

Monitoring Effects of Marine Protected Areas

Monitoring determines whether marine protected areas (MPAs) help to maintain productive ocean ecosystems that provide recreational opportunities that humans want and need.

Socio-economic monitoring in the Channel Islands is guided by a Socio-economic monitoring plan that was developed with stakeholders and experts. A socio-economic coordinator, hired by the Channel Islands National Marine Sanctuary, implements the monitoring plan, provides a conduit for stakeholder involvement, and provides annual reporting of monitoring results. The programs described below are essential elements of the monitoring plan.

Monitoring Recreational Fishing

The California Recreational Fisheries Survey, supported by the Department of Fish and Game, is the new method for estimating total recreational catch of marine fish. The survey includes information about recreational catch from private and rental boats, and Commercial Passenger Fishing Vessels (also known as “party boats”). The survey also includes estimates of recreational catch from shore and man-made structures.

The table below shows the percent of recreational passenger fishing vessel (CPFV or Party Boat) landings from the Channel Islands region as compared to other areas

Percent of recreational fish landings from the Channel Islands before and after MPAs established.

Species	Before MPAs	After MPAs
Halibut	14.6%	11.6%
CA Sheephead	20.9%	13.0%
Rockfish	29.5%	31.9%
Ocean Whitefish	34.9%	35.1%
White Seabass	50.6%	42.6%
Lingcod	67.2%	36.7%



in southern California before and after MPAs were established. These numbers take into account a variety of regulatory changes, including depth and season restrictions that may have larger impacts on fisheries than MPAs. Most recreational fisheries remained stable at the islands and only lingcod landings decreased significantly compared to other areas in southern California.

Monitoring Non-Consumptive Recreation

For effective management of recreational activities, managers need information about recreational boating and other associated activities such as diving, kayaking, surfing, and wildlife viewing. Social scientists are collecting data on the spatial distribution and intensity of boating and related activities; how and where boaters spend money; and knowledge, attitudes and perceptions of non-consumptive users. Researchers will investigate possible reasons (including the presence of MPAs) that motivate decisions about ocean recreation. Preliminary baseline data about non-consumptive users will be available by December 2006.

Monitoring Effects of Marine Protected Areas on Commercial Fishing

The California Department of Fish and Game (CDFG)

gathers information about commercial fishery landings. Using these data, the Department can estimate ex-vessel value or the total value of all fish landed (in U.S. dollars) for each commercial fishery at each port.

The table (below) compares the predicted losses and actual changes in ex-vessel value since marine protected areas (MPAs) were established in the Channel Islands. The Department anticipated the “worst-case scenario,” the complete loss of all commercial fishing revenue from proposed MPAs. The Department estimated the actual percent change in ex-vessel value for fisheries in the Channel Islands region and southern California after MPAs were established. There is no evidence that MPAs were directly responsible for either losses or gains in ex-vessel value. The Department attributes these changes to environmental conditions and normal variation in landings.

Key Observations

- Some fisheries (crab, lobster, and urchin) actually gained value in the Channel Islands, although losses were predicted.
- One fishery (sea cucumber) experienced losses, but losses in the Channel Islands region were less than losses in southern California, suggesting that MPAs did not reduce the value of the fishery.
- Some fisheries (sheephead and rockfish) experienced losses throughout Southern California, but losses were greater, on average, in the Channel Islands region.
- The value of squid in the Channel Islands increased in 2005, but declined in 2006, likely because of natural variability over space and time.

Estimated losses and actual changes in commercial fisheries.

Species	Estimated Maximum Loss ¹	Channel Islands Value ²	S California Value ²
Crab	- 15%	+ 43%	- 6%
Spiny Lobster	- 16%	+ 23%	+ 44%
Sea Urchin	- 16%	+ 8%	- 56%
Market Squid	- 13%	- 4%	+ 128%
Sea Cucumber	- 17%	- 11%	- 30%
CA Sheephead	- 16%	- 48%	- 18%
Rockfish	- 16%	- 66%	- 24%

¹ Predicted percent change based on total loss of all commercial revenue in proposed MPAs.

² Actual percent change in ex-vessel value (\$) between the five-year average (1998-2002) before MPAs were established and the three-year average (2003-2006) after MPAs were established.