



Fact Sheet

The Economic Value of Forage Fish

From *Little Fish, Big Impact*, a report from the Lenfest Forage Fish Task Force

On April 3, 2012, the Lenfest Forage Fish Task Force released *Little Fish, Big Impact*, the most comprehensive global analysis to date of the biology and management of forage fish. One of its significant contributions is the first global estimate of the total economic value of forage fish to commercial fisheries, including their indirect, “supportive” value when left in the ocean.

The Task Force used 56 food web models from the scientific literature to estimate (1) the volume of forage fish catch and (2) the contribution of forage fish as prey to the catch of other commercial fish, such as tuna, salmon, and cod. By combining these results with a database of fish prices, the Task Force calculated both “direct value” from catch of forage fish and “supportive value”—their value when left in the water as food for commercially fished predators. The Task Force found that:

- Globally, forage fish are twice as valuable in the water as in the net. The report estimates that the supportive value of forage fish left in the water as food for commercially valuable predators is \$11.3 billion globally (in 2006 dollars), compared to a direct catch value of \$5.6 billion.¹ Supportive value is greater than direct value in 30 of the 56 ecosystem models studied.²

1. The estimate of supportive value is conservative because it does not include predators with no commercial value as catch, such as seabirds and marine mammals. It also excludes the economic value of recreational fisheries, ecotourism, and ecosystem services such as water filtration.

2. The Task Force used published models as a relatively rapid way to assess the global aggregate value of forage fish, but these models only provide a snapshot of direct and supportive value in each ecosystem. These values would change along with any change in prices or fishing effort.

Economic importance of forage fish

TOTAL \$16.9 BILLION

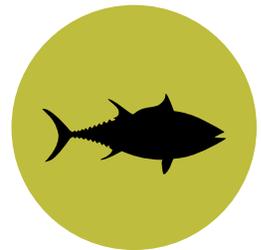
Direct value
of commercial
forage catch

**\$5.6
billion**



Supportive value
of forage fish to other
commercial catch

\$11.3 billion



WHAT ARE FORAGE FISH?

Forage fish are small to medium-sized species that include anchovies, herring, menhaden, and sardines. They are food for numerous marine predators, including commercially important fish like cod, salmon, and tuna.



- **Forage fish direct and supportive values vary tremendously across the globe.** The Task Force found some patterns across latitudes and ecosystem types. For example, the direct value of forage fish is greatest on average near the equator and lowest at high latitudes. The reverse is true for supportive value, which is greatest at high latitudes and lowest near the equator, on average.³ (The Task Force did not investigate possible explanations for these trends.)
- **Managers can identify trade-offs.** The Task Force’s analysis provides a method for identifying the economic value of forage fish, both as a commodity and as prey for other commercial fisheries. Managers may use or expand upon this approach in specific ecosystems to examine potential trade-offs between harvesting forage fish and keeping them in the ocean.
- **Management should focus on predators.** Because forage fish tend to be more valuable as prey than as direct catch, the Task Force recommends that managers focus on the needs of predators when making decisions about forage fisheries. In addition to its economic analysis, the Task Force analyzed strategies to help ensure forage fishing does not unduly deplete predator populations. Based on this analysis, the Task Force recommends cutting catch rates by at least half in most ecosystems and doubling the minimum population size of forage fish, relative to conventional management.⁴

³. In order to compare across ecosystems, the report gives forage fish value in 2006 dollars per square kilometer per year (\$/km²/yr). Average direct value was about \$880/ km²/yr near the equator and about \$166/ km²/yr for high-latitude ecosystems. Average supportive value was about \$153/ km²/yr near the equator and about \$631/ km²/yr for high-latitude ecosystems.

⁴. The Task Force did not make ecosystem-specific recommendations. Rather, it made a set of recommendations based on the level of information available about the fishery and ecosystem.



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