

IT'S ALL ABOUT salmon

SPRING 2005



seafood
choices
ALLIANCE

Salmon Aquaculture

In less than two decades, salmon production has grown from about 50,000 metric tons in 1985 to over 1.2 million metric tons in 2003. In the United States, salmon is now the fourth most consumed seafood, and in 2003 salmon farms accounted for sixty percent of the salmon consumed.

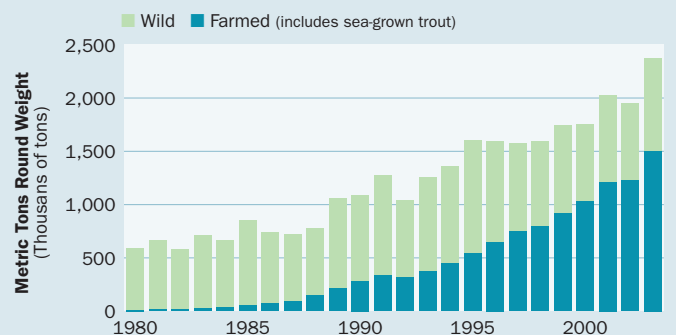
The popularity of farmed salmon is understandable. While it does not share the distinct flavor or earthy image of wild salmon, farmed salmon is a consistent product in both taste and availability. Salmon—wild or farmed—is rich in omega-3 fatty acids and is a heart healthy protein source. And with prices that are comparable to popular entrées such as chicken, farmed salmon has begun to solidify its place on America's dinner plates.

Nevertheless, a growing body of research suggests that the price we pay for farmed salmon does not reflect its true cost. Many scientists, local communities,

and conservationists worry that salmon farming, as it is currently being practiced along the coasts of Norway, Chile, the United Kingdom, Canada, and the U.S., poses serious ecological risks (see reverse).

To be sure, many forms of aquaculture such as the farming of shellfish provide important and environmentally responsible seafood choices. But, until farmed salmon producers adopt more ecologically responsible farming methods and more stringent regulations are in place, the responsibility falls to seafood purchasers to make up their minds about the true price of salmon farming.

WORLD SALMONID SUPPLY 1980–2003



Source: FAO FishStat and SalmonChile

WHERE DOES FARMED SALMON COME FROM?

In general, salmon farms are not “mom and pop” operations, but are quite industrial in size, scope, and practices they employ. In 2003, five companies produced nearly half of the world's farmed salmon, and with two pending mergers, it's likely that just two salmon producers will dominate the world farmed salmon market by the end of 2005. While the top companies have their headquarters in Norway and the Netherlands, major production centers are also located in Chile, the United Kingdom, and Canada.

With few exceptions, the farming of Atlantic salmon and to a lesser extent king and coho salmon operates in the same manner in all regions and by all producers. Salmon eggs are hatched and raised in freshwater tanks on land for the first 12–18 months of life. Then the juvenile salmon, or smolts, are transferred to netpens or cages anchored in coastal waters and fed pelleted feed until they are harvested 12–24 months later.

Cages are usually comprised of nets supported by PVC or steel, with several cages connected by walkways on a single fish farm. Unlike closed or recirculating systems used in progressive farming operations, the mesh enclosures of salmon cages provide no effective barrier between the farm and the surrounding aquatic environment, allowing the transfer and escape of wastes, diseases, and farmed fish.

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NEW FISH ON THE HORIZON

The next wave of aquaculture is raising other carnivorous species using the same problematic salmon farming methods. Unfortunately, farming species such as cod, tuna, and snapper is likely to have the same environmental impacts as salmon farming. The good news is that salmon—like tilapia, striped bass, and barramundi—*can* be farmed in more environmentally friendly systems. Closed recirculating systems virtually eliminate waste discharge, escapes, and disease transfer to wild fish. To date, only one small producer in British Columbia produces salmon farmed in a closed system.

IS ORGANIC THE ANSWER?

Many purchasers—aware of the ecological impacts of current salmon farming practices—are turning to “organic” labeled farmed salmon as a better choice. Organic aquaculture standards have been developed in several countries, and aquaculture products certified to these standards and labeled as “organic” are showing up in U.S. markets. While the USDA has started a process to develop organic standards of its own for seafood, it is likely to be several years before regulations are in place and USDA-certified organic seafood is available. Many conservationists and scientists are wary of current certifications of farmed salmon as “organic.” First, wastes from salmon farms are discharged directly into the ocean, which is contrary to the general organic U.S. principle that wastes be recycled or re-used. Additionally, salmon feed that depends on wild fish or fish by-products for use in the feed, is unlikely to meet the standard for 100% organic ingredients. ●

REVIEW OF MAJOR ENVIRONMENTAL IMPACTS OF SALMON FARMING:

- **Source of Parasites & Diseases**—Normally occurring at low levels in the wild, diseases and parasites may reach epidemic proportions in the crowded conditions of netpens. In addition to killing farmed salmon, diseases and parasites can be transferred to wild fish populations with potential catastrophic impacts on the wild salmon population. For instance, a recent study has linked the spread of parasitic sea lice from salmon farms along a river in British Columbia to wild pink salmon in that river.
- **Takes More Fish than it Gives**—Carnivorous fish such as salmon require a high protein diet. Several pounds of wild fish are required as feed to produce each pound of farmed salmon. As farmed salmon production expands, it will continue to require additional wild fish for feed despite the fact that over seventy-five percent of monitored world fisheries are close to or over the maximum sustainable limit.
- **Releases Untreated Wastes in the Coastal Environment**—A single farm with 200,000 salmon can produce as much fecal waste as a city of 62,000 people, all of it untreated and discharged directly into surrounding waters. In addition to wastes, antibiotics and pesticides can also be released into the environment when they are used on salmon farms.
- **Displacement of Wild Salmon Populations**—Large numbers of farmed salmon regularly escape from netpens each year. These fish may compete for food and habitat with wild salmon populations and pose a variety of ecological risks to the region, whether or not the farmed salmon is a native species. Recent reports indicate nearly half a million salmon and trout escaped from ocean cages in Norway in 2004 and recent storms off the coast of Scotland resulted in the release of over 600,000 salmon from farms. ●



A farm worker scatters feed pellets on a typical salmon farm.

National Oceanic and Atmospheric Administration