LENFEST OCEAN PROGRAM

A scientific summary
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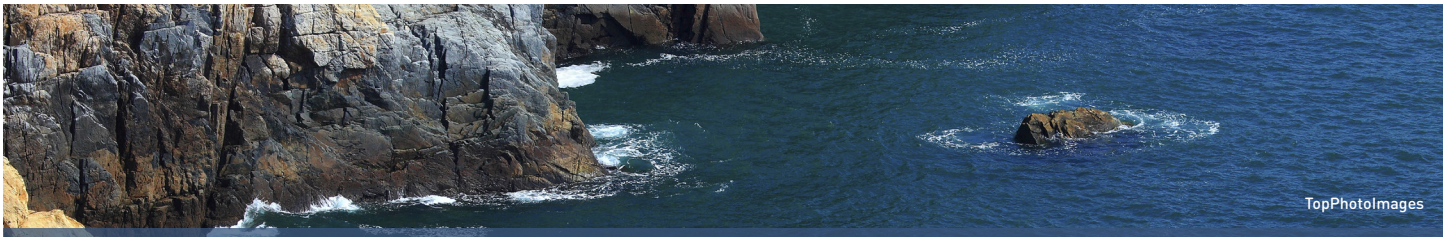


TopPhotoImages

INSIGHT INTO CHINA'S MARINE CONSERVATION EFFORTS:

A new paper assesses China's progress toward area-based marine conservation targets

A new study in the journal, Science Advances, provides the first comprehensive and publicly available database of area-based marine conservation in China's waters, giving insight on the country's progress toward meeting global commitments (i.e., Aichi Biodiversity Target 11). Based on China's political and environmental significance in global conservation discussions, better understanding of the country's history and current implementation in managing area-based conservation could help inform dialogue around management of marine biodiversity at national and international levels.

THE STUDY'S OBJECTIVES

1. Develop a comprehensive and publicly available database of China's area-based marine conservation measures.
2. Assess the distribution of China's protected areas across different habitats as a measure of ecological representativeness.
3. Analyze China's progress towards meeting international conservation targets and pathways for improvement based on the study results.

13%

of China's EEZ is protected under various levels by 326 sites. These sites address 142 conservation objectives.

CHINA'S PROTECTED AREAS: MARINE PROTECTED AREAS AND AQUATIC GERMPLASM RESERVES

Four types of protected areas were assessed in this study, including, three types of MPAs: Marine Nature Reserves (MNRs)- no take MPAs, Special Marine Protected Areas (SMPAs)- limited use MPAs that also include Marine Parks (MPs) as a sub-category of SMPAs that focus on ecotourism. Aquatic Germplasm Reserves (AGRs), also known as fishery conservation zones, were included in the analysis, as they protect commercially important, rare, or endangered fish species. Because their main conservation objective is not biodiversity conservation, they are not considered MPAs, although some AGRs may qualify as other effective area-based conservation measures (OECMs), if they meet the criteria, because of their potential to deliver biodiversity outcomes.

ASSESSING CHINA'S PROGRESS TOWARD GLOBAL CONSERVATION TARGETS

The Convention on Biological Diversity's (CBD) Aichi Target 11 calls on countries to protect 10% of their exclusive economic zone (EEZ) by 2020. In China's offshore waters, 4.5% is protected in areas that qualify as MPAs. If AGRs are deemed to meet the CBD standards of OECMs and are also included, nearly 13% is protected, indicating that China may have surpassed the 10% ocean protection goal. When researchers looked across habitat representativeness in protected areas, protection levels varied across depth and location for the 16 habitat types defined in the study. Important shallow habitats, such as mangroves and coral reefs, were more frequently protected by MPAs, but as depth increased, protection became less consistent. Habitats found in depths between 10-50m were protected mostly by AGRs, and deeper habitats greater than 50m and beyond the shelf (e.g., canyons and seamounts) were represented by less than 1% in protected areas or had no protections at all.

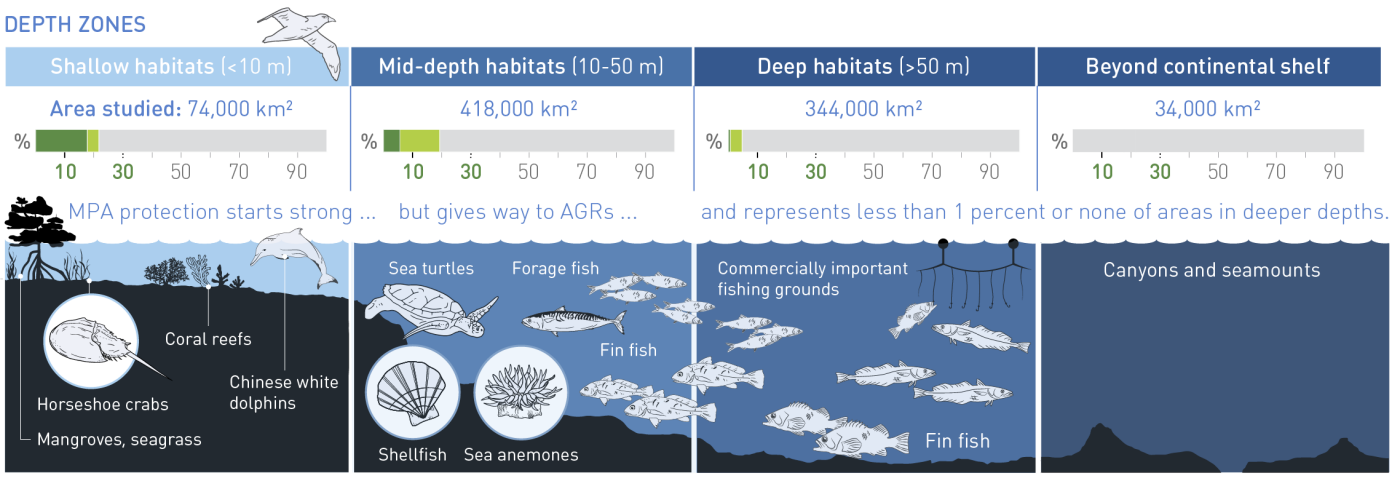
Figure 1

MARINE PROTECTIONS IN CHINA'S WATERS

If AGRs are considered OECMs, China is on track to exceed the 2020 goal of protecting 10% of its offshore waters. If the target is raised to 30%, further protections will be needed.

A CLOSER LOOK: HABITAT REPRESENTATION AND PROTECTION LEVELS ACROSS DEPTH

Four depth zones were defined in the study: shallow habitats (<10m), mid-depth habitats (10-50m), deep habitats (>50m), and non-shelf (depths beyond the continental shelf). Shallow habitats were afforded the greatest proportional protection by MPAs, while mid-depth habitats were protected mostly by AGRs. Habitats in the deepest waters and those beyond the shelf had little to no protection from either MPAs or AGRs.



POTENTIAL FUTURE DIRECTIONS

The CBD Conference of Parties is expected to conclude in 2022. It's evaluation of progress toward conservation targets may set a higher goal for ocean protection by 2030, thus raising the bar for protection standards and MPA network effectiveness. Based on the findings in this study, China may consider:

- Adding protections for pelagic ecosystems, especially by no-take MPAs, and in tropical and sub-tropical regions.
- Adding protections for deep water ecosystems including undersea canyons and seamounts, which are currently not represented.
- Strengthening the level of protection by converting some AGRs to MPAs.
- Developing long-term monitoring programs to understand management impact beyond numerical goals.

It will be important to continue building knowledge about the quality of these protected areas in enhancing marine biodiversity. MPAs frequently prioritized conservation of certain coastal ecosystems with high biodiversity (mangroves, wetlands, coral reefs), and culturally significant charismatic animals (seabirds, marine mammals) among their conservation objectives, while objectives for AGRs primarily targeted commercially significant finfish and shellfish. Understanding how this contributes to conserving biodiversity and ecosystem health could address questions of network effectiveness.

Citation

Bohorquez, J.J., Xue, G., Frankstone, T., Grima, M.M., Kleinhaus, K., Zhao, Y., Pikitch, E.K. (2021). China's little-known efforts to protect its marine ecosystems safeguards some habitats but omits others. *Science Advances*.

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