

REPORT TITLE

**Husky Energy East Coast Operations
Newfoundland & Labrador Offshore Area
Environmental Assessment Review for 2009**

SUBMITTED TO

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Table of Contents

1.0	Introduction.....	4
2.0	Husky Energy – Jeanne d’Arc Basin 2006 3D Seismic Environmental Assessment Review (CEAR No. 05-01-8783)	5
2.1	Project Description and Scope.....	5
2.1.1	Activities Covered	5
2.1.2	Geographic Scope.....	5
2.1.3	Temporal Scope	6
2.1.4	Planned activities for 2009	6
2.2	Environmental Aspects.....	6
2.2.1	Fisheries.....	6
2.2.2	Species at Risk.....	6
2.2.3	Mitigations	7
3.0	Husky White Rose Development Project: New Drill Centre Construction and Operations Program Environmental Assessment (CEAR No. 06-01-7410).....	8
3.1	Project Description and Scope.....	8
3.1.1	Activities Covered	8
3.1.2	Geographic Scope.....	8
3.1.3	Temporal Scope	9
3.1.4	Planned activities for 2009	9
3.2	Environmental Aspects.....	9
3.2.1	Fisheries.....	9
3.2.2	Species at Risk.....	9
3.2.3	Mitigations	10
4.0	Husky Delineation/Exploration Drilling Program for Jeanne d’Arc Basin Area, 2008-2017 (CEAR No. 07-01-28877).....	11
4.1	Project Description and Scope.....	11
4.1.1	Activities Covered	11
4.1.2	Geographic Scope.....	11
4.1.3	Temporal Scope	11
4.1.4	Planned activities for 2009	11
4.1.5	Fisheries.....	12
4.1.6	Species at Risk.....	13
4.1.7	Mitigations	13
5.0	Concluding Statement	13
6.0	References	14

6.1 Environmental Assessments..... 14
6.2 Species at Risk Recovery Strategies..... 14
7.0 Appendices 14

List of Figures

Figure 2–1 - Geographic Scope of Project Area for CEAR No. 05-01-8783 5
Figure 3–1 - Geographic Scope of Project Area for CEAR No. 06-01-7410 8
Figure 4–1 - Geographic Scope of Project Area for CEAR No. 07-01-28877 12

List of Tables

Table 1 - Environmental Assessment Approvals in Force for Husky Energy as of January 2009 4

1.0 Introduction

Offshore oil and gas exploration and production programs generally encompass long periods of time and multiple, successive, operational steps. As a consequence of this environmental assessments of these programs address a variety of activities undertaken over a number of years.

This document is the second of the annual reviews of the status and ongoing validity of the environmental assessments currently in place for Husky Energy's activities in the Newfoundland and Labrador Offshore Area. These reviews are to assist the C-NLOPB in fulfilling its responsibilities under the *Canadian Environmental Assessment Act* (CEAA) by ensuring that the scope of the assessment(s) and the mitigations committed to therein remain technically valid.

The following lists Husky Energy's environmental assessments that have been approved by the C-NLOPB under which Husky will be conducting offshore operations during the coming year – 2009.

Table 1 - Environmental Assessment Approvals in Force for Husky Energy as of January 2009

Screening Determination Reference ¹	EA Report Title	Husky Document Number
CEAR No. 05-01-8783	Husky Energy – Jeanne d'Arc Basin 2006 3D Seismic Environmental Assessment Update	ED-HSE-RP-0029
CEAR No. 06-01-7410	Husky White Rose Development Project: New Drill Centre Construction and Operations Program Environmental Assessment	WR-HSE-RP-4003
	Husky White Rose Development Project: New Drill Centre Construction and Operations Program Environmental Assessment Addendum	WR-HSE-RP-0167
	Husky White Rose Development Project: New Drill Centre Construction and Operations Program Environmental Assessment Amendment: Construction of Protective Flowline Rock Berms	WR-HSE-RP-1087
CEAR No. 07-01-28877	Husky Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area, 2008-2017	ED-HSE-RP-0016

The following sections organized by specific, individual environmental assessments provide the necessary information to confirm the ongoing validity of the assessment in question or note any changes that need to be addressed.

¹ Follow the links to C-NLOPB public registry to view the environmental assessments, amendments and regulatory determinations.

2.0 Husky Energy – Jeanne d’Arc Basin 2006 3D Seismic Environmental Assessment Review (CEAR No. 05-01-8783)

2.1 Project Description and Scope

2.1.1 Activities Covered

This assessment encompasses the conduct of 2D and 3D seismic surveys in the Jeanne d’Arc Basin area. Typically up to two 5085 in³ air gun arrays operating at 2000 psi could be employed firing alternately with sound source characteristics of 106.4 Bar-meters (i.e., ~255 dB re 1µPa (0 p)). The assessment also considers the need for a picket vessel(s) to accompany the survey vessel.

Geophysical site surveys (i.e., geo-hazard surveys) use smaller sound sources and other necessary survey equipment to conduct a site survey for a drilling location. For this type of survey typically four or more sleeve airguns of approximately 160 in³ in total volume operating at 2000 psi are used. The maximum output from this array has a peak to peak value of 17.0 Bar-metres equating to 244.6 dB (peak to peak)/1µPa@1m, or 238 dB (zero to peak)/1µPa@1m.

2.1.2 Geographic Scope

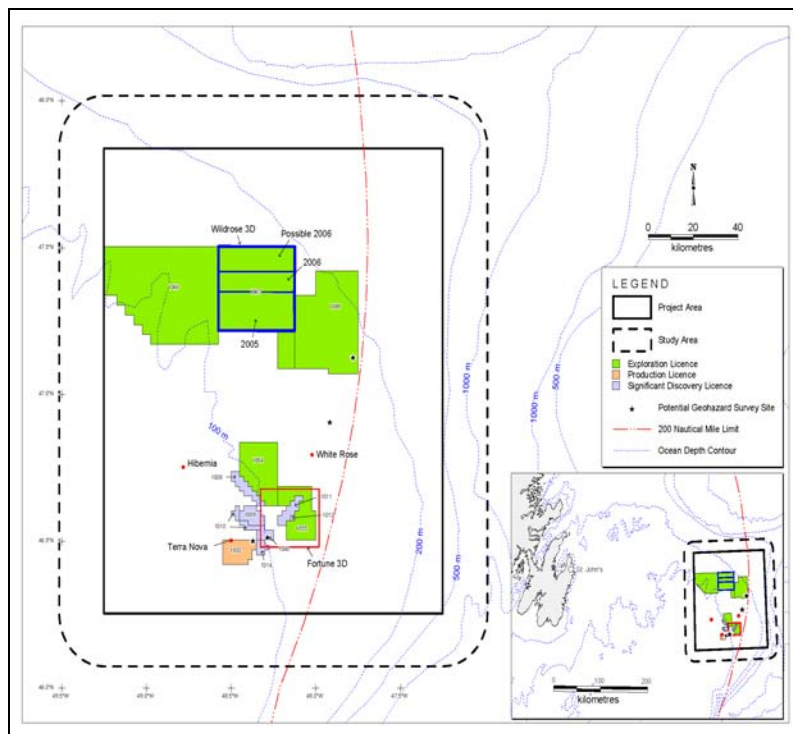


Figure 2–1 - Geographic Scope of Project Area for CEAR No. 05-01-8783

The geographic scope of the assessment is portrayed in Figure 2–1. This area encompasses sufficient area to conduct seismic surveys over Husky’s land interests in the Jeanne d’Arc Basin area and allows for end-of-survey line turn around for the seismic vessel. The corner coordinates of the Project Area are 46° 15’ to 47° 50’ North and 47° 15’ to 49° 15’ West.

2.1.3 Temporal Scope

This assessment was prepared to cover the years 2006 through 2010. Within any one year large area surveys were anticipated to occur from May through mid-November. However, geo-hazard surveys were scoped to occur year-round to support drilling operations as needed in response to identification of drilling targets within the geographic and temporal scope of the assessment

2.1.4 Planned activities for 2009

Husky Energy has no plans to conduct 2D or 3D seismic survey over the area depicted in Figure 1. In 2009, geo-hazard surveys are potentially planned for the drilling sites known as “Tiger’s Eye” and “Glenwood”. “Tigers Eye” encompasses ELs 1055 and SDLs 1011 and 1012, whereas “Glenwood” encompasses EL 1090. These ELs and SDLs are within the geographic scope of the assessment.

2.2 Environmental Aspects

2.2.1 Fisheries

Fishing activities in the study area have not changed significantly since the assessment report was accepted and the program approved. Subsequent to that time, in 2006 and 2007, Husky Energy conducted two other assessments that overlapped the geographic scope of this one. In addition, StatoilHydro Canada Ltd. (StatoilHydro) has conducted two other assessments in late 2007 through early 2008 that encompass the same general geographic area. Each of these assessments reflect the same patterning for the vast bulk of fishing activity on the Grand Banks as derived from Fisheries and Oceans databases including research vessel and under-utilized species information.

Perhaps the key fishery with respect to this assessment is the snow crab fishery that is prosecuted within the study and project areas encompassed by this assessment. It is of particular note because seismic and crab fishing operations (fixed-gear) can conflict in time and space. Recent information summarizing the conduct of the snow crab fishery in the Newfoundland and Labrador Offshore Area indicated that, as noted above, the general pattern and intensity of the snow crab fishery is consistent with the original and subsequent assessments. While the overall pattern on the fishery is similar over time there is a trend (2007 & 2008) for the pattern of fishing within NAFO Area 3L along the Northeast shelf edge to indicate a continuous level of effort as opposed to previous years (see Appendix 1).

2.2.2 Species at Risk

The Ivory Gull (*Pagophila eburnean*) has been defined as endangered under the *Species at Risk Act* (SARA) for the Study/Project areas relevant to this assessment. In addition, among the commercially fished species - American Plaice (*Hippoglossoides platessoides*) has recently been listed as threatened by COSEWIC. In addition COSEWIC has identified additional “candidate” species that will be assessed in the future. A recent example is the Manx Shearwater (*Puffinus puffinus*) which has been defined as a High Priority Candidate species by COSEWIC.

An updated listing of SARA and COSEWIC listed species for the Grand Banks area of interest to Husky Energy is provided in Appendix 2. Species with final recovery strategies in place are noted. None of the species relevant to the scope of this assessment have an associated critical habitat description or an action plan in place.

None of the recovery plans in place change the mitigation measures currently committed by Husky for the scope of the operations addressed by the environmental assessment.

2.2.3 Mitigations

Husky regards the environmental predictions and consequent mitigations cited in the environmental assessment and subsequent significance determination that relates to [CEAR No. 05-01-8783](#) as still valid and re-commits to implementing these mitigation measures for the activities to be carried out under the scope of this assessment this year.

3.0 Husky White Rose Development Project: New Drill Centre Construction and Operations Program Environmental Assessment (CEAR No. 06-01-7410)

3.1 Project Description and Scope

3.1.1 Activities Covered

This project involves the construction of up to five (5) glory holes during a construction phase that will continue through 2011. Construction will also include installation of drilling templates and other subsea equipment in the glory holes to support eventual production operations. The glory holes will support up to 28 new wells. In addition, subsea flow lines will also be installed to connect new glory holes with existing ones that connect to the SeaRose FPSO.

3.1.2 Geographic Scope

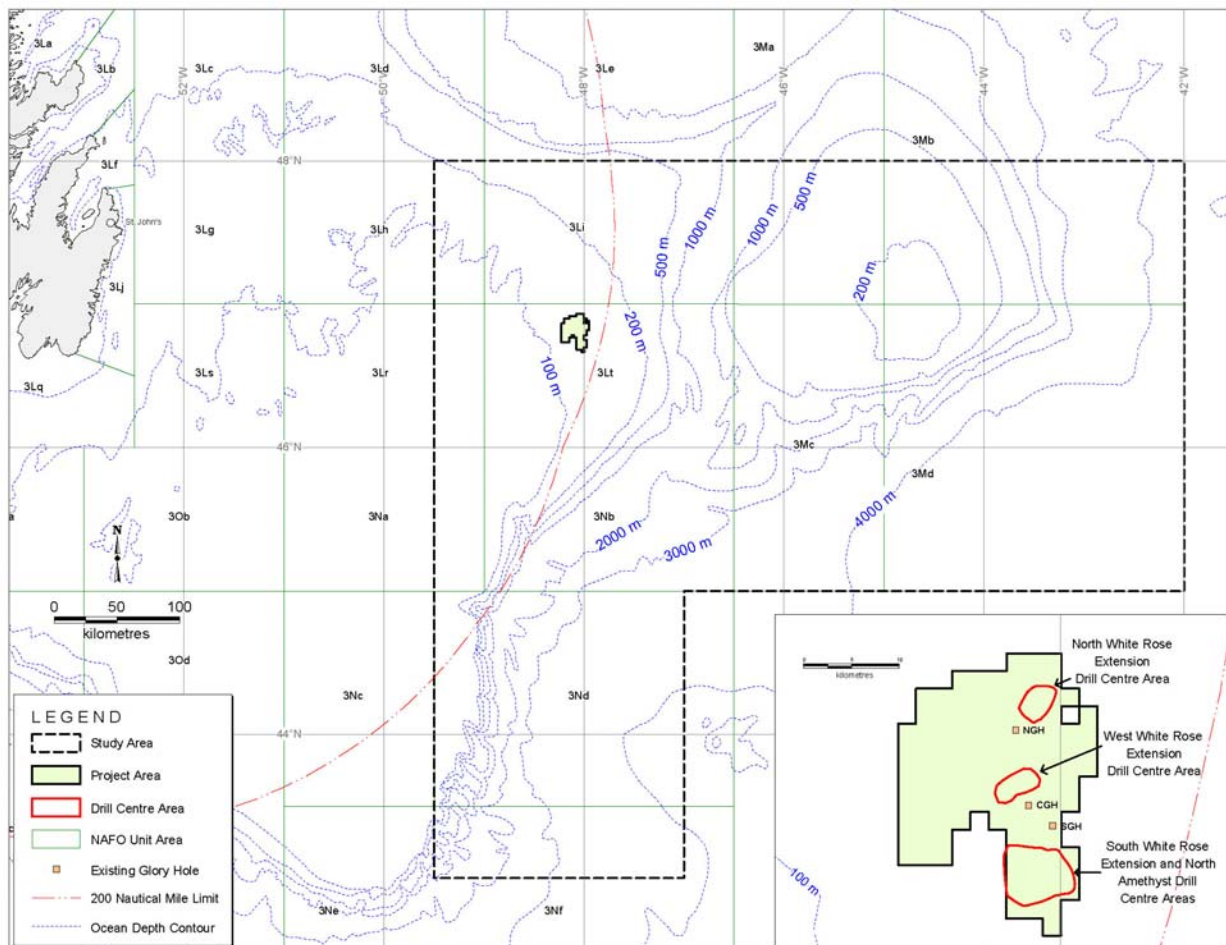


Figure 3–1 - Geographic Scope of Project Area for CEAR No. 06-01-7410

The geographic scope of the assessment is portrayed in the inset map in Figure 3–1.

3.1.3 Temporal Scope

Dredging activities are generally scheduled for May through mid-September each year. Drilling and other construction activities are scoped for year-round operations, however placement of subsea equipment to support drilling and production operations, and installation of flow lines in glory holes, will most likely occur during the summer and fall weather windows.

3.1.4 Planned activities for 2009

No glory hole excavation is planned for 2009. Development drilling activities to be carried out under the scope of this environmental assessment include drilling at the North Amethyst location in a glory hole excavated in 2007. Temporary Guide Bases were installed in the North Amethyst glory hole in 2008. In 2009 subsea equipment will be installed in North Amethyst and the Southern Drill Centers and flow lines will be laid between these two drill centers.

In late summer and early fall of 2009, rock berms will be placed on flow lines exiting and entering the North Amethyst respectively. The purpose of this work is to provide protection for the flow lines from drill rig anchor chains and dropped objects. An amendment to the environmental assessment described in this section was submitted to the C-NLOPB in August 2009.

3.2 Environmental Aspects

3.2.1 Fisheries

Fishing activities in the study area have not changed significantly since the assessment report was accepted and the program approved. Subsequent to that time, in 2006 and 2007, Husky Energy conducted two other assessments that overlapped the geographic scope of this one. In addition, StatoilHydro Canada Ltd. (StatoilHydro) has conducted two other assessments in late 2007 through early 2008 that encompass the same general geographic area. Each of these assessments each reflect the same patterning for the vast bulk of fishing activity on the Grand Banks as derived from Fisheries and Oceans' databases including research vessel and under-utilized species information.

Perhaps the key fishery with respect to this assessment is the snow crab fishery that is prosecuted within the study and project areas encompassed by this assessment. It is of particular note because seismic and crab fishing operations (fixed-gear) can conflict in time and space. Recent information summarizing the conduct of the snow crab fishery in the Newfoundland and Labrador Offshore Area indicated that, as noted above, the general pattern and intensity of the snow crab fishery is consistent with the original and subsequent assessments. While the overall pattern on the fishery is similar over time there is a trend (2007 & 2008) for the pattern of fishing within NAFO Area 3L along the Northeast shelf edge to indicate a continuous level of effort as opposed to previous years (see Appendix 1).

3.2.2 Species at Risk

The Ivory Gull (*Pagophila eburnean*) has been defined as endangered under SARA for the Study/Project areas relevant to this assessment. In addition, among the

commercially fished species - American Plaice (*Hippoglossoides platessoides*) has recently been listed as threatened by COSEWIC. In addition COSEWIC has identified additional “candidate” species that will be assessed in the future. A recent example is the Manx Shearwater (*Puffinus puffinus*) which has been defined as a High Priority Candidate species by COSEWIC.

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None of the recovery plans in place change the mitigation measures currently committed by Husky for the scope of the operations addressed by the environmental assessment.

3.2.3 Mitigations

Husky regards the environmental predictions and consequent mitigations cited in the environmental assessment and subsequent significance determination that relates to [CEAR No. 06-01-7410](#) as still valid and re-commits to implementing these mitigation measures for the activities to be carried out under the scope of this assessment this year.

4.0 Husky Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area, 2008-2017 (CEAR No. 07-01-28877)

4.1 Project Description and Scope

4.1.1 Activities Covered

This environmental assessment addressed the potential for drilling 18 delineation and/or exploration wells from semi-submersible or jack-up mobile drilling units or drill ships. It also assessed the effects of geo-hazard surveys and vertical seismic profiles associated with the drilling program.

4.1.2 Geographic Scope

The geographic scope of the drilling program is depicted in Figure 4-1. The project area is depicted by the red rectangle. The coordinates of the project area are as follows: 48° North and 49.5° West, 48° North and 47° West, 46° North and 49.5° West; and, 46° North and 47° West.

4.1.3 Temporal Scope

Exploration and delineation drilling activities as outlined above will be carried out year-round from 2008 through 2017.

4.1.4 Planned activities for 2009

In 2009, Husky plans to drill one or more of the following exploration/delineation well targets – Trave, Emerald, Primrose, or Triton with a semi-submersible drilling platform. These targets will be scheduled for late in 2009 and if not drilled then will be scheduled for 2010 or later. Geo-hazard surveys in support of these particular drilling targets were carried out in 2007.

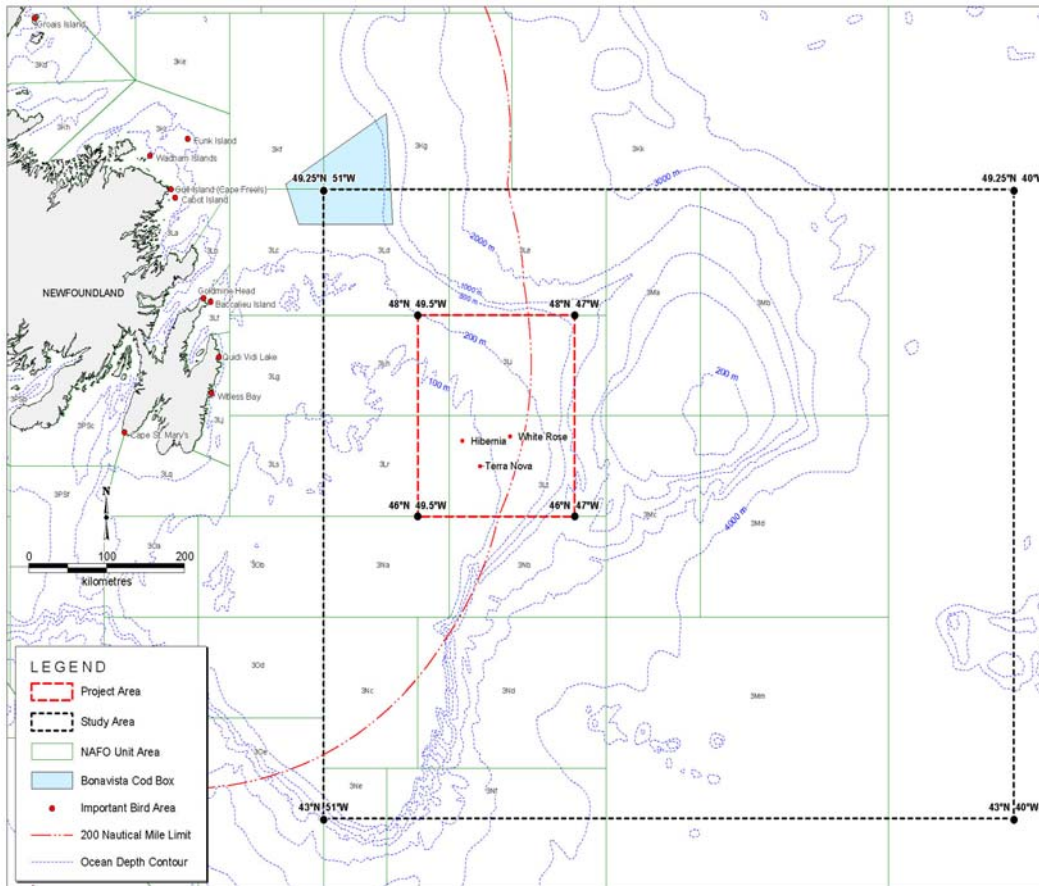


Figure 4-1 - Geographic Scope of Project Area for CEAR No. 07-01-28877

4.1.5 Fisheries

Fishing activities in the study area have not changed significantly since the assessment report was accepted and the program approved. Subsequent to that time, in 2006 and 2007, Husky Energy conducted two other assessments that overlapped the geographic scope of this one. In addition, StatoilHydro Canada Ltd. (StatoilHydro) has conducted two other assessments in late 2007 through early 2008 that encompass the same general geographic area. Each of these assessments each reflect the same patterning for the vast bulk of fishing activity on the Grand Banks as derived from Fisheries and Oceans' databases including research vessel and under-utilized species information.

Perhaps the key fishery with respect to this assessment is the snow crab fishery that is prosecuted within the study and project areas encompassed by this assessment. It is of particular note because seismic and crab fishing operations (fixed-gear) can conflict in time and space. Recent information summarizing the conduct of the snow crab fishery in the Newfoundland and Labrador Offshore Area indicated that, as noted above, the general pattern and intensity of the snow crab fishery is consistent with the original and subsequent assessments. While the overall pattern on the fishery is similar over time there is a trend (2007 & 2008) for the pattern of fishing within NAFO Area 3L along the northeast shelf edge to form a continuous level of effort as opposed to previous years (see Appendix 1).

4.1.6 Species at Risk

The Ivory Gull (*Pagophila eburnean*) has been defined as endangered under SARA for the Study/Project areas relevant to this assessment. In addition, among the commercially fished species - American Plaice (*Hippoglossoides platessoides*) has recently been listed as threatened by COSEWIC. In addition COSEWIC has identified additional "candidate" species that will be assessed in the future. A recent example is the Manx Shearwater (*Puffinus puffinus*) which has been defined as a High Priority Candidate species by COSEWIC.

An updated listing of SARA and COSEWIC listed species for the Grand Banks area of interest to Husky Energy is provided in Appendix 2. Species with final recovery strategies in place are noted. None of the species relevant to the scope of this assessment have an associated critical habitat description or an action plan in place.

None of the recovery plans in place materially change the mitigation measures currently committed by Husky for the scope of the operations addressed by the environmental assessment.

4.1.7 Mitigations

Husky regards the environmental predictions and consequent mitigations cited in the environmental assessment and subsequent significance determination that relates to [CEAR No. 07-01-28877](#) as still valid and re-commits to implementing these mitigation measures for the activities to be carried out under the scope of this assessment this year.

5.0 Concluding Statement

The activities Husky plans to carry out in 2009 have been reviewed and assessed to be within the scope of the environmental assessments referenced herein with the exception of the placement of rock on flow lines planned for late summer 2009 (see Section 3.1.4). An amendment to Husky's Drill Center Construction environmental assessment will be submitted in early 2009 to address this activity.

The environmental effects predicted in the currently valid assessments are still valid. Husky reaffirms its commitment to implement the mitigation measures proposed in these assessments and in the Screening Decisions made by the C-NLOPB.

6.0 References

6.1 Environmental Assessments

1. LGL Limited, 2008, Environmental Assessment of StatoilHydro Canada Ltd. Exploration and Appraisal/Delineation Drilling Program for Offshore Newfoundland, 2008-2016. LGL Rep. SA947. by LGL Limited, Canning & Pitt Associates Inc., and Oceans Ltd., St. John's, NL, for StatoilHydro Canada Ltd., St. John's, NL. 174 p. + appendices.
2. LGL Limited. 2008. Environmental assessment of StatoilHydro's Jeanne d'Arc Basin area seismic and geo-hazard program, 2008-2016. LGL Rep. SA947a. Rep. by LGL Limited, Canning & Pitt Associates Inc., and Oceans Ltd., St. John's, NL, for StatoilHydro Canada Ltd., St. John's, NL. 174 p. + appendices.
3. LGL Limited. 2005c. Northern Jeanne d'Arc Basin Seismic Program Environmental Assessment. LGL Rep. SA836. Rep. by LGL Limited, St. John's, NL for Husky Energy Inc., Calgary, AB. 241 p.
4. LGL Limited. 2006c. Husky White Rose Development Project: New Drill Centre Construction & Operations Program Environmental Assessment. LGL Rep. SA883. Rep. by LGL Limited, St. John's, NL, for Husky Energy Inc., Calgary, AB. 299 p. + App.
5. LGL Limited. 2007. Husky White Rose Development Project: New Drill Centre Construction & Operations Program Environmental Assessment Addendum. LGL Rep. SA883a. Rep. by LGL Limited, St. John's, NL, for Husky Energy Inc., Calgary, AB. 126 p. + App.
6. LGL Limited. 2009. Husky White Rose Development Project: New Drill Centre Construction and Operations Program Environmental Assessment Amendment: Construction of Protective Flowline Rock Berms. LGL Rep. SA1030. Rep. by LGL Limited, St. John's, NL, for Husky Energy Inc., Calgary, AB. 55 p.

6.2 Species at Risk Recovery Strategies

1. Atlantic Leatherback Turtle Recovery Team 2006. Recovery Strategy for Leatherback Turtle (*Dermochelys coriacea*) in Atlantic Canada. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa, vi + 45 pp.
2. Kulka, D., C. Hood and J. Huntington. 2007. Recovery Strategy for Northern Wolffish (*Anarhichas denticulatus*) and Spotted Wolffish (*Anarhichas minor*), and Management Plan for Atlantic Wolffish (*Anarhichas lupus*) in Canada. Fisheries and Oceans Canada: Newfoundland and Labrador Region. St. John's, NL. x + 103 pp.

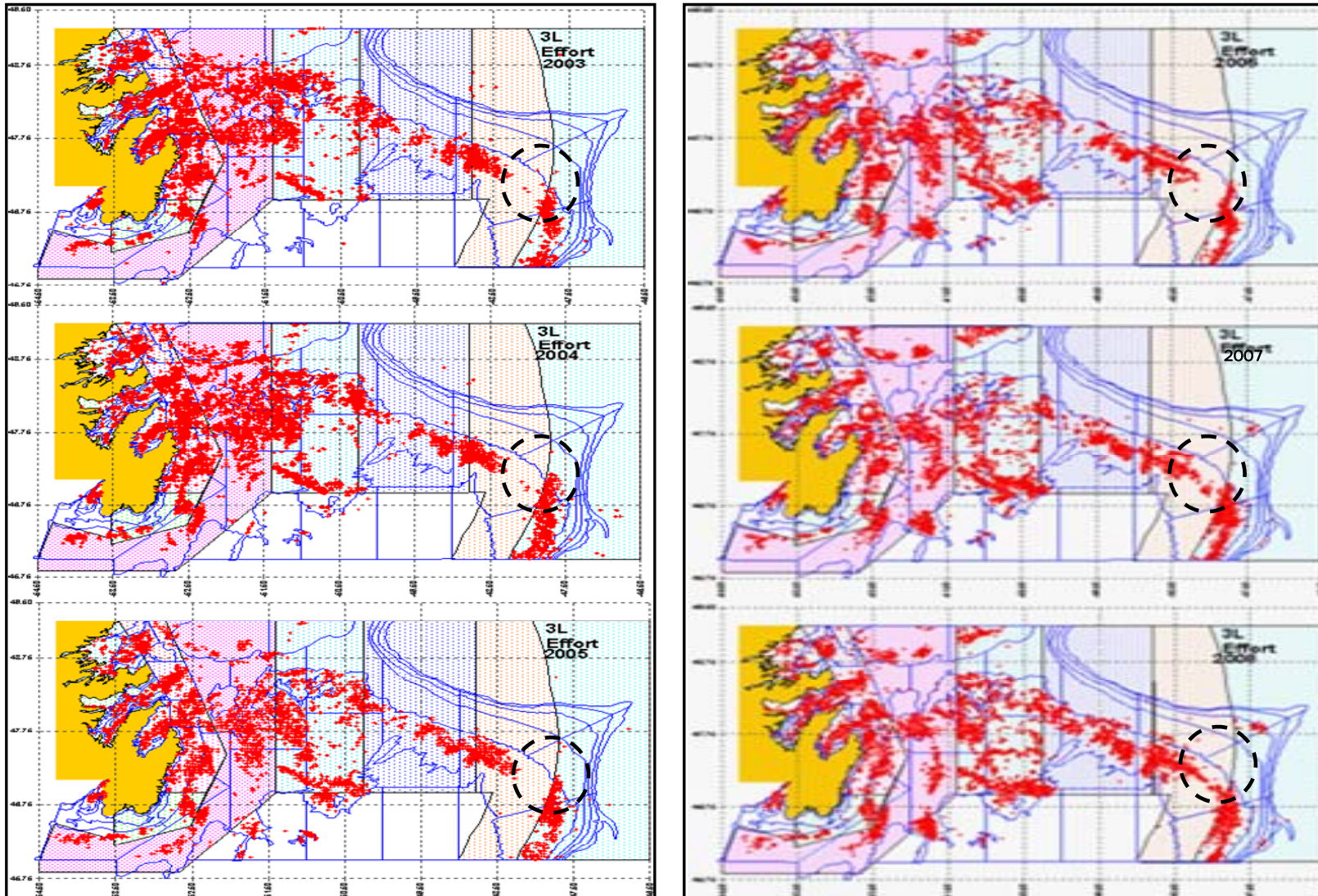
7.0 Appendices

Appendix 1 - Snow Crab Fishery in Newfoundland & Labrador Waters 2003-2008

Appendix 2 - Current Listing of [SARA](#) and [COSEWIC](#) Listed Species in the Husky Project Areas

Appendix 1: Snow Crab Fishery in Newfoundland & Labrador Waters 2003-2008

Crab Fishing Efforts Over Time 2003 to 2008 - Note Changes Near White Rose



Appendix 2 - Current Listing of [SARA](#) and [COSEWIC](#) Listed Species in the Husky Project Areas²

Species		SARA Schedule 1			COSEWIC			
Common Name	Scientific Name	Endangered	Threatened	Special Concern	Endangered	Threatened	Special Concern	Candidate
Birds								
Ivory Gull	<i>Pagophila eburnea</i>	X			X			
Manx Shearwater	<i>Puffinus puffinus</i>							High priority
Marine Fish								
Northern wolffish	<i>Anarhichas denticulatus</i>		X			X		
Spotted wolffish	<i>Anarhichas minor</i>		X			X		
Atlantic wolffish	<i>Anarhichas lupus</i>			X			X	
Atlantic cod (Newfoundland & Labrador population)	<i>Gadus morhua</i>				X			
Porbeagle shark	<i>Lamna nasus</i>				X			
White shark	<i>Carcharodon carcharias</i>				X			
Roundnose Grenadier	<i>Coryphaenoides rupestris</i>				X			
Cusk	<i>Brosme brosme</i>					X		
American Shad	<i>Alosa sapidissima</i>							Mid-priority
Alewife	<i>Alosa pseudoharengus</i>							Mid-priority
Capelin	<i>Mallotus villosus</i>							Mid-priority
Haddock	<i>Melanogrammus aeglefinus</i>							Mid-priority
Shortfin mako shark	<i>Isurus oxyrinchus</i>					X		
Blue shark	<i>Prionace glauca</i>						X	
American Eel	<i>Anguilla rostrata</i>						X	
Roughhead grenadier	<i>Macrourus bergsila</i>						X	
Bluefin Tuna	<i>Thunnus thynnus</i>							Under review ³
Spiny eel	<i>Notacanthus chemnitzii</i>							Mid-priority
Pollock	<i>Pollachius virens</i>							Mid-priority
Spinytail Skate	<i>Bathyraja spinicauda</i>							Mid-priority
Atlantic salmon	<i>Salmo salar</i>							High priority
Ocean pout	<i>Zoarces americanus</i>							High priority
American Plaice (Newfoundland & Labrador Population)	<i>Hippoglossoides platessoides</i>					X		

² Green Shade means a final Recovery Strategy is in place but no critical habitat has been identified nor have actions plans been finalized for these species. Note that two other species that have recovery strategies, the Atlantic Walrus and Grey Whale, have been extirpated from Eastern Canadian waters and therefore are not listed in the above table.

³ Species Status report in preparation

Species		SARA Schedule 1			COSEWIC			
Common Name	Scientific Name	Endangered	Threatened	Special Concern	Endangered	Threatened	Special Concern	Candidate
Marine Mammals								
Blue whale	<i>Balaenoptera musculus</i>	X			X			
North Atlantic right whale	<i>Eubalaena glacialis</i>	X			X			
Fin whale (Atlantic population)	<i>Balaenoptera physalus</i>			X			X	
Killer Whale (NW Atlantic & Eastern Arctic Populations)	<i>Orcinus orca</i>						X	
Sperm whale	<i>Physeter macrocephalus</i>							Low priority
Cuvier's Beaked Whale	<i>Ziphius cavirostris</i>							Mid-priority
Sowerby's beaked whale	<i>Mesoplodon bidens</i>						X	
Harbour porpoise	<i>Phocoena phocoena</i>						X	
Hooded seal	<i>Cystophora cristata</i>							Low priority
Harp seal	<i>Phoca groenlandica</i>							Low priority
Reptiles								
Leatherback sea turtle	<i>Dermochelys coriacea</i>	X			X			