

United States' ocean conservation efforts have major gaps, analysis shows

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More than 98% of U.S. waters outside the central Pacific Ocean are not part of a marine protected area, and the ones that are tend to be "lightly" or "minimally" protected from damaging human activity, research led by

Oregon State University shows.

Published today in *Frontiers in Marine Science*, the study examined the nation's 50 largest marine protected areas, or MPAs, using a groundbreaking guide produced last year by some of the same scientists who worked on the current research. Those 50 account for 99.7% of the United States' MPA coverage.

Among the study's conclusions: The U.S. needs to create more, and more effective, MPAs—and fast.

"These findings highlight an urgent need to improve the quality, quantity and representativeness of MPA protection across U.S. waters to bring benefits to human and marine communities," said Jenna Sullivan-Stack, a research associate at Oregon State University and the study's lead author.

U.S. waters include the territorial sea, which extends 12 nautical miles offshore, as well as the contiguous zone (24 nautical miles) and exclusive economic zone (200 nautical miles).

According to criteria established by "[The MPA Guide: A framework to achieve global goals for the ocean](#)," published in *Science* in September 2021, 99% of U.S. waters that are "fully" or "highly" protected are in the central Pacific.

That means critical [marine systems](#), such as those in the Atlantic, Arctic and northeast Pacific oceans and the Caribbean Sea, are vulnerable to "unprecedented pressures," and so are the coastal economies that depend on those systems, said co-author Kirsten Grorud-Colvert, associate professor of integrative biology in the OSU College of Science.

"The benefits from marine protected areas are key for our future," said

Grorud-Colvert, who led the MPA Guide project. "The MPA coverage in regions outside the central Pacific is surprisingly sparse, and the gaps in protection represent a challenge to meeting the goals laid out in the Biden administration's [America the Beautiful](#) initiative."

The America the Beautiful goals include conserving at least 30% of the country's lands and waters by 2030. After using the MPA Guide to assess the 50 largest U.S. marine protected areas, the scientists determined 25.2% of the U.S. [ocean](#) to be "fully" or "highly" protected.

Thirty-one scientists took part in the analysis of United States MPAs, which the authors note is one of the first systematic applications of the MPA Guide. The guide is built on criteria derived from decades of research in ecosystems and human communities around the world so [marine protected areas](#) can be accurately rated as fully, highly, lightly or minimally protected, Grorud-Colvert said.

This information on protected area quality is crucial, she added, as policymakers try to measure and improve the level of protection offered by existing MPAs and work to develop new ones.

It also highlights the need to improve equity and other social and ecological conditions needed for the areas to be effective, added OSU's Ana Spalding, another co-author of the analysis.

"It is important to recognize that well-managed MPAs, designed with the local context in mind, can deliver benefits that extend beyond marine life to coastal communities that depend on sustainable marine resources for their livelihoods and cultural survival," said Spalding, associate professor of marine and coastal policy at Oregon State and a research associate at the Smithsonian Tropical Research Institution.

In addition to urging the creation of more fully and highly protected

areas, the authors offer other recommendations for U.S. policymakers, including:

- Establish new, networked MPAs with better representation of marine biodiversity, regions and habitats. "The vast central Pacific MPAs are valuable and should be celebrated, but we need to create effective networks in other areas too," Sullivan-Stack said. "This will bring the social benefits of MPAs within reach of many more communities."
- Improve attention and commitment to equity in new and existing MPAs. "Thoughtfully including diverse rights holders and stakeholders, particularly Indigenous and other historically excluded communities, in the creation, design, implementation, management and MPA impact assessment has the potential to increase overall MPA effectiveness," Spalding said.
- Track MPAs' ability to deliver outcomes, not just the area they cover. "And outcomes from sites that provide effective and lasting conservation benefits but are not MPAs, like military closed areas for example, should also be tracked as the U.S. works toward the 30x30 target," Grorud-Colvert said.
- Ensure that MPAs are built to last. Governance structures and long-term funding support for staffing, monitoring, etc., should be established or strengthened, the scientists say. "More research is needed on how to make sure MPAs are both climate ready and can help mitigate the effects of climate change," Sullivan-Stack said.
- Build on existing MPA initiatives at the state and local levels. "State support is crucial for achieving the federal goals of America the Beautiful," Spalding said. "State initiatives could include executive and legislative actions, outreach and education, and stakeholder coordination, while local community needs can and should be aligned with those of conservation efforts."

More information: A scientific synthesis of marine protected areas in the United States: Status and recommendations, *Frontiers in Marine Science* (2022).

Provided by Oregon State University

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