

Developing alternative commercial fishing gear

Test fishing to begin on Columbia River for fall chinook and coho salmon

In late August, the Washington Department of Fish and Wildlife (WDFW) will begin conducting test fisheries on the Columbia River as part of an effort to develop alternative gear for commercial salmon fisheries. The goal of the project is to identify commercial fishing gear capable of capturing large numbers of hatchery fish, while allowing for the safe release of wild stocks.

Expanding on a pilot project conducted last year, WDFW will initially work with commercial fishers to test three types of fishing gear: modified purse seines, beach seines and trap nets. Future testing will involve other types of gear. This year's test fisheries for chinook and coho salmon are scheduled to run through October.

WDFW will receive \$1.9 million from the National Marine Fisheries Service to conduct this year's gear trials. As in last year's pilot project, all fish captured in the gear tests will be released back into lower Columbia River.

The need for alternative commercial fishing gear

All three types of fishing gear involved in the test fishery allow the fish to remain free-swimming until they are sorted and released. During last year's pilot project, participants caught and handled 884 fish, only one of which died.

That survival rate would be virtually impossible to duplicate with a gillnet, the primary type of commercial fishing gear currently used on the lower Columbia River. While gillnets are highly effective at catching salmon and steelhead, they provide a limited ability to sort and release fish while they are still alive.

This greatly restricts commercial fishing on the Columbia River, where many wild salmon and steelhead populations are listed for protection under the federal Endangered Species Act (ESA).



Fishing test a beach seine during the 2009 pilot project.

Gear being tested this fall

- **Purse seine:** A long wall of mesh netting is drawn out in a circle from the primary boat by a smaller boat. The bottom of the net is closed like a drawstring purse, trapping the fish in the net, where they can be sorted while still in the water.
- **Beach seine:** Similar to a purse seine, except one end of the net is anchored to the shore. A small boat pulls the other end of the net away from the beach, then upstream and back to shore to form a webbed circle.
- **Trap net:** A stationary or floating funnel-shaped net with wings that leads fish into a series of increasingly smaller boxes where they eventually become trapped.

Because federal law strictly limits impacts on those fish, many fisheries must be curtailed even when large numbers of hatchery-reared fish are available for harvest.

For these reasons, identifying commercial fishing gear capable of catching large numbers of hatchery fish while protecting wild fish would not only support conservation efforts, but also provide additional financial benefits for commercial fishers and the state of Washington.

Maximizing economic benefits for coastal and river communities

Salmon hatcheries on the lower Columbia River have been the backbone of the Northwest fishing industry for nearly three-quarters of a century, producing more than 50 million fish per year.

This economic powerhouse was created by the federal Mitchell Act, passed in 1938 to provide mitigation for the impacts of dam construction on Columbia River salmon runs.

Today, 20 hatcheries built under that legislation account for:

- . More than 40% of the chinook salmon catch off the Washington and northern Oregon coasts
- . 35% of the coho salmon caught off Oregon and 25% off Washington
- . \$29.3 million contributed annually to local personal income from sport and commercial fisheries
- . 1,108 full- and part-time jobs throughout the region.

But maintaining these benefits presents a challenge at a time when fishing is constrained by the ESA and broad-based efforts to recover wild stocks. In fact, continuing current hatchery production levels relies on finding ways to catch those fish without putting wild stocks at risk.

Significant progress toward that goal has been made in recreational fisheries over the past decade with the development of mark-selective fisheries, which require anglers to release wild fish – identifiable by an intact adipose fin. Developing alternative gear for commercial fisheries that achieves the same result would go a long way toward maintaining the benefits of Mitchell Act hatchery production.



A purse seiner makes a set during the 2009 pilot project.

Controlling the number of hatchery salmon on the spawning grounds

Maximizing the catch of hatchery fish isn't just an economic issue; it is also a major consideration in conserving and recovering wild salmon and steelhead populations.

As described in the Lower Columbia Basin Salmon Recovery Plan, allowing large numbers of hatchery fish to reach spawning areas can subject wild salmon and steelhead to “genetic deterioration, reduced fitness and survival (and) ecological effects such as competition or predation.”

The Hatchery Scientific Review Group (HSRG), an independent group of scientists appointed by Congress, echoes these concerns. In an assessment completed in 2008, the HSRG found that excessive numbers of hatchery fish are spawning in areas utilized by the nine primary wild chinook populations and the 10 primary wild coho populations in the lower Columbia River.

Unlike sport fisheries, commercial fisheries have the “catching power” to prevent large numbers of hatchery fish from reaching area spawning grounds. But that harvesting potential can only be fully tapped with fishing gear that allows for high survival of released wild fish.

Next steps

WDFW's goal is two-fold: To determine whether the alternative fishing gear can effectively catch large numbers of fish, and whether those fish can be sorted and released without injury. The department plans to continue testing these and other gear types through 2015. WDFW will develop fisheries for alternative gear as soon as it proves to be effective.

The pilot project in 2009 involved a purse seine, a beach seine and a trap net. This year's test fishery will include five purse seines, five beach seines and two trap nets.

Like last year, fishers working with WDFW will modify the gear as needed to achieve the best results. They will also fish the gear in various areas, and under various tides and conditions.

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