MEXICAN SEA OF CORTEZ SHRIMP

OCEAN TRUST OCTOBER 2005 WWW.OCEANTRUST.ORG

STATUS: PROMOTING SUSTAINABILITY FOR SHRIMP FISHERY & WILDLIFE

Overview

In 2005, concern over the impact of shrimp fishing on the endangered vaquita marina, Gulf of California (GOC) harbor porpoise triggered a review on the sustainability of shrimp fisheries in the Sea of Cortez. Ocean Trust acting at the request of Ocean Garden Products, the primary importer and distributor of shrimp from the Upper GOC, conducted an independent assessment based on site visits to the region, interviews with fishermen and scientists, and a through literature review to fact find the issues and recommend a course of action.

Upper Gulf of California, Mexico

Findings

Shrimp production comes primarily from trawl fisheries operating out of Puerto Peñasco and San Felipe, Mexico. All trawl vessels use turtle and fish excluder devises, are limited in number by permits, and restricted by closed areas and seasons. A government onboard observer program monitors catch and bycatch, and satellite vessel monitoring systems are required for enforcement and tracking of all trawl vessels. Bycatch levels are comparable to those in the US Gulf of Mexico shrimp fisheries (4:1), however 10-15% of bycatch is retained and sold. There is no interaction with endangered vaquita marina porpoise. It swims faster than trawl net tow speeds and is known to avoid boats, nevertheless trawlers are not allowed in a vaquita protection zone.

Shrimp Trawler Sea of Cortez

Approximately, one million pounds of shrimp are harvested by small day boats, pangas, with 2 3/4 inch shrimp gill nets from El Gulfo de Santa Clara. The few studies that have been conducted on vaquita interactions with gill net fisheries show that the primary cause of incidental mortality was associated with totoaba and shark large mesh (>8 inch) fisheries, now prohibited (Vidal 1995). A 1993 study in Santa Clara which monitored vaquita interactions with gill net fisheries over the course of a year only observed one mortality but recorded eleven mortalities from a survey of 1,066 beach interviews with fishermen (D'Agrosa et al. 1995). This survey was used to calculate a mortality rate and estimate vaquita mortalities based on the level of fishing effort in gill net fisheries in Santa Clara (D'Agrosa et al. 2000).

Large Mesh Gill Net Fishery

Panga Off El Gulfo Santa Clara

Out of 3,946 estimated fishing trips, 26 vaquita mortalities were estimated to be associated with 6 inch mesh gill net fisheries (chano, sharks, rays, sierra, mackerel) and 13 estimated for small mesh shrimp nets (D'Agrosa et al. 2000). Shrimp fishermen contest this estimate indicating that vaquita are rarely seen and the 2 3/4 inch mesh size is too small for vaquita to become entangled.

Small Mesh Shrimp Net

Conservation Agreement

In June 2005, Ocean Garden Products and Ocean Trust met with several environmental groups to discuss the vaquita marina and shrimp fishing in the Upper Gulf of California (GOC). The meeting led to an agreement to work together to protect the vaquita marina while promoting the sustainability of the fisheries and fishing communities in the GOC. Three objectives were identified: eliminate bycatch of vaquita marina, eradicate illegal fishing, and improve efficiency of shrimp fisheries so that bycatch is reduced while supporting fishermen and local communities. A subsequent meeting in Puerto Peñasco defined concrete steps forward to eliminate the use of 6 inch mesh gill nets and end the practice of setting unmonitored shrimp nets which is likely the cause of vaquita mortality in the small mesh shrimp fishery. The group also adopted an Ocean Trust recommendation to test new systems for sorting catch with a deck mounted hopper tank and conveyor to keep bycatch and shrimp in seawater thus reducing bycatch mortality and enhancing shrimp quality.

Rare GOC Vaquita Marina

Australian Shrimp Hopper

Conclusion

The Mexican Sea of Cortez shrimp fishery is among the most sustainable trawl shrimp fisheries incorporating advanced management tools such as satellite vessel monitoring systems, observers and light weight nets along with turtle and bycatch reduction devises, closed areas and seasons. Perhaps even more significant is that when confronted with environmental issues, Ocean Garden Products and the fishing groups in the Upper GOC worked with Ocean Trust to fact find the issues and identify positive areas of cooperation to enhance sustainability of their fishery and the ecosystem in the Sea of Cortez.

Ocean Trust. Ocean Garden. NGOs. Fishermen

References: D'Agrosa, C, O. Vidal and W.C. Graham. 1995. Mortality of the vaquita (*Pbocoena sinus*) in gillnet fisheries during 1993-94; and Vidal, O. 1995. Population biology and incidental mortality of the vaquita, *Pbocoena sinus*. Both in Report of the International Whaling Commission Special Issue 16:283-291 & 247-272. D'Agrosa, C, C. Lennert-Cody and O. Vidal. 2000. Vaquita bycatch in Mexico's artisanal gillnet fisheries: driving a small population to extinction. Conservation Biology 14:4 1110-1119.