



March 1, 2018

Nation Leadership, Health and Fisheries Leads,

**Re: HMCS Calgary Marine Diesel Release - Review of Herring Fishery and Health Considerations**

In response to the marine diesel release originating from the HMCS Calgary vessel on February 24, 2018, information has been provided by various federal and provincial agencies with expertise and responsibility in environmental spill response. Herring fisheries have been identified as an important resource at risk for communities. Environmental Health staff, and Senior Medical Officer and Medical Health Officers from First Nations Health Authority, Island Health, and the Provincial Health Office, have conducted a combined review of this information.

Based on the best available information at this time, ***the marine diesel release related to this particular incident represents a very low risk to humans through herring as a food source and no health advisory is necessary at this time***. This letter describes key information used to make this assessment and to ensure that it is available to communities. We have requested of agencies that a detailed compilation of the lines of evidence be provided. We also propose that a re-evaluation process be put in place, with involvement of communities, should any new information indicate potential spill impacts.

1. Nature of the spill: According to the Department of National Defence, an estimated 20,000 litres of marine diesel was continuously discharged by HMCS Calgary over the course of 100 km and five hour time period, approximately in the center of the Strait of Georgia. Local weather stations and vessel reports indicate the sea conditions were high energy due to wind, wave and sea temperature as reported by Environment and Climate Change Canada. In addition, high volume of water in the channel enables dilution. See attachment #1.
2. Product: Marine diesel (MDO) will float on water, spreading rapidly to form a thin film or sheen. It can quickly evaporate up to 50% in a few hours to days. Marine diesel also naturally disperses readily into the water column under high energy conditions (wind, waves) which will greatly reduce the rate of evaporation. Marine diesel is composed of hydrocarbons including chemicals such as BTEX (benzene, toluene, ethyl-benzene and xylene) and polycyclic aromatic hydrocarbons (PAHs). See attachment #2.
3. Trajectory modelling: Environment and Climate Change Canada modelling indicated that very little product would reach shorelines and most would have evaporated shortly after the spill or be dispersed through wave or mixing actions. Product reaching the shoreline is normally of greater concern due to sediment and shellfish uptake (Source: NOAA).

4. Shoreline and area observations: With the exception of one report from a commercial aircraft, no observable sheen was seen throughout the vessel path and at sites where product would have been anticipated to reach according to trajectory modelling.
5. Herring exposure risk, uptake and elimination: Usually, the greatest risk to seafood consumers following an oil spill is from exposure to PAHs. Finfish are not likely to become contaminated or tainted because they usually avoid the area. Finfish can also rapidly process oil chemical compounds out of their bodies. In comparison, where shoreline oiling occurs, there is greater risk for fish that spawn or occur in nearshore, shallow water areas in intertidal and subtidal zones. (Source: NOAA) See attachment #3.
6. Spatial distribution of herring: Information provided by the Department of Fisheries and Oceans suggests that herring are not likely to have been present in the center of the channel or in physical proximity to the vessel track.

**FNHA would like to request that information relating to spatial distribution of herring be validated by local First Nations using the attached map by highlighting any known areas for which local knowledge indicates that current or historical distribution occurs. If you wish that this information not be shared with agencies, please indicate this on the map. Please return to: [ephs.afterhours@fnha.ca](mailto:ephs.afterhours@fnha.ca)**

Environment and Climate Change Canada (lead agency) and Department of National Defense requests that **if community harvesters or local fisherman observe any product that these be reported to the provincial spill line: 1-800-663-3456.**

We recognize that incidents such as this generate significant concern. Health authorities will continue to monitor new information, and update these recommendations should it be required.

Sincerely,

First Nations Health Authority  
Dr. Shannon McDonald  
Attachments:

Island Health  
Dr. Shannon Waters

Office of Provincial Health Officer  
Dr. Bonnie Henry

1. HMCS Calgary Trackline (Source: DND/ECCC)
2. Safety Data Sheet – Diesel Fuel No 2 (Source: DND)
3. Biological and Ecological Factors Affecting PAH Contamination of Seafood, Managing Seafood Safety during Oil Spills (Source: NOAA)  
<https://response.restoration.noaa.gov/sites/default/files/managing-seafood-safety-oil-spill.pdf>

*Note: Information below is being compiled across multiple agencies.*

**Lines of Evidence**

<b>Evidence</b>	<b>Agency</b>	<b>Comments</b>	<b>Reference/Attachments</b>
20000L of Diesel Released	DND	Dispersed over 100 km, over 5 hours; assumed constant release	DGIR or applicable
Weather and Sea state	ECCC		
Product: Marine Diesel	DND	No additives - confirmed	SDS and DND
Product Behaviour	HC/ECCC	Volatility - potential for bioaccumulation is low and environmental degradation is high; low environmental persistence	
Fate and Effect of product	ECCC	Known properties: dilution, degradation, evaporation, water column integration	
Modelling of dispersion	ECCC	Degradation, surface, evaporation, water column integration	Modelling graphs and figures
Dilution Factor	ECCC	Calculation on potential dilution factor	ECCC to provide
Observational evidence: on water/shoreline	CCG, DND, TC, MOE	Without environmental impacts (acute impacts to environment/biota) likely no chronic impacts to biota (Health Canada expert comment)	
Observational reports	NASP/DND/CCG	Harbour Air initial observations; field crew checks on select sites - all negative; NASP/DND/CCG flights; observation reports matching model predictions (zero shoreline landing)	Reports to be referenced
Resources at risk geographical area (herring)	DFO	Modelling area of impact of fuel indicates a barrier from fishery - need confirmation of harvest areas from FN communities; fairly close to shore (1-2mile); diurnal migration; 40-50 fathom line	Maps to be referenced
Metabolism capability of hydrocarbon by vertebrates	DFO	Information available specific to finfish	
Maps/figures needed	DND/DFO/ECCC	Overlay of herring/updated model results/ship track info	