

# A change for the better in salmon farming: closed containment

Closed containment aquaculture is a solution scientists, conservationists, and citizens that want to keep wild salmon around have been asking for. Closed systems separate farmed fish from wild fish to avoid the problems with waste, sea lice, disease and escapes that have been plaguing the net pen industry and threatening wild salmon for so many years.

## Why is closed containment farmed salmon more sustainable than net-cage farmed salmon?

Coho salmon raised in a land based closed containment operation in Washington State was the first salmon farm to receive a “Best Choice” ranking for environmental sustainability by the [Monterey Bay Aquarium / SeaChoice](#). Closed systems separate farmed fish from wild fish and the environment allowing waste, escapes, and spread of disease and sea lice to be controlled. For all of these impacts this closed containment salmon ranked “Best Choice” where net pen farmed salmon ranked “Avoid”.

## What about the feed? How much wild fish is needed to raise this farmed salmon?

Reducing the dependence on wild fish in aquaculture feeds is critical for sustainability. The closed containment farmed salmon assessed as Best Choice has made improvements in their feed sources to reduce the amount of wild fish needed, but it is still not perfect. They are using fish processing byproducts in order to more efficiently use marine resources and have reduced the overall amount of fish used. The amount of “Wild Fish In” to “Farmed Fish Out” is 1.2 to 1, significantly lower than typical salmon feed. Further reductions are planned. Use of marine resources ranked as “Some Concerns” in comparison to “Avoid” for a typical net pen farmed salmon.



Closed containment salmon for sale at Save on Foods in Vancouver, BC

## Are antibiotics or chemicals used to raise closed containment salmon?

Some of the same reasons that fish raised in closed containment pose less risk to wild fish also help protect the farmed fish from disease. Having a physical barrier between the farmed and wild environments eliminates the transfer of disease or sea lice into the farm. Also, the “Best Choice” closed containment salmon farm uses water from a pathogen-free source. Protection from disease entering the farm means fish do not need to be treated with the chemicals and antibiotics that net pen farms use.

## Are there other types of farmed salmon that have a “Best Choice” sustainability ranking?

This salmon is the only farmed salmon to attain a “Best Choice” ranking based on the transparent, science-based assessments completed by the Monterey Bay Aquarium and SeaChoice. A number of “eco-labels” are now appearing on some Atlantic farmed salmon raised

SeaChoice, Canada’s most comprehensive sustainable seafood program, is about solutions for healthy oceans. SeaChoice formed to help Canadians take an active role in supporting sustainable fisheries and aquaculture at all levels of the seafood supply chain.

### Members:

*Canadian Parks and Wilderness Society*

*David Suzuki Foundation*

*Ecology Action Center*

*Living Oceans Society*

*Sierra Club British Columbia*

Working in collaboration with the Monterey Bay Aquarium’s acclaimed Seafood Watch program, SeaChoice undertakes science-based seafood assessments, provides informative resources for consumers, and supports businesses through collaborative partnerships.

[www.SeaChoice.org](http://www.SeaChoice.org)



in net-pens, but net-pen systems are unable to adequately address major environmental impacts like escapes, disease and sea lice transfer, and waste that harms the marine environment.

### **Why isn't closed containment technology more widely used?**

Closed containment technology is developing rapidly and is being used for salmon and many other types of fish. With increasing demand for sustainable seafood we expect to see an increasing shift towards adoption of closed containment technology. The existing net-pen industry has resisted changes to their farming practices and business model. This resistance is coming at a cost to our environment and wild fish, which is one of the reasons supporting the closed containment salmon available in the marketplace now is so important.

### **Some people say this salmon isn't better for the environment, because it has a larger carbon footprint. Is this true?**

Improved technology continues to greatly improve the energy performance of closed containment systems. A frequently cited study on the energy use of closed containment looked at an experimental closed system that is no longer in use. Going forward, alternative energy sources offer promising ways to further reduce their carbon footprint. The challenge of energy-efficiency and lowering the carbon footprint is solvable, while there are not other effective solutions to the problems of net-pen farmed salmon harming wild salmon and the environment.

### **Sounds pretty good from an environmental perspective, but what about the taste and is it wallet friendly?**

This salmon, similar to Atlantic farmed salmon, has a somewhat lighter, less fishy taste than wild salmon. Customers have given good reviews on the taste.



SeaChoice display at Save on Foods in Vancouver with closed containment farmed salmon

There is an increased cost in production because closed containment farms actually pay the full cost of growing fish instead of letting the environment bear the cost. However, closed containment salmon can still be sold to consumers at a competitive price. A great deal considering that, unlike open net cages, they pay the full cost of waste disposal, disease control and preventing escapes.