

Illustrating the hidden economic, social and ecological values of global forage fish resources

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Description

Forage fish, also called prey fish or bait fish, are small pelagic fish that are hunted for food by larger predators. Predators include other large fish, seabirds and marine mammals. Typical marine forage fish eat plankton near the base of the food chain, often by filter feeding. These include, in particular, fish of the order Alvinia (herring, sardines, alicia shad, hirsia, menhaden, anchovies, sprat), but also smelt such as half-beaks, silversides and capelin, and others such as gold-banded fusiliers. Foraging fish compensate for their small size by forming schools. Some even swim in synchronized grids with their mouths open so that they can filter plankton efficiently. These schools form huge flocks that migrate along the coast and across the open ocean. Swarms are a concentrated energy resource for large marine predators. Predators are highly concentrated in herds, acutely aware of their numbers and whereabouts, and undertake thousands of kilometers of unique migration to connect or remain connected to them. Marine primary producers, mainly found in plankton, produce food energy from the sun and are raw materials for the marine food web. Forage fish transfer this energy by eating plankton and becoming food for the higher predators themselves. As such, forage fish occupy a central position in the food web of oceans and lakes. Fisheries sometimes catch baitfish for commercial purposes, but primarily for use as baitfish for farmed animals that eat fish. Some fisheries scientists have expressed concern that this could affect the predatory fish populations that depend on them. Catching forage fish can be traced back to 3,000 years ago. Throughout history, forage fish populations have remained intact due to abundant fish, limited numbers of fishing vessels, and modest fishing methods. I experienced. This decline, combined with recent advances in fishing technology, has caused us to start "fishing up the food web." In other words, we shifted our focus from large apex predators to species downstream in the food chain

that were abundant at the time. Continuing to fish forage fish at current levels will deplete a major food source, making the recovery of larger fish problematic. Adding new fish species to increase the food base in an established bass bluegill pond can have unintended consequences. They compete for natural food and may decrease rather than increase the overall food base. Golden Shiners are egg eaters and can reduce bass response. It is also important to consider that released fish may migrate downstream to other ponds or natural water bodies. Fathead minnows feed on a wide variety of plants, animals and debris. Fathead minnows feed on commercial fish food such as floating pellets fed to catfish. Fathead minnows are native to much of North America, from southern Canada to Alabama, Texas, and New Mexico, although their exact range is unknown. Commercial fishing of forage fish is characterized by changes as markets, uses, economies, and fish stocks change. For example, herring is used as bait (including sport fishing bait, halibut bait, crab bait), animal feed (including zoo animal bait), and human consumption, including the use of herring eggs as food for humans.

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Conflict of Interest

The author declares there is no conflict of interest in publishing this article.

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