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Status Report on Sea Lice Monitoring In the Broughton Archipelago

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January to March 2003

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In February, the Ministry of Agriculture Food and Fisheries committed to establish an Interim Sea Lice Monitoring program for salmon farms in the Broughton Archipelago. The objective is to gather information on the levels of sea lice on farms and work with the industry to develop management actions to minimize the levels of lice during the migration of wild salmon smolts, including pink salmon.

The province is sharing information with the Department of Fisheries and Oceans in order to coordinate monitoring and research activities aimed at protecting wild salmon in the Broughton.

The program is designed to establish standardized monitoring for the companies in the area and to audit that program through on-site farm visits. The latter includes independent examination and enumeration of lice levels on fish by ministry fish health technicians at randomly selected farms.

Management actions used to control lice levels include fallowing, single year class sites, harvesting and treatment.

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METHODOLOGY

Historical information from the industry's existing monitoring program was provided to MAFF to inform management actions to control lice on farms prior to and during the spring smolt migration period from April through June.

The Monitoring program includes 16 farms from the Broughton Archipelago. Of these, 14 farms currently contain fish or have smolts being entered and have been evaluated for sea lice. Sampling was conducted at least once per month until March at which time sampling increased to once every two weeks as per the new condition of licence. Sampling was conducted in three cages per site with a minimum of 20 fish per pen examined. The historical data provided is based on sample size of approximately 2,200 fish.

The numbers of motile and gravid lice were enumerated on each fish. Gravid lice are mature female lice with eggs which when released may survive and potentially develop into copepods that are infectious to salmon. Counts of gravid lice provide an indication of the level of potential infection. Motile lice includes gravid female lice as well as all other grazing mobile lice on the fish. Counting motile lice is an indicator of developing lice loads and provides information used in decisions on the treatment and control of lice levels.

Controlling the overall lice populations through harvesting or treatment will reduce the number of gravid lice and thus cut lice loads on the whole.

Audits until March 31 have been conducted on four farms. The audits confirmed lice loads reported by industry were consistent with those found in the independent audit sampling.

The average number of motile and gravid lice per fish was calculated for different size classes of fish from January through March. The results and the number of farms

containing the size class categories is presented in the following tables.

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Table 1: Average Number of Gravid Lice Levels per fish on farms by size class of fish

Size of Fish / Number of farms	Jan	Feb	Mar
All Sizes / 14 Farms	0.95	1.57	1.18
500 gms. / 6 Farms	0.02	0.06	0.03
2-3 kgs / 3 Farms	1.45	1.01	0.04
7+ kgs / 5 Farms	1.78	3.73	3.25

Table 2: Average Number of Motile Lice Levels per fish on farms by size class of fish

Size of Fish / Number of farms	Jan	Feb	Mar
All Sizes / 14 Farms	2.46	3.94	3.60
500 gms. / 6 Farms	0.30	0.45	0.73
2-3 kgs / 3 Farms	4.74	3.26	0.19
7+ kgs / 5 Farms	3.69	8.54	9.08

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RESULTS January to March (pre-migration)

As a result of management measures in March, both motile and gravid lice on the majority of farms (64%) are low. The larger fish show higher loads but are either being harvested or treated to kill the lice — either approach will remove these lice from the environment.

Thus, it is anticipated that the lice levels in April will be

significantly reduced — during the highest period of wild smolt migration. And we will continue to monitor and audit and manage the lice, and take appropriate action.

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