

Caribbean Corals

LARGE-SCALE, LONG-TERM REEF CONSERVATION

The Caribbean

is home to some of the planet's most magnificent coral reef ecosystems. These coral habitats are essential—they harbor abundant ocean life, help protect communities from coastal flooding and erosion, and support nearly half of the region's economy. But in recent decades, Caribbean coral cover has declined by almost 60%. Remaining reefs face the threats of warmer waters, harsher storms, disease, overfishing, and pollution.

To protect and restore coral reefs, The Nature Conservancy (TNC) is guiding effective marine management and innovating ways to accelerate coral reproduction and reef recovery. Partnering with organizations, institutions, communities, and governments, we are shaping a brighter future for the coral reef ecosystems that benefit more than 44 million people across the Caribbean.



STATE-OF-THE-ART HUBS SCALE UP CORAL RESTORATION

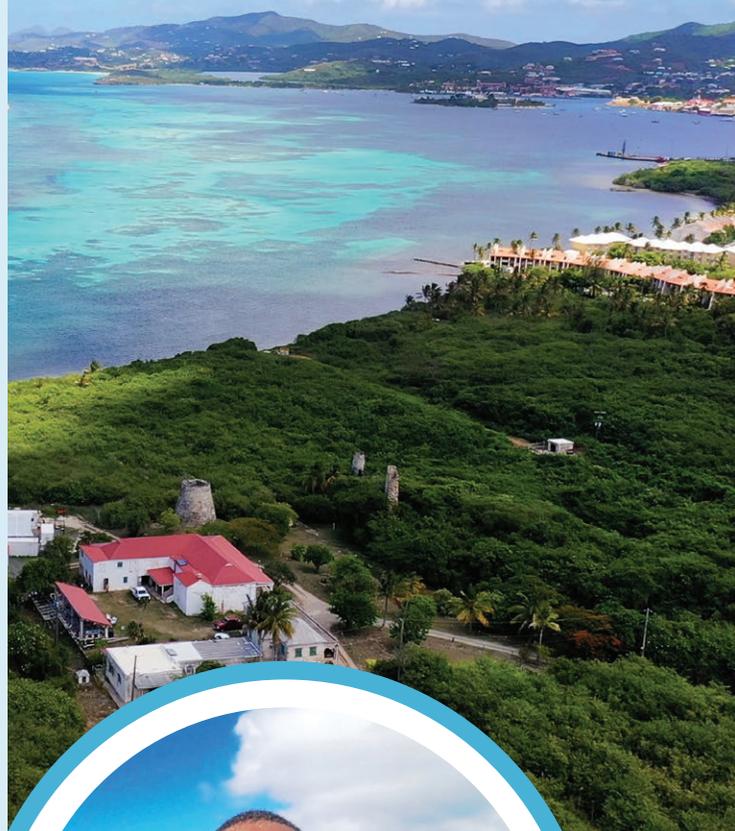
At our Coral Innovation Hubs, we are advancing the science of coral reproduction and restoration. Our newest Hub on St. Croix, U.S. Virgin Islands, is spearheading one of the world's largest coral restoration initiatives—covering more than 150 acres of reef area in the East End Marine Park.

Through our state-of-the-art lab and extensive land-based and underwater coral nurseries, we are innovating techniques to breed significantly more corals for restoration, with greater survival rates. These techniques include larval propagation, which helps preserve coral genetic diversity and resilience, and microfragmentation, a process that dramatically stimulates coral growth. New corals are then used to rebuild damaged reefs and accelerate reef recovery.

Thanks to a partnership with the U.S. National Park Service, these restoration approaches will be implemented across all National Park waters in the U.S. Virgin Islands. These efforts, along with work at TNC's Coral Innovation Hubs in The Bahamas and the Dominican Republic, are catalyzing world-class science and a global network of partners to save imperiled reefs.

In The Bahamas, working with partners that include the Cape Eleuthera Institute and Perry Institute for Marine Science, we developed techniques to increase the survival rates of young corals once they are released into the ocean or settled back onto reefs. In the Dominican Republic, we work with Grupo Puntacana Foundation, Dominican Foundation of Marine Studies, and the Dominican Reef Network to grow millions of new corals, representing many reef-building and endangered species.

At all our Coral Innovation Hubs, we raise awareness about the importance of coral reefs with students, communities, and governments. We amplify the impact of our findings through the TNC-led Reef Resilience Network, an educational platform that connects 34,000 practitioners working to conserve coral reefs around the globe.



DIVE DEEPER
nature.org/CaribbeanCoral

FIRST PAGE, CLOCKWISE Thriving corals in Eleuthera, The Bahamas © Paul A. Selvaggio; An endangered green sea turtle swims through a Virgin Islands reef. © MJS Visions; A practitioner transports corals from a TNC nursery. © Jennifer Idol THIS PAGE, CLOCKWISE Aerial view of our Virgin Islands Coral Innovation Hub © MJS Visions; A student snorkels and learns about corals during a field trip to our Bahamas Coral Innovation Hub. © Lily Haines; *Orbicella annularis*, an important reef-building species, grows at our Virgin Islands lab. © TNC

SCIENCE AND TECHNOLOGY FOR SMARTER CONSERVATION

TNC recently produced the first-ever high-resolution maps pinpointing the precise location of nearshore habitats throughout the Caribbean basin—a feat that provides unprecedented insights into coral reefs and other underwater oases of life. The maps, covering nearly 1 million square miles of ocean, are based on innovative analysis of satellite and drone imagery. We also created the first maps that show how coral reefs across the Caribbean will withstand the growing impacts of climate change, such as warmer waters and severe storms.

These tools reveal vital information for governments, marine managers, scientists, and practitioners—and help them ensure greater long-term impact by prioritizing conservation efforts where reefs naturally have a higher probability of remaining healthy in the face of climate change. This groundbreaking science is already helping us guide the effective management of 3,000 square miles of ocean in the Dominican Republic and prioritize coral conservation sites in Cuba, the Dominican Republic, Haiti, and Jamaica. The coral resilience maps are also helping us optimize reef restoration work in the U.S. Virgin Islands, and our partners target elkhorn coral recovery in Antigua.

COMMUNITY WELL-BEING DEPENDS ON HEALTHY REEFS

With close to 70% of its population living in coastal flood zones, the Caribbean is one of the most vulnerable regions in the world to climate change. Healthy coral reefs absorb an average of 97% of the energy of incoming waves, helping to protect shoreline communities during hurricanes. To invest in nature-based coastal resilience solutions, TNC and the International Federation of Red Cross and Red Crescent Societies forged a first-of-its-kind partnership that bridges conservation and humanitarian efforts.

Together, we work with communities in the Dominican Republic, Grenada, Jamaica, and The Bahamas to design projects that restore reefs and coastal habitats. This includes installing hybrid “reefs”—structures made of both natural and artificial elements that help protect coastlines and provide new places for corals to take hold. We also work to reduce wastewater and fertilizer pollution that weakens corals. With communities, we are saving nature to save lives.



DIVE DEEPER
nature.org/CoralMapping

clockwise TNC scientists use a drone to collect super high-resolution images of marine habitats in the Virgin Islands. © Steve Schill/TNC; Satellite imagery of marine habitats informs our groundbreaking marine maps. © Planet; A hybrid “reef” in Grenville Bay, Grenada, supports marine life and helps protect the coastal community against storm impacts. © Tim Calver

A BRIGHT, RESILIENT FUTURE IN THE FACE OF CLIMATE CHANGE

TNC is working to conserve and restore coral reefs that support vibrant oceans and livelihoods and help strengthen the climate resilience of coastal communities. We combine the coral reproduction expertise pioneered at our Coral Innovation Hubs with cutting-edge mapping to restore reefs where they will thrive as the world changes. To put science into action, we work with diverse partners, including policymakers, the tourism sector, community-based organizations, and international organizations.

It is urgent that we scale coral recovery efforts across the Caribbean now, before it is too late. To do this, we will launch new Coral Innovation Hubs in Cuba, Haiti, Jamaica, and Grenada; guide Caribbean governments and partner organizations in effective marine and coastal conservation; and empower communities to rebuild coastal habitats that help keep them safe. Together, these efforts can conserve reefs at a scale that matters, for lives, livelihoods, and a resilient future.

OUR 2021 IMPACT

20

CARIBBEAN GEOGRAPHIES
benefitted from our cutting-edge maps for smarter ocean conservation

2,760

SCIENTISTS AND PRACTITIONERS
educated in coral solutions, including the use of remote sensing technologies

270,930

HEALTHY YOUNG CORALS
outplanted or released into the ocean to bring new life to damaged reef ecosystems

14 million

NEW CORAL EMBRYOS
grown in our labs, representing eight species, to accelerate reef restoration



OUR MISSION: TO CONSERVE THE LANDS AND WATERS ON WHICH ALL LIFE DEPENDS



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