



## **New Brunswick Health Policy for Shellfish Aquaculture**

**Department of Agriculture, Aquaculture and Fisheries**

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## 1. INTRODUCTION

The management of shellfish health is a shared responsibility between the New Brunswick Department of Agriculture, Aquaculture and Fisheries (NB DAAF), the Canadian Food Inspection Agency (CFIA), and Fisheries and Oceans Canada (DFO). The NB DAAF is responsible for managing the health of all aquaculture stocks. The CFIA and DFO jointly administer the National Aquatic Animal Health Program (NAAHP), which addresses specific reportable diseases in both wild and cultured shellfish populations. DFO manages invasive species and oversees introductions and transfers.

This document provides the framework for health management for all cultured shellfish stocks in New Brunswick. The New Brunswick Health Policy for Shellfish Aquaculture addresses diseases of commercial significance not covered by the National Aquatic Animal Health Program for all shellfish species cultivated within New Brunswick. Effective shellfish health management is essential to the long-term economic and environmental sustainability of the shellfish aquaculture industry in New Brunswick and is also necessary to provide industry, government, the investment community, interest groups, the general public and all other stakeholders with the assurance that shellfish health is effectively managed and that the risk of loss due to disease is minimized.

### **Key Components:**

The Key Components of this Policy are:

- A. Prevention of Introduction:** preventing the introduction of a pathogen to a population of shellfish.
- B. Health Maintenance:** ensuring that good farming practices are used to promote the maintenance of healthy stocks.
- C. Early Detection and Effective Response to Disease:** implementing an ongoing surveillance and monitoring program to ensure early detection of emerging Shellfish health issues, as well as a timely and appropriate response when a potential disease risk is encountered.
- D. Communication:** providing relevant and timely Shellfish health information to key stakeholders so that appropriate action can be taken to minimize risk.
- E. Research and Education:** fostering and contributing to appropriate scientific research is essential to keeping the industry abreast of ongoing advances in Shellfish health management and effectively transferring this information to industry and Shellfish health professionals.

## 2. PRINCIPLES

- The Health Policy for Shellfish Aquaculture must provide an effective framework to support the long-term sustainability of the Shellfish aquaculture industry while protecting the greater public interest.
- The Health Policy for Shellfish Aquaculture must be economically justifiable and be undertaken in an environmentally acceptable manner in the context of managing disease risk.
- Communication and cooperation amongst stakeholders is essential to ensuring a coordinated and effective approach to Shellfish health management.
- The timely collection, collation, and dissemination of relevant Shellfish health related information to key stakeholders is a necessary component of effective disease management.
- The roles and responsibilities of industry and government must be clearly defined and respected
- The Shellfish health protocols and compliance standards must be based upon sound scientific principles and the most current scientific information relative to each disease.
- Laboratories must meet specified quality assurance standards and use approved methodologies to be authorized to perform testing for regulatory purposes.
- The Health Policy for Shellfish Aquaculture must communicate and cooperate with other regional, national and international Shellfish health management initiatives and programs.

## 3. DEFINITIONS

See **Appendix A – “Definitions”**.

## 4. MANDATE AND RESPONSIBILITIES OF STAKEHOLDERS

### 4.1 Governing Acts and Regulations

Shellfish health in New Brunswick is governed by a number of provincial and federal Acts and regulations including: *New Brunswick Aquaculture Act* (Chapter A-9.2) 1988, and New Brunswick Regulation 91-158; the *Health of Animals Act* and the *Fisheries Act*, the Aquaculture Activities Regulations (AAR) and the Aquatic Invasive Species Regulations (AIS).

## **4.2 Responsibilities of the Department of Agriculture, Aquaculture and Fisheries**

The New Brunswick Department of Agriculture, Aquaculture and Fisheries (NB DAAF) has the legislative authority and responsibility for aquaculture development and shellfish health management under the *Aquaculture Act* and Regulations. The fundamental role of governments in shellfish production is to provide the utmost confidence in the areas of shellfish health, public health, public good and investor confidence. The New Brunswick Health Policy for Shellfish Aquaculture provides the framework for NB DAAF to carry out its responsibilities with regard to effective shellfish health management. For more information on the *Aquaculture Act* and Regulations please see <http://laws.gnb.ca/en/ShowPdf/cs/2011-c.112.pdf> and <http://laws.gnb.ca/en/ShowPdf/cr/91-158.pdf>.

### **4.2.1 Role of the NB DAAF Aquaculture Veterinarian:**

The NB DAAF Aquaculture Veterinarian is the regulatory veterinarian for aquaculture in New Brunswick and is responsible for the oversight of the Health Policy for Shellfish Aquaculture. The NB DAAF Aquaculture Veterinarian will:

- Provide veterinary support to Regional Shellfish Biologists and stakeholders where required.
- Monitor compliance with the Health Policy for Shellfish Aquaculture through regular inspections and will take appropriate actions to ensure compliance.
- Act as the point person for investigations related to Federally Reportable Diseases.
- Undertake regular communication with Regional Shellfish Biologists and stakeholders to address all shellfish health concerns.

### **4.2.2 Role of the Regional Shellfish Biologists:**

- In consultation with the NB DAAF Aquaculture veterinarian, act as the central communicator for the Health Policy for Shellfish Aquaculture and provide critical information to the appropriate stakeholders.
- Inform the NB DAAF Aquaculture Veterinarian of all shellfish health issues and concerns.
- Act as the point person for any shellfish health issues that require further investigation.
- Conduct routine site visits on shellfish leases which include the collection of samples for disease screening.

## **4.3 Responsibilities of the Canadian Food Inspection Agency (CFIA)**

Under the authority of the *Health of Animals Act* and its *Regulations*, The Canadian Food Inspection Agency (CFIA) delivers the National Aquatic

Animal Health Program (NAAHP). The NAAHP is designed to prevent the introduction and spread of the reportable and immediately notifiable diseases of finfish, molluscs and crustaceans. The NAAHP domestic disease control program requires the mandatory reporting of disease. The CFIA conducts disease investigations and emergency response as required when reports of disease occur. The NAAHP import/export program places controls on the importation of aquatic animals and their products, and provides market access for exported animals and products that meet trade partner requirements. The CFIA conducts risk analysis and collaborative surveillance programs to support the domestic and international control programs. For more information on the requirements of the NAAHP please see <http://www.inspection.gc.ca/animals/aquatic-animals/diseases/eng/1299156296625/1320599059508>

#### **4.4 Responsibilities of Fisheries and Oceans Canada (DFO)**

Fisheries and Oceans Canada (DFO) provides laboratory support to the CFIA for the NAAHP components in relation to diagnostic testing, research, and scientific advice to support the program. DFO's National Aquatic Animal Health Laboratory System (NAAHLS) was designed specifically to support the NAAHP and is comprised of four (4) laboratories across Canada.

Currently DFO is responsible for permitting movements of aquatic animals through the Introductions and Transfers Licensing process, which contains requirements for fish health testing under the *Fishery (General) Regulations*. DFO will address the regulatory overlap with CFIA's Domestic Movement Control Program.

DFO will also have regulatory authority over treatment of aquatic invasive species and aquatic pests with the Aquaculture Activities Regulations and the Aquatic Invasive Species Regulations under the *Fisheries Act*. For more information on the roles and responsibilities of DFO please see <http://www.dfo-mpo.gc.ca/science/aah-saa/index-eng.htm>.

#### **4.5 Role of the License Holder**

The license holder is responsible for carrying out all activities and responsibilities as outlined in this document.

The license holder:

- Will be required to maintain a record of all relevant shellfish health information pertaining to diseases, disease agents, parasites, toxins and contaminants on their lease. The licence holder must provide this information to an Inspector when requested.
  - This would include, but not be limited to, the full disclosure of all clinical findings, suspicion of infection or disease, laboratory results and their interpretation, unusual or unexplained mortality

and any other information that is relevant to the shellfish health status of the site.

- This would also include results from the Provincial surveillance program and any other samples collected by the Regional Shellfish Biologists.
- Ensure that all biosecurity protocols are followed as identified in this policy and/or surveillance program.
- Ensure that they are fulfilling their requirements of this Policy and all regulations or Ministerial directives related to shellfish health.
- Ensure that they are fulfilling the requirements as outlined in the National Aquatic Animal Health Program (NAAHP) governed by the Canadian Food Inspection Agency (CFIA).

#### **4.6 Shellfish Health Technical Committee (SHTC)**

A Shellfish Health Technical Committee will be formed with representatives from the shellfish industry and NB DAAF. Where required, the SHTC may include subject matter experts to provide input and recommendations. The Shellfish Health Technical Committee will develop a Terms of Reference and an annual work plan to guide their activities. It is the intent of the Committee to work on the following:

- Standard Operating Practices for the Shellfish Industry in New Brunswick
- Development of Shellfish Management Areas
- Development of treatment/prevention regimes
- Development of biosecurity protocols for Shellfish farms
- Response plans in the event of a mass mortality event (for cases not under the authority of CFIA)
- Development of a Shellfish Health Worksheet for growers and Regional Shellfish Biologists

#### **4.7 Confidentiality**

All shellfish health records and diagnostic results required by the Regulations, or requested by an inspector appointed under the Act, are deemed to be confidential in accordance with Section 38 (1) of the Act. Please note that the Act also provides for the disclosure of such information under certain circumstances (Section 38(3)).

#### **4.8 Relationship to the National Aquatic Animal Health Program**

The New Brunswick Health Policy for Shellfish Aquaculture is intended to be complementary to the National Aquatic Animal Health Program (NAAHP). Under the direction of the Canadian Food Inspection Agency (CFIA), the NAAHP will be developing national standards and protocols for federally regulated shellfish diseases [http://www.inspection.gc.ca/animals/aquatic-animals/diseases/eng/1299156296625/13205\\_99059508](http://www.inspection.gc.ca/animals/aquatic-animals/diseases/eng/1299156296625/13205_99059508).



#### **4.9 Compliance and Enforcement**

The Department of Agriculture, Aquaculture and Fisheries (NB DAAF) is the lead agency with respect to the enforcement of aquaculture legislation in New Brunswick as described in the *Aquaculture Act* and Regulations. The NB DAAF has the authority and responsibility to ensure that all aquaculture facilities in the province are in compliance with the Act and Regulations.

### **5. REPORTING OF DISEASES AND AQUATIC INVASIVE SPECIES**

The reporting of diseases and aquatic invasive species is critical to their proper control and management. Diseases of concern are diseases which have socio-economic importance and require regulatory measures to control their spread and management. For certain diseases not under the authority of the NAAHP, an action plan or control program may be implemented by NB DAAF and industry.

#### **5.1 Reporting Requirements**

Under Section 25 of the *Aquaculture Act*, the licensee must immediately report the presence of disease, disease agents, parasites, toxins or contaminants at their aquaculture site. This includes, but is not limited to, aquatic invasive species, boring sponges and mud worms. The following sections define the requirements for reporting.

Licensees will be required to provide:

- Notification of Federally Listed Reportable Diseases to the Canadian Food Inspection Agency (CFIA) (and to the NB DAAF Chief Aquaculture Veterinarian)
- Upon request from an Inspector, an up to date record of all relevant shellfish health information pertaining to occurrences of diseases, disease agents, parasites, toxins and contaminants on the licensees lease.
- Other responses may include:
  - increased monitoring for information gathering,
  - increased active surveillance.

*Please Note: the development and implementation of a site-specific control and containment plans including quarantine, depopulation, monitoring and cleaning and disinfection is under the authority of the CFIA for all federally listed reportable diseases. NB DAAF will collaborate with CFIA where appropriate.*

### **6. SHELLFISH HEALTH MANAGEMENT**

Shellfish Health Management requires a multi-faceted approach in order to achieve effective Shellfish health. To achieve this, there are five (5) key areas that need to be addressed:

#### **6.1 Prevention of Introduction**



- 6.2 Health Maintenance
- 6.3 Early Detection and Effective Response to Disease
- 6.4 Communication
- 6.5 Research and Education

## **6.1 Prevention of Introduction**

As a first line of defence against diseases, it is essential to take all reasonable steps to minimize the risk of introducing disease and/or disease agents to aquaculture facilities.

### **6.1.1 Transfer of Live Shellfish:**

To ensure that shellfish and biological products from shellfish being transferred are healthy and do not pose an unacceptable risk when transferred, licensees are currently required to obtain an "Introductions and Transfers Licence" from Fisheries and Oceans Canada. NB DAAF is consulted on all Provincial I&T requests and may require additional restrictions for movements of shellfish on/off an aquaculture site. These restrictions will depend on the health status of the farm and is based on the discretion of the NB DAAF Chief Aquaculture Veterinarian. Since the CFIA's Domestic Disease Control Program is in place, licensees will be required to obtain a permit from CFIA for the transfer of stocks originating outside of the Province of NB.

### **6.1.2 Biosecurity**

It is important that strict hygiene and biosecurity standards be used to prevent the transfer of disease causing agents between shellfish aquaculture sites and between different growing areas. The following activities are considered to be "high risk" for the transfer of disease agents and/or aquatic invasive species:

- Movement of equipment from site to site or from one bay to another
- Movement of animals from site to site or from one bay to another
- Use of shared equipment and boats.
- Visitors to the site (federal/provincial staff, others, etc).
- Access to the site by other water users,
- Collection of wild stock

It is highly recommended that licence holders either refrain from the activities above in the event a disease or disease agent is found on their farm or that procedures are put in place, in consultation with the NB DAAF Chief Aquaculture Veterinarian, in order to manage potential risks associated with the transfer. It is also the intent of the Shellfish Health Technical Committee to develop a series of Standard Operating Practices, which would include a section on biosecurity.

## 6.2 Health Maintenance

Central to the success of an effective health management program, is the practice of sound husbandry techniques at aquaculture sites. Good operating and biosecurity practices not only minimize the risk of disease for the individual site but they also help to minimize the impact of disease on neighbouring sites and the industry overall.

### 6.2.1 Standard Operating Practices

Preventing the introduction of disease agents/invasive species is a continuous challenge for the shellfish aquaculture industry, veterinarians and Shellfish health professionals. Biosecurity usually involves disease surveillance, testing, disinfection, etc. The Industry, in conjunction with the Province through the Shellfish Health Technical Committee will be developing a series of standard operating practices for the Shellfish aquaculture industry.

## 6.3 Early Detection and Effective Response to Diseases of Concern

Industry-wide monitoring and surveillance for potential Shellfish health problems are necessary, as these activities provide critical information regarding the early detection of emerging Shellfish health issues and the effectiveness of response. Early detection of disease or other Shellfish health issues is often critical to the effective control and management of diseases. Results from periodic monitoring carried out by NB DAAF may be used to satisfy specific national and/or international Shellfish health requirements. The details of the New Brunswick Shellfish Health Surveillance Program for Aquaculture can be found in Annex B of this document.

The following is a list of diseases, pests and aquatic invasive species of concern that should be monitored in collaboration with the Regional Shellfish Biologists and through the New Brunswick Shellfish Health Surveillance Program for Aquaculture:

1. MSX (Multinucleate Sphere X) disease, Haplosporidiosis)
2. Bonamia spp
3. Polydora spp
4. Dermo
5. Green Crab
6. Boring Sponge
7. Oyster Drill
8. Codium
9. Various Invasive Tunicates
10. Skeleton Shrimp

Upon the detection or suspicion of a disease, diseases agent, parasite, toxin or contaminant, the Minister of NB DAAF may, under Section 27 of the *Aquaculture Act*, designate a **Controlled Aquaculture Area (CAA)** for that disease, should it not be a Federally Reportable Disease under the NAAHP.

CAA's are designated by the Minister in order to control the spread of disease, disease agents, parasite, toxins or contaminants and outline the conditions and measures that must be adhered to within that area.

It is important to note that the Minister of NB DAAF may alter or modify detection and response initiatives in order to effectively meet the challenge of early detection and effective response to diseases under different circumstances and environments.

#### **6.4 Communication**

Effective communication is critical to the effective management of disease. It is the objective of various programs under this Policy to provide relevant and timely shellfish health information to key stakeholders so that appropriate action can be taken to minimize disease risk and spread. Where permitted by law, information will be shared with licence holders through the Regional Shellfish Biologists in consultation with the NB DAAF Aquaculture Veterinarian. It is highly recommended that licence holders share pertinent health information with others in the same bay that could potentially be impacted. The Shellfish Health Technical Committee will also serve as an avenue for sharing information on disease risks and or shellfish health concerns. As with all Policy development it will be reviewed periodically as new scientific information becomes available.

#### **6.5 Research and Education**

Ongoing efforts in research and education are critical to the advancement and improvement of shellfish health management. NB DAAF supports and is committed to advancing the understanding of shellfish health issues through effective research and to transferring these advances to industry, Shellfish health professionals and other key stakeholders through targeted education and training initiatives.

## APPENDIX “A”

### DEFINITIONS

**Aquaculture:** Rearing of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants. The term “rearing” implies individual or corporate ownership of the organisms being reared and also implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, and protection from predators and disease.

**Aquaculture Facility:** A physical installation used for the culture of aquatic species.

**Diagnostic Test:** used to confirm or classify disease, guide treatment or aid in the prognosis of clinical disease. In this setting, all animals are ‘abnormal’ and the challenge is to identify the specific disease the animal(s) in question has (have).

**Disease:** Any deviation from or interruption of the normal structure or function of any part, organ, or system (or combination thereof) of the body that is manifested by a characteristic set of signs, and whose etiology, pathology, and prognosis may be known or unknown.

**Disease Agent/Pathogen:** A specific causative agent of disease, such as but not limited to bacteria, virus or parasite.

**Effectiveness:** A measure of how well a treatment works among those to whom it is offered (compare with efficacy).

**Efficacy:** The power to produce effects of intended results. A measure of how well a treatment works among those who receive it (compare with effectiveness).

**Endemic disease:** A disease that occurs with predictable regularity in a population with only relatively minor fluctuations in its frequency; (OR) a disease, which already exists in a defined region.

**Exotic disease:** A disease, which has never been previously identified in a defined region.

**Farm:** A facility or location, which is licensed to carry out aquaculture, such as a nursery or grow-out site. Also understood to mean the farmer, owner, site manager or licence holder.

**Lease (aquaculture):** a document issued by the Minister and administered by the Department that allows the occupation of a specific parcel of land for a specified period as per section 33 of the New Brunswick *Aquaculture Act*.

**Monitoring:** A broad scale observation. It pertains to keeping a general watch for the appearance of threatening disease agents.

**Reportable Disease:** the causative agent of any such diseases that is prescribed as reportable.

**Risk:** A statistical concept defining the expected frequency or probability of undesirable effects resulting from a specified exposure to known potential pathogens. It can also be defined as the probability of loss, injury or harm.

**Risk Factors:** Factors associated with an increased likelihood of acquiring disease.

**Screening:** tests can be used as screening tests in healthy animals (ie to detect sero-prevalance of diseases, disease agents, or subclinical diseases that might be impairing production.) Usually the animals or farms/sites that test positive will be given a further in depth diagnostic workup (perhaps diagnostic tests), but in other cases, such as in disease control programs, the initial test result is taken as the state of nature. For screening to be effective, early detection of disease must offer benefits to the industry or 'program'; relative to letting the disease run its course and being detected when it becomes clinical.

**Shellfish:** All mollusc species of the class Bivalvia i.e., molluscs having gills for respiration and a shell consisting of two hinged sections called valves (ex: clams, oysters, mussels, scallops, etc.).

**Surveillance:** A narrow scale observation. Once having identified a particular threatening disease agent, imminent or already present, it pertains to the function of keeping a close watch, both for the appearance of an imminent threat, or for changes in behaviour of a disease agent already identified as being present.

**Virulence:** A measure of an agent's ability to induce severe disease

# **New Brunswick Shellfish Health Surveillance Program for Aquaculture**

**Department of Agriculture, Aquaculture and Fisheries  
FINAL December 2017**

## 1.0 INTRODUCTION

A number of shellfish diseases have been identified in the Atlantic Provinces over the last several years. These diseases have the ability to cause significant economic loss to the New Brunswick shellfish aquaculture industry if not controlled or prevented from being introduced. This document reflects an evolving surveillance program based on practical experience.

### 1.1 Objective:

The objectives of the Surveillance Program for Shellfish Aquaculture in New Brunswick are:

- To provide the shellfish aquaculture industry and government with a surveillance program that provides comprehensive and timely information on *MSX* in order to allow for a rapid response for controlling or managing this disease if required.
- To assess the status of other diseases and pests of concern to the shellfish aquaculture industry.
- To provide adequate sampling of targeted organisms (oysters and other bivalves) and timely results on samples collected.

### 1.2 Regulatory Framework:

The legal framework for this program is under the Province of New Brunswick's *Aquaculture Act* and Regulations, 1988.

### 1.3 Administration and Program Review:

- The NB DAAF Aquaculture Veterinarian will provide oversight on the surveillance program.
- Regional Shellfish Biologists will act as the coordinators for the surveillance program in consultation with the NB DAAF Aquaculture Veterinarian.
- This surveillance program will be routinely reviewed and updated to reflect the availability of new information.

## 2.0 MSX STANDARD SURVEILLANCE REQUIREMENTS

### 2.1 Introduction:

Several shellfish diseases are found in the Atlantic Provinces. **MSX (Multinucleate Sphere X) disease, Haplosporidiosis**, also known as Delaware Bay disease, infects oysters in both wild and cultured conditions. In the fall of 2002, oyster samples from the Bras D'Or Lakes area tested positive for MSX. This was of major concern to Canada since the OIE (Office International des Epizootics) considered MSX to be an internationally reportable disease. As a result, control and containment measures have been put in place to minimize the spread of MSX in



Atlantic Canada. Fisheries and Oceans Canada has also coordinated with the Maritime Provinces a surveillance program for MSX since 2003.

The monitoring and surveillance of oyster and other bivalve stocks for MSX is critical to the early detection of this disease and for other diseases of concern for the New Brunswick shellfish aquaculture industry.

## **2.2 Surveillance Program:**

The following areas will be sampled taking no less than a lot of 30 animals/site for testing. These sites will be subject to change depending on the shellfish health status in New Brunswick. Other areas (ie. Bay of Fundy) may be included in the surveillance program in order to assess the overall health status of that area and to take a proactive approach for early detection.

Culture Oyster Sampling Sites: Diagnostic testing will be done by a recognized shellfish health diagnostic services laboratory: A lot of 30 animals will be sampled for each site in the spring and fall of each year. Sampling locations will be:

St.Simon Sud	Tracadie
Tabusintac	Néguac
Aldouane	Bouctouche
Bedec	Cocagne
Shemogue	Shediac

*Wild Oyster Sampling Sites: In addition to cultured oysters, testing of wild oysters will be included in the surveillance program. Wild oysters will be collected from three different spat collection bay areas: Diagnostic testing will be done by a recognized shellfish health diagnostic services laboratory.*

During the summer months, the following spat collection bay areas will be sampled taking no less than 5 oysters per month between the months of May and October for a total of 30 animals/site for MSX testing.

- Caraquet Bay, Cocagne Bay and Bouctouche Bay

## **2.3 Surveillance Frequency:**

- Surveillance visits to the above noted sites will be carried out from May to October of every year.
- NB DAAF regional biologists will collect a random sample from each of the identified sites.
- Location of the cultured sites will be provided on a site diagram.

#### **2.4 Sampling Requirements:**

- The NB DAAF regional biologists will collect a lot of 30 animals (oysters) during each of the two visits noted above.
- The NB DAAF staff will perform preliminary tissue preparation of the oyster or samples for PCR and histology testing.
  - All samples will be analysed for MSX by PCR in a recognized shellfish health diagnostic services laboratory.
  - Positive samples will be sent to the National Aquatic Animal Health Laboratory System (NAAHLS) Lab in Moncton for confirmatory testing.

#### **2.5 Testing Protocols:**

- Samples sent to a recognized shellfish health diagnostic services laboratory will be analysed for MSX by PCR.
- All samples will be prepared within 24 hours of collection and sent for analysis. PCR samples will be fixed in 95% ethanol and sent to a recognized shellfish health diagnostic services laboratory
- Samples for histology testing will be immediately fixed in Davidson's for 24 hours and then in 70% ethanol.
- NB DAAF will hold and archive all culture samples until the PCR results are completed.

#### **2.6 Communication of Surveillance Results:**

All positive testing results will be immediately reported to CFIA as per the requirements of the *Health of Animals Act*. Results will also be communicated back to the NB DAAF Aquaculture Veterinarian and the Regional Shellfish Biologists. A generic report will also be compiled outlining the results of each surveillance period.

### **3.0 SURVEILLANCE OF OTHER DISEASES AND PESTS OF CONCERN**

Through the Shellfish Health Technical Committee a plan will be developed to assess the status of the following list of diseases and pests of concern to the shellfish aquaculture industry:

1. Bonamia spp
2. Polydora spp
3. Dermo
4. Green Crab
5. Boring Sponge
6. Oyster Drill
7. Codium
8. Various Invasive Tunicates
9. Skeleton Shrimp
10. Other diseases or pests of concern

#### **4.0 DETERMINATION OF DISEASE STATUS**

Due to the fact that MSX is a federally listed reportable disease, determination of disease status is under the authority of the Canadian Food Inspection Agency and the National Aquatic Animal Health Program.

<http://www.inspection.gc.ca/animals/aquatic-animals/diseases/eng/1299156296625/1320599059508>

#### **5.0 SITE STATUS REQUIREMENTS AND CONTROL MEASURES**

Due to the fact that MSX is a federally listed reportable disease, site status requirements and control measures are under the authority of the Canadian Food Inspection Agency and the National Aquatic Animal Health Program.

<http://www.inspection.gc.ca/animals/aquatic-animals/diseases/eng/1299156296625/1320599059508>