

Waste Permits for Fish Farms Considered

By Aaron Porter

BANGOR—The performance of farmed salmon was in the spotlight at the Spectacular Events Center last week.

The subject commanded a devoted audience of fish farmers, environmentalists, state and federal regulators of fisheries stocks and the environment.

Experts discussed the dismal show that Maine's wild Atlantic salmon stocks are making in an attempted comeback and debated the effects that farmed fish might, or might not have on the wild fish.

The two-day session was a hearing by Maine's Board of Environmental Protection as part of its efforts to come up with a waste discharge permit to bring Maine salmon farms into compliance with the federal Clean Water Act. The testimony that board members heard last week was sometimes impassioned, often contradictory and frequently—technically complex.



A Maine Strain Atlantic salmon, the product of generations of selective breeding by Atlantic Salmon of Maine, is a giant next to a Penobscot River salmon of the same age.

STAFF PHOTO BY AARON PORTER

The stakes are high and the need for a permit is somewhat urgent. That's because no salmon farm in Maine possesses the permit required by federal law. The wild Atlantic salmon in Maine has been listed under the federal Endangered Species Act making regulation of farmed fish an even higher priority.

Indeed, two of the largest growers, Atlantic Salmon of Maine owned by Norway-based Fjord Seafood, and Stolt Seafarms, another Norwegian company, were found guilty by a U.S. District Court judge of operating without the permits. Last July, Heritage Salmon, a Canadian company, settled a suit brought against it by the U.S. Public Interest Research Group before the judge was about to rule on it. However, the so-called pollution discharge elimination discharge permits still don't exist.

The federal Environmental Protection Agency, which failed to design and issue permits when the salmon industry was in its infancy, passed responsibility for administering the permit program to the Maine Department of Environmental Protection.

That department came up with the draft general permit being responded to by industry, government and environmental interests at last week's hearing.

The general permit is intended to be applied to most existing salmon farms in the state and any future applications that fall within its defined scope. But even the idea of a general permit was debated, as well as where it should apply, what standards it should require and how its conditions of operation should be defined, assessed and enforced.

If implemented as written, the draft permit would be applied geographically to all farms east of Naskeag Point in Brooklin, except those north of a line from Schoodic Point to Baker Island and Naskeag Point.

But oceanographer Neal Pettigrew of the University of Maine told the board his research into stratification of sea water during the summer would suggest the line should be drawn further Downeast near Great Wass Island. He said east of that point currents make stratification and resulting oxygen depletion in deep water less likely. Any farm to the west of that line would require an individual pollution elimination discharge permit tailored to its own environment.

Pettigrew also advocated regular monitoring of dissolved oxygen levels, vital for sustaining marine life and reduced by decaying organic material.

“Once or twice a year is not going to make any sense at all.” he said.

The general permit requires an average current velocity below net pens of five centimeters per second. Pettigrew said it would be more useful to guarantee the removal of waste dropped to the bottom by requiring a maximum current velocity of at least 42 centimeters per second.

He supported the idea of a general permit but cautioned that “it ought to be restricted to sites we might call ‘no brainers.’”

Other witnesses called by the environmental intervenors in the hearing raised similar concerns. Inka Milewski, head of the Conservation Council of New Brunswick, questioned the use of mixing zones, areas where higher levels of pollutants would be permitted around a pen to allow for dilution and diffusion of pollutants.

Milewski said the permission to degrade the bottom in an area extending out from the pens 30 meters in all directions isn’t a good idea. She accepted that there will be changes to the bottom under a pen but warned that a 2.5-acre pen would have a 7.5-acre mixing zone on the bottom in which some deterioration would be tolerated.

She noted that in New Brunswick she saw sites that didn’t look too bad from visual inspection passing over them. But when the sediments were dug up they were found to be severely lacking in oxygen. Those conditions have an impact on the species that can live in the area.

Milewski said the Province of New Brunswick implemented new regulations in 2001 designed to keep the bottom under a net pen with at least some oxygen.

“If an operator can maintain oxic conditions that’s still productive bottom,” she told the board.

While fish farmers and their attorneys questioned some of the criteria for inclusion in the general permit, the majority of their concerns were focused on salmon genetics, the effects of escaped salmon on wild stocks, and the details of fish marking required under the draft permit.

The genetics question springs from the endangered species listing and has been the subject of heated debate. Indeed, the state of Maine has a lawsuit pending to contest the listing of wild salmon in the state.

Graham Gall, a scientist from the University of California testified on behalf of the salmon farmers that the genetic impacts of escaped farm salmon on the wild stocks would be minimal and could even be good for the health of the ailing wild fish.

However, federal regulations now require that farmed Atlantic salmon have no European genetic material. The National Marine Fisheries Service and the Department of Fish and Wildlife have come up with a specific test for seven different series of genetic information that can identify the fish as having come from European stock. That screening is required in the draft permit.

“Screening is not a way of getting rid of European genes because the genome gets mixed together,” Gall said. That is to say the seven test segments don’t account for all the European genetic information that could exist in farmed salmon.

“What you are throwing away is the marker not the genotype,” he warned of the screening program.

David Peterson, chief executive officer of Atlantic Salmon of Maine noted that if his company were to get rid of all European stock and start a breeding program with wild Maine fish, the problem of farmed fish and wild fish having genetic differences wouldn’t be over.

“Twelve years from now our brood stock would be different from what’s in the river,” Peterson said. In that context, he said “it is key to accept provisions that containment management is very important.”

Gall downplayed the impact escaped salmon could have on the wild fish in terms of genetic change or the disturbance of rare wild salmon egg clutches in the rivers. He suggested that if European stock were able to breed with the wild fish, any strongly affected offspring simply would not make it back to the rivers of its birth to

reproduce.

He also stressed that the salmon currently in the rivers have already been altered by a century of stocking the rivers with hatchery fish.

Fred Whoriskey, vice president of research and development for the Atlantic Salmon Federation, disagreed with much of Gall's testimony.

"This is substantially the Maine salmon that was here 100 years ago and 100 years before that," Whoriskey said of existing wild stocks. He stressed the importance that when it comes to marking fish, they be traced back to the farm they came from so containment problems there can be addressed.

Industry representatives resisted the idea of farm-specific marking on the grounds that existing technology is too expensive and untried in commercial applications. They suggested otolith marking would be a useful alternative.

The otolith is a bone in the salmon's inner ear that can be marked by changes in temperature before an egg has even hatched. Thus, fish from an entire hatchery can be identified but what farm an escaped fish came from would remain a mystery.

The board granted intervenor status to 16 groups or individuals. They included Heritage Salmon, Atlantic Salmon of Maine, Stolt Seafarms, the Maine Aquaculture Association and Maine Salmon Inc.

Environmental intervenors included the National Environmental Law Center, the Atlantic Salmon Federation, the Sierra Club, the Conservation Law Foundation, the Friends of Blue Hill Bay and the East Penobscot Bay Environmental Alliance. Also granted intervenor status were the Rouque Island Gardner Homestead, the towns of Eastport and Lubec, the Sunrise County Economic Council, and the Zone C Lobster Zone Council.

Chairman Richard Wardwell described the two-day hearing as "grueling" as he thanked participants.

Now the board awaits closing briefs from the intervenors in about three weeks. Two weeks following that reply, briefs will be submitted. Then the board will get down to amending the draft and sending their version back to the Department of Environmental Protection.