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CANADA



February 2011

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Did you Know?

It is possible to lead a cow upstairs but not downstairs.

Can you solve this Puzzle?

What is represented by this BrainBat?

lookbebebebeuleap

Answer on Page 4

Comments about this Newsletter?

Please email comments, articles and ideas to Ian Roberts, Communications Manager at ian.roberts@marineharvest.com

DOMTAR EarthChoice
High quality paper with a conscience

Closed Containment Pilot Update

By Clare Backman, Sustainability Director



In our May 2010 progress update on our land-based pilot project we announced the search for a project manager to focus on delivery of this project from design to construction to

operation. This search showed us that the design and operation stages require different sets of qualifications and experience. It was decided to separate out the engineering study as a stand alone project with assessment of potential site locations as a component. This engineering work went to WorleyParsons Canada of Victoria, BC and their report, expected by the end of February 2011, will provide us with system design specifications as well as potential south coast BC locations for construction of the pilot.

There is great deal of public interest in the possibility of closed system aquaculture; critics of net pen aquaculture have for many years called for “closed containment” to replace marine net pens. The Agrimarine Industries’ experimental floating tanks at Middle Bay are often referred to in the local newspapers as representing the future of sea farming. Our assessment of these tanks has found that they will not move beyond many of the limitations we discovered through our own marine based tank farm trial in 2002: incoming water will still have sea lice and harmful algae, much waste water goes back to the ocean unfiltered; big ocean tanks are difficult to keep in place and are prone to damage from continuous wave movement.

Therefore, the February engineering report to MHC will focus on re-circulating aquaculture systems (RAS) technology for two reasons. First, Marine Harvest Canada is a world leader in building and operating RAS technology for growing salmon. In BC we employ re-circulating

aquaculture systems (RAS) technology to rear half of our broodstock fish and at two of our three hatcheries, one having operated continuously since 2000. Second, a recently completed and exhaustive evaluation of closed system aquaculture technologies completed by the Canadian Scientific Advisory Secretariat (CSAS) for the DFO concluded that only RAS showed any potential to be financially viable for growing salmon assuming that future cost reduction efficiencies can be discovered.

Another aspect of our RAS project is to develop the tools (a computer model) to critically compare its costs and benefits with our existing net pen business, and to scale up the pilot results to a commercial level of production. Read more about the benefit-cost assessment model elsewhere in this issue.

Right now, our net pen farms meet and exceed a regulatory regime that is probably the strictest in the world and our operations are certified to ISO 14000 standards of environmental management. All of us know that Marine Harvest Canada operates to these high standards not because we have to but because it is the right thing to do. RAS allows us to maximize the growing conditions for our fish and protect them from disease, harmful algae and predation. But it also takes a lot of electrical energy and water treatment and therefore higher costs.

The RAS pilot project is designed to help us answer these questions:

- Is it technologically possible to raise harvest size salmon in RAS?
- Is it economically and environmentally sound when scaled up to a commercial level?
- Can it be operated at a commercial level without subsidy?

Watch for news of further developments during 2011.



Kitasoo Seafoods is Open for Business



(clockwise from top left): Lorne Robinson, Brendan Humchitt, Winnie Robinson, Gerri Brown

There is a buzz in the air in Klemtu – and it’s not just the sound of float planes landing. It’s also the sound of fish processing equipment. From now until July, Kitasoo Seafoods will be bustling with activity. Thirty-five local staff will be processing nearly 340,000 pounds of salmon each week.



Medrick Robinson working the packaging line.

Managers Steve Sainas and Jason Swanson are excited about the recent renovations the plant has just received. “We finished stage two of our upgrades to the plant just in time for the first harvest,” says a relieved sounding Steve. “The renovations included new ceiling panels, new

lights and a re-paneled ice house. The last stage of upgrades (stage 3) will include new stainless steel equipment and will arrive soon.”

Once processed and packaged, the fresh salmon is shipped in refrigerated trailers on a barge destined for Kitimat. After a 16 hour boat trip, they are then trucked 18 hours to Vancouver.

“It’s all about timing,” Steve says with a chuckle.

Kitasoo Seafoods is owned and operated by the Kitasoo/Xai’xais First Nation. This is the 10th season of processing Marine Harvest Canada salmon at Kitasoo Seafoods.

Photos submitted by Steve Sainas



Food safety testing at Marine Harvest Canada

By Jean Veale, Food Safety Manager

Here at Marine Harvest Canada, we spend a lot of time and energy on growing healthy and top quality Atlantic Salmon.

Many employees may not be aware that while they are working hard to grow, harvest and process our fish, there is also a lot of work being done to ensure the quality and food safety of our product.

- Fat and Pigment testing is performed on fish at different stages in the growth cycle to determine whether or not targets are being met for pigment levels and visual colour.
- Fatty acid profiles are determined during fat & pigments testing to document the health-promoting levels of marine omega-3 fatty acids. Results have shown that that two portions of Marine Harvest salmon per week will cover your weekly need of marine omega-3 fatty acids.

Our Corporate Quarterly Monitoring Program has samples sent to an external laboratory in Germany from every Marine Harvest business unit. Tests are run to confirm that common environmental pollutants are well below CFIA and FDA regulatory standards. Some of the tests performed are:

- PCB and Dioxin testing
- Flame retardant testing (PBDE’s)
- Pesticides (OP and OC)
- Antioxidants (BHA, BHT and Etoxyquin)
- Heavy metals (arsenic, mercury, lead, cadmium)
- Nutritional testing is performed on an annual basis. You can find the results of this testing on our website under Product/Salmon Nutrition

- Shelf-life testing is done on whole fish and on fillet twice per year. This assures that our customers are receiving product that has a consistent 10-14 day shelf life.
- We perform pre-harvest residue testing from every site. This documents that all therapeutic residues are well within CFIA and FDA regulatory standards.
- CFIA also requires that we must test our fish to document the absence (non-detectable levels) of the following unapproved substances: Florquinolones and Dyes (Malachite Green, Crystal Violet).

The value of documenting the safety and quality of the food we produce to our customers, regulatory authorities, and families is priceless.



Campbell River Bonspiel Huge Success!



The 1st annual Positive Aquaculture Awareness curling bonspiel held in Campbell River last month was a huge success - especially for the Marine Harvest team that travelled from Port Hardy. The three ringers (and Jacque Gaudet!) blew away the competition to do the North Island proud! The tournament also managed to raise \$500 for the local chapter of the United Way. See you again next year!

The winning MH team (l-r); 2nd- Jacque Gaudet, Lead- Pam Chalmers, 3rd- Kathy Baker, Skip- Tom Baker (Photo submitted by Pam Chalmers)

Port Hardy Processing Plant



The waste water treatment upgrades are moving ahead well at the Port Hardy Processing Plant. The project is being built by North Island talent and includes welders, bulldozers and electricians from Port Hardy and Port McNeill. It's expected to be completed by mid April.

Photo submitted by Ron Meuleman

Save the Date! Special Events coming up....

Pacific Salmon Foundation 2011 Campbell River Dinner & Auction

Saturday, February 5th, 2011
Maritime Heritage Centre
5:30 pm Reception & Silent Auction
7:00 pm Dinner
8:30 pm Live Auction

12th Annual BC Aquaculture Achievement Awards

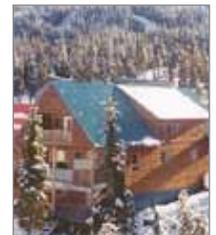
Saturday, February 26, 2011
Details and nomination forms for the Awards Night will be forwarded to you soon.
Support Aquaculture Awareness
www.farmfreshsalmon.org

Campbell River Salmon Foundation 2011 Annual Fundraising Dinner, Auction & Dance

Saturday, March 12th, 2011
Campbell River Community Centre
Tickets \$75.00 (includes annual membership)
6:00 pm Reception & Silent Auction
7:00 pm Dinner
8:30 pm Live Auction
Catering: Coast Discovery Inn & Marina
Auctioneers: Ritchie Bros

A limited number of tickets are available for staff compliments of Marine Harvest Canada. Please contact tina.mcmurdo@marineharvest.com (250-850-3276 ext 7226) should you like tickets to these events.

3rd Annual Ladies Winter Weekend Getaway at Mt Washington Friday, March 18, 2011 to Sunday, March 20, 2011



Any women involved with aquaculture (in any capacity) are welcome. That includes any female relatives of employees that work in aquaculture. Further details are posted on the MHC blog at <http://www.marineharvestcanada.com/blog>
We hope to see you there!

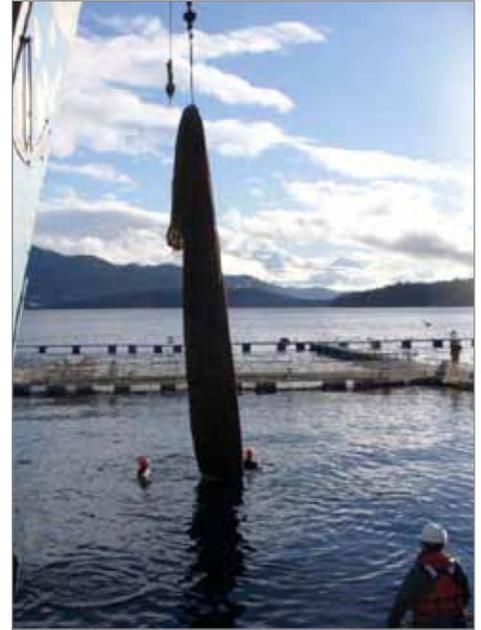


Congrats Cathie!!

Cathie Emms was the lucky winner of the Wellness Committee's recent raffle. She won 2 tickets Vancouver Canucks vs Boston Bruins, two jerseys, and one night accommodation plus \$250.

The Wellness Committee is run by employees at Port Hardy Processing Plant and money raised goes towards various staff programs such as kids Christmas parties and turkey dinners. The Committee also participates in local charitable events such as the Cancer Society's Relay for Life.

Photo submitted by Kathy Baker



Nelson Aster looks on as two hard-hatted scuba divers prepare a net for removal at Brougham Point. Once the salmon are large enough, the smaller mesh nets are replaced with larger mesh nets that allow for greater water flow and oxygen exchange. Nelson and the rest of the crew on the Service "9" make quick work of this, doing up to four net changes in a day.

Photo submitted by John Dolmage

Unique Cost Modelling Project Underway



Seen here is (l-r) Michelle Molnar (David Suzuki Foundation), George Kuo, Leonard Leung, and Sharon DeDominicis.

Marine Harvest wants to answer questions about the benefits and costs of different types of fish culture technologies used to grow Atlantic

salmon to harvest size. So Marine Harvest and the Coastal Alliance for Aquaculture Reform (CAAR) have teamed up and hired the services of the Conservation Strategy Fund (CSF) to build a "benefit/cost analysis model" that will compare ocean-based net pen salmon farms and land-based recirculating aquaculture systems.

Information gathering has now started and CSF will be collecting and assessing information from Marine Harvest and CAAR with respect to the financial, environmental and social costs of the two aquaculture technologies.

As part of the information gathering, the team dropped by to check out one of our recirculating aquaculture systems at the Sayward North hatchery in January.

You Tube

Marine Harvest Global is now on YouTube.

Check them out at <http://www.youtube.com/MarineHarvestGroup>



Misky Mentor to Many

By Gina Forsyth



Daryl Misky is no stranger to aquaculture. As Vessel Skipper for the Campbell River South Production Area, he loves the variety the position offers and always being on the move.

Daryl runs freight to and from sites, helps with harvesting and site set up as well as net washing.

Daryl, who has his Master Limited 60 ton vessel operating ticket, was born and educated in Port

Coquitlam, near Vancouver. “I found out about a job vacancy in aquaculture while working at a salmon enhancement hatchery,” commented Daryl. The position was with Pacific Aqua Foods on the Sunshine Coast and gave Daryl a range of opportunities, from working on-site to site management and hatchery operations. He relocated permanently to Campbell River in 1991, after commuting between Vancouver Island the Sunshine Coast.

Daryl is quickly approaching his 23rd year with the company. Throughout his varied roles, his attitude has helped others around him to strive to do their best, said James Rogers, Campbell

River South Production Manager and long-time friend.

“Daryl is a leader when he’s working on a project. He’s known to be dependable and unwavering, regardless of the support capacity he’s involved in,” said James. “His influence on the people around him, including me, has been unquestionably positive,” added James.

Daryl and his wife Julia have two kids, a son, who is in French Immersion, and a daughter. As a family they enjoy downhill skiing at Mt. Washington and camping.

Research Linking Increased Parasite Prevalence to Farms Paltry

By Gina Forsyth

For hundreds of millions of years, parasites have existed on earth. These ancient but ever-adapting life forms have inhabited our world since life began. Despite the information we have obtained, and amount of effort and time put in to study parasites, there are many knowledge gaps that remain. In aquaculture for instance, more specifically salmon farming, we are attempting to close some of these gaps and discover more about the parasite, wild fish, and farmed fish relationships. Two things are certain however - parasites are found in both farmed and wild fish populations and they are a natural occurrence.

So what, exactly, is a parasite anyway? The definition is not complicated. A parasite is simply any organism that takes it’s nutrients directly from another organism in order to survive and has the potential to harm its host. We tend to think of parasites as only animals, but plants can be parasites too. Mistletoe, which you might be familiar with, is an example of a plant parasite because it grows within or attached to a different tree or shrub.

Parasites have an important role to play in the ongoing development of life. “There’s a constant

adaptation of the host and the parasite as they try to outdo each other,” explained Derek Nickel, Environmental Technician. It’s like two countries at war, he added. This struggle between the two is one of the many mechanisms that help move evolution forward.

Earlier this year it was reported that an increase in the numbers of a copepod from the family Pennellidae might be caused by fish farms. However, ground-breaking studies were done in BC waters in the late 1960s and early 1970s on this parasite (well in advance of large-scale salmon aquaculture) by respected scientists such as Dr. Bob Kabata and Dr. Earl Forrester. They examined its population levels and distribution and concluded that population fluctuations and the shift of parasites from one location to another is expected due not only to the movement of the host but also to naturally-occurring environmental conditions. Their research also included collecting much life cycle data, although a great deal remains unknown.

Fish infected with this specific species of Pennellidae can suffer blindness caused by the parasite infecting its eyes. This lack of sight leads



to starvation when the fish are unable to find food.

There has been little to no compelling evidence to support the suggestion that any increase in these Pennellidae parasite populations are related to presence of salmon farms, commented Derek. This assertion in the summer 2010 is simply not supported in the scientific literature and no conclusions can currently be made about potential links to salmon farming operations.



Salmon Conservation gets a Helping Hand



Two salmon enhancement hatcheries on Vancouver Island received a much-needed boost this week from a local business. The Oyster River Enhancement Society and the Fanny Bay Salmonid Enhancement Society have received \$5000 and \$3000 respectively from Marine Harvest Canada to help continued efforts restoring vital river habitat and protect local salmon populations.



The Oyster River Enhancement Society (ORES) is a volunteer driven, non-profit British Columbia based Society (1983) and a Registered Canadian Charitable Organization. ORES' major purpose is to enhance, restore and protect fish and wildlife habitat of the Oyster River watershed and relies entirely upon its volunteers, members and donors for their respective contributions.

“Funding from our local business community is critical to the continuation of our hatchery,”

says ORES President Jim Loring. “Combining this operational support with the dedication of our volunteers, we’ll be able to continue our work conserving salmon populations in the Oyster River.”

ORES will be using the funds from Marine Harvest Canada to complete much needed improvements to the hatchery road system.

At Fanny Bay, President Judy Ackinclose is looking to replace an ageing egg taking shed. The hatchery, built by DFO in 1965, produces about 350,000 salmon fry to be released in local watersheds and much of the infrastructure is in need of upgrades.

Ackinclose is quick to thank aquaculture businesses for their support. “Marine Harvest has provided a lot of support for our hatchery over the years,” she says. “The entire bird protection net was donated by them as well as all our egg incubation trays. This donation is timely for us because we have some critical work to do.”

Fanny Bay Salmonid Enhancement Society (FBSES) operates two hatcheries at Wilfred and Rosewall Creek (Rosewall Creek Falls pictured above) with 55 volunteers dedicated to enhancement and habitat restoration of local watersheds.

Marine Harvest produces fresh BC farm-raised salmon and is the largest private employer on Northern Vancouver Island. To find out more about these donations and other conservation projects, please visit www.MarineHarvestCanada.com.



Sharing facts and correcting myths at bcsalmonfacts.ca

When it comes to debunking myths and learning the true facts about farmed salmon the place to go now is BCSalmonFacts.ca.

BCSALMONFACTS

“Salmon farmers have worked very hard to address concerns raised about salmon farming and have been successful in doing so, but despite this, many myths remain. That’s why our members have launched BCSalmonFacts.ca, a new website where we will separate myths from fact and set the record straight,” says Mary Ellen Walling, executive director of the British Columbia Salmon Farmers Association.

In addition to the new website, members of the BC Salmon Farmers Association are also launching a television and print media advertising campaign urging viewers and readers not to believe everything they hear about farmed salmon without first checking the facts.

“At BCSalmonFacts.ca people will be able to separate fact from fiction,” says Clare Backman, Sustainability Director at Marine Harvest Canada, a member of the BCSFA. “It’s about time the real story was told.”

There are video clips and forums on the site with links to articles of interest. On the forums people can post questions and get straight answers. There is also a Facebook page (facebook.com/bcsalmonfacts) and a Twitter feed (twitter.com/bcsalmonfacts).

BC SalmonFacts.ca is an initiative of five major salmon farming companies and feed suppliers: Marine Harvest Canada, Mainstream Canada, Grieg Seafood, Ewos and Skretting, all members of the BC Salmon Farmers Association. The BCSFA is the voice of British Columbia’s environmentally sustainable farmed salmon industry.