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Can repurposing fish aggregating devices make MPAs more effective?

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By Responsible Seafood Advocate

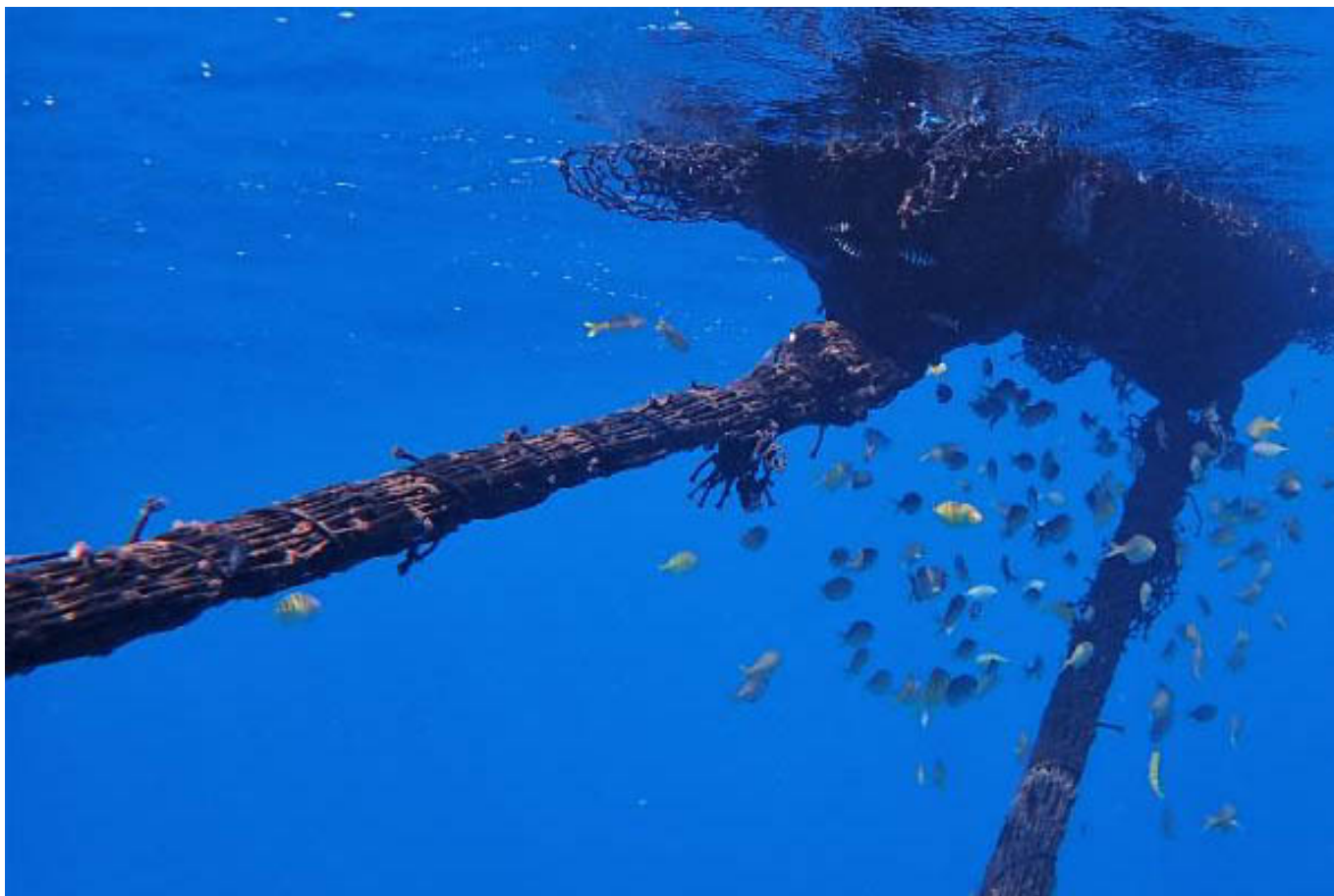
Study suggests that fish aggregating devices could be repurposed to enhance marine protected areas

Technology widely used by fishing fleets to attract open ocean species could play a role in safeguarding marine environments, according to [a new study](https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/conl.12984?src=getftr) (<https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/conl.12984?src=getftr>), published in *Conservation Letters*.

The research, which was conducted at Palmyra Atoll in the Central Pacific Ocean in collaboration with scientists from the Queensland University of Technology (QUT) and The Nature Conservancy (TNC), suggests that fish aggregating devices (FADs) could be used to “protect, conserve and sustain” exploited fish species in marine protected areas (MPAs).

Drift FAD (dFAD) devices – essentially a floating mat or raft attached to floats and a buoy, often equipped with a satellite location device – attract pelagic fish (such as tuna, marlin and mahimahi), making them more accessible and cost-effective for commercial fishing operations.

“If fishing fleets can use dFADs to attract fish towards their nets, why can’t we use them to attract fish into protected areas?” said Michael Bode, co-author and QUT professor. “Also, by increasing the local



By strategically placing fish aggregating devices within protected areas and utilizing advancements in drone and autonomous technology, researchers believe they can significantly improve the effectiveness of marine protected areas. Photo courtesy of the Queensland University of Technology.

density of exploited species, they may also improve the function of ecosystems in blue water MPAs.”

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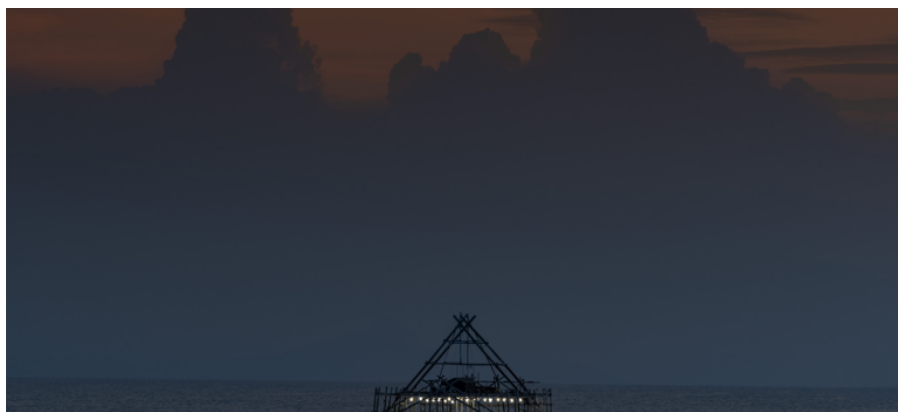
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By strategically placing conservation FADs (cFADs) within protected areas and utilizing advancements in drone and autonomous technology, the team believes they can significantly improve the effectiveness of MPAs. These conservation devices could address a primary challenge faced by blue water MPAs – their relatively small size.

“This use of cFADS could overcome the conservation areas’ small size, compared with the vastness of the ocean, by giving fish an ‘incentive’ to remain or congregate within the protected area,” Bode said.



Fisheries in Focus: What are fish aggregating devices and why is there debate about banning them?

Use of fish aggregating devices increases fishing efficiency but can potentially increase bycatch and ocean pollution if FADs are lost or abandoned.



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The team found that placing FADs inside MPAs could increase the time pelagic species spend in those areas (where they can't be caught), reducing mortality rates.

“Somewhat amazingly, we found that even a small number of FADs inside a blue water MPA can meaningfully amplify the benefits of that MPA,” said Edward T. Game, co-author and TNC’s Asia Pacific lead scientist and director of conservation.

The team highlighted the uniqueness of using FADs as a conservation tool, citing the ability to control their positioning within an MPA. This control allows them to aggregate fish and enhance their residence time within protected waters, ultimately benefiting the entire ecosystem.

“We can have control over where they are positioned, so, therefore can keep them inside an MPA and use them to aggregate the fish and increase their residence time within protected waters,” said Kydd Pollock, co-author and TNC’s pelagic conservation strategy lead. “Efficient seabird foraging is closely tied to breeding success, so having consistently higher fish biomass in a region benefits the entire ecosystem.”

The study offers a promising solution to the limitations of blue water MPAs, presenting a novel application of existing fishing technology to contribute to marine conservation efforts.

Read the full study (<https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/conl.12984?src=getftr>).

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