Industrial fishing fleets dump nearly 10 million metric tons of fish back into the ocean every year, or almost 10 percent of the global catch, according to a new study.

In the early 1950s, fish discards were much lower, at five million metric tons (MT) per year. They rose to a peak of just under 19 million MT in 1989 and have since gradually dropped to the current nearly 10 million MT.

Discards result from poor fishing practices and inadequate management, according to the researchers. Fish may be too small, damaged, inedible, or of little market value.

Multiple causes are likely driving the decline in discards, the study said. Aquaculture is booming, so there's more demand for previously undesirable fish, especially in Southeast Asia. Better fisheries management in some areas has also played a role, including rules focused on reducing waste and forbidding discards in Norway and parts of the European Union.

Discards could also be declining because the abundance of non-target species is dropping, meaning there are fewer non-target species for fishermen to accidentally catch, according to Tim Cashion, a researcher at the Sea Around Us, a research initiative at the University of British Columbia.

"We believe this declining trend is caused by many factors, but most troubling is the hypothesized declining populations of non-target species," Cashion told SeafoodSource.

But the biggest reason for declining discards may be that global fish catches are also declining.

"Discards are now declining because we have already fished these species down so much that fishing operations are catching less and less each year, and therefore there's less for them to throw away," Dirk Zeller, the study's lead author and a professor at the University of Western Australia. Zeller is also a research partner with Sea Around Us.

The trajectory of total fish catches has been similar to that of discards.

Between 1950 and 1996, catches rose from 28 million MT per year to 130 million MT per year, according to a catch reconstruction estimate done by Zeller and his colleagues. Since 1996, catches have declined by 1.2 million MT per year.

In addition to catches and discards both declining, the portion of catches discarded has also fallen. Before the year 2000, discards made up 10 to 20 percent of catches. Since then, they've accounted for a little less than 10 percent of annual catches.

Industrial, large-scale fisheries were responsible for the bulk of discards, and most discards – between 93 and 98 percent – take place in the exclusive economic zones managed by individual countries. Recently,
however, discards have increased on the high seas, rising from one percent in 1950 to six percent in 2014.

The location of discards has also shifted over the decades.

From the 1950s to the 1980s, discarding mostly happened in northern Atlantic waters. Discards in the Atlantic Ocean peaked in 1968 at just over 10 million MT. They subsequently fell – except for a brief jump in the late 1980s – and by the mid-2010s, discards were at about three million MT per year.

Prior to 1980, discards in the Atlantic were predominantly in the northwest and northeast Atlantic, near the U.S., Canada and Europe. Since then, discards have shifted to the central eastern Atlantic, off the coast of North and West Africa.

Discards peaked in the Pacific Ocean later than they did in the Atlantic, hitting their highest point of more than nine million MT per year in 1990. Discards have since declined to less than five million MT per year.

In the Pacific, discards are coming mostly from the western and central Pacific, off the coast of Russia, East Asia, and Southeast Asia.

Russia has accounted for more than half the discards in the northwest Pacific recent decades, though Japan, South Korea, and China have discarded significant volumes of fish, too. In the western central Pacific, local fishing countries such as Indonesia, Thailand and, more recently, Vietnam, dominate discards.

Discards in the Indian Ocean, Mediterranean Sea, and Black Sea are low compared to the Atlantic and Pacific.

The discarded fish include unmarketable ones that are damaged during the fishing process, along with small or out-of-season fish. For some, only a small part of the fish is harvested, such as the roe of Alaska Pollock. Other discards are by-catch.

Not all scientists see discards as terribly problematic.

“The major reason for fish discards is low economic value. Some things come up in nets that no one either wants or has a way to sell,” Ray Hilborn, a professor at the University of Washington, told SeafoodSource. “Is this actually a problem? I don’t see that discarding threatens the food security from major fisheries except in cases where it is juveniles of desirable species.”

Aaron Orlowski

Contributing Editor
amorlowski@gmail.com
@aaronorlowski