

Mapping Ocean Wealth: Livelihoods, Economies and Integrated Ocean-Use Planning

By 2050, as the planet's population swells toward 9 billion, demand for food, water and energy will strain Earth's natural systems, especially our ocean and coastal ecosystems. To ensure these important systems keep pace with human need, we must harness the scientific knowledge, innovative thinking, new tools, and applications of marine conservation, restoration and management.

Ocean ecosystems are as varied as they are valuable. Seagrass meadows are veritable fish factories—serving as nurseries for many important species for sport and industry. Recreational snorkeling and diving generates billions every year in tourist dollars, with coral reefs and kelp forests as prime destinations. To resource managers and community planners, oyster reefs support important fisheries, filter pollutants from the water and break wave energy, reducing the impacts from storms.

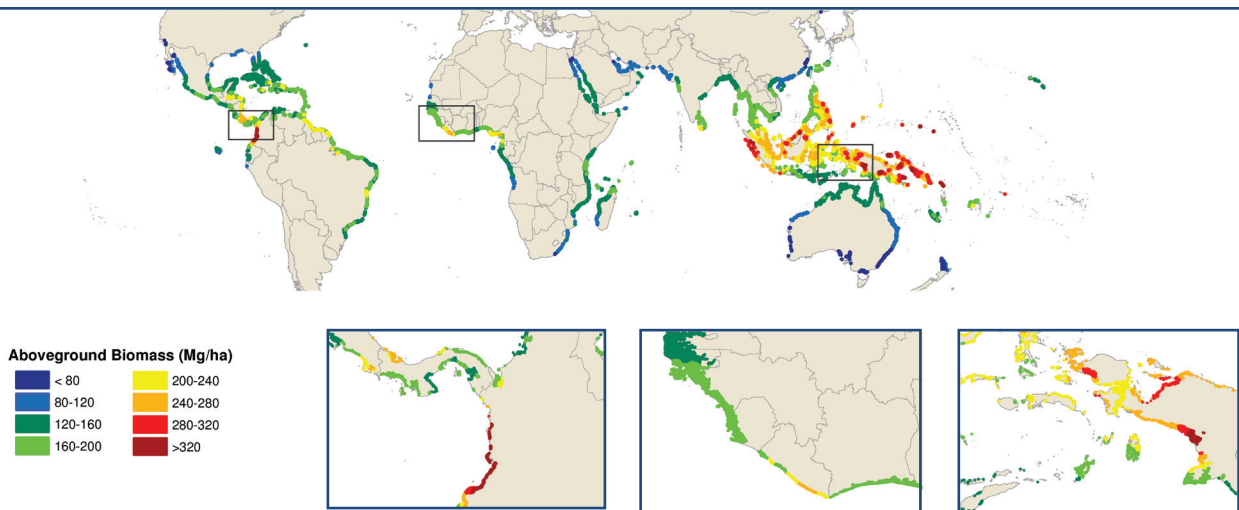
When considered in conjunction with salt marshes, mangroves, ocean currents, nutrient-rich upwellings and many other habitat types, the ocean provides countless, in many ways invaluable, services to human society and we must cherish them.

Mapping Ocean Wealth

The Conservancy's goal is to calculate and describe—in quantitative and spatial terms—all that the ocean does for us today, so we can make smart investments and decisions affecting what the ocean can do for us tomorrow.

In mapping our ocean wealth, we move from broad global averages of habitat science to specific local details, and evaluate nature as an asset. This local data then becomes actionable, translating directly into the engineering, financial and policy language that can inform and improve coastal and ocean planning, conservation, development and investment decisions.

The Conservancy's work builds on rapidly advancing marine science and our proven record on oysters, coral reefs and mangrove forests. We have compiled a detailed understanding of what drives the value of particular ecosystems and we will continue to explore the thousands of field-based studies from around the globe to map the benefits to people and society.



Map of distribution of the global ecosystem service of above ground carbon storage by mangroves © Hutchison et al., 2013

The definition of “value” in nature must necessarily be broad. Wealth in dollar terms alone is not enough. Our aim is to understand and model the “production functions” that underpin ecosystem services and report those functions in terms of job creation, food security, risk reduction, tourism and so on. This scientific approach enables us to map value both on a global scale with resolution great enough to influence policy and investments, but also to the finer scales enabling us and partners to map patterns of ecosystem value around individual bays and small islands.

Ocean Wealth in Decision Making

A coalition of scientists and experts are working to meet the needs of decision-makers, equipping them with science-based information to inform their planning processes. This includes engineers incorporating natural solutions into coastal infrastructure projects; it includes government agencies developing ocean-use plans and rebuilding fish populations; it includes conservation groups maximizing benefits from restoration projects; and development organizations investing in climate adaptation and poverty alleviation.

Only by **mapping ocean wealth** and demonstrating fish production, erosion prevention, mitigation of storm-related risks, recreation, tourism and so many other services can decision makers value ocean habitats for what they are truly worth to society, and all that is at risk should they fail.



A COLLABORATIVE APPROACH

Mapping ocean wealth complements and empowers both conservation and development efforts at the multinational, regional and local level. Only when government, industry and the scientific communities collaborate, can we advance a new way to value the fundamental habitats that support our society.

The Mapping Ocean Wealth collaboration welcomes new partners and has already been strengthened by input from: Cambridge Conservation Initiative; Cambridge University; Duke University; Ecosystem Services Partnership; Global Partnership for Oceans; Natural Capital Project; University of California, Santa Barbara; University of California, Santa Cruz; Wetlands International; Wildlife Conservation Society; and World Resources Institute.

For more information, links to new science and tools please visit:
www.OceanWealth.org and follow [www.twitter.com/Ocean_Wealth](https://twitter.com/Ocean_Wealth)

Or contact: Rob Brumbaugh, Integrated Ocean Management Lead, The Nature Conservancy: rbrumbaugh@tnc.org
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Clockwise on front: Local fishermen leave the Colorado River Delta to catch fish in the Gulf of California. The US and Mexican governments signed a 5-year agreement to connect the Colorado River back to the Sea of Cortez for the first time in nearly half a century. © Erika Nortemann/TNC; Mangrove in the shallow coastal salt flats of Warderick Wells Cay in the Bahamas. © Mark Godfrey/TNC; ReefBLKs are one of three methods being used to restore 3 acres of oyster reefs along the shores of Mobile Bay as part of stimulus-funded project. © Beth Maynor Young; Breakwaters help protect islands in Corpus Christi Bay near Port Aransas, Texas. © Erika Nortemann/TNC. **Page two:** Coral reef off Restoff Island in Kimbe Bay, West New Britain, Papua New Guinea. This area is one of the Marine Protected Areas (MPAs) which The Nature Conservancy helped design to protect the biodiversity of the bay. © Mark Godfrey/TNC