

# Superchill Savages Salmon In Blue Hill Bay Fish Farms

*By Aaron Porter*

ELLSWORTH—The unusually cold winter has claimed more than a few vulnerable plumbing systems and venerable car batteries around the county. But out on the bays, it has claimed thousands of farmed salmon worth millions of dollars.



Salmon farmer Erick Swanson's crew tries to get an icebound boat away from the dock in order to check on the fish farm during one of the cold snaps this month.

PHOTO COURTESY OF ERICK SWANSON

The fish have fallen prey to seawater temperatures as low as minus .8 degrees Celsius.

“Their whole antifreeze system is dependent on an ionic balance in the cells,” said Steve Page, environmental compliance officer for Fjord Seafood.

In the extreme cold the fish can perish due to long-term exposure, which decreases the activity of enzymes essential to bodily functions such as the immune system.

Slow freezing of the actual fluids of the fish cause the tissue cells to lose moisture, raising concentrations of fluid ions in the cells to lethal levels. Fast freezing causes ice crystals to form within the cells, destroying them.

Page said superchill has cost Fjord Seafood upwards of 100,000 fish at its Scrag

Island farm off Swan's Island.

"It looks pretty wiped out," he said. Although many fish had been harvested from the site in recent months, he didn't hold out much hope that those remaining would survive the extreme cold.

Even as late as last Friday when air temperatures had moderated, Page said it was difficult to assess the damage at the pens.

"The waters are still cold enough that you can't shock the fish," he said. That's because any stress can disturb their body chemistry to the point that they succumb to the extreme cold.

"There's absolutely nothing we can do," Page said. Even approaching the site with a boat is a possible threat. Putting a diver in a pen is even more risky. But Page said the company was monitoring their sites as closely as possible.

Starting with water temperature readings around the pens, Page was startled at the fluctuations in temperature.

"It can vary as much as a half degree [Celsius] from one end of the site to the other," Page said. Even a tenth of a degree can have a negative effect on the fish, he noted.

As of Friday, he said it looked as though most of the damage for his company was confined to the Scrag Island farm. Nearby Black Island appeared to be safe and sites Downeast were showing slight mortality.

Up Blue Hill Bay at the Trumpet Island salmon farm off Hardwood Island, owner Erick Swanson was recording high mortality among his fish. He estimated about 50 percent of his fish died over the last week.

He said the last year he'd seen anything like this was in 1994 when a record-cold January led to extremely cold water temperatures in early February.

Swanson, who was plagued by ice around his farm earlier in the winter, said the ice is important to maintaining the water temperature at his farm.

He said that when Union River Bay and the upper reaches of Blue Hill Bay freeze solid, it helps keep his fish alive. That's because warmer water coming from the river and the depths of the bay isn't mixed with the cold surface water by the wind. Also, the ice insulates the water against the cold air.

"When you can get some ice with snow on top of it, those cold snaps don't matter," he said.

He said he has monitored water temperatures in previous winters and has found the warmer water trapped under the ice makes its way down the bay to his farm and beyond soon after a cold snap.

This year, he said, the Coast Guard ice breaking up the bay to the Union River has probably affected the water temperatures at his farm.

While the air temperatures had been climbing over the past week, Swanson said Tuesday water temperatures at his pen were only up as high as minus .5 degrees Celsius.

Swanson and Page said their losses are covered by fish stock insurance, at least to some degree.