

LFA 34 Management Board

Presentation to the Joint Review Panel
Whites Point Quarry and Marine Terminal Project
Public Hearings June 27, 2007

Plan:

1. **Who we are – LFA 34 Mgmt Board**
2. **Ecosystem management areas / interconnectedness of the region**
3. **Concerns - Impact of Whites Point Quarry on the lobster fishery**
 - i - **Sediment**
 - ii - **Chemical run-off**
 - iii - **Invasive species**
 - iv - **Displacement of fish harvesters**
 - v - **Blasting**
 - vi - **Environmental monitoring**
4. **Summary**
5. **Recommendations**

Lobster Fishing Area 34 (LFA 34) Management Board – represents approximately 985 fish harvesters who hold a valid lobster licence to fish in LFA 34.

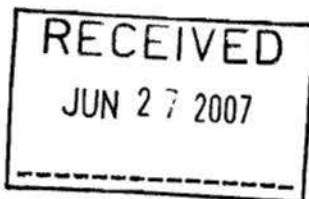
In 2005 the LFA 34 landed catch of 16,000 metric tonnes had a landed value of \$235,500 million dollars. Exporters of lobster products in 2002-2003 had a record value for their products at nearly a billion dollars. The lobster industry creates approximately 10,000 jobs and this fishery is notably the social, cultural, and economic driving force of Southwestern Nova Scotia. The coastal waters that border the proposed White Point Quarry lies within the LFA 34 fishing grounds.

DFO Identified Management Areas:

In ecosystem based management it is necessary to consider what takes place in one area has an influence on the overall ecosystem.

White Point Quarry lies within the Gulf of Maine which was announced to be one of Canada's proposed large ocean management areas (LOMA) by Faith Scattalon of Fisheries and Oceans Canada at the 2004 Gulf of Maine Summit. Canadian and United States Fish harvesters, scientists, DFO and US marine managers have held their fourth annual Lobstermen TownHall Meeting to discuss research and management of their linked lobster fishery ecosystem.

In 1995, DFO designated Lobster Fishing Areas 34, 35, 36, 38, and 41 that includes the waters of the Bay of Fundy Saint Mary's Bay to the Hague Line (the US / Canada ocean border as Lobster Production Area 7 (LPA 7)).



It is very important that this Joint Panel Review acknowledge and take into serious consideration the interconnectedness of the waters and marine life within Lobster Production Area 7 and not condone the idea that the **'area of impact'** from this proposed quarry operation will be only a 7.5 X 2.5 mile radius of Fundy waters adjacent to the proposed quarry site. Digby Neck and the Islands border the Bay of Fundy on one side and Saint Mary's Bay on the other. These two bodies of water are connected by two passages with strong tidal currents and Saint Mary's Bay opens into the Bay of Fundy. Larvae drift studies carried out in 2001 by Drinkwater et al (1-12) provide evidence for the importance of Saint Mary's Bay as a lobster nursery and juvenile habitat.

An example that illustrate the Fundy currents that are the driving force of the interconnectedness of this region:

- An aquaculture cage broke free from Blacks Harbour, New Brunswick and washed ashore at Salmon River just below Cape Saint Mary, Saint Mary's Bay.

One example of current directional drift is a vessel when it breaks down near the shore with the Fundy tide going out. The vessel will drift down the Bay at the same time as drifting out towards mid-Bay. This example was substantiated June 20, 2007 by Mr. Taggart's Buoy Drift Study showing where the currents will carry sediments and chemical released from the proposed quarry site.

The impact of the Whites Point Quarry and Marine Terminal

The impact of sediment settlement from mining and quarries on lobster nursery and juvenile grounds is a concern for lobster fish harvesters and others such as, DFO scientists, DFO managers, and scientist working in collaboration with DFO.

- At a LFA 34 Management Workshop (2000: 12) Bill Congleton, a Scientist from the University of Maine, explains the term "critical habitat" as "habitat necessary for the survival of juveniles, in the case of lobster, this means a cobble type bottom."
- Doug Pezzack, a DFO Scientist, repeated his concern regarding the impending risks suggesting that "precautionary measures to protect the ecosystems and habitats should be a priority. There are some serious concerns" ... Pezzack warns that "if we are not willing to pay a high price later, we should begin addressing these concerns now" (LFA 34 2000: 12). This was 7 years ago and still nothing has been done to protect ecosystems and habitat in LFA 34.
- Peter Lawton, a DFO Scientist, confirms the need for immediate action to protect 'critical lobster habitat' in LFA 34 when he stated: "If the critical habitat of a species disappears, so does that species" (LFA 34 2000: 12).
- The 2001 Caddy Report (43, 44) confirms these Canadian and American Scientists' concern need to protect juvenile lobster habitat. Caddy's report confirms that juvenile lobster pass a significant phase in their pre-recruitment life in "crevices in cobble bottom where they are protected from predation. Such cobble bottom areas are rare below tide marks and rather limited in extent. If so, their limited area could be a 'bottleneck' for the production of pre-recruits ... the limit to recruitment could be the absence of crevices of suitable size."

- The DFO Lobster Conservation Strategy (2004) outlines the concern about abundance of pre-recruits and the fear that with the industry's dependence on new recruits that if a year class failure occurs this would have an immediate effect on the landings and on future recruitment.
- Drinkwater (2002) suggests there is a strong correlation between the abundance of lobster larvae settlement to recruitment.
- The 2001 Drinkwater study points out that Saint Mary's Bay is an area where lobster settlement is high and raises the question as to why this region has low lobster catches.

Evidence is clear that lobster settlement areas need to be protected. The Joint Review Panel must recommend that decision makers err on the side of caution. The accumulation of sediment over fifty plus years pose a high risk to critical nurseries, juvenile lobster habitat and too many marine species. Adult lobster will not return to an area where silt covers hiding places and where there is no food. Lobster in larval stage four (stage of settlement) will by-pass an area where sediment accumulation covers cobbled or rocky habitat. The priority must be to protect Saint Mary's Bay as a critical nursery and juvenile lobster habitat from any further influence from sediment settlement and chemical drifts.

It is unknown where the larvae of lobster that spawn in Saint Mary's Bay settle. It is a known fact that lobster larvae drift great distances in ocean currents (Drinkwater 2000). Sediment and chemical drifts from the proposed Whites Point Quarry will have a far-reaching impact in the Bay of Fundy and Saint Mary's Bay.

At the 2004 Lobster Science Workshop in Charlottetown Fred Page, a Fisheries and Oceans Canada scientist, presented his findings on sediment drift from aquaculture sites that shocked the lobster industry. Pictures taken over a period of time from a helicopter showed an immense spread of sediment over great distances from an aquaculture site. This study shows the importance for decision makers to increase the area of impact for industrial development. It also shows that the impact of sediment drift and sediment accumulation that result from industrial development must be taken into serious consideration when determining the long term impact on marine habitat.

Chemicals are inherently used in the rock mining/quarry operations. The high risk of chemicals leaching into the water column either through controlled release or as a result of inclement weather or atmospheric storms have been pointed out at these public hearings. Chemical poses an unacceptable risk to the lobster industry and to other fisheries. Burrige et al (1999) noted that chemical patches drift in currents. Lobster larvae drift in those same currents. Studies carried out by Burrige et al (1999) show that aquaculture pesticides are lethal to lobster larvae. Studies by Susan Waddy (2002: 1096) warns that aquaculture pesticides causes egg-bearing females to abort and in some cases result in death of the animal.

Last week on June 20th Chris Taggart presented his findings from a buoy drift study that showed the White Point / Fundy current patterns. Mr. Taggart's study of tidal currents in the proposed quarry area looked at the direction and distance of current drift during low

tides and high tides for a two week period. Other factors that impact on the direction and distance sediment and chemical travel in current drift movement includes the movement of water currents below the surface, wind, tide heights, inclement weather. It is important to note that at some point this sediment will settle to the bottom of the Bay.

Taggart spoke to sediment drift and its destruction of vital plankton and zooplankton that are a critical food source for whales. It is also important to note that many more species than whales are dependant on plankton and zooplankton for food. Lobster larvae spend the first six to eight weeks of their life near the surface and their only source of food during these first three stages of life is plankton.

The lobster larvae drift with the Bay currents – if the sediment kills the plankton and zooplankton what is the impact on lobster larvae? Even if the larvae survive the drifting sediment, will there be any food (plankton) alive to sustain them? If some lobster larvae survive these threats to their survival, will there be any cobble ground left to settle on?

Blasting

- In the DFO (June 20, 2007) presentations to this Joint Panel it was stated that blasting changes the feeding and behavioral patterns of marine animals. DFO also stated that blasting does change the feeding and behavioral patterns of lobster. Lobsters migrate to the near shore waters to molt, to mate, and to spawn. Disruption of feeding and behavior patterns most likely will impact on the life cycle of these lobsters. Females need nutrition prior to a molt and after the molt. Will changes in feeding patterns weaken the female lobsters during this critical stage of their life cycle? Will the behavioral changes impact on the breeding rituals and practices? Will the behavioral changes impact on the male lobster and their role to fertilize the female or as the protector of a female during the vulnerable stage during and after the molt?
- Although some scientists claim lobsters do not hear they do have organs similar to ears that detect barometric pressure by which they determine when to migrate inshore or offshore. There is concern that blasting creates a water pressures that negatively impact the migratory pattern of lobster in this area?

Environmental and marine life monitoring

DFO proposed to study the impact of the quarry operation on lobster once the quarry becomes operational. This approach is unacceptable. This does not take into consideration the ecosystem based approach to ocean management and does not include a precautionary approach. This quarry proposal has been on the table for some time. Why has DFO not moved forward to intervene on behalf of the ecosystem to ensure that a base line study is completed before any industrial development?

In 1994, LFA 34 fish harvesters and a university partner developed a proposal to do a base line study in Saint Mary's Bay. This was before a scallop fishery was allowed in the Bay but at that time DFO would not delay the opening the scallop fishery in order for the study to be carried out.

It is a well known fact that the Department of Fisheries and Oceans Canada, Maritimes Region does not have the financial or the human resources to carry out necessary monitoring of the quarry impact on the marine environment.

- Has DFO presented to the Joint Panel Review a plan on how they intend to monitor lobster or marine health and marine habitat in this area? Not just for the short term but for the long haul?
- Who is going to monitor the impact on marine life and marine habitat? What department is going to finance the monitoring? A DFO representative's response to a question on who will monitor the impact of quarry operations on marine life and their ecosystem was that monitoring the quarry's impact is the responsibility of the Department of Environment. Are there clear boundaries to determine how these government departments will work together and share responsibilities to protect critical habitat and ecosystems?

Fish harvesters know from experience that the only science or monitoring of the quarry's impact on the lobster fishery will have to be borne by them. With the exception of a few lobster surveys that DFO carries out on board a scallop dragger, all lobster recruitment science is done by volunteer lobster harvesters in partnership with the Fishermen Scientists Research Society. Fish harvesters have no faith in the current government system to ensure protection of our fisheries or fish habitat. There may be good intention and interest by DFO to do the necessary science but without financial and human resources good intention does nothing to protect our renewable natural resources.

LFA 34 Management Board has concerns for the quarry's impact on other marine life:
Herring in this area of the Fundy is a very significant component of the food chain in this area's ecosystem. It is unacceptable that this panel accept the flippant remark by a DFO representative on June 20th who claimed that herring in this area "is not significant" and referred to the herring on German Bank as the main biomass. The herring in this region is significant to those marine species that depend on them as their food and to fishermen that harvest them for their livelihood or use herring for lobster or groundfish bait.

Horse muscles A rare bed of horse muscles is situated within the Bay of Fundy above the proposed quarry site. It is the intent of certain groups to have a portion of this muscle habitat designated as a Marine Protected Area. In the long-term the impact of sediment accumulation may cover and smother this rare species of muscles. Once stronger currents and a longer period of time is added to the path of sediment as shown in Taggart's June 20th presentation puts this rare habitat at high risk of annihilation.

Sharks – the Bay of Fundy is known to be the home of a diversity of shark species. There are more species of sharks in the Bay of Fundy during the summer months than any where else in the world. Sharks are considered an endangered species with 90% depletion in the biomass of the world's sharks. The important role of shark in the food chain, their role in maintaining healthy oceans, and their rate of depletion beg for a precautionary approach to industrial development in the Bay of Fundy region.

Invasive species

In regards to invasive species, DFO's June 20 presentation to this panel made clear that DFO can do nothing to contain invasive species once they are here. DFO's only approach to deal with invasive species is to explore 'prevention' measures. The management of the Saint Lawrence Seaway has been dealing with a preventative approach to manage invasive species for many years yet approximately 15 invasive species invade the Great Lakes every year.

The risk of invasive species occurring in the proposed area as a result of vessel transportation of the rock quarry product is extremely high. If an invasive species invade lobster habitat or a bacterial invasion cause a lobster disease in Southwestern Nova Scotia the resulting impact would be the loss of many 1000s of jobs. This risk is even higher when one considers the vessels transporting the quarry's product travels through the waters where lobster disease devastated the Long Island lobster industry. These vessels also travel through the most polluted waters on the eastern seaboard of the Atlantic Ocean.

Does the potential of creating a very few jobs at a rock quarry warrant the high risk of an intrusion of a species that may wipe out 100s of fishery related jobs? The communities on Digby Neck can survive without the few jobs created by Bilcon but these communities cannot survive without the inshore fisheries.

Displacement of fish harvesters by the Quarry Project:

The fishing season in LFA 34 takes place from the last Monday in November to the end of May. This is a fishing season that has a limited number of days at season because of inclement weather conditions that include high winds, storms, and extreme cold. It would not be feasible for lobstermen to have to move their traps once every two weeks before Bilcon set off their blasts and then move the traps back onto the fishing grounds. Fish harvesters could be told blasting will occur on a particular day, they move their gear, the fog sets in, the blast is delayed, stormy weather sets in. It could be days before fishermen get their gear back onto the fishing grounds. On top of this is the added cost of fuel and labour to get this work done. If the proposed quarry goes ahead, fish harvester will be displaced from their traditional fishing grounds. It is absolutely unacceptable that lobstermen will be expected to spend four days a month during January to April to move gear in and out of their fishing grounds.

The number of fish harvesters recognized as eligible for compensation/mitigation should there be loss of livelihood by Bilcon is unacceptable (Bilcon 2007 Letter to the LFA 34 Management Board). It is unknown what areas or what number of fish harvesters will be impacted by the quarry sediment and chemical run-off. It is very important to note that lobster spawning areas and lobster settlement areas of those same larvae are not always the same. The 2001 Drinkwater study explains how the larvae of lobster that spawn in the White Point area will be the lobster biomass that settles a distance up or down the Bay.

The lobster fishing grounds adjacent to the proposed rock quarry are also fished by harvesters from as far away as West Pubnico areas.

Displacement of fish harvesters for a few jobs in a rock quarry is not warranted. Using Bilcon's limited number of 5 identified fishing rigs using this fishing ground will likely result in the loss of 15 fishing jobs plus trucking and processing jobs. We know this number is an underestimation of potential job losses in the area if the proposed quarry becomes operational.

Summary

The accumulation of sediment poses a high risk to smothering critical lobster nursery and juvenile habitat and habitat for many other marine species. The long-term impact of rock mining is unacceptable if the result of sediment or chemical run-off brings about the destruction of marine habitat. All sediments from the proposed quarry will sooner or later settle on some ground and that ground is at risk of being changed to a point of habitat destruction.

Chris Taggart's presentation showed the killing impact of sediment drift on plankton and zooplankton which are the foundation of the food-chain. Others spoke to the influence of quarry lights on the herring population which is another critical link in the marine food chain of this area.

Chemical drifts in Bay currents pose a high risk of mortality for lobster larvae and egg-bearing females.

Invasive Species and an invasion of bacterial that causes shell disease pose a high risk not only to the lobster industry but to the social, cultural and economic foundation of Southwest Nova Scotia

Saint Mary's Bay is one of the best lobster habitats in LFA 34 and scientific studies prove that this area is prime juvenile lobster habitat. No base line study of Saint Mary's Bay have been carried out.

Recommendations:

Area of impact from this proposed industrial rock quarry must reflect the area that is determined by the Bay of Fundy currents and must include Saint Mary's Bay.

That this Joint Review Panel recommend that the proposed quarry not go ahead at this time.

That a base line study be completed in the coastal waters of Saint Mary's Bay and the proposed quarry impact area.

That all intergovernmental departments with responsibilities for the environment and ocean management collaborate to ensure the technology required to prevent the high risk imposed by invasive species brought into the area by hitch hiking on sea going vessels.

That DFO present an appropriate plan of action to deal with the high risks to the lobster stocks that will result from this quarry if it becomes operational.

No fish harvesters should be displaced from their livelihood for the sake of a small number of quarry jobs. The region can survive without the quarry but the economic sustainability of the area cannot be maintained without commercial fisheries.

For further data or references on the above information please contact:
L. Wayne Spinney, Executive LFA 34 Management Board