

# Researchers seek to reduce bycatch in groundfish trawling

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(Phys.org) —Researchers working with the groundfish fishing industry in the Pacific Northwest have tested a new "flexible sorting grid excluder" – a type of bycatch reduction device that shows promise to significantly reduce the incidental bycatch of Pacific halibut from commercial bottom trawl fishermen.

In a series of tests that included 30 tows off the Washington coast, commercial fishermen were able to reduce the number of halibut taken as bycatch by 57 percent, while retaining 84 percent of the targeted groundfishes, according to Mark Lomeli of the Pacific States Marine Fisheries Commission, a multi-state agency charged with sustainably managing Pacific Ocean resources.

The findings are being published in the journal *Fisheries Research*.

Incidental bycatch is a significant issue in many coastal regions including the Pacific Northwest. It occurs when fishing operations result in the discard of non-targeted fish and invertebrates, or through accidental interactions with mammals, seabirds and [sea turtles](#). It is of particular concern, resource managers say, when these "bycaught" species are overfished, threatened or endangered.

The halibut project is the latest success in a series of bycatch reduction projects conducted through a collaboration between NOAA Fisheries and the Pacific States Marine Fisheries Commission. These projects have captured the interest of the [fishing industry](#), according to Waldo

Wakefield of NOAA's Northwest Fisheries Science Center, a principal investigator on the project and co-author on the article.

"Fishermen are really engaged in the research because they are concerned about getting shut down if the weight of the halibut bycatch approaches a certain threshold," said Wakefield, who works out of Oregon State University's Hatfield Marine Science Center in Newport, Ore. "The fishermen are not only engaged with the scientists, but they interact with each other and with the net-makers.

"In addition to the reality of being shut down, there is a perception issue," added Wakefield, who is a courtesy professor in OSU's College of Earth, Ocean, and Atmospheric Sciences. "They don't want to unnecessarily be killing halibut, salmon and other species."

The flexible sorting grid excluder uses two vertical sorting panels that sort fish by size as they progress back toward the codend, noted Lomeli, who was lead author on the Fisheries Research article. The concept to the design is that fish smaller than the grid openings will pass through and be retained, where fish greater than the grid openings – such as the halibut – will be excluded from the net via an exit ramp.

"The system is not perfect," Lomeli said. "Smaller halibut will occasionally slip through and fishermen in the tests lost about 16 percent of the groundfish they were targeting."

Nevertheless, the reduction of the halibut bycatch is significant and may be improved by further research.

"The benefit of this type of gear is that fishermen can use smaller or bigger grids depending on the size of the fish," noted Lomeli, who also works out of OSU's Hatfield Marine Science Center in Newport. "What works for one vessel may not work for another, and fishermen may want

to adjust when they target different species. "

Bycatch has become a major issue, the researchers noted, especially since many of the fisheries have gone to a catch-share management system, which caps the number of fish individual fisherman can catch instead of the old system, which had a quota for the entire industry. As part of the new management system, observers are now aboard each fishing vessel to note the catch numbers and weight of both targeted fish and bycatch.

"If the fishermen start getting close to catching too many fish of the wrong species, they typically move, change gear or fish during a different time of the year," said Wakefield, who is with the Fishery Resource Analysis and Monitoring Division of NOAA's Northwest Fisheries Science Center.

Wakefield and Lomeli have been collaboratively conducting trawl selectivity studies in West Coast trawl fisheries. Their initial work began with the Pacific whiting industry at reducing Chinook salmon bycatch. In this work, a bycatch reduction device using an open escape window was developed that allowed strong-swimming Chinook to escape through the open window, while weak-swimming Pacific hake passed through to the codend.

They also worked with Bob Hannah and Stephen Jones of Oregon Department of Fish and Wildlife in helping the Oregon pink shrimp industry reduce habitat impacts and bycatch of eulachon, a small threatened species in the smelt family, by modifying components of the trawl net. The research team is continuing its work with shrimpers, developing new proposals to further decrease the bycatch of eulachon as well as juvenile rockfish.

The collaborative effort to reduce bycatch by NOAA, the Pacific States

Marine Fisheries Commission, ODFW, the fishing industry, net-makers and others is one reason Oregon State University's Hatfield Marine Science Center was established – and is considered one of the most unique marine research and education facilities in the world. The bycatch issue is of such significance it will be a focus of [Marine Science Day](#) on April 13 at the Hatfield [Marine Science](#) Center.

**More information:** [www.sciencedirect.com/science/ ...  
ii/S0165783613000210](http://www.sciencedirect.com/science/.../S0165783613000210)

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