From:	Riddell, Brian (Pacific)
Sent:	Thursday, January 31, 2008 3:59 PM
To:	Richards, Laura <RichardsL@pac.dfo-mpo.gc.ca>; Black, Edward <BlackE@DFO-MPO.GC.CA>
Cc:	Parsons, Jay <ParsonsJa@DFO-MPO.GC.CA>
Subject:	RE: Sea Lice Management BN
Attach:	Sea Lice -Jan 31 08 - LR rev.DOC

<<...>>
I have added some material to Laura edits. One large paragraph is background and not intended for inclusion unless you wish to develop an additional bullet. In the Next Steps though I have tried to include a bullet on the need to acquire data from the industry (as discussed on the call with Sylvain).

Brian E Riddell, Ph.D.
Division Head, Salmon and Freshwater Ecosystems,
Science Branch, Pacific Biological Station,
Nanaimo, BC V9T 6N7
250-756-7145 (w)
250-714-5599 (cell)

-----Original Message-----
From: Richards, Laura
Sent: January 31, 2008 2:48 PM
To: Black, Edward
Cc: Riddell, Brian (Pacific); Parsons, Jay
Subject: RE: Sea Lice Management BN

Edward - I cannot support your version as written. See attached suggestions to which Brian may choose to add.
LR << File: Sea Lice -Jan 31 08 - LR rev.DOC >>

Dr. Laura Richards
Regional Director Science / Directrice régionale des sciences
Fisheries and Oceans Canada / Pêches et Océans Canada
Pacific Biological Station / Station biologique du Pacifique
3190 Hammond Bay Rd, Nanaimo, BC V9T 6N7

tel/tél: 250-756-7177
FAX: 250-729-8360
e-mail/courriel: richardsl@pac.dfo-mpo.gc.ca

-----Original Message-----
From: Black, Edward
Sent: January 31, 2008 1:59 PM
To: Richards, Laura; Riddell, Brian (Pacific); Parsons, Jay
Subject: Sea Lice Management BN

We have made another try at the BN.

Sorry to have to resend this document to you but it was necessary to change the thrust of the document to be more focused on Science (You'll notice we have taken out some of the references to management

activities.) but in a format a layman can understand.

Comments would be greatly appreciated.

<< File: 2008-502-00021 Sea Lice Management Actions-Jan 30 08-BN-M.DOC >>

2008-502-00021

EKME #768352

MEMORANDUM FOR THE MINISTER

NEW RESEARCH RESULTS ON THE

INTERACTIONS BETWEEN SEA LICE AND JUVENILE PINK SALMON

(Information Only)

SUMMARY

- A new study from Fisheries and Oceans Canada (DFO) linking sea lice to juvenile wild salmon mortality is expected to be released in April 2008.

- This study, combined with Environmental Non Government Organization (ENGO) studies could significantly increase public attention and concern on the issue of how sea lice from salmon farms affect wild salmon in BC.
- This is the first DFO study that confirms ENGO claims of mortality of individual juvenile pink salmon from sea lice infections. The results of this study are laboratory based and will require analysis of field data to confirm applicability to the natural environment.
- DFO will; develop a communications plan to manage the possible media and public interest, continue to closely monitor the situation and provide scientific advice to resource managers.

Background:

- Sea lice are a naturally occurring parasite found in wild populations of fish.
- Since 2001 public concern has been raised that commercial salmon aquaculture farms are the major source of these sea lice, causing increased levels of infection of wild juvenile salmon by sea lice in the Broughton Archipelago (BA) area of the B.C. coast

.../2

- ENGO's have suggested to the public that sea lice from salmon aquaculture farms cause an increase in the severity of infections in B.C.'s wild pink salmon resulting in a

decrease in wild salmon populations.

- A recent report theoretically modeling the outcome of lice – pink salmon interactions was published by ENGO - linked researchers in the high profile journal *Science*. This study predicted that, if infection continues, sea lice from farms will cause the extinction of some pink salmon populations in 4 generations (8 years) due to increased mortality in the juvenile salmon..
- Further, a separate paper by environmental activist Ms. Alexandra Morton linking sea lice infections to declines in Fraser river sockeye populations is expected to be published in early 2008.
- Since 2003, the Department has conducted extensive field and laboratory research programs to study sea lice, its potential origins, and the health of wild salmon populations in the area and have not found concrete evidence to support ENGO claims.
- To this date DFO has not been able to find a correlation between the levels of sea lice on the farms and mortality of wild pink salmon.
- However, in the next few months a new study by a DFO scientist (summarised in an earlier briefing note) is expected to be published indicating that, in the laboratory, very small pink (0.3 gm.) salmon are subject to an increased mortality rate if exposed to high levels of sea lice.

Analysis

- This is the first Departmental confirmation of lice- induced mortality on wild salmon and will likely be used by ENGOs to support their claims that salmon aquaculture farms cause an increase in wild salmon mortality rates through the spread of sea lice.
- However, it is important to note that this DFO laboratory study does not provide evidence that sea lice from salmon aquaculture farms infect wild salmon at high enough levels to decrease abundance of wild pink salmon in the natural environment.

- Regardless, the release of the DFO study on lice induced mortality could precipitate a significant media event and could be seen by ENGOs and the public as confirmation that aquaculture is negatively affecting the wild salmon populations.

Next Steps

- DFO-Science will continue its program of pink salmon monitoring and sea lice research in 2008 to ensure that if there is a relation between wild pink salmon abundance and sea lice on fish farms, it is detected as early as possible.
- Concurrently, the Department will examine data collected over the past five years to determine where and when small pink salmon are more prevalent, how those relate to farm locations, and therefore risk of these pink salmon becoming infected by sea lice.
- The department will develop a communications plan that will focus on presenting and explaining these new scientific findings to the public, and ensuring the public that DFO is continuing to monitor the sea lice situation.
- Science will continue to work with and support Resource managers with the provision of the latest scientific advice from all sources

Michelle d'Auray

Edward Black /Jay Parsons / Christine Stoneman / Sylvain Paradis/ Wendy Watson-Wright / db