




Fisheries and Oceans
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**Fisheries and Oceans Canada
Presentation on the
Whites Point Quarry and Marine
Terminal Project**



Canada 

Fisheries and Oceans Canada's (DFO) Mandate

- Sustainable Fisheries and Aquaculture
- Safe and Accessible Waterways
- Healthy and Productive Aquatic Ecosystems

DFO Core Activities

- Oceans and Habitat Management
- Science
- Fisheries and Aquaculture Management
- Coast Guard
- Canadian Hydrographic Service
- Small Craft Harbours

DFO's Regulatory Role

- *Fisheries Act*
 - Section 32 – destroy fish by any means other than fishing
 - Section 35 - harmful alteration, disruption or destruction of fish habitat
 - Marine Mammal Regulations
- *Oceans Act*
- *Species at Risk Act* (for aquatic species)
- *Canada Shipping Act*
 - Vessel Traffic Services Zones Regulations

DFO's Regulatory Role

Responsibilities for the *Fisheries Act* are shared between DFO and Environment Canada:

- DFO is responsible for provisions of the Act that protect fish, fish habitat, and the management of fish.
- Pollution prevention and control provisions of the *Fisheries Act* are administered and enforced by Environment Canada, and focus on prohibiting the deposit of deleterious substances into waters frequented by fish.

DFO's Initial Involvement in the Whites Point Project

- In March 2003 DFO received the project description.
- In April 2003 DFO determined a *Fisheries Act* Authorization and *Navigable Waters Protection Act* Approval would be required for the Marine Terminal only.
- DFO is a Responsible Authority under the *Canadian Environmental Assessment Act*.
- In June 2003, the Minister of DFO referred the project to the Minister of Environment for a review panel.

DFO's Involvement in the Environmental Assessment Review

- Met with the proponent to identify DFO issues related to the project.
- Conducted a scientific review of the initial blasting plan submitted by the proponent.
- Reviewed the EIS with comments to the Joint Review Panel.

Overview of Issues Related to DFO's Mandate

- Marine mammals and blasting
- Marine mammals and shipping
- Fish and blasting
- Lobster and blasting
- Invasive species
- Fish habitat

Marine Mammals and Blasting

Including Species at Risk

- Marine mammals can be adversely affected by noise with most cases showing a behavioural response rather than injury or mortality.
- Sound levels in the water column at 500 meters of 186 decibels (dB) are expected to represent the worst case estimate for a single blast.
- While there are no set limits in Canada for noise level for marine mammals, studies and limits set by US *Marine Mammal Protection Act* indicate there is a low likelihood of injury at these levels.

Marine Mammals and Blasting

Potential Impacts Continued

- DFO is uncertain of the physical or behavioural impact of blasting on marine mammals within 500 meters of the blast site.
- Beyond the 500 meters, only behavioural effects are anticipated but DFO is uncertain what would be the impact of these effects.
- There may be subtle behavioural effects on marine mammals beyond 2500 meters from the blast site but these are unlikely to result in changes to populations of marine mammals.

Marine Mammals and Blasting

Recommended Mitigation

- Proposed mitigation, such as the 500 and 2500 meter safety zones for marine mammals, is expected to reduce the potential for harmful impacts of blasting on marine mammals under good visibility conditions.
- However, the ability to detect marine mammals at these distances in various weather conditions and sea states is uncertain.

Marine Mammals and Blasting

Recommended Monitoring

- Calibrated blast sound measures prior to operational blasting and arrival of endangered right whales.
- Visual observation of marine mammal behaviour before, during, and after blasting.
- Testing of the effectiveness of visual observation methods at 2500 meters from the blast site.
- Use of ongoing passive acoustic monitoring.
- Link up with other research initiatives.

Marine Mammals and Shipping

Potential Collisions

- Any additional shipping in the Bay of Fundy, increases the potential for collisions with marine mammals including right whales.
- New shipping lanes have been established to reduce the risk of collisions with North Atlantic right whales and the route to the quarry is not in a known whale aggregate area.
- Mitigation such as speed reduction if whales are sighted should also aid in reducing impacts.
- However there is still some question as to how mitigation connected to shipping will be controlled by the proponent.

Marine Mammals and Shipping

Shipping Noise

- Ship-induced noise has been identified as a potential limiting factor for right whales.
- A reduction in speed as presented by the proponent will reduce shipping noise for those vessels.
- If this project were to proceed, monitoring of shipping noise around potential environmentally sensitivity areas is recommended.

Fish and Blasting

Potential Effects

- Studies show that an overpressure in excess of 100 kilopascals (kPa) can result in the mortality or injury of fish as well as their eggs and larva.
- The sites of damage in fish include the swim bladder and other organs.
- To address concerns from blasting near fish habitat DFO has developed the “Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters”.

Fish and Blasting

Mitigation and Monitoring Recommendations

- With a charge of 45 kilograms of explosive, the proponent would require a setback of 33.74 meters to achieve an overpressure of less than 100 kilopascals (kPa).
- Due to the possible presence of endangered Inner Bay of Fundy salmon, DFO has recommended that the setback distance be increased by a factor of 3 when these fish are thought to be near the quarry site.
- If the project proceeds, monitoring of the initial blasts should be used to confirm that the overpressure level is not exceeded.

Blasting and Lobster

Potential Effects

- As invertebrates lack a swim bladder, the research on finfish can not be easily applied to lobster or other invertebrates.
- Based on the proponent's modeling, the sound levels in the water closest to the blast are not expected to exceed 216 decibels (dB).
- Recent research by DFO demonstrated that adult lobster exposed to seismic sound levels of 227 decibels showed no mortality or significant injury.

Blasting and Lobster

Recommended Monitoring

- Although this research did not observe any mortality there were some changes in feeding and biochemistry after the exposure event.
- These studies did not include an examination of the impacts on eggs or larvae.
- Given some uncertainty on the impact of blasting on lobsters, a monitoring program should be implemented if this project proceeds.

Invasive Species

Potential Impacts

- Invasive species have the potential to result in significant ecological and economic impacts.
- The Maritimes are experiencing the impact of several marine invasive species including the European green crab and the clubbed tunicate.
- Determining the magnitude of effects is challenging in that one successful introduction from one vessel discharge can lead to local and regional effects.

Invasive Species

Mitigation and Monitoring

- As ballast water is one of the main pathways for the introduction of invasive species, the Ballast Water Control and Management Regulations will help reduce the risk of introductions.
- Monitoring may help detect possible invasive species in the early stages of colonization. However, depending on the species, eliminating or controlling the introduced species after it is detected can be difficult.

Fish Habitat

- The marine terminal will result in some loss of fish habitat, however this is relatively minor when compared to other construction methods.
- DFO has calculated the loss of fish habitat as the area of the terminal pilings.
- The loss of fish habitat will require an Authorization under subsection 35(2) of the *Fisheries Act* and compensation under DFO's "Policy for the Management of Fish Habitat".

Fish Habitat

- The proponent has submitted an initial fish habitat compensation plan to DFO.
- DFO is currently involved in research to determine the effectiveness of various marine fish habitat structures.
- If this project proceeds, DFO will use this research and information from similar projects to ensure appropriate fish habitat compensation is developed by the proponent.

Fish Habitat

- Habitat impacts can also arise from sedimentation from runoff or changes in currents.
- DFO works with the province of Nova Scotia in ensuring sediments from developments do not impact fish habitat.
- Monitoring and mitigation of sediments is a standard requirement of quarry developments.

Closing Comments

If the project proceeds, DFO recommends monitoring in the following areas:

- Noise from blasting and shipping
- Marine mammal behaviour
- Lobsters (noise and habitat)
- Sediment
- Invasive species

Closing Comments

If the project was to proceed, DFO will continue our role as a federal regulator in applying the *Fisheries Act* and the *Species at Risk Act*.

If monitoring was to show the project as having unacceptable impacts on fish or fish habitat (including marine mammals), DFO would address these issues through our applicable legislation.

Thank You

Fisheries and Oceans Canada looks forward to the recommendations from the Joint Review Panel.

After the Panel releases their recommendations, the Federal Government will provide a formal response to the Panel Report.