

Task force recommends reducing global harvest of 'forage fish'

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A task force that conducted one of the most comprehensive analyses of global "forage fish" populations issued its report this week, which strongly recommends implementing more conservative catch limits for these crucial prey species.

The Lenfest Forage Fish [Task Force](#) calls for the harvest reduction of sardines, anchovies and other forage fish so that they can continue to serve as critical prey for larger species, including salmon, cod and tuna, as well as for dolphins, whales, penguins and seabirds.

The report concludes that the fish are "twice as valuable in the water as in a net."

"Forage fish are essential components of marine ecosystems," said Selina Heppell, an Oregon State University fisheries [ecologist](#) and one of the authors on the report. "The status and importance of each species can be difficult to evaluate because many of them migrate long distances and they can fluctuate dramatically in abundance.

"There also are regional differences in how the fisheries are managed and the relative health of the population," added Heppell, who is an associate professor in OSU's Department of Fisheries and Wildlife. "The West Coast sardine fishery, for example, is carefully monitored. They have a 'harvest control rule' that sets the harvest at about 10 percent of the overall stock, and when the population gets below a certain level, they stop fishing.

"Those are the kinds of regulations that may need to be adopted in other parts of the world."

Funded by the Lenfest [Ocean Program](#), the task force is comprised of 13 scientists from the United States, Canada, Australia, United Kingdom, and France. They include researchers who have studied forage fish, as well as their predators, including larger fish, seabirds and marine mammals.

The task force reviewed forage fisheries worldwide and conducted analyses of 82 marine ecosystem models. It concluded that these small schooling fish are a crucial link in [marine food webs](#) because they consume [phytoplankton](#) and in turn are preyed upon by a variety of animals that may switch from one forage fish species to another, depending on relative abundance.

In computer model simulations, reduced harvest of forage fish led to persistence of top predators, and more fish for fisheries.

The harvest of these forage fish has increased with demand, as they are used not only for food – from canned sardines to anchovies on pizza – but primarily for fish meal and fish oil to feed farmed fish, pigs and chickens. They also are used as nutritional supplements for people.

"Traditionally, we have been managing fisheries for forage species in a manner that cannot sustain the food webs, or some of the industries they support," said Ellen K. Pikitch of Stony Brook University in New York, who led the task force. "As three-fourths of [marine ecosystems](#) in our study have predators highly dependent on forage fish, it is economically and biologically imperative that we develop smarter management for these small but significant species."

The report estimates that forage fish worldwide generate \$5.6 billion as

direct catch, but contribute more than double that - \$11.3 billion – by serving as food for other commercially important fish.

Oregon State's Heppell said conservative management is particularly important because these forage fish are subject to major fluctuations. Sardines almost completely disappeared from the northern California Current System for about 30 years then reappeared during the 1980s. By the 1990s, sardines were again harvested and their numbers peaked around 2000, but have begun dropping again.

Likewise, eulachon smelt once filled many Northwest rivers and have largely disappeared, she noted.

"There has been a growing concern by commercial and recreational fishing groups about the status of forage fish, because they are so important to their livelihood," said Heppell, who is on the science team of the Pacific Fishery Management Council, which manages West Coast fisheries.

"This report underscores the need for ecosystem-based management because the success of [forage fish](#) is important for dozens of other species that we care about," she added.

More information: The report is called "Little Fish, Big Impact: Managing a Crucial Link in Ocean Food Webs." More information on the Lenfest Forage Fish Task Force is available at:

www.oceanconservationscience.org/foragefish/

Provided by Oregon State University

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