

## Fishermen monitor pregnant fish to aid conservation

Port Orford fishermen are working with scientists to find out whether releasing pregnant rockfish can help conserve the resource—and their way of life.

Fishermen are working with the Port Orford Ocean Resource Team (POORT) and researcher Selina Heppell, of Oregon State University’s Department of Fisheries and Wildlife, on a project to determine whether releasing “big old fat fecund females”—BOFFs—can contribute to the species’ reproduction and survival, ultimately sustaining the local fishery.

Their efforts, supported by a grant from Oregon Sea Grant, are focused on the live fishery—a market that began in California and expanded into Oregon in the mid-1990s. Live China rockfish can sell for \$11 per pound in Asian restaurants and live fish markets along the west coast. At those prices, fishermen need only catch about 100 pounds a day of live fish to earn a living. “A decent-sized rockfish is a twenty-dollar bill,” said Captain Aaron Longton, POORT board member and owner of the fishing vessel Golden Eye.

Oregon’s nearshore rockfishes have not been well studied. The research project brings fishermen and scientists together to monitor how released fish survive as they move between fishing areas and Redfish Rocks, a proposed marine reserve. It is one of a number of Sea Grant-supported projects that have recruited fishermen to help with fisheries research.

Older and larger female fish produce more offspring than younger females, and scientists believe that the babies of



Fishermen often try to assist rockfish in returning to the ocean bottom by sticking the fish’s bladder with a needle to deflate it.

older mothers may have a higher-than-average chance of survival. Removing BOFFs from the population may have a disproportionate effect on the survival of the entire population—and the fishery that depends on it.

Fishermen have been voluntarily releasing live females for years, and they even brought the local live-fish buyer, NorCal Seafood Inc., on board. When spawning (or “gravid”) females release their eggs in the company’s holding tanks, the larvae clog the system; thus, NorCal no longer buys gravid females from fishermen.

Heppell’s project goes a step further by trying to determine whether careful handling and quick release will help the fish survive to reproduce once they are returned to the sea. It also

looks at whether a common practice is helping or hindering survival.

Rockfish have a balloon-like swim bladder inside that helps them move up and down in the ocean waters. When such deep-water fish are brought rapidly to the surface on fishing lines, this bladder can inflate, similar to a diver experiencing “the bends.” That leaves the fish too buoyant to swim back down to deep water; it may die on the surface or be eaten by predators. And dead fish do not reproduce—nor do they sell in live markets.

Fishermen often try to assist fish in returning to the bottom by sticking the bladder with a small needle to deflate it. “We run a fish hospital,” said Longton.

Heppell’s research team will tag the fish before they are released and use

release cages mounted with video cameras to see what happens to them when they are returned to the water. The team and the fishermen they work with will try to determine whether the pregnant females survive better with or without a needle stick, as some studies suggest that fish may deflate on their own.

The more important factor may be to get the fish back to the ocean bottom quickly, according to Heppell. Returns of the tagged fish will also be used to track the movement and survival of released fish up and down the west coast.

The research project plans to begin tagging and releasing pregnant fish in January 2010, and Heppell doesn't expect definitive results until later that year. But fishermen say the collaboration is already promoting the idea of involving local fishermen in research and monitoring.

A poster co-sponsored by the Commercial Fishermen of Port Orford and the Port Orford Ocean Resource Team (POORT).



“It will be great to maintain a spawning base (of females) in this fishery,” said Longton. “Our local knowledge tells us that if you return a fish to its native habitat, it is going to survive. Now we have the chance to prove it.”

Port Orford is a small, isolated community on the southern Oregon coast, about 40 miles south of Coos Bay. It is one of the last small-boat ports in Oregon, and many residents have fished the same way for the past 30 years.

Fishing is the town's only industry, and many of its fishermen have found themselves with diminished income because of tighter regulations on the local rockfish and sablefish fisheries. Research collaborations such as Heppell's can bring a fishing boat up to \$1,000 a day from scientific charters.

One goal is to determine how and whether local fishermen can contribute to management of the resource. Heppell credits Oregon Sea Grant with supporting the effort to determine “what science is actually possible on the water during fishing.”

“This is a conservation effort that makes sense,” Heppell said. “It is an individual action; people understand it. Some baby fish are going to survive.”

Scientists and fishermen also hope the BOFFF project will set the stage for future collaborative research in the Port Orford area as it uncovers the specific challenges of local management. Fishermen, POORT, and other local groups are hoping to build a new cannery with interpretive and research centers in the area. The centers would provide public marine education and housing



Graduate student Suzanna Stoike examines a rockfish.

for scientists who study the south coast fisheries. Plans are to build the cannery to LEED (Leadership in Energy and Environmental Design) standards; it would be the first fishery research center in southern Oregon dedicated to the study of fish spawning and migration.

The current research project employs Oregon State graduate student Suzanna Stoike to keep participants interested and informed. She creates posters to remind fisherman to release spawning females, and she surveys people for recommendations on project goals and outcomes. “I hope this project will further the acceptability of collaborative research and advance local management along the Oregon coast,” Stoike said.