

## Case Study: The Channel Islands MPAs, The Spiny Lobster & Commercial/Recreational Fishing

*This case study represents an illustration of how monitoring programs can integrate both social and ecological information to make management decisions.*



California has [124 Marine Protected Areas \(MPAs\)](#), [covering 16% of state waters](#). MPAs are designated protected areas, meant to conserve biodiversity and promote ecosystem health. Monitoring is key to the ongoing success of the state's MPA program. A monitoring baseline was established between 2007 and 2018 by scientists and partners and will continue to be critical context as long-term monitoring reveals how MPAs impact the ecosystem.

Commercial and recreational fishing are two of the indicators used to evaluate the success of the Channel Islands MPAs. Fishing includes both social and ecological indicators because it represents the combination of multiple social and behavioral dimensions of human life — economic livelihood, recreational enjoyment, traditions and customs — as well as the ecological well-being of different species and fisheries in and around the protected area.

The [California spiny lobster](#) (*Panulirus interruptus*) is an economically and ecologically significant commercial and recreational fishing target. Approximately [660,000 pounds are harvested commercially each season](#). Recreational harvest can amount to another several hundred thousand pounds. The lobsters live predominantly in the crevices of rocky areas in intertidal zones from Monterey Bay, California to Magdalena Bay, Baja California, with a natural lifespan of 30 to 50 years. This geographic range puts the Channel Islands MPAs in the middle of the lobster's territory, where kelp forests also provide excellent habitat.

As with many fisheries, the California spiny lobster is managed by the California Department of Fish and Wildlife (CDFW). The recreational spiny lobster fishery is monitored using the [Spiny Lobster Report Card program](#), where recreational fishers record the date, number of lobsters caught and a location code. This allows the CDFW to monitor variations in the fishery.

Starting in 2016, the California Spiny Lobster Fishery Management Plan (Lobster FMP) became the first FMP to integrate the effects of MPAs on the species. The CDFW uses the spawning potential ratio (SPR) model, which is a process that compares the reproductive potential of fished lobsters to the reproductive potential of the fishery if the population were unfished. This

helps reveal how commercial harvest is impacting the lobster's ability to reproduce.

[Management actions](#) (such as establishing a total allowable catch, changing the season length or setting minimum legal size and bag limits) can be triggered depending on the results. These actions influence the species' health and reproductive potential and could also impact commercial and recreational harvesters who depend on the California Spiny Lobster.

As of the 2016 management plan, it was estimated that approximately 14.6% of known lobster habitats exist within MPAs. This number, as well as other data from the MPAs — the size of the MPA, the amount of spiny lobster spillover, etc. — factor into the SPR model. This means that for spiny lobsters, MPAs directly affect what management actions do, or don't, get triggered.