

 DATA FOR **PROGRESS**

GREEN NEW DEAL POLICY SERIES:
FOOD & AGRICULTURE

SEAFOOD, BLUE JOBS, AND THE GREEN NEW DEAL

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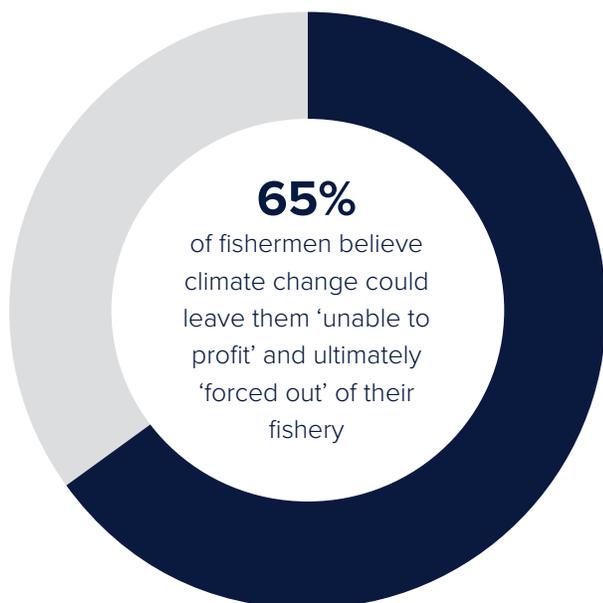
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The Green New Deal is a broad and ambitious agenda to invest in communities, infrastructure, technology, and good jobs to help the United States achieve environmental and economic justice.

Our food systems comprise 9 percent of total U.S. greenhouse gas emissions¹ and 11 percent of all U.S. jobs.² At the same time, oceans are our greatest natural resource. Oceans have absorbed around 30 percent of anthropogenic carbon³ and seafood is the number one source of animal protein in the world.⁴ And with more U.S. territory sitting below water than above, and 40 percent of Americans living in coastal counties,⁵ oceans are also a major part of the U.S. economy, supporting 3.3 million U.S. jobs.⁶ By unleashing the potential of our waters, we can curb climate change while vastly strengthening the blue economy.

This brief highlights how action at the intersection of these areas can and must play a large role in addressing climate change. Reforms within our food systems and investments in our waters and seafood infrastructure are vital to the environmental and economic goals of a Green New Deal.

Fishing communities' attitudes on climate change have changed: Fishermen see the effects of climate change every day. According to a Center for American Progress survey, 65 percent of fishermen believe climate change could leave them 'unable to profit' and ultimately 'forced out' of their fishery.⁷ Of those surveyed, two-thirds identified as "moderate" or "conservative."⁸ These climate trends are pushing formerly recalcitrant constituencies into action. Last year the largest commercial fishing association on the West Coast, PCFFA, filed suit against 30 fossil fuel companies for the climate impacts on their livelihoods as the ocean warms.⁹ At the same time, the newly minted Shellfish Growers Climate Coalition, a national group with over 100 member companies, have joined the ranks of the climate movement to ratchet up pressure for immediate climate action.¹⁰



We just witnessed the worst salmon run in the last 100 years. Climate change is an existential crisis for our fishery and communities.

Dune Lankard, Alaskan Gillnetter and Founder of the Eyak Preservation Council

GREEN NEW DEAL POLICY RECOMMENDATIONS

While human impacts on our oceans are severe, solutions exist. A Green New Deal should include reforms in three specific policy areas – **ocean habitat restoration, community-based fisheries and restorative ocean farming** – which will shift the ocean from a resource in crisis into a powerful tool for mitigating climate change and transforming our food system. By prioritizing ocean restoration, we can make our coasts and oceans the life-giving, carbon-sequestering, job-supporting habitats they once were. By promoting sustainable fishing and regenerative ocean farming practices, we can reclaim U.S. seafood as a major cornerstone for job growth and transform one of the nation’s most iconic industries into a front-line solution to climate change and the coming food crisis.

VOCABULARY FOR PROGRESS: BLUE CARBON

Blue carbon is the carbon stored in ocean and coastal ecosystems, often through seagrass, wetlands, tidal marshes, seaweeds, and mangroves. The soil of wetlands can sequester up to five times more carbon than that of even tropical forests.¹¹ Alternatively, when damaged, an enormous amount of carbon is emitted back into the atmosphere, making protection and restoration of these systems a key pathway to mitigate climate change.¹²

LINKING COASTAL HABITAT RESTORATION AND A JUST TRANSITION FOR COASTAL COMMUNITIES

The death and displacement caused by Hurricane Katrina and the poor disaster response disproportionately impacted Black communities.¹³ Hurricane Sandy disproportionately caused flooding in Black and Latino communities.¹⁴ To this day, Hurricane Maria recovery efforts in Puerto Rico remain slow and underfunded.¹⁵ Tribal communities ranging from Inupiat in Alaska¹⁶ to the Biloxi-Chitimacha-Choctaw and the United Houma Nation in Alabama¹⁷ are being forced to retreat from their native lands due to rising sea levels. Habitat restoration is one of the most cost effective ways to reduce this harm. In Mobile, Alabama, for example, oyster reef restoration projects are expected to reduce wave energy at the shore by 76 to 99 percent.¹⁸ Plus, the reef construction is anticipated to add \$8.4 million to the local economy.¹⁹



Invest in Blue Carbon Habitat Restoration

PROBLEM: Climate change, coastal development, and pollution are destroying America’s coastal marine ecosystems. Florida has lost over 50 percent of its coral reefs since 1996.²⁰ Northern California has lost 93 percent of its kelp forest since 2013.^{21,22} Not only are our coastal ecosystems habitat for most seafood species at some phase of their life, but they also provide critical storm protection – wetlands prevented \$625 million in damages during Hurricane Sandy and are often more effective and less expensive than seawalls.²³ A concerted ecosystem restoration effort is needed to protect coastal areas, especially poor communities, communities of color, and Indigenous nations which are most at risk.²⁴



FLORIDA
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NORTHERN CALIFORNIA
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SOLUTION: Support state and national restoration programs, including replanting of seagrasses, wetlands, mangroves, shellfish, and seaweeds, perhaps funded by a blue carbon fund.

POLICY RECOMMENDATIONS

- ▶ Incorporate ocean and estuary restoration activities into H.R. 2358, the 21st Century Civilian Conservation Corps Act, which would establish a Civilian Conservation Corps to “employ unemployed or underemployed, in the construction, maintenance, and carrying on of works of a public nature, including reforestation, soil erosion and climate adaptation infrastructure.”
- ▶ Authorize a domestic blue carbon program under the Department of Commerce, administered by NOAA, charged with the creation of a carbon fund for ocean-based emission reductions, including seaweed, seagrass and other ocean and estuary restoration programs.
- ▶ Direct NOAA to map and establish “Blue Carbon Zones” in federal waters dedicated to ocean carbon sequestration.
- ▶ Fully fund NOAA’s Coastal and Estuarine Land Conservation Program, which partners with states to conserve coastal ecosystems.
- ▶ Include shellfish and seaweed restoration programs as eligible activities for funding from the Harbor Maintenance Trust Fund, a program authorized by the Water Resources Development Act of 1986.



Support Sustainable, Community-Based Fisheries

PROBLEM: For decades, U.S. policy has incentivized the consolidation of US fishing fleets and the export of domestically-caught seafood. The result is a carbon-intensive, globalized seafood sector that undermines, rather than supports, community-based fisheries, job creation, and climate mitigation. Around 70% of the seafood consumed in the U.S. is imported.²⁵ This is due in part to lack of investment in local seafood processing centers, which means that a significant percentage of what is caught in U.S. waters is exported to Asia for processing before a portion of it returns to the US for consumption – unnecessarily adding millions of carbon miles to our food system.²⁶ And despite working waterfronts contributing 3.4 percent of the US GDP,²⁷ these areas are being rezoned, eliminating infrastructure of the blue economy, and taking local seafood and water-dependent jobs with it, with little chance of those being reclaimed.²⁸



SOLUTION: Provide loans, tax breaks, and other subsidies to rebuild domestic seafood processing infrastructure and working waterfronts, while significantly expanding community-based fisheries programs and access.

POLICY RECOMMENDATIONS

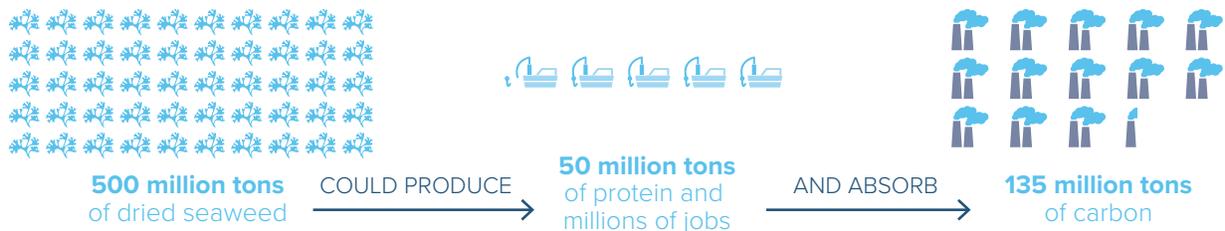
- ▶ Provide tax breaks and USDA low interest loans for regional processing centers to incentivise domestic processing and distribution of U.S. caught seafood.
- ▶ Support passage of the Keeping America's Working Waterfronts Act to identify and support investment needs for local communities' working waterfronts, and support passage of legislation that would incentivize community allocations under Limited Access Privilege Programs.
- ▶ Support the development of a new data driven insurance-based risk management system at NOAA or another appropriate agency for various sectors of the seafood industry to hedge against the unpredictable impacts of environmental fluctuations and climate change.
- ▶ Provide a simple regulatory pathway for independent fishermen to sell seafood directly to U.S. consumers and encourage the growth of family-run fishing fleets through the Young Fishermen's Development Act, which provides targeted support programs for young and early stage fishers.
- ▶ Expand NOAA's Seafood Import Monitoring Program (SIMP) to 100percent of imported fish and require digital traceability for all domestic products, in order to combat seafood fraud, track climate-driven species migration, and empower American consumers to buy local.



Catalyse Restorative Ocean Farming

PROBLEM: Rising human population, combined with the increasing occurrence of floods, droughts, and other climate-induced disasters, is quickly stretching our centralized and industrial land-based food system beyond its limits. At the same time, with over 90 percent of global fish stocks maximally exploited or overfished, our wild fisheries cannot fill the gap of feeding the planet in the era of climate change.²⁹ As the fastest growing food sector on the planet,³⁰ aquaculture is emerging as the primary source of seafood for Americans. However, global aquaculture practices, such as those of high density offshore finfish aquaculture, have been plagued with environmental problems.

SOLUTION: Support climate-smart aquaculture, specifically regenerative ocean farming, through the cultivation of seaweeds and shellfish to simultaneously sequester millions of tons of carbon, create millions of new jobs and reduce food insecurity. A network of community-based seaweed farms inhabiting less than 5 percent of American waters could sequester the carbon generated by 30 million cars and generate millions of direct and indirect jobs.³¹ When used in non-food products, such as fertilizers, animal feeds, and bio-plastics, seaweeds and shellfish can mitigate the climate impacts of numerous industries, including the reduction of cattle methane output by up to 58 percent.³²



POLICY RECOMMENDATIONS

- ▶ Include macroalgae in the tax credit provided under Section 45Q - Carbon Capture and Storage - of the Internal Revenue Code and phase in the per ton algae credit based on guidelines recommended by the IPCC. Simultaneously create a USDA program to develop methodology providing full credit for ocean-based biobased content for products from biologically recycled carbon and nitrogen.
- ▶ Include ocean farmer training programs in the Beginning Farmer and Rancher Development Program, under the Agricultural Act of 2014. Program benefits range from pre-qualification for loans to new farmer training programs.
- ▶ Fund expansion of Sea Grant programs, which provide direct technical assistance for ocean-based industries.²⁹
- ▶ Include shellfish and seaweed in the Federal Crop Insurance Act definition of "agricultural commodity" to allow ocean farmers to pay into protection from climate-caused crop loss, as land-based farmers currently do.
- ▶ Establish eligibility for ocean farmers under the USDA Biomass Crop Assistance Program, which provides loan guarantees and other financial support to farmers.
- ▶ Establish a new USDA Restorative Ocean Agriculture Research and Policy Program to address challenges in farm-scale algae and shellfish production, community-driven permitting, and market innovation throughout the industry.

ENDNOTES

1. "Sources of Greenhouse Gas Emissions." Environmental Protection Agency, 4 Sep. 2019, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#agriculture>
2. "Ag and Food Sectors and the Economy." Ag and Food Sectors and the Economy, USDA ERS, 16 Apr. 2019, <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy.aspx>
3. Khatiwala, Samar et al. (2009). Reconstruction of the history of anthropogenic CO₂ concentrations in the ocean. *Nature*, 462, 346–349. <https://doi.org/10.1038/nature08526>
4. Béné, Christophe, et al. (2015). Feeding 9 Billion by 2050 – Putting Fish Back on the Menu. *Food Security*, 7(2), 261–274. doi:10.1007/s12571-015-0427-z
5. "Economics and Demographics." Office for Coastal Management, National Oceanic and Atmospheric Administration, <https://coast.noaa.gov/states/fast-facts/economics-and-demographics.html>
6. Office for Coastal Management, National Oceanic and Atmospheric Administration. 2019. NOAA Report on the U.S. Ocean and Great Lakes Economy. Charleston, SC: NOAA Office for Coastal Management. Available at <https://coast.noaa.gov/data/digitalcoast/pdf/econ-report.pdf>
7. Conathan, Michael. Fishermen's Views of a Changing Ocean. Center for American Progress, 15 Jan. 2015, <https://www.americanprogress.org/issues/green/reports/2015/01/15/104573/fishermens-views-of-a-changing-ocean/>
8. Ibid.
9. Drugmand, Dana. Commercial Fishermen Latest to Sue Oil Companies for Climate Impacts. *Climate Liability News*, 15 Nov. 2018, <https://www.climateabilitynews.org/2018/11/15/fisheries-crab-climate-change-liability/>
10. Shellfish Growers Climate Coalition, The Nature Conservancy, <https://www.nature.org/en-us/what-we-do/our-priorities/tackle-climate-change/climate-change-stories/shellfish-growers-climate-coalition/>
11. Read, David, et al. The Role of Land Carbon Sinks in Mitigating Global Climate Change. The Royal Society, 2001. https://royalsociety.org/-/media/Royal_Society_Content/policy/publications/2001/9996.pdf
12. "What is Blue Carbon?" National Ocean Service, 1 June 2013, <https://oceanservice.noaa.gov/facts/bluecarbon.html>
13. Sharkey, Patrick (2007). Survival and Death in New Orleans: An Empirical Look at the Human Impact of Katrina. *Journal of Black Studies*, 37(4), 482–501. https://www.jstor.org/stable/40034319?seq=1#page_scan_tab_contents
14. "Race, Ethnicity, and Flooding." Stony Brook University Center for the Study of Inequality, Social Justice and Policy, <https://inequality.studies.stonybrook.edu/wordpress/mapping-sandys-inequalities/race-ethnicity-and-flooding/>
15. Madrid, Manuel. With Hurricane Season Looming, Billions in Disaster Recovery for Puerto Rico Remain Unspent. *The American Prospect*, 15 Apr. 2019, <https://prospect.org/article/hurricane-season-looming-billions-disaster-recovery-puerto-rico-remain-unspent>
16. Kennedy, Merrit. Threatened By Rising Seas, Alaska Village Decides To Relocate. NPR, 18 Aug. 2016, <https://www.npr.org/sections/thetwo-way/2016/08/18/490519540/threatened-by-rising-seas-an-alaskan-village-decides-to-relocate>
17. Davenport, Coral and Robertson, Campbell. Resettling the First American 'Climate Refugees'. *The New York Times*, 3 May 2016, <https://www.nytimes.com/2016/05/03/us/resettling-the-first-american-climate-refugees.html>
18. "Fast Facts: Natural Infrastructure." Office for Coastal Management, National Oceanic and Atmospheric Administration, 12 Aug. 2019, <https://coast.noaa.gov/states/fast-facts/natural-infrastructure.html>
19. Ibid.
20. "America's Coral Reefs." Environmental Protection Agency, 4 May 2018, <https://www.epa.gov/coral-reefs/americas-coral-reefs#Florida>
21. "'Perfect Storm' Decimates Northern California Kelp Forests." California Department of Fish and Wildlife, 30 March 2016, <https://cdfwmarine.wordpress.com/2016/03/30/perfect-storm-decimates-kelp/>
22. Pierre-Louis, Kendra. California's Underwater Forests Are Being Eaten by the 'Cockroaches of the Ocean.' *The New York Times*, 22 Oct. 2018, <https://www.nytimes.com/2018/10/22/climate/kelp-climate-change-california.html>
23. Jacobsen, Rowan. Rebuilt Wetlands Can Protect Shorelines Better Than Walls. *Scientific American*, 1 Apr. 2019, <https://www.scientificamerican.com/article/rebuilt-wetlands-can-protect-shorelines-better-than-walls/>
24. Lee, Barbara. A Katrina Retrospective: Structural Inequality, Environmental Justice and Our National Discourse on Race. *HuffPost*, 25 May 2011, https://www.huffpost.com/entry/a-katrina-retrospective-s_b_702911
25. Gephardt, Jessica et al. (2019). Opinion: To create sustainable seafood industries, the United States needs a better accounting of imports and exports. *Proceedings of the National Academy of Sciences*, 116(19), 9142-9146; doi:10.1073/pnas.1905650116
26. Ibid.
27. "An Overview of the U.S. Ocean Economy." National Working Waterfront Network, 4 Sept. 2019, <http://www2.vims.edu/bridge/wateraccess/econ.cfm>
28. Ounanian, Kristen (2015). Wither the Waterfront: Does the United States Need Federal Legislation to Preserve Working Waterfronts? *Coastal Management*, 43(6), 668-684. doi:10.1080/08920753.2015.1088764
29. United Nations Food and Agriculture Organization, 2019. State of World Fisheries and Aquaculture. Available at <http://www.fao.org/3/i9540en/i9540en.pdf>
30. Ibid.
31. World Bank Group, 2016. Seaweed Aquaculture for Food Security, Income Generation and Environmental Health in Tropical Developing Countries. Available at <http://documents.worldbank.org/curated/en/947831469090666344/pdf/107147-WP-REVISED-Seaweed-Aquaculture-Web.pdf>
32. Mernit, Judith Lewis. How Eating Seaweed Can Help Cows Belch Less Methane. *Yale Environment 360*, 2 July 2018, <https://e360.yale.edu/features/how-eating-seaweed-can-help-cows-to-belch-less-methane>
33. "Sea Grant: About." Sea Grant, National Oceanic and Atmospheric Administration. <https://seagrant.noaa.gov/About>.