

THE OCEAN HEALTH INDEX

Our interactions with the ocean and coasts have become more intense and varied, and generate more benefits than ever. These benefits are not boundless, and we can no longer take a healthy ocean for granted. Stewardship must include an assessment of overall health, but “healthy” continues to mean different things to different people. Clear, credible, salient indicators of ocean health will strengthen management, policy, and planning.

WHAT IS A HEALTHY OCEAN?

A healthy ocean is not pristine - it includes humans and the diversity of ways we value and use it. A healthy ocean provides protein, medicines, and energy, subsistence options for those who need them, and opportunities for recreation and tourism. It holds high intrinsic value and supports tremendous biodiversity. It regulates our climate and creates habitats that protect our shorelines from inundation and erosion. It sustains a diversity of livelihoods, cultures, and traditions. And most importantly, a healthy ocean is resilient to a variety of pressures, including climate change and unforeseen future stressors. **In short, we define a healthy ocean as one that can sustainably deliver a range of benefits to people both now and in the future.**

HOW DO WE MEASURE IT?

We are a group of leading scholars who are developing indicators to track the ocean's current and future health, focusing on 10 broadly held public goals:

- **Seafood provision** from sustainably harvested or cultured stocks
- **Subsistence harvest** from sustainable practices
- **Natural products** like medicine, curios, and energy, that are sustainably extracted
- **Carbon storage** in biogenic habitats (while minimizing effects of acidification)
- **Shoreline protection** from inundation and erosion
- **Sense of place** from iconic species, lasting special places, and other cultural values
- **Livelihoods** and coastal and ocean-dependent economies
- **Tourism and recreation** opportunities
- **Clean waters** for aesthetic value and to avoid detrimental effects on humans or wildlife
- **Biodiversity** of species, habitats, and landscapes

Based on these goals, we are creating a set of indicators to consistently and reliably measure the health of the ocean and coasts across a variety of different contexts - data poor and data rich, tropical and temperate, regional and global.

Indicators comprise 4 components:

- status relative to reference points (good or bad?),
- recent trends (getting better or getting worse?),
- near-term vulnerability (what is intensity of current human pressures?), and
- longer-term resilience (can the system continue to provide this benefit into the future?).

Ultimately, these indicators will be incorporated into a single Ocean Health Index (OHI) that will be calculated annually for the entire globe as well as at smaller regional sites.

HASN'T THIS BEEN DONE BEFORE?

No. Not like this.

Existing analyses tend to focus on individual sectors such as fisheries or coastal pollution, without consideration for the overall condition of the ocean, the full set of goals that people care about, explicit tradeoffs among those goals, or the cumulative impacts of various activities on the continued delivery of benefits.

Rather than evaluating the health of the ocean and coasts purely as a biophysical system (as is typical of most assessments), we are explicitly examining the flow of ecosystem services to link the biophysical and human dimensions.

Our approach seeks integrated measures that heavily leverage existing data and indicators, and reanalyzes or combines them in novel ways to evaluate and track progress toward specific goals (i.e., things people care about) and the attributes that are most important for assessing those goals (status, trend, vulnerability, sustainability).

We are whittling down the hundreds of candidate indicators to those that are salient, responsive to change, and amenable to scaling across local, state, regional, national, and international monitoring.

WHERE IS THIS HAPPENING?

Indicators are currently being developed for the California Current, the mid-Atlantic Bight of the US Northeast Shelf, Chesapeake Bay, and Fiji's Exclusive Economic Zone as test beds, with a single, composite measure of ocean health, the OHI, calculated for each of these sites.

HOW WILL THIS BE USED?

These regional case studies will help us test and demonstrate the transferability of the Index across different contexts. Other locations will follow.

Regular and repeated assessments of ocean health can aid the formulation and implementation of decisions for coastal and marine spatial planning, ecosystem-based management, environmental protection and restoration, and coastal zone management.

The OHI will also be calculated annually at the scale of the global ocean. This global standard for ocean health will provide the public and policymakers a common language to describe how the ocean is changing and what they might do differently.



FOR MORE INFORMATION

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