



## OCEAN MISSION: ECOSYSTEMS ON THE EDGE

The Smithsonian is driving an initiative to use nature-based solutions to safeguard coastal ecosystems vital for food security, pollution filtration, and shoreline stabilization, which currently face numerous threats. The mission will harness the Smithsonian's extensive expertise in science, art, history, and culture to foster coastal resilience and protect global biodiversity for people and nature.

### HOW THE SMITHSONIAN IS TAKING ACTION

**Developing Standards and Solutions for Blue Carbon:** Collaborating with policymakers and local communities to craft rigorous standards for ecosystem service valuation and promoting the conservation and restoration of coastal habitats through blue carbon accounting.

**Enhancing Reef Resilience:** Studying coral and oyster reefs to inform management strategies that support ecosystem recovery, sustain community livelihoods, and allow for adaptive and resilience responses.

**Advancing Genomics and Ocean Life Mapping:** Leveraging environmental DNA, digital collections, networks, and partnerships to provide comprehensive data on biodiversity that underpins other social and natural science applications.

**Boosting Marine Socio-Ecological Resilience:** Working with coastal communities to co-develop solutions that will harness and magnify the resilience of people and nature by focusing on the science, governance, and engagement needed to balance conservation and sustainable use effectively.

**Prioritizing Urban Estuary Biodiversity:** Bringing together stakeholders to address data gaps, set biodiversity and habitat conservation standards, and respond to rapidly growing challenges in coastal urban environments.

### THE SMITHSONIAN'S STRENGTHS WILL FACILITATE PROGRESS THROUGH

- Transformed understanding of marine biodiversity using cutting-edge genomics, environmental DNA analysis, digitization of historical collections, and machine learning.
- Engaging interdisciplinary science approaches to understand socio-ecological systems better.
- Strengthened global networks and partnerships to coordinate targeted research, conservation, and community-engagement efforts.
- Impact evaluation, monitoring of management interventions to assess their trajectories towards biological conservation targets and wider co-benefits to coastal communities.
- Engaging educational programs and the Smithsonian's unparalleled public education reach, targeting a wide audience to build a network of informed ocean ambassadors.

### LEARN MORE

Co-benefits of marine protected areas for nature and people <https://doi.org/10.1038/s41893-023-01150-4>

## EMBRACE OUR SHARED FUTURE

The Smithsonian Institution is committed to advancing and inspiring global engagement and environmental stewardship. In 2022, we introduced "Life on a Sustainable Planet," a pivotal initiative that fosters dialogue between scientists, students, policymakers, and the public on today's most pressing challenges. Renowned for our historical museums, the Smithsonian is equally vibrant in scientific discovery and education. With over 800 esteemed scientists conducting research on Earth and beyond, we tackle questions as broad as the cosmos' mysteries and as complex as ecosystem resilience. Our collaborative efforts are shaping the future as we work to preserve biodiversity, champion sustainable practices, and offer solutions to climate change. **Join us in this crucial conversation for a sustainable tomorrow.**