2015 Environmental Assessment Update
Hebron Project Comprehensive Study Report

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For:

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Acronyms and Units of Measure

C-NLOPB	Canada-Newfoundland and Labrador Offshore Petroleum Board
COSEWIC	Committee on the Status of Endangered Species in Canada
CSR	Comprehensive Study Report
DFO	Fisheries and Oceans Canada
EDC	Excavated Drill Centre
EMCP	ExxonMobil Canada Properties
GBS	Gravity Base Structure
km	Kilometre
L	Litre
m	Metre
m^3	Cubic metre
mm	Millimetre
NAFO	Northwest Atlantic Fisheries Organization
OLS	Offshore Loading System
RV	Research Vessel
SARA	*Species at Risk Act*

1.0 INTRODUCTION

This document is an environmental assessment update for the Hebron Comprehensive Study Report (CSR) (EMCP 2011). This environmental assessment update document includes updated project descriptions for the offshore loading system (OLS) pipeline placement and fish survey data collection, as well as updated sections on commercial fisheries and species at risk to reflect the most current information (as of February 6, 2015).

These activities will take place in the Hebron amended Project Area assessed in the Hebron Project CSR Addendum (EMCP 2013) (Figure 1-1); coordinates are provided in Table 1.1.

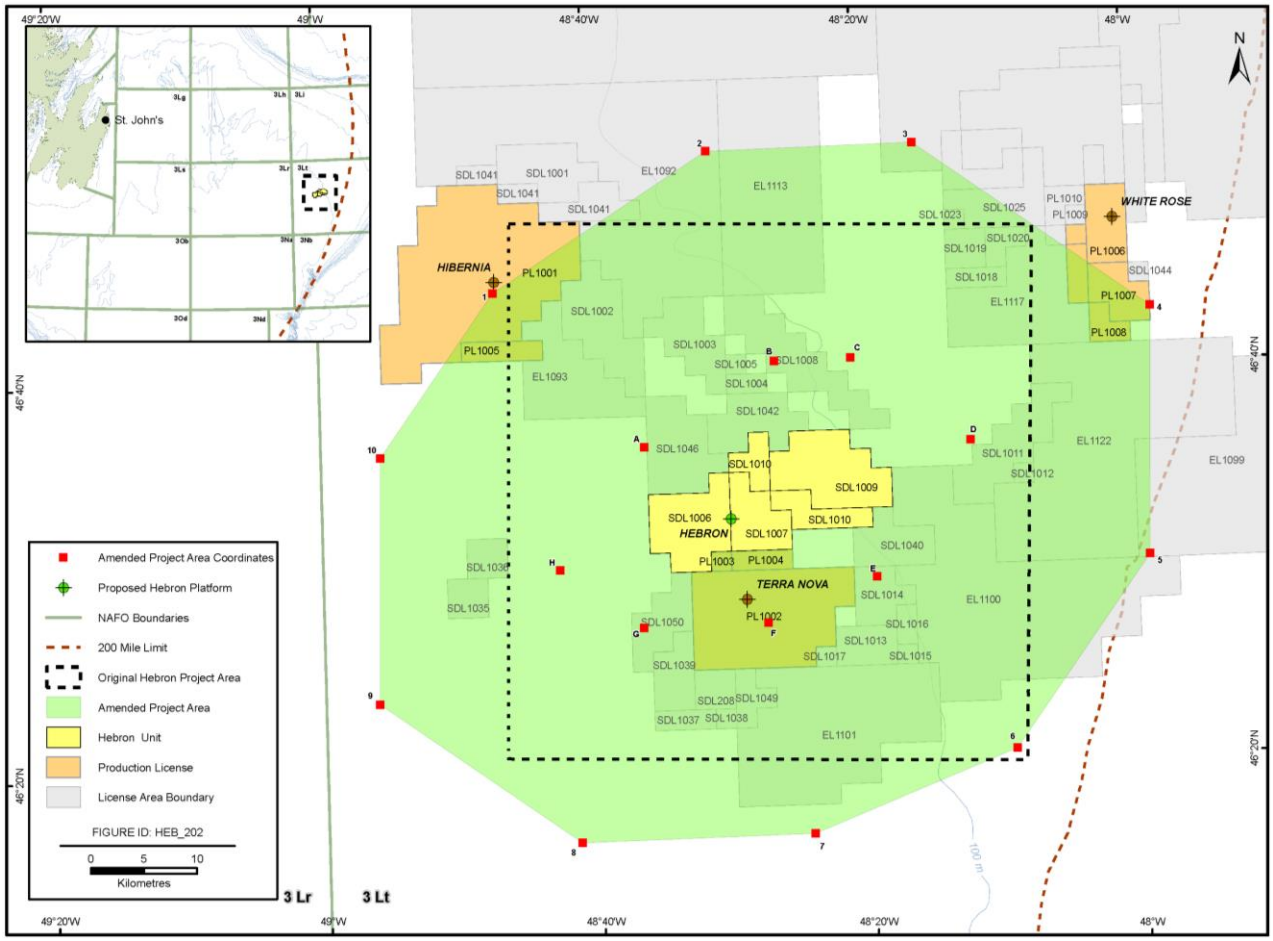


Figure 1-1 Hebron Amended Project Area

Table 1.1 Hebron Amended Project Area Coordinates

Point	Longitude	Latitude
1	-48.78352	46.74078
2	-48.51538	46.85583
3	-48.26047	46.85793
4	-47.97379	46.71297
5	-47.98496	46.50267
6	-48.15611	46.34213
7	-48.40654	46.27536
8	-48.69184	46.27328
9	-48.93517	46.39511
10	-48.92725	46.60378

2.0 PROJECT DESCRIPTION

2.1 2015 Activities

The two Hebron Project activities to be conducted in 2015 are a fish survey and installation of the pipeline component of the OLS. The work will occur from May 2015 to November 2015. If required, up to three vessels may be in the Hebron amended Project Area at any one time. Two of the vessels would be engaged in the vicinity of the GBS location.

These activities were previously assessed in the Hebron Project CSR (EMCP 2011), approved by the Minister of Environment on December 22, 2011, as well as the Hebron Development Application (Development Plan and Benefits Plan) approved by the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) by Decision Report 2012.01 on April 27, 2012. The Hebron amended Project Area was assessed in the Hebron Project CSR Amendment (EMCP 2013).

2.1.1 Fish Survey

A fish survey is being conducted as part of the environmental characterization of the Hebron location. Fish species survey data will be collected using fish sampling gear such as a commercial groundfish trawl and/or scallop dredge within the Project footprint and at up to two reference areas. All survey work will occur over the Hebron amended Project Area, as defined in the Hebron Project CSR Addendum (EMCP 2013) (see Figure 1-1), focusing on the Hebron Significant Discovery Licenses. The fish survey will occur between May and August. A fishing vessel, supplied by an EMCP contractor, will be engaged to collect the fish samples.

2.1.2 Installation / Placement of Three Offshore Loading System Pipes

The OLS pipeline will be placed on the seafloor at its operational location in 2015 (i.e., wet storage); it may be two years before it is connected to the gravity base structure (GBS). An environmental friendly preservation fluid will be injected into the pipeline until it is connected to the GBS.

The scope of activities includes the installation of three subsea 610-mm (24-inch) outer diameter pipeline segments (OLS Pipelay Program); two pipelines (each approximately 2 km long) that will connect the future Hebron GBS Production Platform to two subsea bases and one pipeline (approximately 1.85 km) to interconnect the two subsea bases and form a looped piggable pipeline. Associated testing and preserving for wet storage is also included in the scope of activities. On-bottom stability of the OLS pipeline will be achieved by the application of concrete weight coating. Trenching and burial of the OLS pipeline will not be required.

The following marine activities will be performed during the OLS Pipelay Program:

- initiate dead man anchor start-up
- laydown on seafloor
- execute surveys (pre-lay survey, as-laid survey, lay support)
- flooding, cleaning, gauging, hydro-testing and depressurization
- preserve pipeline for two years (by filling the capped lines with preservation fluid)

The chemicals used for testing and preservation have been selected following the *Offshore Chemical Selection Guidelines* and any discharges will be in compliance with the Operations Authorization. The amount of chemicals anticipated to be released during the OLS Pipelay Program is 105 L (mixed with approximately 85 m^3 of seawater); the estimated amount of chemical use is based upon the design pipeline lengths and concentrations of the given chemical. If the initial pressure tests fail, it is possible that further releases of treated seawater above the estimated 105 L (mixed with approximately 85 m^3 of seawater) may occur.

The chemicals to be used are CRW 9800 (a corrosion inhibitor), X-CIDE 450 (a registered biocide) and Roemex RX9022 (a dye). These three chemicals have been assessed as GOLD Standard under the *Offshore Chemical Selection Guidelines*. CRW 9800 is a water-based low-toxicity solvent formulation that is considered highly dispersible in produced waters / brines. X-CIDE 450 is a water-soluble, aldehyde-based liquid formulation. Any unused product will comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. A licensed waste disposal contractor will be used for product disposal.

EMCP has contracted Allseas Canada Limited (Allseas) to perform this scope of work, which will include the use of a dynamic positioning pipelay vessel (*M/V Lorelay*) to load out and install approximately 6,000 m of pipe at the Hebron Field. Allseas may or may not use a second vessel to perform other activities currently planned for execution by the *M/V Lorelay*. It is anticipated that this OLS Pipelay Program will have an approximate duration of four weeks and will be executed between June and August 2015. The program will be conducted in one direct mobilization to the Hebron offshore location.

The activities planned for 2015 relate only to the OLS Pipelay Program and excludes the installation of OLS bases, hose system and tie-in spools. These future installations will be subject to separate updates for the completion of the Hebron OLS Project.

2.2 Consultation

EMCP met with One Ocean and Ocean Choice International on January 28, 2015 and the Fish, Food and Allied Workers Petroleum Industry Liaison on January 30, 2015, to provide an overview of the 2015 activities and to discuss any questions these organizations may have with the upcoming programs. The Association of Seafood Producers was also invited to the January 28 meeting but could not attend; they indicated they were comfortable with One Ocean representation. The attendees did not express any concerns or issues with the Hebron amended Project Area or activities proposed for 2015. EMCP met with the C-NLOPB on February 5, 2015. No issues or concerns were raised during the discussions.

The following mitigations were discussed:

- posting to NotShip
- single point of contact
- updated information will be shared with the Fish, Food and Allied Workers and One Ocean.

2.3 Mitigation

Mitigation measures associated with these activities were previously assessed under the Hebron Project CSR (EMCP 2011). Mitigation measures proposed in the Hebron Project CSR (EMCP 2011) to reduce the potential for adverse environmental effects remain unchanged.

Guidance provided in the *Geophysical, Geological, Environmental and Geotechnical Program Guidelines* (C-NLOPB 2012) will be used as the basis for the management and mitigation of environmental risks associated with the 2015 activities.

The primary potential environmental effect of the OLS Pipelay Program would relate to substrate disturbance and release of chemicals. The activities related to this pipelay program were previously assessed in the Hebron CSR. The mitigation measures proposed in the Hebron CSR remain unchanged. It should be noted that EMCP is in the process of applying to DFO to determine the requirement for habitat compensation (a proposed mitigation in the CSR) under the *Fisheries Act, 2012* Authorization.

The primary potential environmental effect of the commercial fish survey relates to the collection of fish tissue samples for laboratory analyses. The activities related to this survey were previously assessed in the Hebron CSR. The mitigation measures proposed in the Hebron CSR remain unchanged.

3.0 BIOLOGICAL ENVIRONMENT UPDATES

As noted in Section 1.0, in addition to updates to Section 2.9.6 of the Hebron Project CSR (EMPC 2011), the commercial fisheries and species at risk information has been updated to reflect the most current information (as of February 6, 2015).

3.1 Commercial Fisheries

Fisheries activities within the Study Area were reported for 2007, 2008, 2009, and 2010 in the original CSR (Section 7.3.2.5) and graphically depicted up to 2008 in the original CSR. Fisheries activities within the Study Area for 2010 and 2011 were graphically depicted in the 2013 Hebron CSR Update (Stantec 2013) and 2012 in the 2014 Hebron CSR Update (Stantec 2014). Commonly occurring fish and shellfish species within the Hebron Offshore Study Area include northern shrimp, snow crab, sand lance, Greenland halibut, yellowtail flounder, witch flounder, thorny skate, lumpfish, redfish, grenadier, sculpin, capelin and Arctic cod.

Data for commercial snow crab, northern shrimp and groundfish fisheries harvested in 2013 are illustrated in Figures 3-1 to 3-3. DFO research vessel locations in 2012 are illustrated in Figure 3-4. Based on data as depicted in the Hebron Project CSR (EMCP 2011) and the 2013 and 2014 updates (Stantec 2013, 2014), there is minimal commercial fishing effort near the Hebron amended Project Area.

DFO Ottawa Statistical Division's policy prohibits release of data that can be mapped due to privacy concerns. Therefore, spatial data are now released at an aggregated 1/10th degree 'cell' level only. No absolute values of weight and value are provided; the actual weight and value of a catch within each box will be given as a range and actual catch will be restricted to portions caught within a given cell.

Therefore, the figures for 2012 data for snow crab, northern shrimp and groundfish (see Figures 3-1 to 3-3) illustrate an average percentage of the weight percentage data provided by DFO. The weight percent for a specific cell has been summed and divided by the number of months that specific cell was fished (i.e., when the cell was fished, X% of species A was caught in the boundaries).

Validated commercial fisheries data for 2014 for Northwest Atlantic Fisheries organization (NAFO) Division 3L are not available at this time.

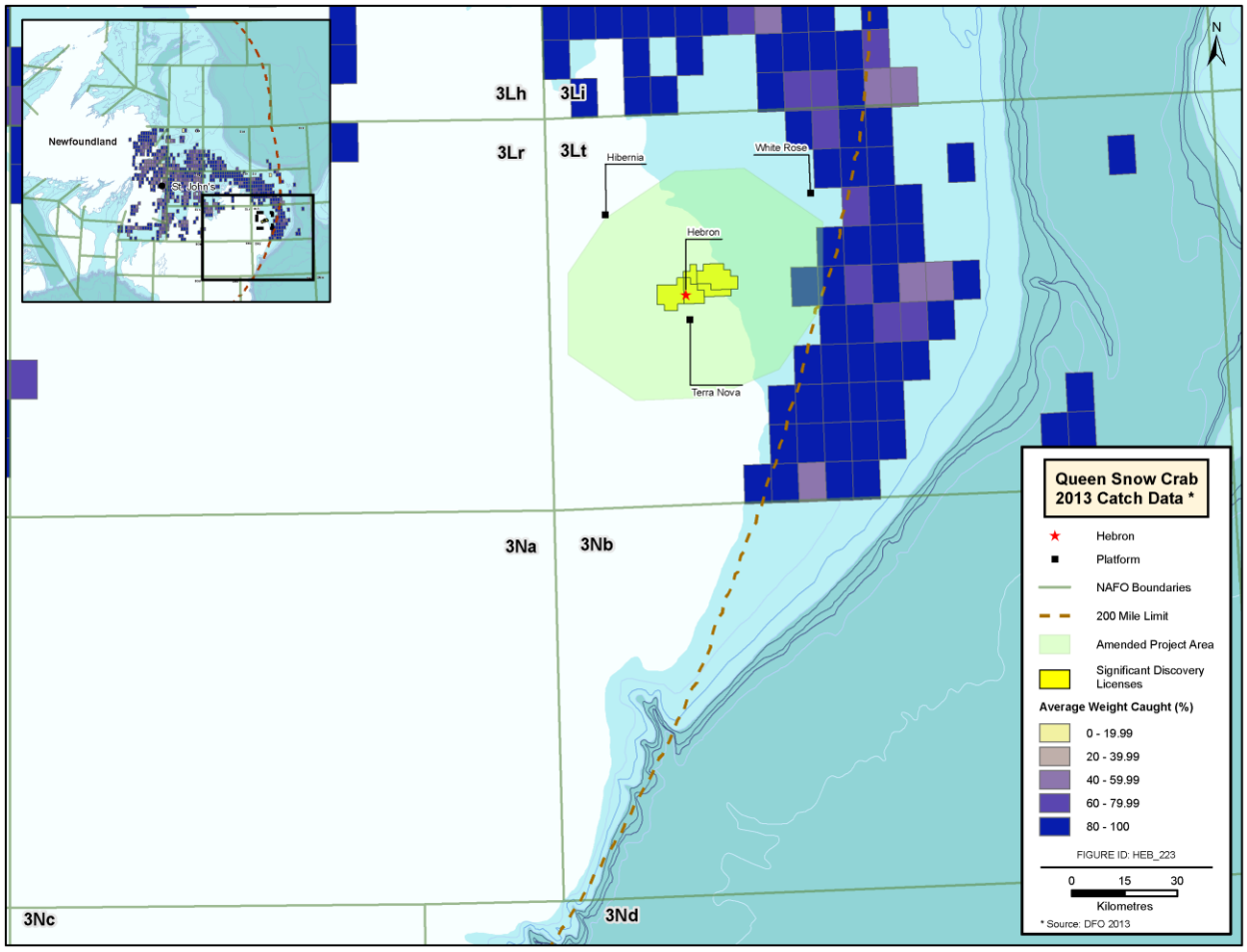


Figure 3-1 Snow Crab – Percent Average Weight Harvested (2013)

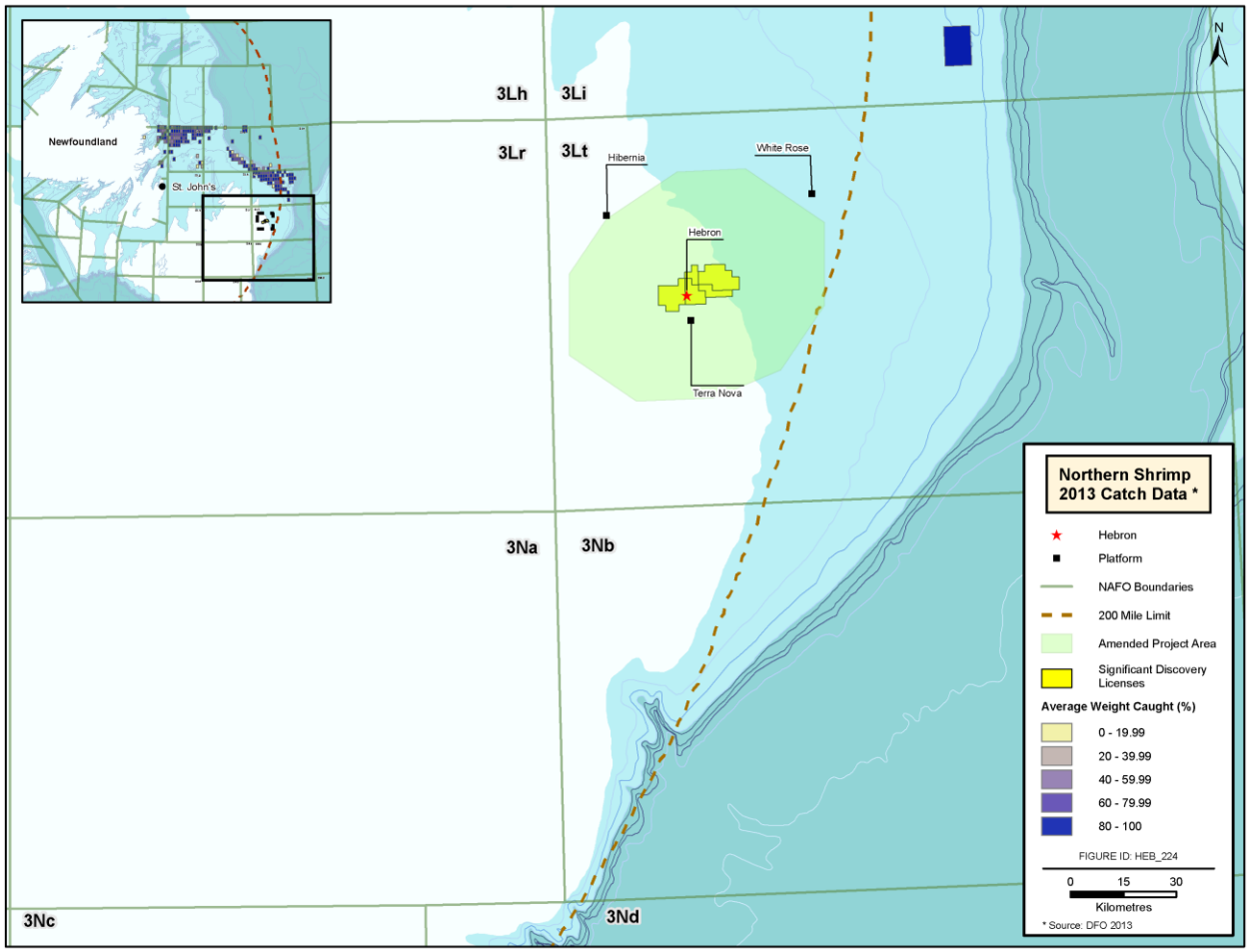


Figure 3-2 Northern Shrimp – Percent Average Weight Harvested (2013)

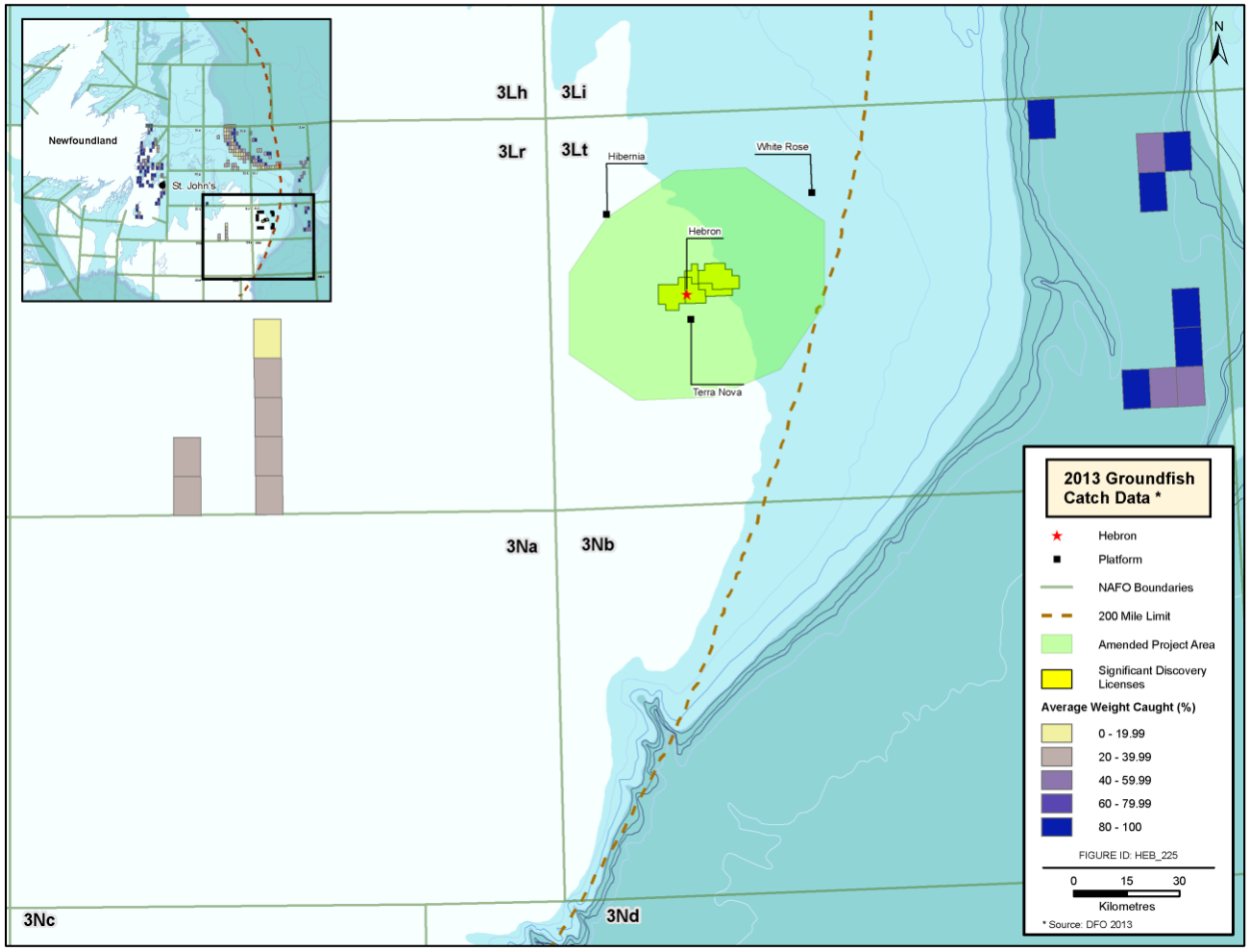


Figure 3-3 Groundfish – Percent Average Weight Harvested (2013)

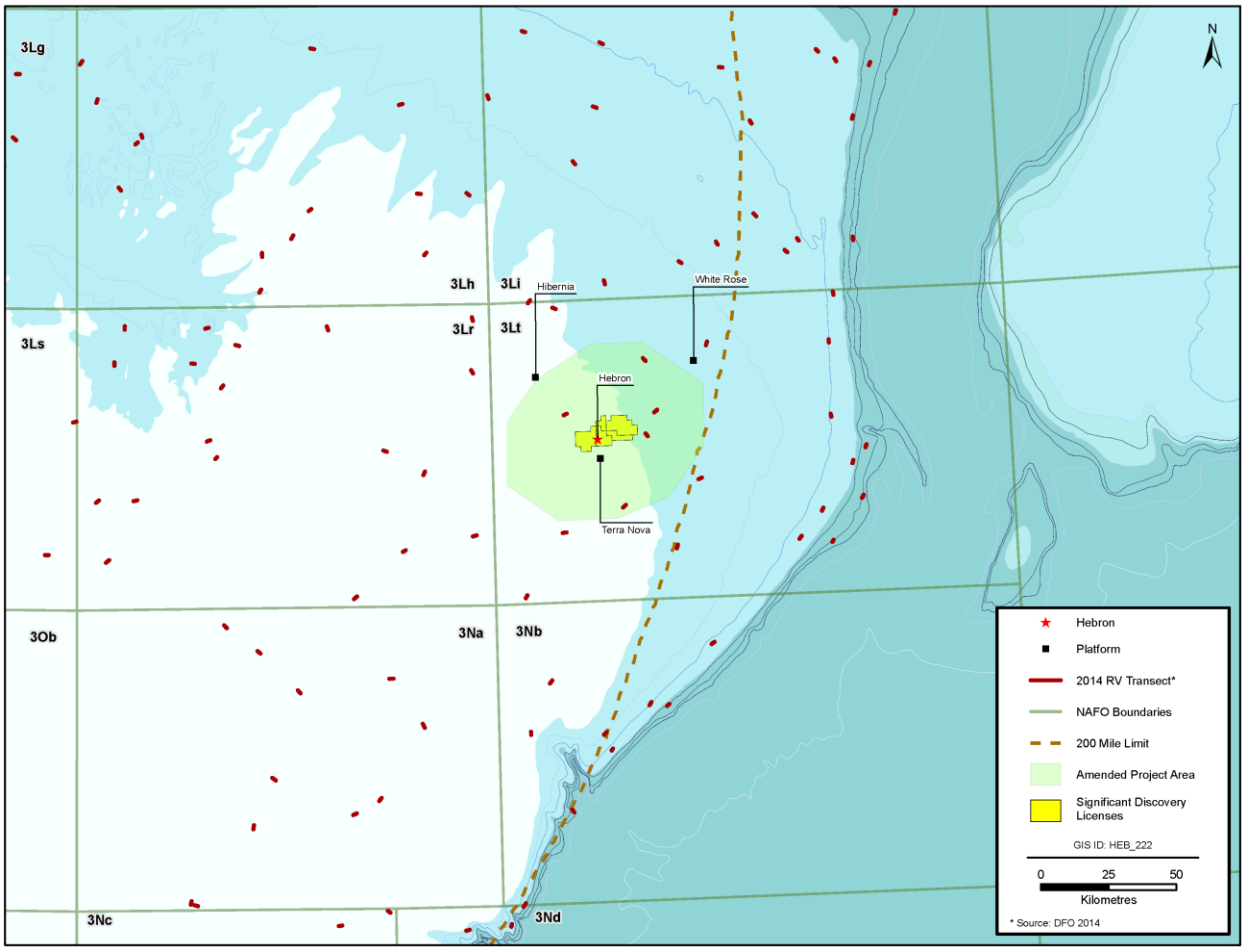
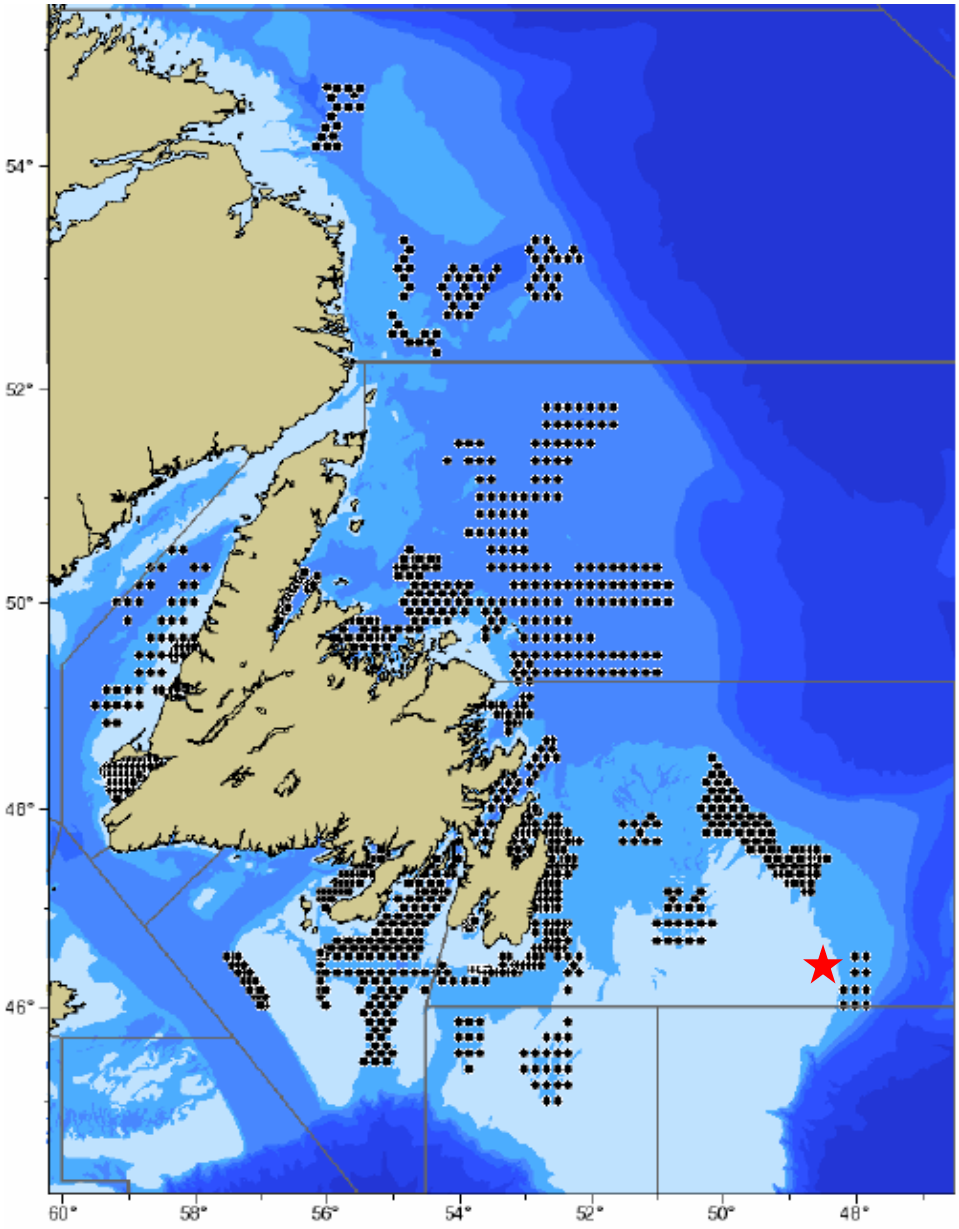


Figure 3-4 DFO Research Vessel Transects (2014)

DFO will be conducting surveys in NAFO Division 3L from the *Research Vessels* (RVs) *Needler* and *Teleost* (G. Sheppard, pers. comm.). The *RV Teleost* will be conducting the Newfoundland and Labrador Spring Atlantic Zone Monitoring Program from April 7 to 28, 2015 in NAFO Divisions 3P + 3KLMNO. The *RV Teleost* will also be conducting a comparative redfish survey from April 29 to May 6, 2015, in NAFO 3L and a capelin survey from May 12 to 26, 2015, in NAFO 3KL. The *RV Teleost* will be conducting a Newfoundland and Labrador Fall Survey from November 24 to December 8, 2015 in NAFO 3K + 3L Deep.

The *RV Needler* will be conducting the Newfoundland and Labrador spring survey from May 12 to 26, 2015, in NAFO 3O + 3N and from May 27 to June 13, 2015, in NAFO 3L + 3N. The *RV Needler* will be conducting the Newfoundland and Labrador fall survey from September 29 to October 13, 2015, in NAFO 3O + 3N, from October 14 to 27, 2015, in NAFO 3N + 3L, from October 28 to November 10, 2015, in NAFO 3L and from November 11 to 24, 2015, in NAFO 3K + 3L.

The DFO-Industry Post-Season Crab Survey is conducted annually (usually starting in September) and extends from 3O north to 2J. The 2014 post-season crab survey collected samples from the same locations as the 2013 survey (Figure 3-5) and the locations and timelines for the 2015 survey will be the same as last year (D. Power, pers. comm.).



Source: Stansbury et al. 2013

Figure 3-5 Stations for DFO-Industry Post-Season Crab Survey (★ approximate Hebron Project Location)

3.2 Species at Risk Updates

Since the submission of the Hebron CSR (EMCP 2011) and the 2013 and 2014 updates (Stantec 2013, 2014), there has been one addition (Red-necked Phalarope, described below) to the list of species included under the *Species at Risk Act* (SARA) or assessed as at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (Table 3.1). None of the species previously described since the last update (Stantec 2014) have had a designation change.

Table 3.1 Occurrence of Species at Risk within the Study Area

SPECIES		SARA Status	COSEWIC Status	Occurrence in the Study Area
Common Name	**Scientific Name**			
Birds				
Ivory Gull	*Pagophila eburnea*	Schedule 1 – Special Concern	Endangered	May occur but area is not known to be critical habitat for the species
Red-necked Phalarope	***Phalaropus lobatus***	**No Schedule – No Status**	**Special Concern**	**May occur but area is not known to be critical habitat for the species**
Marine Mammals				
Blue Whale	*Balenoptera musculus*	Schedule 1 - Endangered	Endangered	Occurs but area is not known to be critical habitat for the species
North Atlantic Right Whale	*Eubalaena glacialis*	Schedule 1 - Endangered	Endangered	Occurs but area is not known to be critical habitat for the species
Fin Whale	*Balenoptera physalus*	Schedule 1 – Special Concern	Special Concern	Occurs but area is not known to be critical habitat for the species
Sowerby's Beaked Whale	*Mesoplodon bidens*	Schedule 1 – Special Concern	Special Concern	May occur in small numbers but area is not known to be critical habitat for the species
Harbour Porpoise	*Phocoena phocoena*	Schedule 2 – Threatened	Special Concern	Occurs but area is not known to be critical habitat for the species
Killer Whale	*Orcinus orca*	No Schedule – No Status	Special Concern	May occur in small numbers but area is not known to be critical habitat for the species
Northern Bottlenose Whale (Davis Strait-Baffin Bay-Labrador Sea pop)	*Hyperoodon ampullatus*	No Schedule – No Status	Special Concern	May occur in small numbers but area is not known to be critical habitat for the species

SPECIES		SARA Status	COSEWIC Status	Occurrence in the Study Area
Common Name	**Scientific Name**			
Fish				
White Shark	*Carcharodon carcharias*	Schedule 1 - Endangered	Endangered	Not likely to occur
Northern Wolffish	*Anarhichas denticulatus*	Schedule 1 - Threatened	Threatened	Occurs but area is not known to be critical habitat for the species
Spotted Wolffish	*Anarhichas minor*	Schedule 1 - Threatened	Threatened	Occurs but area is not known to be critical habitat for the species
Atlantic Wolffish	*Anarhichas lupus*	Schedule 1 – Special Concern	Special Concern	Occurs but area is not known to be critical habitat for the species
Atlantic Bluefin Tuna	*Thunnus thynnus*	No Schedule – No Status	Endangered	May occur in small numbers but area is not known to be critical habitat for the species
Atlantic Cod (NL Pop)	*Gadus morhua*	No Schedule – No Status	Endangered	Occurs but area is not known to be critical habitat for the species
Cusk	*Brosme brosme*	No Schedule – No Status	Endangered	Not likely to occur
Porbeagle Shark	*Lamna nasus*	No Schedule – No Status	Endangered	Occurs but area is not known to be critical habitat for the species
Roundnose Grenadier	*Coryphaenoides rupestris*	No Schedule – No Status	Endangered	Occurs but area is not known to be critical habitat for the species
Smooth Skate (Funk Island Deep, NL pop)	*Malacoraja senta*	No Schedule – No Status	Endangered	Occurs but area is not known to be critical habitat for the species
Acadian Redfish (Atlantic pop)	*Sebastes fasciatus*	No Schedule – No Status	Threatened	May occur in small numbers but area is not known to be critical habitat for the species
American Eel	*Anguilla rostrata*	No Schedule – No Status	Threatened	Occurs but area is not known to be critical habitat for the species
American Plaice (NL Pop)	*Hippoglossoides platessoides*	No Schedule – No Status	Threatened	Occurs but area is not known to be critical habitat for the species
Atlantic Salmon (South NL pop)	*Salmo salar*	No Schedule – No Status	Threatened	Not likely to occur

SPECIES		SARA Status	COSEWIC Status	Occurrence in the Study Area
Common Name	**Scientific Name**			
Deepwater Redfish (northern pop)	*Sebastes mentella*	No Schedule – No Status	Threatened	Occurs but area is not known to be critical habitat for the species
Shortfin Mako	*Isurus oxyrinchus*	No Schedule – No Status	Threatened	Not likely to occur
White Hake (Atlantic and Northern Gulf of St. Lawrence pop)	*Urophycis tenuis*	No Schedule – No Status	Threatened	Uncommon on the Grand Banks
Basking Shark	*Cetorhinus maximus*	No Schedule – No Status	Special Concern	May occur in small numbers but area is not known to be critical habitat for the species
Blue Shark	*Prionace glauca*	No Schedule – No Status	Special Concern	Not likely to occur
Roughhead Grenadier	*Macrourus berglax*	No Schedule – No Status	Special Concern	Occurs but area is not known to be critical habitat for the species
Spiny Dogfish	*Squalus acanthias*	No Schedule – No Status	Special Concern	Occurs but area is not known to be critical habitat for the species
Thorny Skate	*Amblyraja radiata*	No Schedule – No Status	Special Concern	Occurs but area is not known to be critical habitat for the species
Reptiles				
Leatherback Turtle	*Dermochelys coriacea*	Schedule 1 - Endangered	Endangered	Occurs but area is not known to be critical habitat for the species
Loggerhead Sea Turtle	*Caretta caretta*	No Schedule – No Status	Endangered	Occurs but area is not known to be critical habitat for the species
Update to Table B.1 (Stantec 2014) Bolded species are new to the table				

As of November 2013, COSEWIC has assessed the Red-necked Phalarope as special concern. This species does not have status under SARA. Nor does it have final recovery strategies, action plans or associated critical habitat identified. None of the recovery or action plans available for the SARA species affect the mitigation measures committed to by EMCP in the Hebron CSR (EMCP 2011).

Red-necked Phalarope was previously described in Section 9.3.2.4 (Marine Birds – Species Profiles - Offshore) of the Hebron CSR (EMCP 2011). The following updates Section 11.3.3 (Marine Birds Species at Risk) of the Hebron CSR (EMCP 2011).

11.3.3.3 Red-necked Phalarope

Red-necked Phalarope are shorebirds that are considered pelagic because they spend most of the non-breeding season at sea. They regularly occur in the Atlantic Ocean as they migrate at sea from south of the equator wintering areas to Arctic breeding grounds. Red-necked Phalaropes feed on surface zooplankton by swimming and rapidly picking at the surface of the water.

Incidental observations of small numbers of Red-necked Phalaropes have been recorded during seismic surveys in the Jeanne d'Arc Basin and Orphan Basin from mid-May to October (Husky Energy 2012). They may occur in the offshore area from May to September/October, but in low numbers (Jacques Whitford 2009).

4.0 ENVIRONMENTAL EFFECTS ASSESSMENT

A review of the environmental effects assessment (Chapter 16) predictions and mitigation assessed as part of the Hebron Project CSR (EMCP 2011) was conducted as a result of updated commercial fisheries data and COSEWIC addition. All proposed activities fall within the scope of the Hebron Project CSR (EMCP 2011) (Section 2.9.6).

The mitigation for the activities planned to be carried out under the scope assessed in the Hebron Project CSR (EMCP 2011) are still appropriate, and the Hebron Project partners reaffirm their commitment to the mitigation measures cited in this assessment validation, the Hebron Project CSR (EMCP 2011) and the Scoping Document (C-NLOPB 2009). EMCP has applied to DFO to determine the requirement for habitat compensation (a proposed mitigation in the CSR) under the *Fisheries Act, 2012* Authorization.

5.0 REFERENCES

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