

BC SALMON FARMERS' ASSOCIATION

Salmon Farming Industry Mass Mortality Disposal Workshop Report

June 29, 2010

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Disclaimer:

The Investment Agriculture Foundation of B.C. (IAF) and the BC Ministry of Agriculture and Lands (BCMA) are pleased to participate in the production of this report funded through the Livestock Waste Tissue Initiative (LWTI). We are committed to working with our industry partners to address issues of importance to the agriculture and agri-food industry in British Columbia. Opinions expressed in this report are those of BC Salmon Farmers Association and not necessarily those of IAF, or BCMAL.

Funding provided by:



INTRODUCTION

In 2007, through funding administered by the Investment Agricultural Foundation of British Columbia (IAFBC), a report that reviewed the options for mass mortality disposal in the salmon farming industry was commissioned and then prepared by Golder and Associates. This report, which provided a good overall summary of the current capacity and explored additional solutions, was reviewed by industry and government representatives. While a variety of disposal options were outlined, it was suggested that the best and most environmentally sound options were: bio-digestion, composting in existing facilities and use of silo bags similar to the poultry carcass disposal.

A proposal was sent to the IAFBC in 2009 by the BC Salmon Farmers Association (BCSFA) requesting support for holding a Mass Mortality Disposal Workshop to engage the industry and further develop the Mass Mortality Disposal Plan.

INDUSTRY VIRAL DISEASE MANAGEMENT PLAN

In February of 2010, the BCSFA also renewed efforts to develop an Industry Viral Disease Management Plan. Atlantic salmon have little or no innate immunity to a number of viruses endemic to the BC coast and infection has resulted in large scale mortality in the past. The industry recognized the need to have a contingency plan in place to respond to possible future disease events that may result in mass mortalities.

The Industry Viral Disease Management Plan consists of the following sections.

- Memorandum of Understanding (MOU) signed by the individual companies that outlines their commitment to the plan
- Development of the following standards, protocols and requirements which will form part of the MOU.

Annex A Management Committee

Annex B Bio-security Standards to Minimize the Risk of Disease Transmission

Annex C Bio-security Standards, Procedures and Protocols for Transport of Smolts and Harvest and Transport of Market Size Fish

Annex D Minimum Bio-security Standards for Fish Processing and Handling Wastes and Wastewater from Fish Processing

Annex E Viral Disease Outbreak Management Plan

Annex F Standards for Increased Bio-security for Harvesting, Transporting and Processing of Viral Diseased Fish

Annex G Protocol for Sharing Resources for Harvesting, Processing and Distribution of Fish from a Disease Outbreak

Annex H Minimum Bio-security and Environmental Standards and Required Capacity for Mass Mortality Removal

Annex I Auditing System

Representatives from the industry and BCSFA are collaborating to complete the above requirements by March 2011.

MASS MORTALITY DISPOSAL WORKSHOP

Though the Industry Viral Disease Management Plan puts emphasis on activities to reduce the incidence and spread of disease, such as treatment and early detection, a contingency plan is also needed in case of a mass mortality in a short period of time. This is addressed in the Viral Disease Management Plan Annex H Minimum Bio-security and Environmental Standards and Required Capacity for Mass Mortality Removal. Activities of this section include determining environmental and legal requirements, determining industry requirements by area, determining viable options, and developing a contingency plan for mass disposal.

The two reports previously commissioned reports by Golder and Associates provide a good foundation for these activities.

- British Columbia Finfish Aquaculture Waste Tissue/Finfish Kill Contingency Plan; and
- Supplemental Report for British Columbia Finfish Aquaculture Waste Tissue/Finfish Kill Contingency Plan

The next step was to engage the industry in a workshop where experts from regulatory agencies, agricultural and other sectors and companies with disposal options, provide information to salmon farming production, fish health and management personnel.

Workshop Goals

- better understanding of each legitimate option based on its use in other agricultural sectors and each option's possible application to salmon farming
- identification of capacity and regulatory hurdles restricting various the use of various options
- better understanding by authorities and emergency response representatives of the particular constraints and problems of finding on-land disposal solutions to a mass mortality event
- identification of specific next steps, responsibilities and timelines to moving forward with a mass mortality disposal plan
- formation of an industry committee to develop an industry plan for mass mortality disposal

Workshop Date: June 28th, 2010

Workshop Location: Maritime Heritage Centre, Campbell River, BC

Workshop Agenda

Introduction	
8:45am	Pre-event Coffee
9:00-9:30am	Welcome, Introduction of Participants, Workshop Introduction
Industry and Regulatory Requirements	
9:30-9:45am	Barry Milligan, Grieg Seafood Topic: Industry situation and specific requirements
9:45-10:00am	Andrea Osborn, CFIA Topic: Requirements for diseased waste
10:00-10:15am	Conrad Berube, BC Ministry of Environment Topic: OMRR, Emergency response and FAWCR
Disposal Options	
10:15-10:30am	Jack Masterman, Keltic Seafood
10:15-10:45am	Session Break
10:45-11:00am	Tricia Fawkes, Foenix Forest Technology Inc
11:00-11:15am	Jessica Read, Earthbank Resource Systems
11:15-11:30am	Steve Morton, Renuable Resources
11:30-11:45am	Bryan Arthur, Pacific Forge Bag Supply
11:45-12:15pm	Doug Davidson, West Coast Reduction
12:15-1:00pm	Lunch - provided
Industry Requirements and Disposal Considerations by Area	
1:00-2:00pm	Break out Group Discussions to determine industry requirements and disposal options by area
2:00-2:15pm	Group 1 Presentation
2:15-2:30pm	Group 2 Presentation
2:30-2:45pm	Session Break
2:45-3:00pm	Group 3 Presentation
3:00-3:15pm	Group 4 Presentation
3:15-4:00pm	Discussion
4:00-4:15pm	Closing Remarks

Attendees

1	Barry Milligan	Grieg Seafood
2	Mia Parker	Grieg Seafood
3	Tim Lelliot	Grieg Seafood
4	Mike Crivea	Grieg Seafood
5	Blair Billard	Grieg Seafood
8	Pam Stevens	Aztec Freight
9	Don McIntyre	Mainstream Canada
10	Dave Pedersen	Mainstream Canada
11	Brock Thomson	Mainstream Canada
12	Nathan Cassan	Mainstream Canada
13	Chris Ledger	Mainstream Canada
14	Diane Morrison	Marine Harvest Canada
15	Meghan Mills	Marine Harvest Canada
16	Sharon DeDominicis	Marine Harvest Canada
17	Owen Green	Marine Harvest Canada
18	Rocky Boshman	Marine Harvest Canada
19	Roger King	Marine Harvest Canada
20	James Rogers	Marine Harvest Canada
21	Floyd Cole	Marine Harvest Canada
22	Dean Trethewey	Marine Harvest Canada
23	Terry Smith	Marine Harvest Canada
24	Jason Schwartz	Marine Harvest Canada
25	Andrea Osborn	Canadian Food Inspection Agency
26	Mark Sheppard	BC Ministry of Agriculture and Lands
27	Conrad Berube	BC Ministry of Environment
28	March Klaver	Fisheries and Oceans Canada
29	Luis Afonso	BC Centre for Aquatic Health Sciences
30	Mary Ellen Walling	BC Salmon Farmers Association
31	David Minato	BC Salmon Farmers Association
32	Linda Hiemstra	Mel Mor Science
33	Rick van Kleeck	Investment Agriculture Foundation
34	Jack Masterman	Keltic Seafood
35	Tricia Fawkes	Foenix Forest Technologies
36	Don Waugh	Foenix Forest Technologies
37	Jessica Read	Earthbank Resource
38	Steve Morton	Renuable Resources
39	Brian Arthur	Pacific Forge Bag Supply
40	Doug Davidson	West Coast Reduction

Recap of Presentations

Andrea Osborn, Canadian Food Inspection Agency (CFIA)

In the fall of 2010, CFIA will complete regulations for communicable diseases. The focus of the regulations will be to quarantine and dispose of in manner to reduce the spread of the disease. The regulations will cover the treatment of diseased carcasses, equipment used in disposal and disposal of offal. Also in the fall of 2010, Veterinary Epidemiologist responsible for Disease Control Contingency Planning and Joanne Constantine, National Manager, both of CFIA will meet with the BC industry.

Conrad Berube, BC Ministry of Environment (MoE)

Based on the previous two IHN epizootics it is accepted that farming practices contributed significantly to IHN spread between farms and areas (Saksida, 2006). Waterborne transmission played a role in the spread of IHN between farms in close proximity (Saksida 2006, McClure 2007). Retrospective investigations suggest that rapid culling of the index case may have significantly limited or even eliminated IHN spread. Estimated loss was 11000mt in 2002 due to IHN (Golder & Associates 2008).

Mass mortality due to disease will have similar logistics challenges as bloom loss but additional requirement to minimize disease transfer by reducing or eliminating shared personnel / equipment / vessels / trucks etc. between regions.

Golder Report Feb 2008 (Investment Agriculture Foundation of BC) on Finfish Kill Contingency Plan concluded the following.

- 11 days minimum for efficient fish kill cleanup
- 15,000 mt kill recommended for resource planning
- Composting / ensiling considered best alternative – deficiency identified
- Commitments and responsibilities from government agencies should be clarified
- New landfill or silage facility on North Island should be considered
- A jointly owned equipment cache should be put together
- Agreements with disposal operators should be developed to ensure capacity is available
- Contingency plans to identify personnel and equipment should be developed
- In areas with multiple operators a MOU outlining cooperation should be developed
- Industry driven committee should be developed to drive the process

Wharves, divers and boats are the constraints to an efficient fish kill cleanup. Disposal options include West Coast Reduction, Earthbank, Foenix Forest Technologies, Reunable Resources and Pacific Forge Bags.

Jack Masterman, Keltic Seafoods

Keltic Seafoods is a custom fish processing company providing services to seafood buyers and sellers in Port Hardy. The reduction plant is available for disposal of fish waste and all the fish offal is turned into fish meal and fish oil. The plant has a capacity of 48 metric tons per day and is capable of handling current production as well as waste

from other plants. The reduction process requires fresh carcasses to produce a premium product. The total capacity would be 250mt every 8 days.

Tricia Fawkes, Foenix Forest Technologies

Foenix Forest Technologies, located at Port McNeil, is a fish waste and wood composter producing a soil product. There are no restrictions on the volume of waste that can be received and site operates 5 days/week. Composting mix is 50% bark waste and 50% fish waste and they stock pile large volumes of bark waste.

Jessica Read, Earthbank Resources

Earthbank, located in Parksville, has a fish compost process that has been certified and quality approved by the Rodale Organic Gardening Solvita Process and the company provides garden compost of the highest quality. Daily capacity is currently 100 mt but this could be doubled as they not limited by space. They will provide trucks and trailers - 8 roll off containers (100mt total) though the most efficient method is likely to move 25-25mt increments. In 2003, Earthbank processed 1000mt of IHN mortalities in 3 week period and over 3000mt for the entire outbreak.

Steve Morton, Reunable Resources

Currently has a digestion plant that grinds and liquefies fish waste into fertilizer. The plant is registered by CFIA and has no cap on the volume of waste it can accept. It can process 30mt/hour. The waste takes approximately one month to become liquefied and the process has no impact on the environment. They will accept waste of poor condition as it liquefies faster.

Bryan Arthur, Pacific Forge Bag Supply

Pacific Forge Bag Supply will provide bags which compost contents in 8 weeks with no leaching or odour. The process requires a partnership with a wood waste provider with a good water source. This system is especially good if the composter has a lack of room and time. Permitting is the same as for composting and the end product belongs to the farm or compost owner.

Doug Davidson, West Coast Reduction

West Coast Reduction produces protein and oil from fish waste that are less than 5 days old. Nanaimo plant can process 200-300mt/day and the Vancouver plant up to 500mt/day. Full bio-security at all times and rendering ensures sterilization. They require 2-5 day lead time to mobilize trailers which they provide to transport the mortalities.

WORKSHOP FINANCIAL REPORT

	Budget	Actual Costs	Industry In-kind	Industry Cash	Invest. Agriculture Foundation
Workshop Organization and Facilitation	\$ 9,580.00	\$ 9,837.96	\$ 4,080.00	\$ 3,000.00	\$ 2,757.96
Venue Rental	\$ 616.00	\$ 550.00			\$ 550.00
Catering	\$ 1,900.00	\$ 1,221.39			\$ 1,221.39
Program Printing telephone, email	\$ 150.00	\$ 150.00	\$ 150.00		
Speaker Travel, accommodation*	\$ 2,563.00	\$ 365.01			\$ 365.01
Audio Visual Equipment		\$ -			
Other Costs		\$ -			
TOTALS	\$ 14,809.00	\$ 12,124.36	\$ 4,230.00	\$ 3,000.00	\$ 4,894.36

*Speaker Travel and Accommodation	
Keltic Seafood	\$ 145.77
Pacific Forage Bag Supply Ltd.	\$ 219.24
Renuable Resources	\$ -
Foenix Forest Technology Inc.	\$ -
West Coast Reduction	\$ -
TOTAL	\$ 365.01

See Appendix A for Expense Receipts.

POST WORKSHOP - NEXT STEPS

1. Industry Committee has been formed from those who volunteered at the workshop to:
 - a. Determine industry-wide standards for Annex H Minimum Bio-security and Environmental Standards and Required Capacity for Mass Mortality Removal (initial meeting to develop standards was held Aug 13th, next meeting Aug 27th)
 - b. Draft a coordinated industry plan for disposal of large volumes of fish mortalities – for the interim and for the long term
 - c. Manage information and research projects to determine the best options for mass mortality disposal
2. Industry will meet with Canadian Food Inspection Agency representatives in October 2010, to integrate the new regulations into the industry viral disease management plan, specifically to ensure the standards and procedures developed for mass mortality disposal meet CFIA standards

Industry Disposal Committee

	Name	Affiliation
1	Barry Milligan	Grieg Seafood
2	Tim Lelliott	Grieg Seafood
3	Mike Crivea	Grieg Seafood
4	Dave Pedersen	Mainstream Canada
5	Nathan Cassan	Mainstream Canada
6	Chris Ledger	Mainstream Canada
7	Diane Morrison	Marine Harvest Canada
8	Meghan Mills	Marine Harvest Canada
9	Roger King	Marine Harvest Canada
10	Terry Smith	Marine Harvest Canada
11	Sonja Saksida	BC Centre for Aquatic Health Sciences
12	David Minato	BC Salmon Farmers Association
13	Linda Hiemstra	Mel Mor Science

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