

# A new TURF-Reserve in Navidad,

# Central Chile

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## Chilean TURF Management

The artisanal fishing industry has always been socially important in Chile, but quickly became economically significant in the 1970s when demand for seafood exports grew rapidly. At the time, fishing effort was unrestricted and overfishing caused a collapse in benthic species' populations including Chilean abalone (loco), sea urchin and scallops. In 1991 the Chilean government established new fishery regulations that aimed to reduce overexploitation of marine species through the Fishery and Aquaculture Law (FAL). The law permitted only artisanal fishing activities within 5 nautical miles from shore, excluding all industrial fishing from this coastal region. The FAL also provided artisanal fishing associations or "unions" the ability to lease coastal TURFs (Territorial User Rights for Fisheries) for 4-year periods, in the form of Management and Exploitation Areas for Benthic Resources (MEABRs). Since then, over 700 TURFs have been established along the Chilean coastline.

TURFs are granted to legally registered artisanal fishing unions – not to individuals – and provide all members exclusive fishing rights to benthic resources within TURF boundaries. Regulations require that union fishers conduct an initial baseline study of the area's marine environment and develop a management plan. Each year the union must hire a consultant to conduct stock assessments in order to set an annual total allowable catch (TAC) for each species in the TURF, and to incorporate any necessary changes to the management plan.

Protection of TURFs from illegal fishing by outsiders is the responsibility of the union fishers as well as the National Fisheries Service. There are no active patrols around TURF boundaries and the quick increase in TURFs along the coast has resulted in a large loss of



Photo: C. Villanueva

open-access grounds, which has also led to increased poaching within TURF boundaries. While TURFs have been helping local fishers maintain stable shellfish stocks, illegal fishing is still a significant problem.

The move toward TURF management of coastal fisheries has helped shift control of marine resources from the government to local fishers. This management system has reduced risks associated with open-access fishing and has given local fishers ownership of their resources, thereby supporting the maintenance of sustainable fisheries.

Despite the large number of TURFs in Chile, there have been very few attempts to implement marine reserves within or adjacent to TURFs. However, one fishing community has recently created Chile's first locally implemented marine reserve that is explicitly designated to conserve local ecosystems and help boost fishery populations in adjacent TURFs.

## Fishing Unions of Navidad: El Federación de Pescadores de Navidad



Navidad is a small region that lies along the coast of central Chile in one of the poorest areas of the country. Two of Navidad's fisher unions - La Boca and Matanzas - are a part of the larger Federación de Pescadores de Navidad (FEPANAV), which includes a total of six fishing unions. Each union within FEPANAV has been allocated a TURF by the government in which their fishers have exclusive access to all benthic species, including the highly valuable loco.

However, La Boca and Las Matanzas have experienced low harvests of target species in recent years and sought out local scientists and municipality leaders to create a marine reserve just outside their TURF boundaries to help improve the performance of these stocks.



Photo: L. Osman

## Navidad Marine Sanctuary

The Navidad Marine Sanctuary was informally created in 2009 and became legally recognized as a marine reserve in late 2012. Prior to the reserve's implementation, the local fishers, scientists, and Navidad municipal officials collaborated to carry out four years of surveys to develop a baseline study of the marine ecosystem along the Navidad coast. Based on the results of these studies, all three of the key stakeholder groups were able to cooperate and choose the best location for the marine reserve. This collaboration was important for reducing conflict between fishers and Navidad officials and ensuring that the chosen site met the biological standards for creating a marine reserve that can successfully achieve conservation and fisheries enhancement goals.

The Navidad Marine Sanctuary hugs the Navidad coastline and covers 15 hectares of kelp forest - an ecologically important marine ecosystem that is threatened in Chile due to increased aquaculture of non-native kelp-dwelling abalone. The kelp forest is home to diverse and abundant benthic species and lies between the La Boca and Matanzas TURFs. The area where the reserve now lies was previously an open-access fishing ground, but remained relatively unexploited. Fishers and scientists agreed that it was important to protect the area through a no-take reserve before it became exploited. The goals of the new marine reserve are to increase harvest of kelp, urchins, loco and limpets outside of the reserve and to serve as a dive site in the hopes of increasing tourism to the area.



Photo: Hugo Carrillo



Photo: C. Villanueva

## Enforcement

Since Navidad Marine Sanctuary is relatively new and only recently recognized by the Chilean government, it is difficult to fully enforce its no-fishing regulations. Monitoring for poaching is the joint responsibility of the union fishers and the municipality, but occurs only sporadically. If a union member is found fishing in the reserve, the unions can take action by fining and even expelling the fisher from the union; however, there are no legal mechanisms to punish outside fishers for fishing inside the reserve. Despite this hurdle, union members have demonstrated a sense of ownership of the reserve's resources by refusing to sell legally harvested kelp to kelp buyers who offer high prices for kelp harvested from the reserve.

## Looking Forward

The recent decision to legally recognize Navidad Marine Sanctuary is a step forward for the Navidad TURF Reserve. With legal backing, the Navidad municipality and local fishers have more authority to protect the marine reserve and prevent illegal fishing within the reserve. The experience in Navidad has also inspired other fishing communities to consider marine conservation approaches alongside their fishing efforts. In January of 2011, eight coastal municipality leaders came together to create the Alliance of Coastal Municipalities for Sustainable Development. One of the goals of this alliance is to take responsibility for managing and conserving Chilean marine biodiversity through the use of public policy and spatial planning.

## For more information...

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