

Aquaculture News and Information from Around the World
SeaWeb Aquaculture Clearinghouse
January 9, 2004

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1. Study: Farm-raised salmon carry more pollutants than wild salmon (US)

Seattle Times

By Lauran Neergaard

The Associated Press

www.seattletimes.nwsourc.com/html/nationworld/2001832349_websalmon08.html

January 08, 2004

Farm-raised salmon contain significantly more dioxins and other potentially cancer-causing pollutants than do salmon caught in the wild, says a major study that tested contaminants in fish bought around the world.

Salmon farmed in Northern Europe had the most contaminants, followed by North America and Chile, according to the study released today. It blames the feed used on fish farms for concentrating the ocean pollutants.

Eating more than a meal of farm-raised salmon per month, depending on its country of origin, could slightly increase the risk of getting cancer later in life, researchers conclude. They urge consumers to buy wild salmon and recommend that farmers change fish feed.

But the Food and Drug Administration said the levels of pollutants found in salmon are too low for serious concern. The agency urged Americans not to let the new research, reported today in the journal *Science*, frighten them into a diet change.

The debate is sure to confuse consumers, who long have been told to eat fish at least twice a week because it helps prevent heart disease. Indeed, salmon is usually listed as a top choice because it is particularly high in heart-healthy omega-3 fatty acids and low in a completely different seafood contaminant, mercury.

Moreover, most farm-raised salmon sold in the United States comes from Chile ~ and the pollutant level in it was not too much higher than that found in some wild-caught salmon.

The study "will likely over-alarm people in this country," said Eric Rimm of the Harvard School of Public Health, a specialist on nutrition and chronic disease. "To alarm people away from fish because of some potential, at this point undocumented, risk of long-term cancer ~ that does worry me."

The study tested salmon raw, with the skin on. Removing the skin and grilling it removes a significant amount of PCBs, dioxins and other pollutants stored in fish fat, the FDA noted.

The average dioxin level in farmed-raised salmon was as 11 times higher than that in wild salmon ~ 1.88 parts per billion compared with 0.17 ppb. For PCBs, the average was 36.6 ppb in farm-raised salmon and 4.75 in wild salmon.

The government does not have one set level of dioxins and PCBs that is considered safe in foods.

"We are certainly not telling people not to eat fish. ... We're telling them to eat less farmed salmon," said David Carpenter of the University at Albany, N.Y., who tested 700 salmon from around the world.

In setting his consumption advice, Carpenter cited Environmental Protection Agency guidelines that are far stricter than the FDA's legal limits.

Farmed salmon eat lots of fish oil and meal made from just a few species of ocean fish, which concentrates the contaminants they are exposed to, while wild salmon eat a greater variety, Carpenter explained.

The salmon farming industry points out that all the pollutant levels are well within the FDA's legal limits and says other foods eaten far more often, such as beef, are greater sources of exposure.

Raising salmon in floating pens is an industry that began just two decades ago but has helped the fish's popularity to soar, turning it from a seasonal to a year-round commodity. More than half the world's salmon now is farmed. Farm-raised salmon sells for about \$4 or \$5 a pound compared with \$15 for wild salmon, said Alex Trent of the trade group Salmon of the Americas.

"These fish don't have to be contaminated," said Jane Houlihan of the Environmental Working Group, which wants salmon farms to switch the feed they use.

Trent said many farmers in the United States, Canada and Chile are slowly replacing some of the fish oil in salmon feed with soybean and canola oil to address the pollutants.

"PCB levels are coming down 10 to 20 percent a year. Every year we take more steps," he said.

Farm-raised salmon contained significantly higher concentrations of 13 pollutants, including dioxins, released when industrial waste is burned, and PCBs, once widely used as insulating material, according to the study.

Animals absorb those pollutants through the environment, storing them in fat that people then eat. High levels are believed to increase the risk of certain cancers and, in pregnant or breast-feeding women, harm the developing brains of fetuses and infants.

One in two Americans will die of cardiovascular disease, a far bigger risk than the cancer concern, said nutritionist Alice Lichtenstein of the Agriculture Department's Human Nutrition Research Center at Tufts University.

Still, "this was a beautiful study" that does raise a concern that needs more attention, she said. "The bottom-line message is to continue to eat fish but consume a variety of different types."

As for the geographic difference in contaminant levels, ocean pollution follows a similar pattern. Europe was industrialized before North and then South America, and presumably each region uses salmon feed made of local ocean fish.

The study was funded by the Pew Charitable Trusts.

The Science article is available at:
www.pewtrusts.com/pdf/salmon_study.pdf

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2. Ranching the Open Ocean (US)

The Oregonian
www.oregonlive.com/news/oregonian/index.ssf?/base/front_page/1072184214112720.xml
By Michael Milstein
December 23, 2003

Look out at the boundless ocean, and envision a new Iowa -- homesteaded by fish farm colonies bigger than downtown Portland, with row upon row of undersea cages roiling with swimming livestock.

It's a dream of seafood visionaries, and the Bush administration is laying the foundation for it.

Federal officials are drafting legislation to let fish farmers lay claim to parcels of sea, just as pioneers laid claim to acreage in the unsettled West. Expected to head to Congress next year, it would apply to federal waters from three to 200 miles offshore -- an immense region outside state jurisdiction and bigger than the entire land area of the continental United States.

The move underscores U.S. government aims to expand fish farming in the United States fivefold by 2025. At that rate, the value of farmed seafood would surpass that of the nation's wild catch. Commercial fishing may become one of the last of the hunting and gathering traditions.

With salmon prices depressed, the new breed of farms may raise more marketable species: cod, halibut, black cod, red snapper, shellfish and more. Nobody imagines it would all happen right away, but over time, fishing boats could give way to bargelike cage complexes that hover below the waves -- safe from storms -- before rising up on floats come harvest time.

Unlike land, oceans have long been viewed as a common resource. The new legislation would grant businesses exclusive use of the sea under leases that may run 20 years, signaling the United States' plans to embrace an aquaculture boom sweeping the world.

"It would be sort of industrializing the oceans to produce things, and that's a brand-new idea for people," says Richard Hildreth, director of the Ocean and Coastal Law Center at the University of Oregon.

Fish farmers speak in dreamy terms of "blue pastures" ready to be sown. Offshore farming can reduce the nation's rising dependency on imported seafood, they say. More than 75 percent of seafood eaten in the United States comes from abroad, much of it raised on farms that may lack rigorous health and environmental standards.

"It's a food security issue," says Conrad Mahnken of the NOAA-Fisheries Northwest Fisheries Science Center near Seattle, who is working on the new legislation. "It's difficult to know the quality of our food when we don't control where it comes from."

This is the fish farming vision.

But many Northwest fishermen see it as the first step toward privatizing the oceans, undermining fishing communities and handing over public waters to industry. A bill in Congress would also let oil companies avoid the cost of removing marine drilling platforms -- and claim tax breaks -- by converting them to free-standing fish farms.

Fish farming today could open the door to eventual leasing of the ocean for garbage dumping or other damaging uses, critics say.

"This is one of the largest public trusts we have," says Jeremy Brown, a salmon and albacore troller in Bellingham, Wash., who is trying to rally others against the movement. "Industry and the administration are looking at it and saying, 'How can we cash in?'"

On the far north coast of Norway, amid an Arctic landscape covered in snow much of the year, a laboratory is developing fish for the sea farms of tomorrow.

Anyone entering the chilly basement room full of conical tanks swirling with finger-sized cod must first don sterile slippers. The Norwegian government has invested \$3 million in these pale gray fish -- the first generation of a national breeding program for cod.

Six researchers, including geneticists and molecular scientists who can scrutinize the tiniest bit of DNA, track the fish daily to select those best suited to farm life. Traits such as growth rate, disease resistance and adaptability to confined spaces all figure in.

Farmers have long sorted cows and chickens in similar ways, and Norway has become the most proficient farmer of high-value fish. The Scandinavian country has mastered salmon farming and exported it around the world.

Cod, a worldwide staple, may be next, especially with wild stocks in steep decline.

"We are realizing that captures of wild cod may never be much greater than they are today," says Arne Arnesen, director of aquaculture research for the Norwegian Institute of Fisheries and Aquaculture Research, which operates the breeding center on the island Ringvassoy. "There is now room for more farmed species."

Down the laboratory's hallways, tanks burble with tiny, transparent lemon sole, mean-toothed wolffish, sea urchins, king crab and more -- all species that may have a future on farms.

When it comes to aquaculture, countries including Norway, Japan and Chile have left the United States in the dust. Fish farming is expanding around the world by about 10 percent a year, but by only 2 percent in the United States, says Linda Chaves, director of the office of constituent affairs at National Oceanographic and Atmospheric Administration-Fisheries.

"Why should the economic advantages of these farming operations accrue to other countries if they could accrue here?" she asks. "We would like to be the leaders in establishing what the environmental standards should be globally, but right now we're not a player at the table."

As the federal agency charged with building aquaculture, NOAA-Fisheries has sunk cash -- more than \$3 million last year -- into making the United States a player. Grants and loans have gone to hopeful fish farmers and researchers designing new cages to stand up to rougher seas offshore, where currents may supply cleaner water, and to solve disease and escape problems.

It plans to pay a New Hampshire company \$289,774 to develop a U.S. strain of cod for farming.

But as near-shore fish farms clash with seaside residents and activist groups, NOAA-Fisheries thinks the only way fish farming can fulfill its promise is to move farther offshore.

Marine farming will take place in something called the Exclusive Economic Zone, or EEZ. It begins where state waters end, three miles from shore, and extends 200 miles from the coast. It lies under federal jurisdiction, yet no federal agency is entirely in charge of it.

That means fish farmers trying to set up shop crash into a bureaucratic wall: No federal law covers the leasing of ocean for fish farms or provides for environmental safeguards.

In 1987, a company called American Norwegian Fish Farms Inc. wanted to occupy 50 square miles of ocean 37 miles off Massachusetts and build 90 pens that would hold 45 million pounds of salmon. But, facing repeated regulatory struggles over several years, the company gave up.

The new blueprint for aquaculture would outline a straightforward process for the secretary of commerce to grant permits. It's unclear whether environmental standards that apply on land would extend offshore -- or what controls would limit escapes, fecal waste and use of drugs. Salmon farms in operation worldwide face few restrictions on the management of huge volumes of waste. But the government would set up new standards through a public rule-making process, Chaves said.

Just as land grants encouraged settlers and railroads to develop the American West more than a century ago, rights to the sea are seen as a vital incentive to persuade fish farms to expand offshore.

An early draft of the new fish farming legislation, obtained by The Oregonian, authorizes the secretary of commerce to lease sections of ocean for fish farming for up to 20 years. Farmers would pay the government royalties of one-half of one percent of the sale price of their fish.

A report funded by NOAA-Fisheries suggests zoning the ocean, like national forests, into sections suited for commercial use, recreation and other purposes. Some regions might become "aquaculture parks" -- after industrial parks on land -- where many fish farms could operate together.

A possible location in the Northwest would be the Strait of Juan de Fuca, outside Puget Sound, said Dan Swecker, executive director of the Washington Fish Growers Association.

"If you could do it on a massive enough scale, it could be worthwhile," he says. "It would take major investment."

Fishing and recreational uses would likely be restricted in leased waters, creating perhaps the first example of a private business mandate for U.S. waters.

Farmers, the legislation says, must use "best available and safest technologies" to protect public health and the environment. But it offers a loophole rarely seen in federal regulation -- the best technologies would not be required if incremental benefits are "clearly insufficient to justify" the costs.

Officials have since revised the legislation, but would not release the latest version until it is cleared by the administration.

Fishermen fear leasing will shut them out. Farming proponents say that's unlikely, however, since farms need not be big to be prolific.

"You can produce huge volumes of fish in a relatively small area," Chaves says. "I would be shocked, stunned and amazed if we ever had huge fish farms blanketing our EEZ."

But it is difficult to tell where the limits might be. NOAA-Fisheries, a branch of the Department of Commerce, is vying for the role of regulating ocean fish farming while also promoting it. The agency has made marine aquaculture a top priority for \$6 million worth of grants in the next two years.

Some of that would go toward engineering cage systems that could stand up to battering by the sea. One of the pioneers is Ocean Spar Technologies of Bainbridge Island, Wash., which sells \$100,000 saucerlike cages that remain submerged and can be tethered almost anywhere currents allow it. Almost 20 are in use around the world, and the cage has proved sturdier than the fish inside it, said aquaculture manager Langley Gace.

"It's like being in outer space," he said. "You're out away from everything, so you really have to plan ahead."

The ultimate obstacle to offshore fish farming, however, is higher cost. With salmon prices depressed by oversupply, companies are looking into more valuable species. As they move farms toward the horizon, they also may compensate by raising lots and lots of fish.

"The industry is going to develop whether we like it or not," says Chaves. "We would like to ensure it's done in an environmentally sound manner. We can't do that unless we're at the table."

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3. Agency sinks proposal for gulf fish farm (US)

St. Petersburg Times

www.sptimes.com/2003/12/30/Southpinellas/Agency_sinks_proposal.shtml

By Craig Pittman

December 30, 2003

Federal officials have rejected a controversial proposal by a Madeira Beach company to set up Florida's first offshore fish farm 33 miles into the Gulf of Mexico.

Florida Offshore Aquaculture's application included "numerous false statements" and plagiarized information from a study that the University of Miami did for a fish farm in Puerto Rico, officials said.

The National Oceanic and Atmospheric Administration's Fisheries Service also cited serious environmental concerns, including water pollution from the fish feed.

In announcing the decision last week, the agency said it will spend the next two years studying the potential environmental impact of fish farms. No permits would be issued for any offshore aquaculture in the gulf during that time.

"We're toast," said company founder Joseph "Jody" Symons, a retired Motorola salesman. He said Monday he was unsure whether his company will appeal the decision or just give up.

Co-founder Tommy Powell, a computer expert who in the 1970s launched the Sound Advice electronics chain to launder drug smuggling profits, sounded a defiant note. In an e-mail, Powell contended that Florida Offshore Aquaculture did not get a fair hearing before federal officials, which he said violated the company's right to due process.

He declined to elaborate, citing his objections to previous St. Petersburg Times coverage of the company: "Anything I told you, you would twist it around to suit your quest for sensationalism."

Symons, Powell and a third founder, charter boat captain Tommy Butler, formed the company in 2002. Their plan called for raising thousands of cobia, amberjack, pompano and other species in cone-shaped net cages anchored to the sandy bottom 33 miles south-southwest of John's Pass. Once the fish were big enough, they would be sold to seafood companies.

But even aquaculture enthusiasts wondered whether the project could work. The cages would be farther from shore than any previous aquaculture operation in the United States, leading to questions about how closely Symons and the others could monitor what was happening there.

None of the three founders have any experience with aquaculture. Butler, the only one with any experience with fish, was on probation for growing marijuana in his home. He also failed to pay thousands of dollars in federal fines.

Environmental groups such as the Ocean Conservancy mounted a campaign challenging the project. The farm-raised fish could develop diseases that spread to wild fish, they said. Excess feed for the fish could pollute the water, they warned.

The campaign succeeded in generating more than 300 letters opposing the application from Florida Offshore Aquaculture, federal officials said. The only support came from the state agriculture department, which helped Florida Offshore Aquaculture officials draft the application.

Meanwhile, questions cropped up about the the company's application, which said the state fish hatchery at Port Manatee and biologists from the Florida Marine Research Institute in St. Petersburg would help tag the fish and check their health.

When a Times reporter contacted hatchery and FMRI officials in August, they said that was not true. Symons then promised to change the application.

In September, University of Miami professor Daniel Bennetti said Florida Offshore Aquaculture had copied, word-for-word, "entire sections and pages" of a study the university had done for a Puerto Rico fish farm.

Bennetti said the sections copied included the water temperature and salinity of the site, suggesting Symons' group did no research on their own proposed farm site.

Symons said Monday that they conducted a scientific study, but he inadvertently copied Bennetti's information.

Members of the Gulf of Mexico Fisheries Management Council posed more than a dozen questions to Symons in September. The council recommended denying the permit.

Initially, NOAA Fisheries found the project would have no significant impact, but the alleged falsehoods and plagiarism doomed the company's application. "The applicants have raised serious doubts regarding their credibility," a NOAA Fisheries attorney, B. Michael McLemore, wrote in November in an internal memo.

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4. Aquaculture Task Force Refines Recommendations (US)

Ellsworth American

www.ellsworthamerican.com/thisweek/01-01-04/ea_news6_01-01-04.html

By Aaron Porter

January 1, 2004

By this time next month Governor John Baldacci,s aquaculture task force will have delivered its final report to the Legislature Jan. 31.

Right now the final draft is in the hands of the Stakeholder Advisory Panel gathering comments and suggestions for changes and additions.

„It,s very much still a work in progress,% David Etnier, deputy marine resources commissioner, said last week.

The Dec. 18 meeting of the task force, scheduled as the final draft review, saw some calls for significant changes to the document at hand. Etnier noted the role bay management could play in the future of aquaculture, as a point of still lively discussion among the 11 members of the task force. Bay management is the idea that uses of the public waters be planned to fit into their immediate cultural, economic and ecological environments.

Etnier said there was a call at the Dec. 18 meeting in Belfast for the creation of a subgroup to possibly work at bay management on a longer term than the task force can.

“To put some meat on the bones of what some people call bay management,” he said.

“The bay management discussion continues,” said Paul Anderson who chairs the task force. “It’s a huge concept to tackle”

While the draft discussed in Belfast specified a recommendation of no action on the topic, Anderson and Etnier said that could change.

Anderson said a revised draft went out to task force members Dec. 24, taking into account the Belfast meeting discussions, in preparation for a Dec. 29 conference call.

“At the end of that call, we have to be ready to send it to the stakeholders,” he said.

Bay management wasn’t the only area of recommendations the group needed to do more work on.

“Some components of the draft we really haven’t had lengthy conversations about,” said Anderson.

He said there are areas of concern about aquaculture in Maine that task force members are still hammering out responses to.

For instance, the desire to include the local communities in the process must be balanced with the state’s duty to uphold public trust.

He said monitoring of the industry is a question members are wrestling with as well. Monitoring is influx at this point anyway as the departments of Environmental Protection and Marine Resources work to harmonize their oversight requirements.

“Conserved lands occupied a lot of time,” Anderson said of the Belfast meeting. The identification of conserved lands and decision as to what conditions or consideration to grant them in relation to lease siting was still up in the air at the close of the Belfast meeting.

The first draft included recommendations to, among other things, have informal public scoping sessions before a lease application is filed, employ mediation to avoid litigation, prohibit towns from charging mooring fees for moorings on leases, create visual impact standards, have municipalities recommend specific lease conditions, eliminate the need for a public hearing for lease renewals or transfers, increase or eliminate the maximum lease acreage and encourage public education efforts on aquaculture.

However, many of the recommendations could change before the final document gets to the Legislature. Anderson said the volunteer task force members have all been working hard to meet the deadline. Etnier echoed his sentiment as did Sebastian Bell, executive director of the Maine Aquaculture Association and a member of the Stakeholder Advisory Panel.

Roger Fleming, an attorney with the Conservation Law Foundation and an advisory panel member, supported the work of the task force but had some reservations about what would come of it all.

“They’ve been working hard and they’ve been having some good discussion of a lot of the issues, but the jury is still out as to where they are going,” he said.

“We’re still certainly under the gun,” Anderson said, heading into the holiday season. And while the deadline is approaching he stressed the importance of getting all members to give their full input.

“Everybody needs to weigh in on everything,” he said.

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5. Inland fish farming leading the way (NZ)

The New Zealand Herald

www.nzherald.co.nz/business/businessstorydisplay.cfm?storyID=3542099&thesection=business&thesubsection=fishing&thesecondsubsection=aquaculture

By Irene Chapple

January 5, 2004

Away from the picnic table where a group are gathered for a cup of tea, two men have their feet in the sand and their hands in their pockets.

They stand on the heights of Bream Bay's rolling dunes, backlit by the sparkling water.

The waves are only middling today; on a good day, workers get out their boards for a surf.

A colleague squints at the pair and deadpans they are busy "checking the water quality".

Nice work, this fishing business. But life is, of course, a little busier than this.

Things have been rather frantic since the National Institute of Water and Atmospheric Research (Niwa) convinced Mighty River Power to lease its spare land and moved in under the shadows of the disused Marsden Pt power station.

Behind the rolls of barbed wire and imposing steel gate, it now farms fish. It's an occupation gathering plenty of attention.

The aquaculture industry has been stalled by a moratorium that began in November 2001 and has now been extended from March this year to December.

The moratorium was imposed to control any goldrush of applications as fisheries laws were revamped, but it has become a shambles, with Maori claims over a share in aquaculture and the foreshore and seabed debate stalling its progress.

The moratorium will now last at least three years and marine farmers are searching for alternative ways to satisfy the export market.

Though the market last year - particularly for mussels - was severely hit by global issues such as Sars, breeding fish and shellfish is still regarded as a sunrise industry for New Zealand.

Creating inland fish farms is one answer to demand and that is where Niwa and Bream Bay's ambitious aquaculture centre, come in.

The centre, which had \$2.4 million in initial capital and has since swallowed a further \$1.5 million, is funded by the Foundation for Research Science and Technology, through Government and commercial contracts for research and consultancy.

Dr Simon Hooker, Niwa's aquaculture business development manager, says the industry's response to Bream Bay has been far better than expected. The capacity to farm fish has doubled since mid-2002 and Bream Bay now employs 28 staff.

The project, says Hooker, is essentially taking risks on behalf of the industry. Commercial contracts cost "a hell of a lot more than we charge".

One of Niwa's most valuable - and most closely watched - contracts is with Parengarenga Fishfarms, which will buy 50,000 kingfish fingerlings, weighing around 5gm, from the Bream Bay complex this year.

The kingfish will be kept until they reach around 6 or 7kg and can be sold locally or overseas.

A Parengarenga spokesman says the company's decision to go inland was not influenced by the moratorium but he agrees it is an obvious move.

Parengarenga will be New Zealand's first inland kingfish farm and the company is sinking about \$10 million into the project.

"This is cutting edge stuff," says Hooker.

Inland farms are rare because of difficulties breeding the fingerlings to adulthood.

Providing appropriate feed for the fish as they grow is one issue; water quality is another.

"The analogy is breeding sheep on Mars," says Hooker. "If the water is too warm, or too cold, or there is too much nitrate or ammonia ... all of this has got to be right."

But an inland farm avoids the red tape strangling sea cage farms.

A plan by Moana Pacific to breed Kingfish in sea cages ended because the company said bureaucracy made the venture too expensive.

Parengarenga says its inland venture - which had an easy run through the consents process - will be profitable in two to three years.

Back at Niwa, the kingfish that will eventually breed Parengarenga's fingerlings swim in circles around the central pole in a 80,000 litre vat.

They are more than a metre long and have been spawning for the past five years.

Niwa is involved in breeding several marine species, including groper, eels, oysters and mussels.

But Hooker is worried.

The moratorium has effectively stymied an industry long touted as one with potential.

Fisheries Minister Pete Hodgson has promised the extensions will not run beyond December but there is cynicism in the industry.

Hooker says if the inland projects are successful, the moratorium is not an issue. "But if the inland stuff doesn't work and people need the sea cage ... there's no point [to Bream Bay] really, is there?"

Aquaculture

Includes the farming of fish and shellfish such as greenshell mussels, oysters, salmon and paua. Species with potential for aquaculture include kingfish, rock lobster, sea horses and eels.

* Earns about \$300 million a year. By some estimates, could earn \$1 billion a year by 2020.

* Moratorium on new marine farms introduced in November 2001 to prevent "gold rush" while Government reforms law.

* Moratorium was due to expire in March but has been extended to expire in December.

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6. E.U. launches seafood research on grand scale

Aquafeed.com

www.aquafeed.com/article.php?id=526§ionid=1

01/06/2004

The EU is sponsoring an integrated seafood research project that in its form and scale is unique throughout Europe. The main focus of SEAFoodplus is consumers and their desire for healthy products. Among other aspects, the project will be concerned with tailor-made products, better utilization of by-products, and ethically acceptable fish farming.

The way has been paved for the biggest research project that the EU has ever sponsored in the seafood sector ^ not only with regard to the total budget sum of about 26 m •, of which the European Commission contributes 14.4 m •, but also with regard to the content and complexity of the research program. It takes into account all the different stages within the value-adding chain and hardly any aspect will be omitted from the investigations. The project will focus on consumers, demands for healthy, safe products that have been produced using sustainable, environment-friendly methods and processed using state-of-the-art techniques. For example, how does feed composition influence fish quality, which ingredients are lost during processing, how can so-called waste be put to good use, and what health benefits do fish products have to offer apart from Omega 3 fatty acids? The researchers have 4 years to investigate these issues: on fish farms, in laboratories, at processing facilities and in hospitals.

Over 70 partners involved

SEAFoodplus has not only high scientific standard but also a broad network of sub-projects. About 70 partners from 16 European states, among them both research institutes and small and middle-sized companies, are co-operating in sub-projects. Even outside Europe there has been an interest in participating, so the Canadian enterprise CEAquanet, is also a partner in the project. Altogether, there are 20 sub-projects embedded in the integrated research project SEAFoodplus.

Project starts on 1 January 2004

With the official start, which is scheduled for 1 January 2004, the life of Professor Torger Børresen, a Danish fisheries researcher, will change. For the duration of the program he will assume the overall leadership and responsibility for this key project. He will be supported in his work by a council consisting of 12 experts who together cover all the project areas. One of their tasks will be the coordination and timing of the numerous individual activities because a lot of the projects build up on one another.

Research projects divided into five areas

SEAFoodplus is subdivided into five strategic clusters that will constitute the pillars upon which the overall project rests. Each of the individual projects deals with a precisely defined topic and can be allocated to at least one of these pillars.

A sixth important topic area is devoted to problems of traceability that have recently gained more significance. The implementation of functioning traceability systems from the live fish to the final ready-to-eat product is thus indispensable. The SEAFoodplus researchers named this concept Cefork to farm,.

Commercial companies integrated within the project

Special attention will be devoted to co-operation with small and middle-sized companies. After all, a lot of the research projects should ultimately deliver results that can be put to commercial use afterwards. In contrast to earlier projects where the utilization of the results was only possible some time after completion of the research, important results are to be made immediately available to the public even while the program is still ongoing. This applies in particular to new technologies that will create economic benefits for their users.

Rapid distribution of results

There will be a special working group whose job it will be to distribute the research results. This group will use the full spectrum of modern communication options to make politicians, consumers and companies in Europe familiar with the important results from the projects: via, for example, specialist publications, the Internet, leaflets, presence at conferences and trade fairs, interviews and press releases.

Company applications still possible

Even after the start of the project, for example, partners can be changed or new partners added. And small and middle-sized companies still have the chance today to work with SEAFOODplus. This particularly applies to innovative European companies that are interested in the implementation of new research results or technologies. They can contact the responsible parties directly via the SEAFOODplus website (www.seafoodplus.org) to apply to participate in individual projects.

For more information contact:

Prof. Torger Børresen
Danish Institute for Fisheries Research
Dept. of Seafood Research
Building 221, DTU
DK-2800 Kgs. Lyngby
Denmark
Tel.: +45 4525 2577
Fax: +45 4588 4774
Email: info@seafoodplus.org
Website: www.seafoodplus.org

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7. 17% Of EU Fisheries Production From Aquaculture In 2001

A recent issue of the European Commission's 'Statistics in focus' reports that in 2001 (the latest year for which complete data are available) the EU-15 Member States produced 1.3 million

tonnes of fishery products from aquaculture, that is 17% of the total fisheries production from capture fisheries and aquaculture. For additional details, access www.europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=KS-NN-03-034-__-N-EN

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8. Fish farm hopes to mine 'black gold' (US)

Sun Sentinel

www.sun-sentinel.com/news/local/florida/orl-loccaviar31123103dec31,0,4614061.story?coll=sfla-news-florida

By Ludmilla Lelis

December 31 2003

The rural hinterlands of northwest Volusia, where leatherleaf fern is king, seems an unlikely home for one of the world's most expensive luxury foods, beluga caviar.

But this is a fish tale like no other.

This coveted "black gold" has been harvested from sturgeon of the Caspian Sea for centuries and was the favored delicacy of the Russian czars and the kings of ancient Persia.

In a few years, those prized fish eggs could come out of a Pierson farm. All that's needed is time, patience and the blessing of the federal government to make America's first-ever beluga caviar farm a success.

"This is the future of the beluga industry in the United States," farmer Gene Evans said, as he watched his biggest Russian fish, some 60-pound beluga sturgeons, circling a tank. "It's just a matter of when it will happen."

Beluga caviar retails for \$70 to \$100 an ounce, rampant poaching has pushed the fish to the brink of extinction, and the United States imports 60 tons of caviar a year. So Evans' farm could become a very lucrative aquaculture operation.

However, success depends on whether federal officials will declare the beluga sturgeon an endangered species. An environmental coalition called Caviar Emptor petitioned the U.S. Fish and Wildlife Service to protect the animal, and the federal agency is scheduled to decide on the status by Jan. 31.

The endangered-species petition is yet another regulatory hurdle that the beluga sturgeon project has faced during the past several years. To come even this far has required the persistence of a Ukrainian businessman, the experience of a Colombian-born scientist and the farming know-how of a native Floridian.

The Ukrainian is Mark Zaslavsky, co-founder of Marky's Caviar in Miami. A plucky immigrant who went from dishwashing to importing foie gras and truffles, Zaslavsky couldn't keep up supplies of Russian caviar. The collapse of the Soviet Union in 1991 undermined the tight control of that nation's sturgeon hatchery and the annual harvest. An illegal trade flourished that has decimated the stocks and led to the first set of international trade restrictions in 1998.

Zaslavsky decided to start growing sturgeon here, but beyond the potential \$5.4 million investment, it has taken every ounce of negotiating skill he had. He has worked through international trade laws and stubbornly kept going after Russian bureaucrats tried to thwart the project early on.

"I had two kilos of fertilized eggs, some 650,000 eggs, and I had the permits in hand, and all I needed was one more signature," Zaslavsky said of his first attempt to import the beluga. "This one gentleman would not sign it. He said he wants to keep the beluga for his children."

He found another fish source but then he had to work through airplane cargo restrictions to transport the fish, in their temperature-controlled tanks, to Florida. He didn't sleep for three days on the trip bringing his first batch of beluga sturgeon from Europe to Miami in June.

Actual care of the fish now falls to Evans, a DeLand native and the descendant of citrus pioneers, with 1,700 acres of land that he bought 10 years ago to farm fish. He already has more than 20 tanks, brimming with beluga, osetra and sevruga sturgeon also from the Caspian Sea, Siberian sturgeon and American varieties of sturgeon.

Construction crews will soon build several round 90,000-gallon tanks and 800-foot-long "raceways" to let the adult fish roam.

Sturgeon are an ancient fish, dating back to prehistoric times, with bony plates instead of interior bones, and broad snouts. Beluga, the biggest of the Caspian fish, are capable of living more than 100 years and can grow up to 2,500 pounds and 15 feet long.

Though they are native to a remote inland sea bordering Russia, Iran, and Kazakhstan, the Russian fish could flourish in Florida. It normally takes them 20 years to mature and produce eggs. Under the Florida sun, that time cuts down to seven or eight years, Evans said.

"These sturgeon are just like everybody else," he said. "They like our Florida weather."

But neither man would be in the sturgeon business without help from Frank Chapman, a Colombian-born University of Florida professor who has been raising sturgeon in Gainesville since 1990. His work helped Florida become one of the few states with a specific law supporting sturgeon farms.

Chapman said sturgeon is an ideal fish to farm, with its high-priced caviar, its valued meat, and its prehistoric nature making it highly adaptable to different conditions and resistant to disease. Farming sturgeon has its environmental benefits, he added.

"Fish farming can relieve the pressure on the population in the wild and help save that population," Chapman said.

Environmentalists don't entirely agree. The environmental coalition, Caviar Emptor, named after a play on the Latin phrase meaning "buyer beware," supports buying fish-farmed caviar, but doesn't support this beluga venture.

Fisheries scientist and University of Miami professor Ellen K. Pikitch said Zaslavsky's project involves importing a non-native species, with the potential environmental problems of having it escape locally. Also, the endeavor wouldn't encourage efforts to save the fish in the Caspian, especially if it meant reducing the economic incentive to save the fish in its native sea.

"To remove adults from their native environment is an unwise move," Pikitch said. "It's not going to do the wild sturgeon any good.

"The value of a single female fish able to spawn again and again in the wild is much greater than having that fish produce caviar for one year," she said.

Pikitch said that the scientific evidence supports the federal endangered species listing. Chapman is worried the listing could end the beluga sturgeon farm overnight.

Federal protections wouldn't necessarily shut down the operation. There have been cases in which the federal government allowed commercial farming of an animal protected in the wild, namely the lynx, farmed for its fur, and the alligator.

Zaslavsky, who has battled foreign bureaucracies to get his fish, thinks his farm will have caviar in its future.

"I believe they will make the right decision," Zaslavsky said. "I don't think they will restrict it for aquaculture."

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9. U.S. plans big bay oyster study

Richmond Times Dispatch

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By Lawrence Latane III

Jan 7, 2004

The federal government is planning a major investigation of whether Virginia and Maryland can rescue their dying oyster industry by releasing non-native oysters into the Chesapeake Bay.

The study, in the form of an exhaustive environmental-impact statement, is expected to take years to complete and will probably determine the future of bay oyster management for generations to come.

"It's going to be a big deal," said Jack Travelstead, chief of fisheries management for the Virginia Marine Resources Commission. "This will be the document the states will use to decide whether they go forward with a new species" or redouble their efforts to restore their native oyster.

The VMRC and Maryland's Department of Natural Resources have each been named co-leaders in the study with the Army Corps of Engineers' Norfolk office. The corps published its intention to prepare the environmental-impact statement in the Federal Register on Monday.

Pressure is building in Virginia and Maryland to find an alternative to the bay's native oyster, which once generated huge commercial harvests that supported a thriving seafood industry. At the same time, the possible use of non-native shellfish is raising questions about what effect, if any, Asian oysters will have on the teetering native oyster population and if alien oysters will fit into the bay's ecology.

In recent years, disease-causing parasites have almost wiped out native oysters, idling oystermen and forcing shucking-house closures in the process.

Combined Virginia-Maryland harvests routinely reached millions of bushels as recently as the 1960s and 1970s but skidded to a record low of about 70,000 bushels last year. This year's catch is expected to drop even more.

"The future prospects of the industry are certainly bleak with the native oyster - and the non-native oyster will depend on this review," said Chris Judy, Maryland's oyster manager.

Both states are eyeing the use of the Asian oyster *C. ariakensis* as a replacement of, or supplement to, the native bay oyster, *C. virginicus*. In Virginia, scientists and watermen are growing 1 million *ariakensis* oysters in their latest of three controlled experiments since 2000.

So far, the tests show that *ariakensis* outgrows and outlives *virginicus* in the face of parasites called Dermo and MSX. Earlier tests with another Pacific oyster, *C. gigas*, showed that *gigas* did not do well in bay waters.

Unlike the current experiments, which are limited to the use of sterile *ariakensis* oysters in mesh bags to prevent an accidental introduction, the corps' study will focus on the creation of a "naturalized, reproducing and self-sustaining population" in the bay, according to the Federal Register.

"It will give an answer to whether or not we should proceed with using an Asian oyster in the bay or not use it at all," said Peter Kube, a biologist with the Corps of Engineers who will be leading the study.

On a more fundamental level, the study will "try to answer the basic question of how to restore an oyster resource in the Chesapeake Bay," he added.

In addition to exploring the use of *ariakensis* oysters, the study will focus on several alternative propositions. Among those are accelerating current efforts at restoring native oysters, imposing a baywide oyster-harvest moratorium, encouraging oyster aquaculture, or pursuing a mix of approaches with both native and non-native oysters.

"It's time to think about these kinds of things," said Travelstead with the VMRC. Virginia is spending about \$3 million in federal grants a year to construct reefs for native oysters, "and there is a lot of question whether that money is being put to good use," he said.

Travelstead said the impact study is expected to cost about \$3 million. Kube said it could take five years to complete.

Virginia and Maryland asked the corps to help them with an environmental-impact statement last year. "They don't want to [decide on non-native oysters] in a vacuum," Kube said.

Oysters are considered a "keystone" species in the bay: In addition to their importance to the local economy and watermen's culture, they also play a tremendous ecological role in the bay. Oysters create reefs that provide food and cover for a host of aquatic life; the oysters themselves maintain water quality by filtering plankton as they feed.

Among the study's goals is exploring the possible risks of a non-native oyster inviting new diseases and viruses to the bay. A previously unknown parasite killed *ariakensis* oysters in Bogue Sound during recent testing of the non-native oyster in North Carolina.

The study will also examine the life history and habitat requirements of *ariakensis*, which is native to the Asian Pacific coast. The study also calls for the development of a model "to determine the specific locations and scenarios" where *ariakensis* might be placed into the bay.

The Chesapeake Bay Foundation, which has been leery of non-native oysters, supports the impact study, said Rob Brumbaugh, a fisheries scientist with the environmental group.

"There are a lot of things you want to know before you answer the question of should you proceed" with *ariakensis*, Brumbaugh said.

The oyster industry also reacted warmly to the study. "We're real excited," said Tommy Kellum, whose family's oyster-shucking business on the Northern Neck is one of the few remaining on the bay.

"The sooner we get started, the quicker we get a decision," Kellum said.

The corps is holding two hearings this month to receive public comment on the study proposal. The hearing scheduled in Virginia will be held in Newport News at 6 p.m. on Jan. 28.

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