Does the world's largest fully protected MPA provide spillover benefits?

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The Papahanaumokuakea expansion was established out to 200 NM in 2016. The data show the relative change in tuna CPUE.

After the Papahanaumokuakea expansion was established 2016, a recent publication in Science claimed that the expansion resulted in higher catch rates of tuna nearer the boundary due to the spillover effects created by the monument expansion.

For the above figure, data for the US deep-set longline fishery were aggregated into pre- and post-expansion time periods (2010-2015, 2016-2021), and the relative change in CPUE was computed for a spatial 1-degree grid. The relative change in the CPUE for yellowfin and bigeye versus the closest distance to the monument boundary shows no significant increase; fishing locations closest to the monument boundary showed both an increase and decrease in measured CPUE. Much of the increases is associated with an increase in bigeye CPUE at distances greater than 600 NM (1,111 km) from the monument boundary.

Is the relative change in CPUE a good proxy measure for spillover?

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One seriously wonders how papers like this get through a peer review process in a journal like Science. The total annual catch of yellowfin in the MPA prior to its closure was 59 tonnes. That is a trivial amount in terms of the total regional catch (>600,000 t) and this did not receive a mention in the paper. Nor did the fact that an increase in CPUE in the area around Hawaii began in about 2014, two years before the closure, and continued to around 2018. This was a broad-scale effect likely related to environmental conditions impacting yellowfin abundance and vulnerability to longline fishing. It was reported in the 2020 yellowfin stock assessment conducted by the Pacific Community and is available on the website of the Western and Central Pacific Fisheries Commission. Again, no mention of this in the paper.

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These fake science papers are nearing the point of being official comedy. There was virtually no yellowfin harvest in the closed area before the closure, so the closure of a place that doesnt have fish or get fished in the first place magically makes fish appear? Makes as much sense as banning fishing on land, then when the biomass in the water next to the land increases, claim that the land fishing closure did it. Just dumb. I wonder who peer reviews this dumb stuff. Coincidence does not prove or even imply causation. Do they teach this rule to the fish scientists?

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