

## Worcester, Tana

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**From:** Worcester, Tana  
**Sent:** 2004-June-04 2:29 PM  
**To:** Harris, Lei E  
**Subject:** RE: RE: Tiverton -Blasting and the effects on Marine Mammals

The blasting at Tiverton would be using explosives, which are known to cause far greater damage than seismics or sonar (primary due to faster "rise-time" of the sound signal, though it will depend on how they do it i.e. subsurface etc. and what mitigation is used).

Talking about seismics though makes me think that I should forward you the proceedings of the DFO Workshop on Seismic Effects held recently in Ottawa (when they are written up). It was a week long meeting with several days spent discussing effects on marine mammals, along with effects on fish, inverts, turtles, etc. There will be working papers on each of these topics (I'm writing the ones on fish and turtles), which are supposed to be published by fall.

### Tana Worcester

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-----Original Message-----

**From:** Harris, Lei E  
**Sent:** June 4, 2004 2:09 PM  
**To:** Worcester, Tana  
**Subject:** RE: RE: Tiverton -Blasting and the effects on Marine Mammals

Your changes look fine.

I would agree that there is some evidence that seismic shooting and possibly low-frequency sonar have a negative impact on cetaceans. I wasn't sure if the blasting described would be equivalent to seismic shooting or not as far as impact, sounds propagation etc. This is not my area of expertise so I didn't want to say too much. It would be reasonable to assume that blasting would have a negative impact.

-----Original Message-----

**From:** Worcester, Tana  
**Sent:** June 4, 2004 1:37 PM  
**To:** Harris, Lei E  
**Subject:** RE: RE: Tiverton -Blasting and the effects on Marine Mammals

Hi Lei. Bob has looked over your response and I've put it into the following format for submission to Habitat (see below). Before I send it, though, I had a couple of questions. 1) the month is missing from the sentence on Humpback whales. Is it supposed to read "Humpbacks usually arrive in the area mid-June"? 2) related to the final sentence, I know that some work has been done of the effects of blasting on cetaceans showing damage to hearing, etc. Would you agree that there is *some* expectation of effects close to blasting (not saying how close, of course) and that is why we would suggest a precautionary approach? 3) Ottawa doesn't like us using the "precautionary approach" term unless it conforms to the legal definition. Bob has suggested using the phrase "risk-management approach" instead (see below).

### DFO Science Response to Habitat Request

RE: Environmental Screening for Harbour Development (Breakwater, Floating Docks, Dredging And Service Area) at Tiverton, Digby County, Nova Scotia.

June 4, 2004

### Habitat Request

Based on the project plans and the occurrence of marine mammals in the Bay of Fundy, are you aware of any marine mammals that may be significantly adversely affected in or near Petit Passage by the blasting activities proposed in this area from June 1st to June 30th?

## Science Response

DFO data on marine mammal sightings near Petit Passage in June was reviewed. It should be noted that these data are opportunistic (not derived from standardised surveys) and so are effort dependent. Cetaceans that are commonly seen in this area in June include Harbour porpoise, Minke whale, and Fin whale. Humpbacks usually arrive in the area mid-June[?]. Dolphins are seen on occasion.

Right whales usually arrive in the Bay of Fundy in July or even August. Some years Right whales have been sighted in June, though this is not common. Most sightings of Right whales occur in the area of Grand Manan Basin, and not in the Petit Passage area.

Although the effects of blasting on cetaceans have not been reviewed here, harmful effects are considered likely to occur within some radius of exposure to an explosive source. A risk-management approach should be taken and efforts should be made to blast only when no whales are in the passage.

### Tana Worcester

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-----Original Message-----

**From:** Harris, Lei E  
**Sent:** June 4, 2004 10:55 AM  
**To:** OBoyle, Robert  
**Cc:** Worcester, Tana; Stephenson, Robert L; Stobo, Wayne  
**Subject:** RE: RE: Tiverton -Blasting and the effects on Marine Mammals

Bob, this is my response to the request from Habitat management. At Tana's suggestions, I am sending it through your office instead of directly to HM.

I have reviewed our data on marine mammal sightings near Petit Passage in June. The data are opportunistic (not derived from standardised surveys ) and so are effort dependent. Cetaceans that are commonly seen in this area in June include Harbour porpoise, Minke whale, and Fin whale. Humpbacks usually arrive in the area mid-. Dolphins are seen on occasion. Right whales usually arrive in the Bay of Fundy in July or even August. Some years right whales have been sighted in June, though this is not common. Most sightings of Right whales occur in the area of Grand Manan Basin, and not in the Petit Passage area.

The affects of blasting in the vicinity of cetaceans is not known. A precautionary approach should be taken and efforts should be made to blast only when no whales are in the passage.

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-----Original Message-----

**From:** Worcester, Tana  
**Sent:** June 2, 2004 3:35 PM  
**To:** Harris, Lei E  
**Subject:** RE: RE: Tiverton -Blasting and the effects on Marine Mammals

Hi Lei. If you have any concerns about this request or have suggestions regarding others in Science who should be contacted, please let me know. Requests like this from Habitat generally go through my office, but in the interest of time (and the fact that my Outlook wasn't working), I asked that they contact you directly. If you do have a response for Habitat, it should probably go back through the RAP office as DFO Science advice (i.e. to give you Science backing...). Thanks.

**Tana Worcester**

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-----Original Message-----

**From:** Rose, Tammy Lee Anne  
**Sent:** June 2, 2004 2:12 PM  
**To:** Harris, Lei E  
**Cc:** Zamora, Phil; Potter, Ted; Penney-Ferguson, Marci; Worcester, Tana; Galante, Rosalia: PWGSC  
**Subject:** RE: Tiverton -Blasting and the effects on Marine Mammals  
**Importance:** High

Hi Lei,

As per our telephone conversation on May 31st, 2004, I am reviewing a project whereby Small Craft Harbours has proposed to develop a harbour in Tiverton, Petit Passage, Digby County, Nova Scotia. The project will include blasting in the intertidal zone during phase 1 of this project for the entire month of June. For more information concerning the project, I have attached the *Environmental Screening for Harbour Development (Breakwater, Floating Docks, Dredging, and Service Area) at Tiverton, Digby County, Nova Scotia*. You may read the entire document but I would suggest referring to the following sections for information concerning this project:

1. Components of the project (page 4)
2. Description of natural areas (page 7)
3. Use of explosives (page 16)

Based on the project plans and the occurrence of marine mammals in the Bay of Fundy, I am **wondering if you are aware of any marine mammals that may be significantly adversely affected in or near petit passage by the blasting activities planned to take place during this time frame (June 1st to June 30th)?** Could you please respond to my request by Friday, June 4, 2004.

If you have any questions concerning my request or if you have a problem with the timeline associated with my request please feel free to contact me via the information below. I appreciate your assistance with this matter.

Thanks,

Tammy

**Tammy Rose**

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<< File: FINAL CEEA Tiverton May 21.doc >>