



# Conserving Coastal Habitats Can Help Address Climate Change

Paris Agreement provides framework for countries to protect vital ecosystems

## Overview

Coastal wetlands and coral reefs are among the planet's most biologically rich ecosystems, serving as nurseries and feeding grounds for a vast array of fish, birds, and marine mammals. By acting as a barrier, these habitats also help protect shorelines from climate impacts such as sea level rise and storms. And coastal wetlands in particular—such as mangroves, seagrass beds, and salt marshes—can play a role in global efforts to mitigate climate change because they are highly effective at sequestering carbon.

## Coastal ecosystems are under threat

Despite their importance, these critical ecosystems are in danger of disappearing during the next century because of threats such as coastal development, poor land use practices, and rising ocean temperatures. Half of the planet's mangroves have been lost in the past 50 years,<sup>1</sup> and human-related impacts have destroyed at least a third of the world's coral reefs in recent decades.<sup>2</sup>

Urgent actions are needed to conserve coastal habitats, and the 2015 Paris Agreement under the United Nations Framework Convention on Climate Change provides a mechanism to secure commitments to protect these valuable ecosystems. The 197 parties that adopted the agreement pledged to reduce carbon emissions and build resilience to the effects of climate change. Each country's commitment—its Nationally Determined Contribution (NDC)—should be ambitious, specific, and measurable and be updated every five years.

## Nature-based solutions can help build resilience and ease climate change impacts

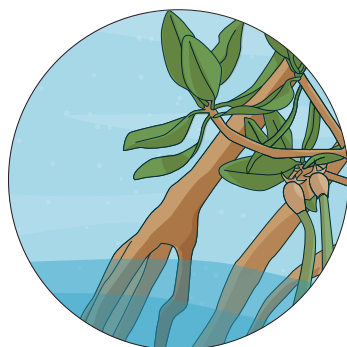
Given the unique role that coastal habitats play in reducing climate impacts and absorbing carbon, countries can include protections for these habitats in their NDCs as nature-based solutions for achieving some of their climate goals.

Once countries have made commitments to protect coastal wetlands and coral reefs, they can receive funding to help them implement on-the-ground measures to ensure lasting protection.

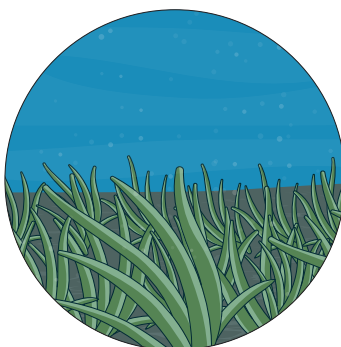
The Pew Charitable Trusts will work with governments, scientists, and civil society to integrate coastal wetlands and coral reefs into countries' NDCs to better protect these vital habitats worldwide.

Figure 1

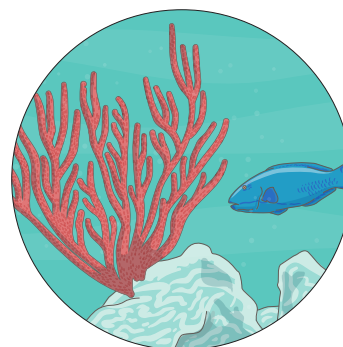
## Coastal Ecosystem Facts



Mangrove forests have the potential to store **three to five times more carbon per acre** than other tropical rainforests.\*



**50 to 90 percent of the carbon** stored in coastal wetlands is found in the soil.†



Coral reefs can help reduce the risk of floods caused by storms and rising seas for **nearly 200 million people**.‡

\* D.C. Donato et al., "Mangroves Among the Most Carbon-Rich Forests in the Tropics," *Nature Geoscience* 4 (2011): 293-97, <https://doi.org/10.1038/ngeo1123>.

† J. Howard et al., "Clarifying the Role of Coastal and Marine Systems in Climate Mitigation," *Frontiers in Ecology and the Environment* 15, no. 1 (2017): 42-50, <https://doi.org/10.1002/fee.1451>.

‡ F. Ferrario et al., "The Effectiveness of Coral Reefs for Coastal Hazard Risk Reduction and Adaptation," *Nature Communications* 5 (2014): 3794, <https://doi.org/10.1038/ncomms4794>.

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## Endnotes

- 1 Global Mangrove Alliance, "Mangrove Knowledge Hub," <http://www.mangrovealliance.org>.
- 2 National Academies of Sciences, Engineering, and Medicine, "A Research Review of Interventions to Increase the Persistence and Resilience of Coral Reefs" (2019), <https://www.nap.edu/catalog/25279/a-research-review-of-interventions-to-increase-the-persistence-and-resilience-of-coral-reefs>.

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*This fact sheet was updated on Oct. 2, 2019, to include new data about the amount of carbon that can be stored in mangrove forests.*

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