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Cal Poly Study Finds Marine Protected Areas' Recovery to Take Time

SAN LUIS OBISPO — A new joint study from Cal Poly and the California Sea Grant suggests that the Central Coast's marine protected areas may eventually produce more and larger fish than areas open to fishing, but the benefits could take time to accrue.

The study looked at the first seven years of monitoring within four marine protected areas (MPAs) between San Francisco and Morro Bay. The study found few significant differences between fish populations inside and outside three of the MPAs, which were established in 2007. However, Point Lobos State Marine Reserve, which has been protected since 1973, is flourishing with more and bigger fish than its surrounding areas.

The research was published earlier in March in the journal PLoS One.

"These marine reserves are going to work, but they're not a short-term solution for commercial fisheries," lead author Rick Starr of California Sea Grant said.

Starr and Dean Wendt, dean of research at Cal Poly, led a team of marine researchers and more than 700 volunteer fishermen to sample fish within and outside of four protected areas: Año Nuevo State Marine Conservation Area, Point Lobos, and the Piedras Blancas and Point Buchon State marine reserves.

In the seven years of data examined, "We didn't see much change that could be attributed to the MPA status," Starr said.

Starr and Wendt suggest part of this trend might be attributable to good conditions for fish outside the reserves. Stringent fishery regulations in California over the last decade have reduced fishing pressure, while ocean conditions favored successful reproduction for many of the species in the study.

MPAs allow little or no harvesting to provide a refuge for commercially fished species and other marine wildlife. Eventually, fish rebuild their population size and generate "spillover" to the surrounding ocean, but the recovery time can vary.

"Early research on MPAs came from tropical areas, where fish tend to have a shorter lifespan and are fast breeders," Starr said. "When you protect those areas, they rapidly rebuild their population. It can take as little as three to five years. We didn't see those results in cold Central California waters. Some of the fish here live for more than 50 years, growing and breeding slowly."

Other reserves in California, where ocean conditions vary widely, could behave differently. MPAs near the Channel Islands saw a rebound of fisheries in just five years, although Starr cautions that these results were primarily noticed for short-lived or fast-growing species.

One of the objectives of the project, which is funded by the Ocean Protection Council

and California Sea Grant, is to work with agencies and fishermen to use the monitoring results for better fisheries management.

“Our goal is to improve conservation and economic outcomes for California fisheries by building strong partnerships among fishermen, scientists, non-governmental organizations and resource managers,” Wendt said.

Starr and Wendt will soon meet with fishermen and state fishery managers to work on a management plan that includes the expertise and participation of non-agency stakeholders.

Wendt said these kinds of partnerships offer a number of benefits, including more eyes on the water to notice changes in the fisheries and better cost-effectiveness at gathering data.

“A study of this size would not have been possible without the help of more than 700 fishermen,” said Wendt. “We hope what we learned over the last seven years can help Californians strengthen our fisheries for the future.”

To learn more or become involved in the fisheries management plan, contact: Starr at rickstarr@ucsd.edu or 831-771-4442 or Wendt at dwendt@calpoly.edu or 805-756-1508.

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