtain approval for Climate Resilience Plans, as part of existing Hazard Mitigation Planning requirements and processes, as a condition for eligibility for grants and loans through the National Climate Adaptation Program. Congress should ensure that skilled technical assistance is made available to support the development of Climate Resilience Plans. In order to encourage the most efficient expenditure of tax dollars, those plans should assess climate risks to homes, public assets, infrastructure, major employers, public health, and vulnerable areas and populations, including identification of repeatedly flooded properties; assess risks to and resilience of services derived from natural resources like agriculture; identify resilience projects that address the identified risks; and identify funding needs and finance approaches they are pursuing. Congress also should ensure that climate resilience and hazard

mitigation plans are informed by meaningful public engagement and input from environmental justice communities and integrated into broader community planning processes, including comprehensive plans, capital improvement plans, workforce development and housing plans, and finance strategies, and should facilitate regional or watershed-scale planning for climate adaptation. (p. 382)

### Expand the Emergency Watershed Protection Floodplain Easements Program

*Recommendation:* Congress should increase funds to the NRCS Emergency Watershed Protection Floodplain Easements Program to help communities quickly address serious and longstanding damage to infrastructure and land and help communities cope with adverse impacts of the climate crisis, without having to wait for a federal disaster declaration. (p. 396)

*Recommendation:* Congress should expand the NRCS Watershed and Flood Prevention Program and the Emergency Watershed Protection Floodplain Easements Program to target additional assistance specifically for the purposes of helping states establish and implement agricultural operation buyouts and waste lagoon conversion in flood- and wildfire-prone areas, including the 500-year floodplain.

Additional programs for increasing the resilience of agricultural lands appear in the section of this report titled “Increase Agricultural Carbon Sequestration and Resilience Through Climate Stewardship Practices.” (p. 396)

### Ensure the equitable treatment of low- and moderate-income households seeking relocation assistance

*Recommendation:* Congress should amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act to provide protection and assistance to LMI people who are seeking federal disaster recovery assistance to relocate from flood- or wildfire-prone areas to comparable replacement housing in less risky areas. (p. 403)

### Help families obtain extreme weather insurance

*Recommendation:* Congress should direct FEMA to collaborate with insurance industry experts to support the creation of a private all-hazards insurance program that would cover all natural hazards, be available for purchase directly from insurers, and meet the federal mandatory purchase requirements for flood insurance and disaster recovery programs. (p. 406)

### Restore buyout lands to enhance natural benefits

*Recommendation:* Congress should increase funds to the FEMA Flood Mitigation Assistance Program to support floodplain, coastal, and stream restoration projects as part of buyout projects. Any additional cost for these ecosystem restoration activities should not figure in the buyout project benefit-cost ratio. Congress should also direct FEMA to allow SLTTs to use Flood Mitigation Assistance Grants and BRIC Grants for the establishment of open-space land trusts or similar arrangements for the ongoing management and maintenance of cleared lands. Congress should direct USACE to provide technical assistance to support ecosystem restoration project planning, design, and implementation. (p. 406)

### Enhance the flood risk information provided by FEMA and the National Flood Insurance Program

*Recommendation:* Congress should direct FEMA to collect, create, and share flood risk data in a dynamic, digital, and public environment that is functional across multiple platforms and that supports analyses of current and future coastal and inland flood hazards. Information on future flood risk should enable communities and the public to see forecasts of flood risk 30-50 years into the future to support decision-making about home buying and infrastructure siting and design. This information should be publicly available and disclosed to borrowers for any federally supported loan so that buyers understand both current and future risks that may require mitigation and change the cost of insurance. (pp. 409–410)

### Address flood insurance affordability to protect frontline communities

*Recommendation:* Congress should direct FEMA to address flood insurance affordability for low-income households and small businesses through a combination of means-tested discounts, mitigation loans, and revolving loans, and allow policyholders to pay flood insurance premiums in monthly installments. Information about the full risk rate should accompany discounts, so that discount recipients understand the full cost of their flood insurance. Congress also should direct FEMA to pilot a grant program to provide temporary premium assistance for policyholders who have requested buyouts that are pending funding and implementation. (p. 412)

### Support community leadership to protect open space in flood-prone areas

*Recommendation:* Congress should direct FEMA to conduct studies to estimate the avoided flood losses and other benefits of not allowing new development and redevelopment of SFHAs. Studies should also identify barriers and other

challenges to implementing measures to preserve floodplains as open space. Congress also should direct FEMA to enhance incentives to states, local governments, tribes, and territories that adopt higher resilience standards, including prohibiting new development in SFHAs. (p. 413)

*Recommendation:* Congress should direct FEMA to prioritize pre-disaster mitigation funds for projects that restore and protect flood-prone areas as open space, including providing funding and technical assistance for buyouts and relocation projects and for the establishment of land trusts to maintain open space as high-quality habitat and outdoor recreation areas. (p. 413)

### Address urban flooding to reduce climate risks

*Recommendation:* Congress should direct FEMA to consider urban flooding hazards in flood risk analyses, accounting for the effects of sea level rise, early reduced snowpack, and increasingly extreme precipitation events on urban drainage and stormwater systems. (p. 414)

### Make flood risk information transparent and available to buyers and renters

*Recommendation:* Congress should require disclosure of flood hazards for properties for sale or lease, including flood insurance requirements, claims, and any known history of flood damage before contracts to lease or purchase property become binding. (p. 414)

### Reform federal flood risk and resilience standards

*Recommendation:* Congress should establish a federal flood policy that integrates modern science on flood and erosion risk into the minimum standards for federally supported activities, including federal facilities, grants, loans, loan guarantees, licensing, and other activities. Congress should direct federal departments and agencies to immediately implement a minimum federal flood standard for federally supported activities of three feet above the base flood elevation for critical actions within the 0.2%-annual-chance floodplain and two feet above the base flood elevation for all other actions within the 1%-annual-chance floodplain. While agencies can implement this simplified approach using flood risk maps and other currently available information, Congress should direct the Federal Interagency Floodplain Management Task Force to update the federal flood policy within three years and provide agencies with guidance to use best available data and methods that integrate current and future changes in flooding based on climate science and other factors affecting flood risk to determine the flood elevation standard in a manner appropriate to policies, practices, criticality, and consequences. (p. 421)

*Recommendation:* Congress should direct the General Services Administration to inventory all federal assets located in designated floodplains, including critical facilities in the 0.2% annual chance floodplain. (p. 421)

### Increase investments in natural infrastructure for coastal and riverine resilience

*Recommendation:* Congress should increase investments in natural infrastructure for coastal resilience by (1) creating new or enhancing existing federal grant programs to help state and local governments, tribal nations, and NGOs optimize natural resource benefits by implementing nature-based infrastructure for resilience and adaptation such as living shorelines, working waterfronts planning, coastal climate preparedness planning, coastal planning, and wetlands restoration; (2) establishing a Natural Infrastructure Resilient Communities Revolving Loan Fund, which would provide low- or no-interest loans for communities to protect themselves from the impacts of climate change through the use of natural infrastructure, including a mechanism to ensure access to the program for lower-income communities; (3) codifying the Coastal Resilience Grants Program and increasing funding for that program to support coastal communities' ability to prepare for and respond to extreme weather, climate risks, and changing ocean conditions by delivering technical assistance, increasing local planning capacity, and supporting coastal research, resilience, and restoration; (4) increasing funding for the National Coastal Resilience Fund for project support and implementation; (5) prioritizing nature-based infrastructure, when possible, over built infrastructure through permitting and increasing investments for the implementation of these projects; (6) prioritizing nature-based infrastructure on federally owned land, including DOD property, where appropriate; (7) promoting interagency coordination of natural infrastructure efforts to encourage information sharing, identify and address research gaps, and facilitate the completion of natural infrastructure projects; and (8) directing NOAA to provide increased education, outreach, and technical assistance to state and local governments and property owners to increase awareness of nature-based infrastructure opportunities and assistance to implement them. (p. 475)

### Expand the Coastal Barrier Resources Act to cover more biologically sensitive areas

*Recommendation:* Congress should expand the CBRA nationwide to identify and protect more biologically sensitive areas vulnerable to sea level rise, storm surges, and hurricanes and to increase habitat for aquatic and coastal species. This should include (1) funding for FWS to complete comprehensive map modernization and improve map accuracy on the remaining 70% of the CBRA Systems not already updated; (2) expanding the definition of "undeveloped coastal

barrier” to include areas that are vulnerable to coastal hazards, such as flooding, storm surge, wind, erosion, and sea level rise; and (3) including hazard-prone areas along the Pacific Coast in the CBRs. (p. 476)

### Enhance the federal government’s scientific and economic capacity for the evaluation of climate impacts on federally supported projects

*Recommendation:* Congress should direct OMB to enter into an agreement with the National Academies of Science, Engineering, and Medicine to assess the state of scientific knowledge on evaluation of climate-related benefits and costs in federally supported projects, such as risks of flooding, wildfire, and extreme weather. The National Academies should also recommend priorities for research activities to improve metrics and methodologies for evaluating these risks. (p. 532)

### Modernize OMB guidance to agencies for the evaluation of climate impacts

*Recommendation:* Congress should direct OMB to consider climate impacts and risks, including flooding, wildfire, tropical storms, and extreme heat, in the development and evaluation of federal programs and regulations, and to update guidance to agencies on the development of regulatory analyses. Federal benefit-cost analyses should evaluate the exposure of federal investments and assets to climate impacts, as well as how federal action can increase or reduce climate impacts. (p. 533)

## 8. Creating climate-ready fisheries

### Increase funds to existing programs to build tribal resilience

*Recommendation:* Congress should provide ongoing appropriations to maintain and enhance the Fisheries Disaster Assistance Program to support a resilient national fishing fleet. (p. 389)

### Incorporate climate adaptation into fisheries management

*Recommendation:* Congress should direct GAO to determine what actions fishery managers have already taken to adapt to climate change and provide recommendations to prepare fishery management and fishing communities for the impacts of climate change. (p. 474)

*Recommendation:* Congress should consider establishing an 11th national standard on climate change resilience and impacts under the MSA for regional fishery management

councils and establish additional tools and requirements to ensure the impacts of climate change are fully considered and integrated into the management process. (p. 474)

*Recommendation:* Congress should direct NOAA to provide research, capacity, and management recommendations to fisheries management councils on how to adapt to a changing climate and tools for incorporating climate change consideration into management plans. (p. 474)

## 9. Advancing ocean-climate justice

*(Note: Many of these recommendations are also cross-categorized under the relevant sectors.)*

### Expand public transit service between underserved communities and green spaces

*Recommendation:* Congress should fund public transit systems that provide underserved communities with access to open spaces. Project developers should engage representatives from underserved communities early in the planning process to ensure the transit system will benefit the intended population. (p. 112)

### Provide federal grant support or loans for deployment of alternative fuel infrastructure for medium- and heavy-duty vehicles

*Recommendation:* Congress should pass legislation authorizing DOT to offer competitive grants or loans to state, local, and tribal governments to install alternative fuel infrastructure, such as charging and hydrogen fueling stations, capable of servicing medium- and heavy-duty vehicles. Federal support for projects should be conditioned on recipients meeting strong labor standards (including Buy America/n and Davis-Bacon prevailing wage requirements), complying with all labor, environmental, and civil rights statutes, and signing community benefit agreements and project labor agreements, where relevant. Priority should go to projects that will reduce harmful air pollution in environmental justice communities and other disproportionately exposed communities, including communities near port facilities. (p. 126)

### Provide grants to expedite port electrification, reduce emissions from port operations, and upgrade ports for offshore wind development

*Recommendation:* Congress should increase funding for DOT and/or EPA grant programs to (1) support retrofitting or replacing diesel vehicles, drayage trucks, and other equipment at ports; (2) upgrade the nation’s inland ports and seaports to improve rail access and support ship-to-shore power; and (3)

prepare coastal port infrastructure to service offshore wind development. Priority should go to projects that will reduce harmful emissions in environmental justice communities and communities disproportionately exposed to air pollution. Project developers should engage representatives from near-port communities early in the planning process. (p. 139)

### Harness the power of students and volunteers to support community resilience

*Recommendation:* Congress should establish a Climate Resilience Service Corps within the CNCS to carry out national service projects that improve community adaptation, mitigation, preparedness, response, and recovery from disasters and other climate-driven threats. Service projects should prioritize frontline communities of color, build local workforce skills and capabilities, and provide volunteers from frontline communities with opportunities to contribute to the resilience planning and project implementation in their own communities. Congress should direct the CNCS to coordinate with the Department of Labor to ensure overarching federal coordination of voluntary and workforce policy. (p. 386)

### Accelerate tribal adaptation and transition and honor treaty rights to traditional lands and waters

*Recommendation:* Congress should create a new Tribal and Indigenous Communities Adaptation Grants program that awards funds based on risk and prioritizes relocation and resettlement for communities at greatest risk. The program should provide funds to tribes and Indigenous communities whose planned transition is pending funding to obtain private insurance protection that can provide rapid payout to support emergency actions, evacuation, and resettlement in the event of a disaster. Projects should maximize workforce development, including assuring life-sustaining wages and career development opportunities in Indian Country, and assure health and safety protections for all workers involved in grant-funded projects. (p. 388)

### Permanently authorize the community development block grants for disaster recovery

*Recommendation:* Congress should permanently authorize the HUD CDBG-DR program and establish within HUD an Office of Disaster Recovery and Resilient Communities, prioritizing funds and technical assistance to low- and moderate-income survivors and ensuring funds are distributed equitably and benefit hardest hit communities.

Federal support for projects should be conditioned on recipients meeting strong labor standards (including Buy America/n and Davis-Bacon prevailing wage requirements), complying with all labor, environmental, and civil rights

statutes, and signing community benefit agreements and project labor agreements, where relevant. (p. 403)

### Ensure the equitable treatment of low- and moderate-income households seeking relocation assistance

*Recommendation:* Congress should amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act to provide protection and assistance to LMI people who are seeking federal disaster recovery assistance to relocate from flood- or wildfire-prone areas to comparable replacement housing in less risky areas. (p. 403)

### Insure public assets against climate risks to drive mitigation and accelerate disaster recovery

*Recommendation:* In order to reduce the risks and costs of climate impacts to insurable public assets and prioritize protection for frontline communities, Congress should direct FEMA to develop a strategy to incentivize insurance coverage against weather perils to Stafford Act Category E assets (public buildings and infrastructure), including schools, public health facilities, and public safety facilities, and to investigate and report to Congress on the trends in insurance available and being obtained to cover those assets. In addition, Congress should direct FEMA to evaluate and report on the use of innovative risk transfer mechanisms such as parametric insurance and catastrophe bonds to cover assets that are eligible for Stafford Act Category E funds. (p. 405)

### Address flood insurance affordability to protect frontline communities

*Recommendation:* Congress should direct FEMA to address flood insurance affordability for low-income households and small businesses through a combination of means-tested discounts, mitigation loans, and revolving loans, and allow policyholders to pay flood insurance premiums in monthly installments. Information about the full risk rate should accompany discounts, so that discount recipients understand the full cost of their flood insurance. Congress also should direct FEMA to pilot a grant program to provide temporary premium assistance for policyholders who have requested buyouts that are pending funding and implementation. (p. 412)

### Expand environmental justice initiatives to share nature's benefits more equitably and honor the conservation needs of all communities

*Recommendation:* Congress should develop and fund initiatives to ensure equitable access to parks, public lands, and other natural spaces. (p. 436)

### Reestablish the Civilian Conservation Corps

*Recommendation:* Congress should reestablish the Civilian Conservation Corps with a focus on recruiting and hiring individuals from environmental justice communities and other underserved populations. This legislation should direct the Department of Labor to work with relevant federal agencies to coordinate similar efforts. (p. 436)

### Prioritize reductions of greenhouse gas emissions and co-pollutants that affect environmental justice communities

*Recommendation:* Congress should direct federal land management agencies to prioritize reducing greenhouse gas emissions and co-pollutants that will affect environmental justice communities and ensure that any actions taken to meet a goal of net-zero emissions on public lands and waters do not result in a net increase of co-pollutant emissions or have any other disparate impacts on environmental justice communities. To help achieve this policy objective, federal land management agencies should implement an inclusive stakeholder process that solicits early input and feedback from representatives living in environmental justice communities. (pp. 481–482)

## 10. General ocean-climate recommendations

### Expand real-time Earth monitoring and data collection for public safety and climate risk modeling

*Recommendation:* Congress should expand federal Earth observation activities, including ocean, ground-based, aerial, and satellite networks, to support real-time hazard monitoring, short-term weather forecasting, and long-range projections of climate risk. Private sector and academic partners can help to accelerate these efforts, so long as the federal government sustains free and open access to Earth observations and forecasting resources. (p. 378)

### Reestablish the Civilian Conservation Corps

*Recommendation:* Congress should reestablish the Civilian Conservation Corps with a focus on recruiting and hiring individuals from environmental justice communities and other underserved populations. This legislation should direct the Department of Labor to work with relevant federal agencies to coordinate similar efforts. (p. 436)

### Restore, strengthen, and codify a National Ocean Policy and incorporate climate mitigation

*Recommendation:* Congress should formally authorize ROPs as partners with the federal government. Additionally, Congress should codify a National Ocean Policy, building on Executive Order 13547, that includes strong interagency and tribal coordination in the form of the White House-level Ocean Policy Committee. This legislation should strengthen the prior National Ocean Policy by prioritizing ocean stakeholder engagement and focusing on ocean health, conservation, and climate change mitigation and resilience. (p. 468)

### Expand real-time Earth monitoring and data collection for public safety and climate risk modeling

*Recommendation:* Congress should expand federal Earth observation activities, including ocean, ground-based, aerial, and satellite networks, to support real-time hazard monitoring, short-term weather forecasting, and long-range projections of climate risk. Private sector and academic partners can help to accelerate these efforts, so long as the federal government sustains free and open access to Earth observations and forecasting resources.

*Recommendation:* Congress should increase funding and use of new and emerging technologies to accelerate the creation and deployment of high-resolution land surface and seafloor maps, including maps of Insular Areas, and to support nationwide mapping of climate-influenced hazards, including intense rainfall, sea level rise, flood, wildfire, landslide, drought, and extreme heat.

*Recommendation:* Congress should direct the National Weather Service to enhance support of its Weather Forecast Offices and Weather Service Offices located in rural, tribal, and Insular Areas, such as the San Juan, Tiyan, and Pago Pago forecast offices. Priorities include updating and maintaining equipment, enhancing research on climate impacts on hurricane and typhoon trends in the territories, and improving weather data collection in order to produce more accurate tropical weather models and predictions.

### Strengthen the National Coastal Zone Management Program and other programs that increase capacity building for coastal communities

*Recommendation:* Congress should increase funding for the National Coastal Zone Management Program, NOAA's National Estuarine Research Reserve System, and the National Sea Grant program. Any expansion of these programs should direct NOAA to prioritize climate benefits, including mitigation potential, coastal restoration, adaptation planning, and natural infrastructure, in grants and state programs carried out under the CZMA. (p. 469)

## Fully and permanently fund the Land and Water Conservation Fund

*Recommendation:* Congress should fully and permanently fund the Land and Water Conservation Fund as well as increase the program's annual authorization and index it to inflation. (p. 432)

## Improve implementation of the Endangered Species Act to protect endangered and threatened species from the impacts of climate change

*Recommendation:* Congress should require that federal agencies consider climate change as a factor in listing and delisting decisions; incorporate climate change considerations in ESA documents and plans; and address the threat of climate change in critical habitat designations and recovery actions. To address the growing need of consultations, Congress should direct DOI to hire enough biologists, ecologists, and National Environmental Policy Act (NEPA) staff to properly evaluate species' needs in a timely manner and propose recovery solutions as well as provide adequate funding to achieve this goal. Congress also should increase funding for the Cooperative Endangered Species Conservation Fund, which provides funding to states and territories for a variety of conservation projects for candidate, proposed, and listed species, as well as increase funding for federal species recovery initiatives by expanding the FWS Ecological Services budget and the National Oceanic and Atmospheric Administration (NOAA) Protected Resources Science and Management budget. (p. 443)

## Achieve a goal of net-zero emissions on public lands and waters by 2040 at the latest

*Recommendation:* Congress should establish a national goal to achieve net-zero emissions on public lands and waters by 2040 at the latest, including ambitious interim target goals. To achieve this goal, Congress should direct DOI and USFS, in consultation with other natural resource agencies, to develop and publish a comprehensive public lands climate plan, using all available authorities and resources within their jurisdictions, including reducing fossil fuel extraction, investigating retirement and buyouts of existing leases, investing in

conservation and restoration of natural landscapes, and accelerating responsibly sited clean energy deployment. This legislation should require that DOI and USFS publish the written strategy every two years, which should include plans, actions, and progress reports to reduce net emissions and meet the reduction targets. Congress should also direct the land management agencies to update their goals periodically to reflect changes in fossil fuel demand and production due to other recommendations in this report. This legislation should establish an office within DOI dedicated to overseeing and enforcing the implementation of programs to achieve a goal of net-zero emissions. (p. 481)

## Prioritize reductions of greenhouse gas emissions and co-pollutants that affect environmental justice communities

*Recommendation:* Congress should direct federal land management agencies to prioritize reducing greenhouse gas emissions and co-pollutants that will affect environmental justice communities and ensure that any actions taken to meet a goal of net-zero emissions on public lands and waters do not result in a net increase of co-pollutant emissions or have any other disparate impacts on environmental justice communities. To help achieve this policy objective, federal land management agencies should implement an inclusive stakeholder process that solicits early input and feedback from representatives living in environmental justice communities. (pp. 481–482)

## Reference

(1) House Select Committee on the Climate Crisis. Solving the Climate Crisis: The Congressional Action Plan for a Clean Energy Economy and a Healthy, Resilient, and Just America. 2020. Available from: [https://climatecrisis.house.gov/sites/climatecrisis.house.gov/files/Climate Crisis Action Plan.pdf](https://climatecrisis.house.gov/sites/climatecrisis.house.gov/files/Climate%20Crisis%20Action%20Plan.pdf).

### CONTACT US



+1 800-519-1541



memberservices@oceanconservancy.org



oceanconservancy.org

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