

BRIEFING NOTE FOR THE ADM, SCIENCE

PROVINCIAL CONCERNS ABOUT PROPOSED MSX CONTROL OPTIONS MAY BE RAISED AT CCFAM DEPUTY MINISTERS' MEETING IN OTTAWA, JUNE 5, 2003

(For Information Only)

SUMMARY

- Nova Scotia, New Brunswick and Prince Edward Island Provincial Fisheries and Aquaculture representatives may raise concerns over some of the MSX control recommendations put forward by the Atlantic Shellfish Health Technical Advisory Committee (ASHTAC), at the CCFAM Deputy Ministers' meeting in Ottawa, June 5, 2003.
- The provinces are concerned that the proposed controls will be ineffective. Specific points are that (i) DFO is not pursuing eradication; (ii) the focus of disease control is only on MSX and not SSO; and (iii) nothing is being done to address perceived risk of MSX spread to oyster stocks elsewhere in Atlantic Canada, via other aquatic animal movements or fishery activities.
- The DM has not been briefed about this potential issue, however, the DG OASD is prepared to respond if MSX control issue is raised at the CCFAM meeting. Speaking points are included below.

ISSUE

- Provinces' concerns over proposed MSX control strategies may be raised at the CCFAM Deputy Ministers' meeting in Ottawa, June 5, 2003. The Deputy Minister has not been briefed and may require DG OASD to be prepared to respond.

BACKGROUND

- MSX is a notifiable disease of the Office International des Epizooties (OIE – the World Organisation for Animal Health) based on its ability to cause rapid mass mortalities in American oysters. Its discovery in dying oysters in Cape Breton in October 2002, poses a significant threat to oyster production throughout Atlantic.

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- SSO, a related infectious agent, was also detected for the first time in Canadian oysters. SSO was found in oysters from the southern Gulf of St. Lawrence oysters and north shore Cape Breton, but with no sign of disease. SSO is listed by the OIE as “other significant diseases of molluscs” so is not considered to present as high a risk as MSX, but is still listed as being of

potential significance.

- Control of MSX disease is extremely difficult. US experience, over the last 45 years, has had limited success in preventing the gradual spread of MSX from Delaware Bay to most other oyster areas along the eastern US. The existence of an unknown 'carrier' or intermediate host of the MSX parasite means removal of infected oysters may be of little use for eradicating the disease agent. Most efforts, thus, concentrate on control of movements of infected oysters which could spread the disease to unaffected areas.
- The source of MSX has not been established, but infections show a point source within St. Patrick's Channel. Although unproven, shipping traffic (industrial and recreational) that dumps ballast collected from MSX positive waters in the eastern United States, may be implicated. If this is the case, it is likely that fresh infectious material will be repeatedly introduced into Cape Breton waters, as such shipping activities continue.

CURRENT STATUS

- DFO has established an Atlantic Shellfish Health Technical Advisory Committee (ASHTAC), comprised of molluscan disease control experts from Canada and the USA, to provide recommendations for MSX control.
- An emergency surveillance program undertaken to delineate MSX in Atlantic Canadian oysters was completed in May 2003.
- Based on the surveillance program results and historic experience with MSX, the ASHTAC prepared six disease-control recommendations. These are detailed in Annex I and summarized as follows:
 - a) Removal of all oysters from infected sites is not considered to be feasible for eradicating MSX from Cape Breton waters.
 - b) Bras d'Or Lakes should be zoned as MSX-positive, despite some sites remaining MSX-negative from surveillance to date. Thus, no live oysters or shells should be permitted to move out of Bras d'Or Lakes.
 - c) Movement of oysters, or oyster shell, within Bras d'Or Lakes would be acceptable, where positive-to-positive and negative-to-negative transfers are feasible.
 - d) Movements of oysters onto positive sites in order to accelerate development of a disease resistance is not recommended, as this may increase pathogen loading and potential for accelerated spread via unknown carrier hosts.
 - e) SSO infections appear light and widely distributed throughout Gulf oyster populations, thus, control of this infection may be unnecessary, and unfeasible.
 - f) There is no evidence to suggest species other than oysters pose a significant threat for movement of MSX, thus, control efforts should focus on oysters. However, stringent removal of any oyster hitch-hikers will be required for mass transfers of other species from MSX-positive.

- These recommendations were presented to provincial fisheries departments and DFO fisheries management for discussion on May 30, 2003. The provinces requested time to examine the recommendations, assess their economic implications, and submit their comments to DFO by Wednesday June 4, 2003. Nova Scotia has requested a delay to assess the impacts of zoning Bras d'Or Lakes as MSX-positive and controls related to this delineation.
- The CCFAM Deputy Ministers' meeting, June 5th, 2003, in Ottawa, may serve as a forum for Atlantic provinces, notably Nova Scotia, to raise their concerns over proposed MSX disease controls. The provinces specific concerns are that:
 - (i) DFO is not pursuing eradication;
 - (ii) the focus of disease control is only on MSX and not SSO; and
 - (iii) nothing is being done to address perceived risk of MSX spread, via other aquatic animal movements or fishery activities, from Cape Breton to oyster stocks elsewhere in Atlantic Canada.
- Communications Branch is updating Media Lines and Q&A's and will revise them as necessary, once provincial input is received. As soon as industry is informed of updated results and control strategies, a map of survey results and a summary of the controls will be posted on the DFO Aquaculture website. Regional communications officers will contact media who has been following MSX developments since its appearance last fall. A meeting is scheduled with Cape Breton oyster producers, June 10th, 2003.

SPEAKING POINTS FOR DG OASD

- DFO implemented stringent controls on all shellfish harvesting activities in Cape Breton on detection of MSX disease in October, 2002. These controls were aimed at limiting inadvertent spread of the disease while federal and provincial personnel undertook an intense surveillance program to establish the extent of the infection throughout Atlantic Canada.
- Results were examined by the Atlantic Shellfish Health Technical Advisory Committee (ASHTAC) and will be used to revise the emergency control measures put on harvest activities, introductions and transfers last October, where necessary.
- Provincial personnel provided significant support with collection of samples and tracking of oyster movements to help control spread of MSX infections. They are also highly involved in development and implementation of ongoing control options, and are currently reviewing the six control recommendations made by the ASHTAC.

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- Timing for implementation of control strategies is urgent, since the oyster fishing season and aquaculture activities are already underway. New Brunswick and Prince Edward Island will get back to DFO by June 4th, 2003. Nova Scotia has asked for a delay until June 9th, 2003. Once received the MSX Coordination Committee (Gulf & Maritimes) will finalize strategies

to implement accepted recommendations.

Attachments

Sharon McGladdery/ Dorothee Kieser / John Moores/ Joan Kean-Howie

**DISCUSSION DOCUMENT
MSX – SSO CONTROL OPTIONS**

**Submitted by Shellfish Health Unit
Department of Fisheries and Oceans
May 27, 2003**

- 1) Results Summary**
- 2) ASHTAC Description & Recommendations**
- 3) MSX-SSO Zonation**

1) RESULTS SUMMARY Refer to Appendix 1: Results map.

- i. MSX appears confined to St. Patrick's Channel, Gillis Cove and Eskasoni. Only St. Patrick's Channel infections have shown spore development.
- ii. Samples collected throughout the rest of Atlantic Canada have shown no sign of MSX and sub-samples from sites with recent trade links to Cape Breton have been double checked by PCR. All results have been negative.
- iii. SSO has been detected using histology, and confirmed with PCR, in samples from PEI, NS, and Lockart Lake, (Bay of Fundy) NB. Prevalences < 5% were found with extremely low intensities (approximately 1-5 parasites/cross-section). No SSO infections have been associated with pathology with the exception of one site within Bras d'Or Lakes, where the primary cause of infection was MSX (see #4).
- iv. Both MSX and SSO were detected using PCR in an oyster from Eskasoni, in the Bras d'Or Lakes. Molecular testing (in-situ hybridization) performed at the OIE Reference Lab in Virginia indicated that MSX was the dominant infection.
- v. SSO was detected by PCR alone in samples from oysters collected in 2002 from two sites on the Gulf shore of NB: Caraquet and Shemogue. These samples were selected to address an import certification request from St. Pierre et Miquelon, France. Visual confirmation of SSO using histology is required therefore results are considered preliminary and work is ongoing. These findings may support the theory of a widespread distribution at sub-clinical levels throughout the Gulf of St. Lawrence.
- vi. Work continues on tissues archived from oysters collected in 1996 and 2001 from the Gulf shore of NB. Results to date are inconclusive. This area was chosen due to the integrity of the preserved tissues for molecular testing. Archived material from other Provinces will be selected following these initial investigations.
- vii. 360 mussels screened for MSX using PCR were all negative. These were from four Nova Scotia sites: 180 from Denas Pond, 120 from Lennox Passage, 60 from Aspy Bay. The 180 from Denas Pond were also negative for SSO using PCR.

- viii. No mortalities have been observed in experimentally stressed oysters held in quarantine at the Bedford Institute of Oceanography. Oysters from both MSX (Denas Pond) and SSO (St. Peter's Bay, PEI) positive sites were tested. Histopathology specimens will be collected for examination to determine if sub-clinical changes in parasite intensity are present.

2) ATLANTIC SHELLFISH HEALTH TECHNICAL ADVISORY COMMITTEE

i) Description

The SHU formed the Atlantic Shellfish Health Technical Advisory Committee (ASHTAC) to discuss scientific results and assist in the formulation of recommendations based solely on best practices for disease management. It is composed of DFO oyster and disease expertise from the Gulf, NCR, Pacific, and Maritimes and the Director of the OIE reference lab, Virginia, USA. The NSDFA veterinarian provided results from the Provincial MSX survey but will reserve comment on recommendations until they are formally discussed with the Province of Nova Scotia. As Chair of ASHTAC, the Head/Shellfish Health Unit in Moncton is responsible for forwarding the recommendations to Fisheries Management and the Chairs of the ITCs for consideration.

ii) Recommendations

1: Eradication not recommended.

Eradication of MSX by removal of infected oysters from Bras d'Or Lakes not considered a viable option.

Note: Removal of infected oysters to mitigate impact of MSX may be an option for sites in Bras d'Or Lakes where MSX positive oysters are:

- i) related to direct transfers from positive sites in St. Patrick's Channel
- ii) held in cages,
- iii) where spores have not been observed to date, and
- iv) where no surrounding wild oysters have been found to be infected.

2: No transfers of oysters out of Bras d'Or Lakes.

Live oysters or shell from within the Bras d'Or Lakes, should not be transferred to waters outside the Lakes.

3: Restricted movements within the Bras d'Or Lakes acceptable.

"Like to like" movements within the Bras d'Or Lakes is considered an acceptable risk for disease management. Therefore, 'positive to positive for MSX' and "no evidence of MSX to no evidence of MSX" should be considered.

No movement of infected oysters to non-infected areas.

4: Do not move oysters to positive sites as a strategy to accelerate development of a disease resistant strain within the Bras d'Or Lakes.

5: No restriction of live transfers related to SSO.

No restrictions of introduction and transfers of live oysters or shell based on disease profiles in areas/zones found to be SSO-positive, but show no sign of MSX. This applies to the waters outside of the Bras d'Or Lakes.

6: No restriction of introduction and transfers of other species for the control of MSX or SSO.

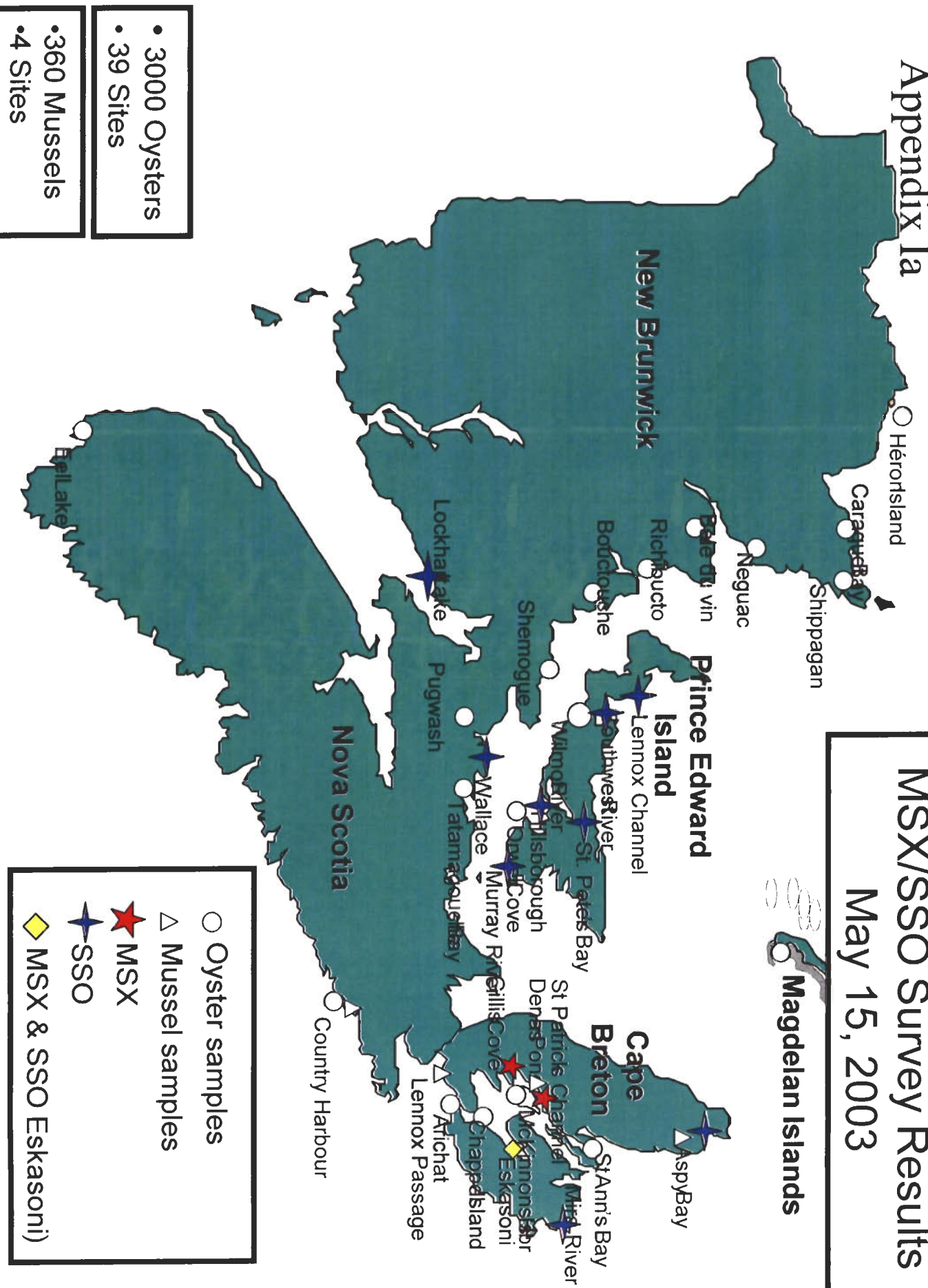
It is highly recommended that best management practices include thorough washing of product prior to transfer to reduce the risk associated with fouling organisms such as juvenile oysters or fellow travelers that may play a part in the life history of these parasites.

D) MSX/SSO ZONATION - Refer To Appendix II: Zonation Map

DFO Science proposed a zonal approach to MSX/SSO disease management during information/consultation meetings with stakeholders in March/April 2003. At that time, the zonal approach was discussed in theory to identify possible implications and seek Provincial and Industry input. Scientific results released May 15/03 (see above) did not alter the distribution pattern of MSX and SSO within Atlantic Canada significantly from February 24/03 results and, therefore, the zones proposed at that time remain valid. The zonal approach is designed to provide a management tool for Introduction and Transfer Committee (ITC) risk assessments and for Fisheries Management.

Appendix Ia

MSX/SSO Survey Results May 15, 2003

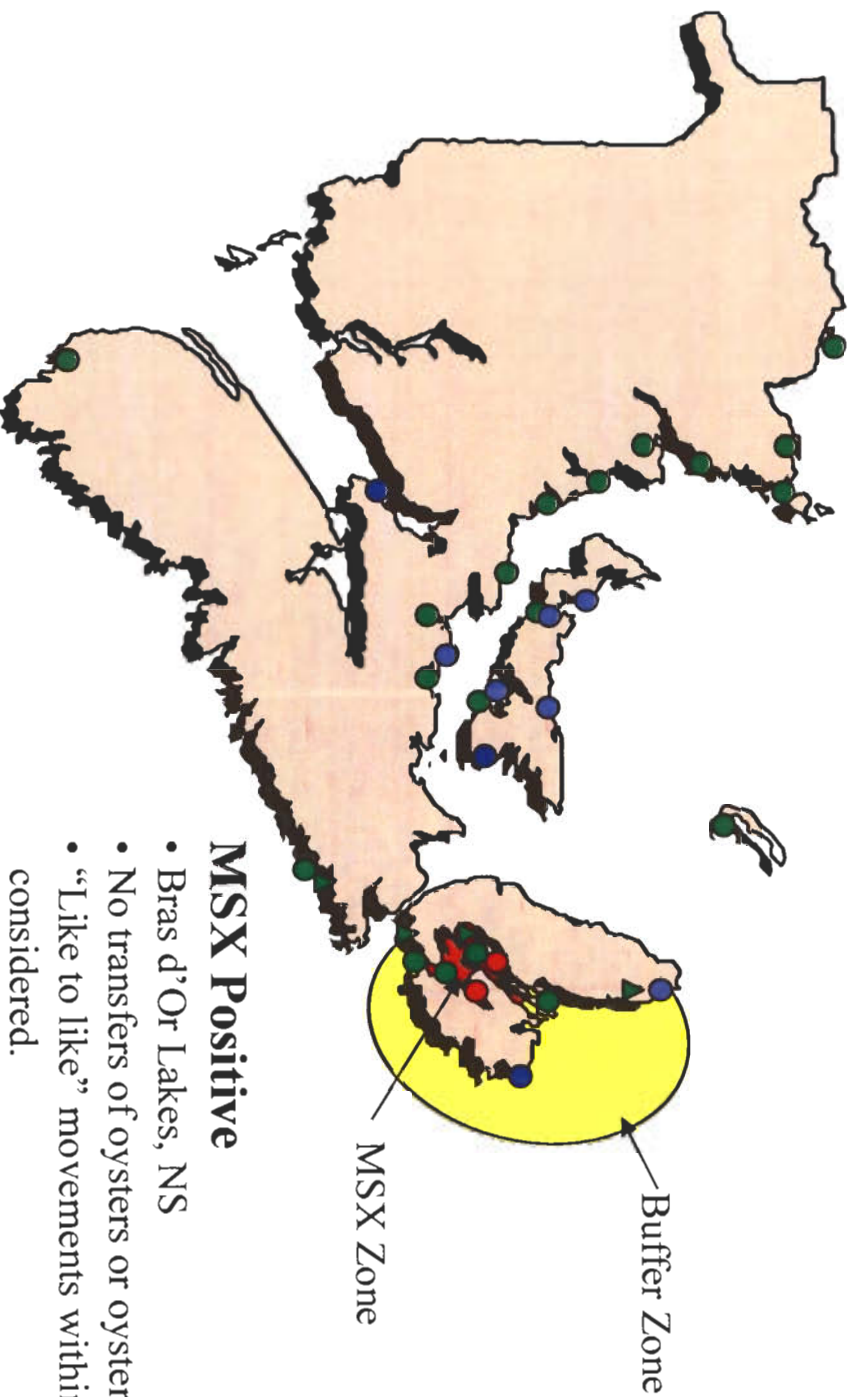


- 3000 Oysters
 - 39 Sites
-
- 360 Mussels
 - 4 Sites

○	Oyster samples
△	Mussel samples
★	MSX
◆	SSO
◆	MSX & SSO (Eskasoni)

Appendix II: MSX Zonation

Disease Management for I & T of Oysters



MSX Positive

- Bras d'Or Lakes, NS
- No transfers of oysters or oyster shell to outside of Positive Zone.
- “Like to like” movements within Bras d'Or Lakes will be considered.

Buffer Zone

- Waters of Cape Breton outside the Bras d'Or Lakes, NS
- Increased surveillance for passive spread of MSX
- No transfer restrictions of oysters or oysters shell within zone.
- Transfers out of zone subject to I&T review.

NOTE:

Malpeque Naive Zone

- No movement of oysters into Bras d'Or Lakes or the waters of Cape Breton