

**Offshore Seafloor and Seep
Sampling Program (2017-
2027) Environmental
Assessment Amendment –
Addendum**

Response to Review Comments



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**OFFSHORE SEAFLOOR AND SEEP SAMPLING PROGRAM (2017-2027) ENVIRONMENTAL ASSESSMENT
AMENDMENT – ADDENDUM**

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1.0 GENERAL COMMENTS

1.1 Fisheries and Oceans Canada

The temporal scope of the planned sampling should be indicated, i.e., it is unclear if the sampling within NAFO closure areas is proposed for 2018 only or for the entire duration of the program (up to 2027).

The temporal scope of the Project is unchanged. The proposed change to the mitigation would apply from 2018 through 2027.

The NAFO closure areas where sampling is planned for 2018 should be provided. Reference to Figure 3-10 (Stantec 2018) is vague.

The area where sampling may occur in 2018 is a Vulnerable Marine Ecosystem (VME) designated by the Northwest Atlantic Fisheries Organization (NAFO). This area is the Flemish Pass / Eastern Canyon 2, which is an elongated area overlapping the 2018 Work Area (Figure 1). The 2018 Work Area also overlaps a small portion of a second VMC, the Beothuk Knoll (Figure 1). These VMEs were identified due to concentrations of corals and sponges and are closed to bottom-contact fishing.

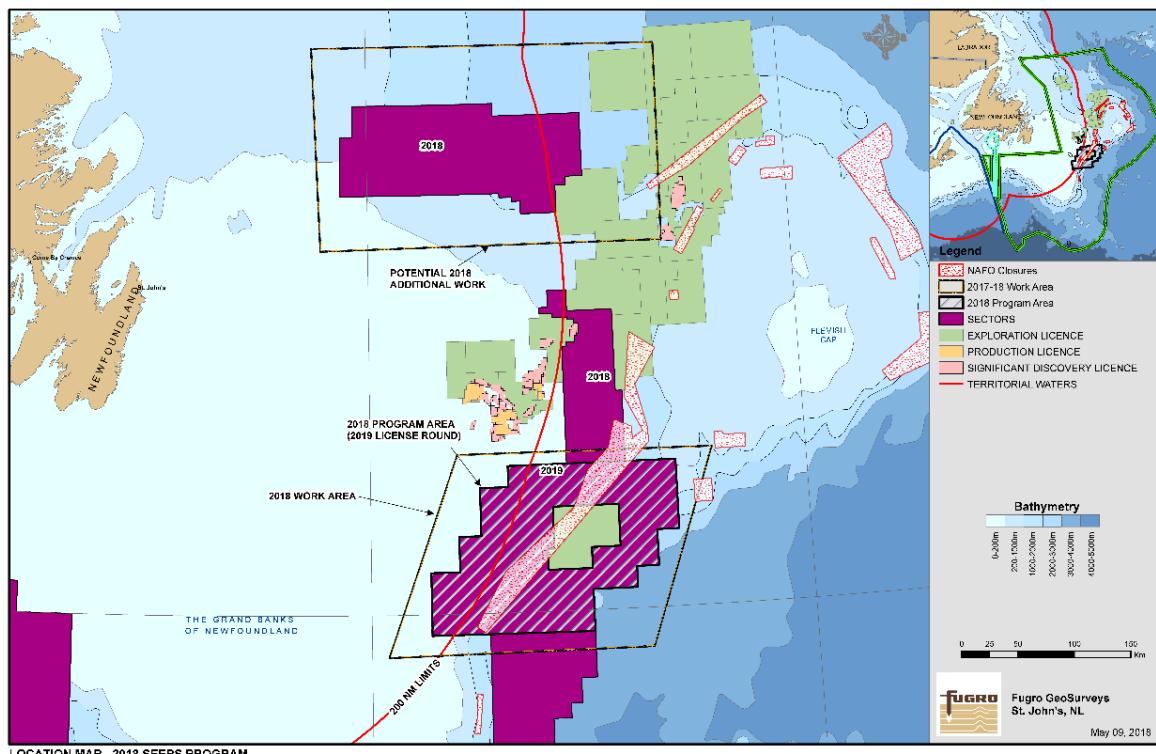


Figure 1 2018 Survey Location Map



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The maximum number of sampling sites within NAFO closure areas planned for both cores and heat probes should be provided.

While the locations of coring stations and heat flow sampling stations are normally identified during or after the mapping phase of the program, Fugro will commit to a maximum of 10 coring stations and 2 heat flow sampling stations within NAFO closure areas during 2018. The actual number of cores / heat flow samples collected may be less, but will not exceed 10 cores and 2 heat flow probes in 2018.

Information on the resolution planned for the multi-beam echosounder (MBES) sampling and sub-bottom profiling (SBP) should be provided. Surveys should be conducted at a resolution or scale fine enough to detect coral and sponge community types found in this region.

The survey is using vessel based multibeam echosounder and sub-bottom profiler. The resolution of the data will vary as a function of range from the sonar transducers. For the 2018 Work Area it is expected to be on the order of several meters.

To clarify, the survey is not a coral and sponge detection survey, rather it is a geophysical survey to characterize the physical and chemical properties of the seabed. The data resolutions required to detect corals and sponges are much higher.

In the amendment document it was noted that the data would identify areas of hard seabed (i.e., areas more likely to contain sponges and/or corals), but it did not suggest that the data would identify corals and sponges.

As documented in the recent DFO CSAS Science Response (March 2018) on the Review of the Environmental Impact Statements for the Flemish Pass Exploration Drilling Project and the Eastern Newfoundland Offshore Exploration Drilling Project:

- Some habitat forming communities found in this region cannot be detected using MBES. These include Geodia sponge grounds, certain species of glass sponges, and bamboo coral. For instance, Acanella is a bamboo coral distributed within the Flemish Pass that only inhabits soft substrates; such species would not be detected based on MBES alone and could be impacted with the proposed mitigation of avoidance of only hard substrates.

Acknowledged. Thank you. The proposed survey is a geophysical survey to characterize the physical and chemical properties of the seabed. Fugro will commit to a maximum of 10 coring stations and 2 heat flow sampling stations within NAFO closure areas during 2018, where each core / heat flow probe has a footprint of approximately 0.008 m². The actual number of cores / heat flow samples collected may be less, but will not exceed 10 cores and 2 heat flow probes in 2018.



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DFO has used MBES and side scan sonar (SSS) to assess sites prior to ROV dives. Both can be used to determine abiotic seabed features and also some biotic features (i.e., Lophelia and reef forming glass sponges); however, coral structures down to 1 m² are not detectable with MBES or modern SSS.

Acknowledged. Thank you. To clarify, the survey is not a coral and sponge detection survey, rather it is a geophysical survey to characterize the physical and chemical properties of the seabed. The data resolutions required to detect corals and sponges are much higher.

In the amendment document it was noted that the data would identify areas of hard seabed (i.e., areas more likely to contain sponges and/or corals), but it did not suggest that the data would identify corals and sponges. Fugro will commit to a maximum of 10 coring stations and 2 heat flow sampling stations within NAFO closure areas during 2018, where each core / heat flow probe has a footprint of approximately 0.008 m². The actual number of cores / heat flow samples collected may be less, but will not exceed 10 cores and 2 heat flow probes in 2018.

Based on the above, it is recommended that the sampling sites within NAFO coral/sponge closure areas be ground-truthed using ROV and that appropriate avoidance and mitigation measures (e.g. avoid and/or set back from any coral sponge aggregations) be employed prior to coring activity to ensure protection of sensitive benthic habitat features.

An ROV survey is not planned for the 2018 program. The mitigations include not sampling in areas of hard seabed identified by the MBES and SBP, a small seabed disturbance footprint of approximately 0.008 m² per core or heat flow probe (approximately 10 cm diameter), and a commitment of a maximum number of cores (10) and heat flow probes (2) within the NAFO closure areas during 2018 activities. The actual number of cores / heat flow samples collected may be less, but will not exceed 10 cores and 2 heat flow probes in 2018.

