



FINAL

**Flemish Pass Exploration Drilling Project (2018-2028)
2021 Environmental Assessment Update**

Submitted to:

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1.0 INTRODUCTION

CNOOC Petroleum North America ULC (CNOOC; formerly known as Nexen Energy ULC) is proposing to undertake an offshore petroleum exploration program in the Canada - Newfoundland and Labrador Offshore Area (hereinafter referred to as the Project). This document is an update of the Environmental Impact Statement (EIS) (Nexen Energy ULC (Nexen) 2018) that provides information to confirm that the proposed program activities for 2021 fall within the scope of the previously assessed program.

As part of the required regulatory review and approval processes for the Project, CNOOC filed an EIS (Nexen 2018) in relation to a proposed offshore petroleum exploration program in February 2018. The EIS was planned, prepared and submitted in compliance with the requirements of the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) including the Project-specific environmental assessment Scoping Document issued in June 2017. The Project was released from further environmental assessment (EA) in December 2019.

This EA Update is intended to:

- Provide an overview of the planned Project activities for the upcoming year (Section 2.0),
- Provide updated applicable baseline information for key environmental components (Section 3.0),
- Provide updated information regarding species of conservation concern (Section 3.1),
- Identify other ocean users potentially active in the Project Area and provide information on engagement activities (Section 4.0),
- Evaluate and confirm that the nature and scope of the planned activities are within the scope of the approved EIS (Nexen 2018) (Section 5.0).

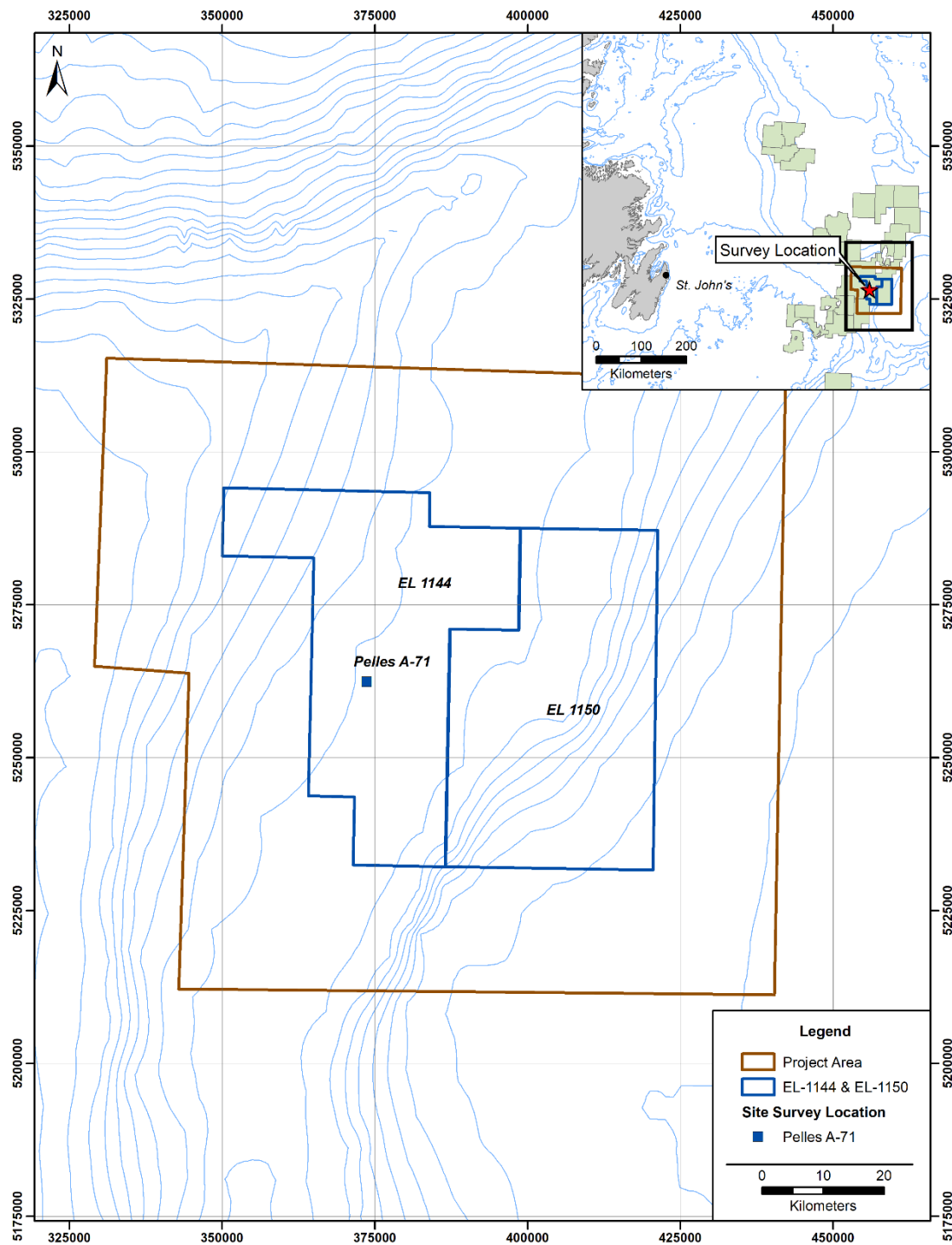


Figure 1-1 CNOOC Exploration Drilling Project Area and Pelles wellsite location.

2.0 PROJECT DESCRIPTION

2.1 Overview of Original Project Description

The EIS (Nexen 2018) included planned offshore exploration drilling activities over the Project Area (Figure 2.1) during the 2018-2028 period. The Project will include exploration drilling within these ELs, possible appraisal (delineation) drilling in the event of a hydrocarbon discovery, VSP, well testing, eventual well abandonment or suspension activities, and associated supply and service activities (Section 2.5 of the EIS). The Project was planned to involve the drilling of up to 10 wells within the two ELs that comprise the Project Area over its temporal duration.

2.2 Planned 2021 Project Activities

CNOOC is currently planning to drill one firm well in 2021; Pelles. The Pelles prospect is located on EL1144 where CNOOC is currently the sole interest holder and therefore operator (Figure 1-1). The exploration well will be drilled in 1,100-1,200 m water depth using a Harsh Environment drill ship, the Stena Forth. Planned activities in support of drilling operations include commissioning, inspection, maintenance, repairs, construction, modification, abandonment/suspension, and decommissioning. Pre-drilling activities include site preparation and deployment of monitoring equipment. VSP surveys may also be conducted following completion of drilling to obtain accurate time-to-depth ties to correlate seismic data to well depth. It is expected that the well will require approximately 45 to 160 days for drilling and evaluation (including sidetracking) and associated well abandonment or suspension between April and September 2021.

Up to four supply vessels suited to the operating environment and task will be used for the duration of the exploration drilling campaign at any given time. The vessels will use shore-based facilities in or near St. John's, NL. Existing port infrastructure will be used for all support aspects, and fuel and supplies will be sourced from existing, local suppliers.

Other activities that are planned during the program also include remotely operated vehicle (ROV) inspection, visual seabed survey activities, and pre-lay work in support of the drilling program. Follow-up monitoring activities (e.g., drilling cuttings monitoring, underwater sound monitoring, marine mammal and sea turtle monitoring during VSP) will also be conducted to verify the accuracy of the effects assessment.

3.0 ENVIRONMENTAL SETTING AND ASSESSMENT

The original EIS provided an overview of the existing physical, biological, and socio-economic environment within and around the Project Area. The following sections provide updated applicable information for the following key environmental components:

- Species of Conservation Concern
- Special Areas
- Commercial Fisheries

3.1 Species of Conservation Concern

3.1.1 Marine Fish

Since the EIS, the conservation status of several fish species within the project area has changed (Table 3.1). Details on marine fish species of conservation concern were previously presented in Section 6.1.8 of the EIS. These changes represent a reassessment of a species' status by their respective agency, either the Union for the Conservation of Nature (IUCN) or the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). No changes have taken place to species listed by either the *Newfoundland and Labrador Endangered Species Act* (NL ESA) or the *Species at Risk Act* (SARA).

Since 2018, the IUCN has revised the status of the barndoor skate and little skate to *Least Concern*, and as such they have been removed from Table 3.1. This assessment was based on increasing population trends for these species worldwide. Similarly, the roughhead grenadier is now listed by COSEWIC as being *Not at Risk* due to increasing population and reduced bycatch due to improved management of the Greenland halibut fishery. Other status changes include the IUCN's status of Basking Shark changing status from *Endangered* from *Vulnerable* due to decreasing population trends, and the COSEWIC status change of shortfin mako increasing to *Endangered* from *Threatened* due to population decline. As these species were considered in the original EIS, no additional biological or ecological information is included here.

One new species has been listed under COSEWIC since the original EIS: the common lumpfish. They have been classified as *Threatened* due to decreased abundance over several decades, especially off southern Newfoundland. Lumpfish are widely distributed throughout the Grand Banks out to the Flemish Cap and are likely present within the Project Area. Adults are benthopelagic and typically solitary and can undertake large migrations into shallow waters to spawn (COSEWIC 2017). Eggs are laid on rocky substrate and guarded by the male fish. Young lumpfish are typically found attached to eelgrass or macroalgae in inshore areas or living pelagically associated with drifting debris or algae. Threats to lumpfish include fishing, habitat alteration, and potentially predation. The potential environmental effects on lumpfish are similar to those outlined for other marine finfish in the EIS, and the species-specific description given in Wood (2019).

Additionally, critical habitat has now been established for the spotted and northern wolffish under SARA. Proposed critical habitat was described in Wood (2019) and has since been finalized with no changes from the proposed areas (Fisheries and Oceans Canada, DFO 2020a). Critical habitat for both species overlaps with the western portion of the Project Area but does not overlap with either EL 1144 or EL 1150. As such, no additional effects are expected beyond those described in the original EIS.

Table 3.1 Updated marine fish species at risk or otherwise of special conservation concern.

Species		Status / Designation ^{1,2}				Relevant Population (Where Applicable)
Common Name	Scientific Name	NL ESA	SARA	COSEWIC	IUCN	
Acadian redfish	<i>Sebastes fasciatus</i>			T	E	Atlantic (COSEWIC); Global (IUCN)
Albacore tuna	<i>Thunnus alalunga</i>				NT	
American eel	<i>Anguilla rostrata</i>	V		T	E	Global (IUCN)
American plaice	<i>Hippoglossoides platessoides</i>			T		Newfoundland and Labrador (COSEWIC)
Atlantic bluefin tuna	<i>Thunnus thynnus</i>			E	E	Global (IUCN)
Atlantic cod	<i>Gadus morhua</i>			E	V	Newfoundland and Labrador (COSEWIC); Global (IUCN)
Atlantic halibut	<i>Hippoglossus hippoglossus</i>				E	Global (IUCN)
Atlantic salmon	<i>Salmo salar</i>			T		South Newfoundland
				SC		Quebec Eastern North Shore
				SC		Quebec Western North Shore
				E		Anticosti Island
				SC		Inner St. Lawrence
				SC		Gaspe-Southern Gulf of St. Lawrence
				E		Eastern Cape Breton
				E		Nova Scotia Southern Upland
				E		Outer Bay of Fundy Population
					LC	Global (IUCN)
Basking shark	<i>Cetorhinus maximus</i>			SC	E	Atlantic (COSEWIC); Global (IUCN)
Bigeye tuna	<i>Thunnus obesus</i>				V	Global (IUCN)
Blue shark	<i>Prionace glauca</i>			NR	NT	Global (IUCN)
Cusk	<i>Brosme brosme</i>			E		
Deepwater redfish	<i>Sebastes mentella</i>			T	LC	Northern (COSEWIC); Global (IUCN)
Haddock	<i>Melanogrammus aeglefinus</i>				V	Global (IUCN)

Species		Status / Designation ^{1,2}				Relevant Population (Where Applicable)
Common Name	Scientific Name	NL ESA	SARA	COSEWIC	IUCN	
Common lumpfish	<i>Cyclopterus lumpus</i>			T		
Northern (broadhead) wolffish	<i>Anarhichas denticulatus</i>		T	T		
Porbeagle	<i>Lamna nasus</i>			E	V	Global (IUCN)
Roundnose grenadier	<i>Coryphaenoides rupestris</i>			E	CE	Global (IUCN)
Shortfin mako	<i>Isurus oxyrinchus</i>			E	V	Atlantic (COSEWIC); Global (IUCN)
Smooth skate	<i>Malacoraja senta</i>			E		Funk Island Deep
				DD		Hopedale Chanel
				DD		Nose of the Grand Bank
				SC		Laurentian-Scotian
					V	Global (IUCN)
Spiny dogfish	<i>Squalus acanthias</i>			SC	V	Atlantic (COSEWIC); Global (IUCN)
Spinytail skate	<i>Bathyraja spinicauda</i>				NT	Global (IUCN)
Spotted wolffish	<i>Anarhichas minor</i>		T	T		
Striped (Atlantic) wolffish	<i>Anarhichas lupus</i>		SC	SC		
Thorny skate	<i>Amblyraja radiata</i>			SC	V	Global (IUCN)
White hake	<i>Urophycis tenuis</i>			T		Atlantic and Northern Gulf of St. Lawrence (COSEWIC)
White shark	<i>Carcharodon carcharias</i>		E	E	V	Atlantic (COSEWIC/SARA); Global (IUCN)
Winter Skate	<i>Leucoraja ocellata</i>			E	E	Eastern Scotian Shelf – Newfoundland (COSEWIC); Global (IUCN)
¹ Not at Risk (NR), Data Deficient (DD), Least Concern (LC), Vulnerable (V), Near Threatened (NT), Special Concern (SC), Threatened (T), Endangered (E), Critically Endangered (CE). Blank cells are considered to be not assessed. ² Multiple designations refer to multiple populations or sub-populations. Grey cells in represent changes to status or addition of species listing from the original EIS.						

Species		Status / Designation ^{1,2}				Relevant Population (Where Applicable)
Common Name	Scientific Name	NL ESA	SARA	COSEWIC	IUCN	
Sources: COSEWIC 2017; Government of Canada 2020.						

3.1.2 Marine and Migratory Birds

Since the original EIS, the conservation status of several bird species within the project area has changed (Table 3.2). Details on bird species of conservation concern were previously presented in Section 6.2.6 of the EIS. Only those species deemed likely to occur within the project area are considered here. No changes have occurred for IUCN or NL ESA listed species. The red-necked phalarope is now listed under Schedule 1 of SARA as Special Concern. Leach's storm-petrel was designated as Threatened by COSEWIC and is under consideration for listing under SARA. Additionally, Ross's gull is added as a potential species to occur within the Project Area (Table 3.2).

Leach's storm-petrels are widely distributed throughout the globe, with distinct Atlantic and Pacific populations. The Atlantic population nests at over 80 sites in eastern Canada, and adults can travel hundreds of kilometers to forage on small fish (COSEWIC 2021). They are commonly encountered by vessels and platforms in offshore Newfoundland, particularly from May to October during migration from breeding colonies to offshore wintering grounds (LGL 2017). While the conservation status of Leach's storm-petrel has been updated, this species and associated special areas (e.g., Important Bird Areas) were specifically considered in the original EIS (e.g., Section 9.3.3 and 9.3.6 in Nexen 2018) based on previous interactions with oil and gas activities (e.g., attraction to artificial light). Current mitigations specific to stranded birds in offshore Newfoundland apply to Leach's storm-petrel as well (Williams and Chardine, no date), and so potential environmental effects from the project on this species should be within EA predictions.

Ross's gull is primarily an Arctic species, with the largest breeding area in northeastern Siberia and smaller colonies in Greenland, Svalbard, and Arctic and subarctic Canada. Few nesting sites are known in Canada, with few pairs recorded at each site in most years (COSEWIC 2007). These birds overwinter at sea mostly in Arctic waters but have been tracked as far south as the northern portions of the Project Area. As this is primarily an Arctic species and only occasionally to be present in the Project Area, interactions with project activities are unlikely. Mitigation measures described in the original EIS for other marine and migratory bird species will also apply to Ross's Gull, and so the potential environmental effects from the Project should be limited. Additional details relating to the Project Area can be found in Wood (2019).

Table 3.2 Updated marine and migratory bird species at risk or otherwise of special conservation concern.

Species		Status / Designation ¹				Relevant Population (Where Applicable)
Common Name	Scientific Name	NL ESA	SARA	COSEWIC	IUCN	
Ivory Gull	<i>Pagophila eburnea</i>	E	E	E	NT	Global (IUCN)
Red-necked Phalarope	<i>Phalaropus lobatus</i>		SC	SC	LC	Global (IUCN)
Leach's Storm-Petrel	<i>Oceanodroma leucorhoa</i>			T	V	Atlantic (COSEWIC); Global (IUCN)
Ross's Gull	<i>Rhodostethia rosea</i>		T	T	LC	Global (IUCN)

¹ Not at Risk (NR), Data Deficient (DD), Least Concern (LC), Vulnerable (V), Near Threatened (NT), Special Concern (SC), Threatened (T), Endangered (E), Critically Endangered (CE) (blank cells are considered to be not assessed)

Grey cells in represent changes to status or addition of species listing from the original EIS.

Sources: COSEWIC 2007; Government of Canada 2020.

3.1.3 Marine Mammals and Sea Turtles

Since the original EIS, the conservation status of two marine mammal species within the project area has changed (Table 3.3). Details on marine mammal and sea turtle species of conservation concern were previously presented in Section 6.3.5 of the EIS. No changes have occurred for IUCN listed species, and no marine mammals or sea turtles are listed under the NL ESA. The Schedule 1 status of the St. Lawrence population of beluga whales has been increased to Endangered from Threatened. Additionally, the bowhead whale is added as a potential species occurring in the Project Area.

The bowhead whale is primarily an Arctic species, with rare occurrences in southern Labrador and the island of Newfoundland. Historically their main threats were whale hunting, but today threats include sea ice reduction and other human activities such as shipping and noise pollution (COSEWIC 2009). The typical range for the Eastern Canada-West Greenland population stretches from western Greenland into Hudson Bay and the high Arctic, with large migrations between summer and wintering grounds. As the Project Area is outside the traditional range for this species, their presence in the area is unlikely. Mitigations described in the original EIS for other marine mammals apply to the bowhead whale as well, and so the potential environmental effects from the Project should be limited. Additional details relating to the Project Area can be found in Wood (2019).

Table 3.3 Updated marine mammal and sea turtle species at risk or otherwise of special conservation concern likely to occur in the Project Area.

Species		Status / Designation ¹				Relevant Population (Where Applicable)
Common Name	Scientific Name	NL ESA ²	SARA	COSEWIC	IUCN	
Atlantic Walrus	<i>Odobenus rosmarus rosmarus</i>			SC	V	Central/Low Arctic (COSEWIC); Global (IUCN; <i>Odobenus rosmarus</i>)
Beluga Whale	<i>Delphinapterus leucas</i>		E	E	LC	St. Lawrence Estuary (COSEWIC/SARA); Global (IUCN)
Blue Whale	<i>Balaenoptera musculus</i>		E	E	E	Atlantic (COSEWIC/SARA); Global (IUCN)
Bowhead Whale	<i>Balaena mysticetus</i>			SC	LC	Eastern Canada-West Greenland (COSEWIC); Global (IUCN)
Fin Whale	<i>Balaenoptera physalus</i>		SC	SC	V	Atlantic (COSEWIC/SARA); Global (IUCN)
Harbour Porpoise	<i>Phocoena phocoena</i>			SC	LC	Northwest Atlantic (COSEWIC); Global (IUCN)
Killer Whale	<i>Orcinus orca</i>			SC	DD	Northwest Atlantic / Eastern Arctic (COSEWIC); Global (IUCN)
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>		E	E	V	Atlantic (COSEWIC/SARA); Global (IUCN)
Loggerhead Sea Turtle	<i>Caretta caretta</i>		E	E	V	Global (IUCN)
North Atlantic Right Whale	<i>Eubalaena glacialis</i>		E	E	CE	Global (IUCN)
Northern Bottlenose Whale	<i>Hyperoodon ampullatus</i>			SC		Davis Strait-Baffin Bay-Labrador Sea (COSEWIC)
			E	E		Scotian Shelf (COSEWIC/SARA)
					DD	Global (IUCN)
Sowerby's Beaked Whale	<i>Mesoplodon bidens</i>		SC	SC	LC	Global (IUCN)
¹ Not at Risk (NR), Data Deficient (DD), Least Concern (LC), Vulnerable (V), Near Threatened (NT), Special Concern (SC), Threatened (T), Endangered (E), Critically Endangered (CE) (blank cells are considered to be not assessed)						
² No marine mammals or sea turtles are listed under the NL ESA						
Grey cells in represent changes to status or addition of species listing from the original EIS.						

Species		Status / Designation ¹				Relevant Population (Where Applicable)
Common Name	Scientific Name	NL ESA ²	SARA	COSEWIC	IUCN	
Sources: COSEWIC 2009; Government of Canada 2020.						

3.2 Special Areas

Since the EIS was submitted, various changes have been made to special areas in the Regional Study Area (RSA). Details on special areas were previously presented in Section 6.4 of the EIS and associated responses to information requirements (e.g., IR-47). The following sections discuss relevant changes to special areas in the RSA since 2019.

Marine Refuges / Fisheries Act Closures

DFO has designated Marine Refuges under the *Fisheries Act* to protect portions of sensitive and productive marine habitat from fishing activities (DFO 2019a). Currently, there are five Marine Refuges within the RSA in offshore and coastal areas (Figure 3-1, Table 3.4). In the EIS, two of these Marine Refuges were identified in the RSA. Since that time, DFO has designated additional Marine Refuges many of which were already protected as fisheries closure areas through the *Fisheries Act*. Thus, three additional Marine Refuges, which were previously included in the EIS as fisheries closure areas, are located in the RSA. Oil and gas exploration activities are not prohibited in Marine Refuges.

Species at Risk Critical Habitat

Due to declines in abundance and biomass, northern and spotted wolffish have been listed as Threatened under SARA. The DFO (2018) recovery strategy for northern and spotted wolffish identified critical habitat within areas where these species are known to occur. Critical habitat supports important functions and features (e.g., areas for spawning, nursery, rearing, food supply, migration) necessary for survival or recovery for these species (DFO 2018).

In 2020, the critical habitat for northern and spotted wolffish were both confirmed as protected under SARA. The RSA intersects with portions of these critical habitats (Figure 3-1). Section 58 of SARA prohibits destruction of any part of identified critical habitat necessary for the survival or recovery of a listed wildlife species identified as such in the recovery strategy or action plan for the species (DFO 2020a,b). Any oil and gas activity that has the potential to affect a species at risk as prohibited by SARA requires a review by DFO.

Snow Crab Stewardship Exclusion Zones

Snow crab fishing is prohibited in exclusion zones, which are 0.5 or 1.0 nautical mile-wide corridors along the length of crab fishing area boundaries to delineate fishing areas and provide a refuge area for snow crab within NAFO 3LNO. Eight Snow Crab Stewardship Exclusion Zones were identified in the EIS as being within the RSA. In 2019, DFO removed fishing prohibitions in Crab Fishing Areas 6C and 8A (DFO 2019b). Currently, six Snow Crab

Stewardship Exclusion Zones are located in the RSA (Figure 3-1, Table 3.4). Oil and gas exploration activities are not prohibited in snow crab stewardship exclusion zones.

Preliminary Representative Marine Areas / National Marine Conservation Areas

At the time of the EIS, Parks Canada had identified preliminary representative marine areas (PRMAs) for potential site selection for National Marine Conservation Areas (NMCAs) under the *National Marine Conservation Areas Act, 2002*. Canada plans to establish a network of NMCAs to protect and conserve representative ecosystems and key features within each of its 29 marine regions. No NMCAs have been established in Newfoundland waters but at the time of the EIS, three PRMAs had been identified in the RSA. These PRMAs have been replaced by three Representative Marine Areas (RMAs) in coastal areas of the southeastern Newfoundland (Parks Canada 2019). Two RMAs fall within the RSA (Figure 3-1, Table 3.4). A future NMCA may be located in one of these PRMAs.

Vulnerable Marine Ecosystems

The Food and Agriculture Organization of the United Nations (FAO) identifies Vulnerable Marine Ecosystems (VMEs) as benthic environments sensitive to disturbance and slow to recover. Portions of VMEs may be closed to bottom fishing activities (See NAFO fisheries closure areas in Table 3.4). In 2016, VME areas (i.e., areas identified for sponges, sea pens and large gorgonian corals) in the Newfoundland offshore were updated but detailed descriptions of the VME areas are not publicly available. One or more of each type of VME is in the RSA and some VMEs may not be visible at this mapping scale. Oil and gas exploration activities are not prohibited in VMEs.

Current Special Areas in the RSA

Special areas are illustrated in Figure 3-1 and a list of current special areas in the RSA is included in Table 3.4. The shortest distances to any of each type are shown. Special areas outside of the RSA may be seen in the figure but are not included in Table 3.4.

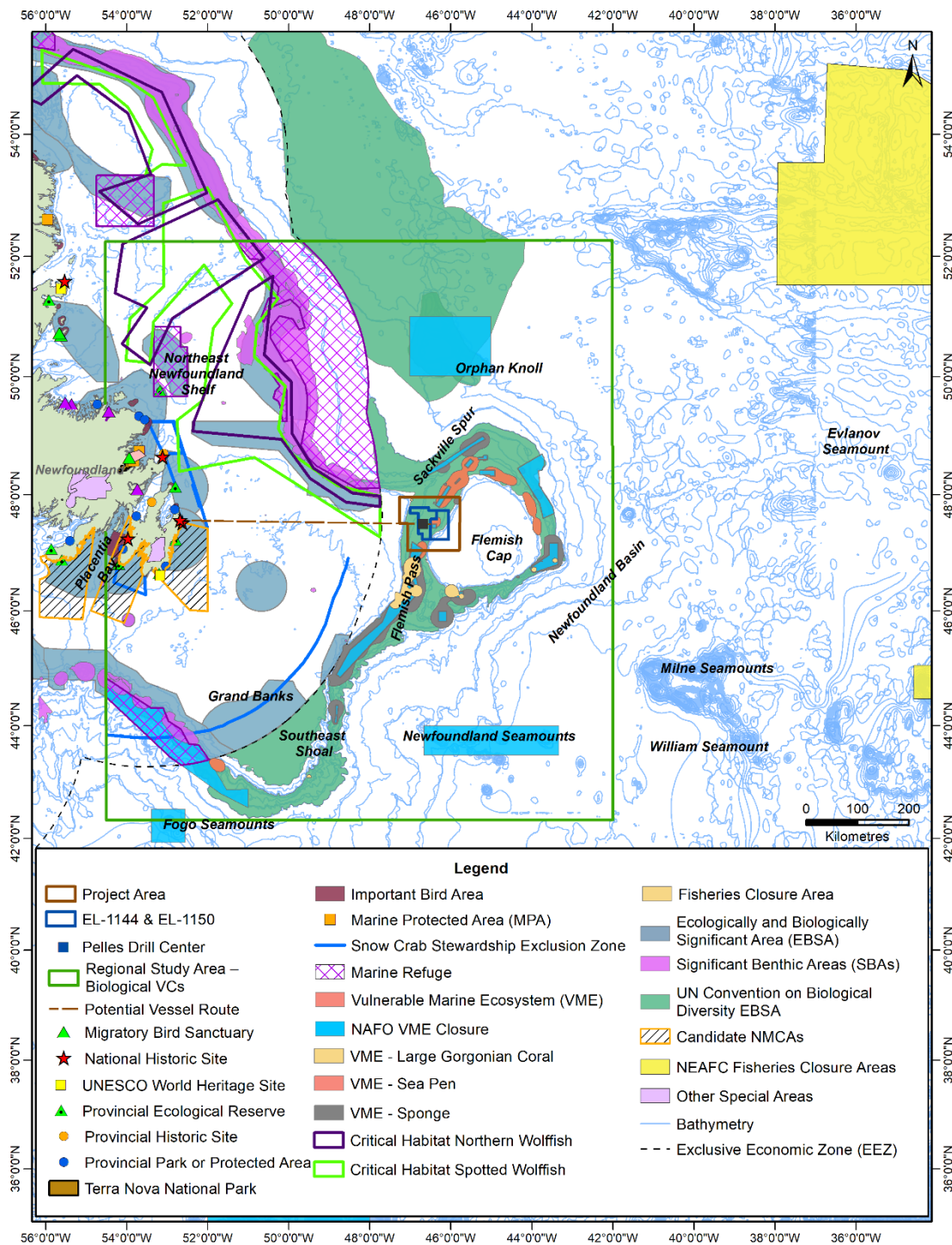


Figure 3-1 Special areas within the Regional Study Area.

Table 3.4 Minimum distances to special areas in the Regional Study Area.

Special Areas	Minimum Distance (km)			
	Project Area	EL 1144 and/or EL 1150	LSA	Vessel Traffic Route
Special Areas under Canadian Jurisdiction				
<i>Marine Protected Areas (MPAs) and Areas of Interest (AOI)</i>				
Eastport - Duck Island	484	508	140	149
Eastport - Round Island MPA	492	515	130	140
<i>Marine Refuges</i>				
Northeast Newfoundland Slope Closure	40	67	30	38
Funk Island Deep Closure	428	456	224	231
Division 30 Coral Closure	551	586	323	333
Gooseberry Island Lobster Area Closure	483	505	93	96
Gander Bay Lobster Area Closure	548	574	224	230
<i>Species at Risk Critical Habitat</i>				
Northern Wolffish	36	56	26	29
Spotted Wolffish	36	56	25	Intersects
<i>Snow Crab Stewardship Exclusion Zones</i>				
Crab Fishing Area 5A	404	429	104	126
Crab Fishing Area 6A	381	403	49	67
Crab Fishing Area 6B	413	391	3	23
Crab Fishing Area – 8BX	113	140	60	50
Crab Fishing Area 9A	464	486	57	123
Crab Fishing Area Near Shore	309	330	Intersects	Intersects
<i>Other Federal Fisheries Act Closure Areas (FCAs)</i>				
Funk Island Deep Box	428	456	224	231
Eastport Peninsula Lobster Management Area	470	494	127	136
<i>Migratory Bird Sanctuaries (MBSs)</i>				

Special Areas	Minimum Distance (km)			
	Project Area	EL 1144 and/or EL 1150	LSA	Vessel Traffic Route
Terra Nova	500	524	140	150
Coastal National Parks and Historic Sites				
Terra Nova National Park	484	507	125	132
Cape Spear Lighthouse National Historic Site	403	423	Intersects	Intersects
Signal Hill National Historic Site	407	427	Intersects	Intersects
Ryan Premises National Historic Site	440	464	114	124
Castle Hill National Historic Site	507	528	91	101
National Marine Conservation Areas (NMCAs) Representative Marine Areas (RMAs)				
I- South Burin/St. Pierre Bank	567	588	558	157
II- West Avalon/Green Bank-	469	490	459	71
III- East Avalon/Grand Banks	357	377	347	4
Canadian Ecologically and Biologically Significant Areas (EBSAs)				
Northeast Slope	33	54	10	Intersects
Eastern Avalon	358	380	Intersects	Intersects
Virgin Rocks	237	265	69	69
Lilly Canyon-Carson Canyon	197	231	187	198
Southeast Shoal	336	370	298	297
Southwest Slope	514	549	274	284
Placentia Bay	493	513	72	82
Smith Sound	446	469	69	79
Fogo Shelf	451	477	181	191
Grey Islands	552	579	273	283
Notre Dame Channel	431	458	225	233
Orphan Spur	223	251	180	172
St. Mary's Bay	468	490	59	69

Special Areas	Minimum Distance (km)			
	Project Area	EL 1144 and/or EL 1150	LSA	Vessel Traffic Route
Haddock Channel Sponges	533	558	190	200
Baccalieu Island	354	376	3	10
Bonavista Bay	456	481	105	115
Significant Benthic Areas (SiBAs)				
Sea Pens	35	58	25	19
Large Gorgonian Corals	63	87	Intersects	Intersects
Small Gorgonian Corals	189	221	121	113
Sponges	362	389	211	200
Special Areas under Newfoundland and Labrador Jurisdiction				
Coastal Provincial Ecological Reserves				
Baccalieu Island Seabird Ecological Reserve	413	435	54	63
Witless Bay Seabird Ecological Reserve	418	440	28	38
Mistaken Point Fossil Ecological Reserve	461	484	98	108
Cape St. Mary's Seabird Ecological Reserve	531	553	130	140
Funk Island Seabird Ecological Reserve	477	504	237	246
Coastal Provincial Parks and Historic Sites				
The Dungeon Provincial Park	438	462	116	125
Chance Cove Provincial Park	445	468	81	90
Windmill Bight Provincial Park	486	511	190	199
Bellevue Beach Provincial Park	487	507	69	78
Deadman's Bay Provincial Park	497	523	200	209
Gooseberry Cove Provincial Park	518	540	108	117
Cape Bonavista Lighthouse Historic Site	439	463	119	129
Heart's Content Cable Station Historic Site	457	478	50	60
Special Areas under International Jurisdiction				

Special Areas	Minimum Distance (km)			
	Project Area	EL 1144 and/or EL 1150	LSA	Vessel Traffic Route
Northwest Atlantic Fisheries Organization (NAFO) Fisheries Closure Areas (FCAs)				
Tail of the Bank (1)	327	358	317	335
Flemish Pass/Eastern Canyon (2)	Intersects	15	Intersects	6
Beothuk Knoll (3)	117	138	107	141
Eastern Flemish Cap (4)	137	162	127	209
Northeast Flemish Cap (5)	120	150	110	202
Sackville Spur (6)	39	59	29	65
Northern Flemish Cap (7)	56	89	46	135
Northern Flemish Cap (8)	79	111	69	150
Northern Flemish Cap (9)	58	88	48	125
Northwest Flemish Cap (10)	Intersects	6	Intersects	35
Northwest Flemish Cap (11)	Intersects	Intersects	Intersects	21
Northwest Flemish Cap (12)	25	52	15	88
Beothuk Knoll (13)	77	97	67	109
30 Coral Closure	551	586	318	333
Orphan Knoll Seamount	227	248	217	248
Newfoundland Seamounts	339	359	329	360
Fogo Seamounts 1	664	698	550	559
Fogo Seamounts 2	753	785	706	335
Vulnerable Marine Ecosystems				
Sponges	Intersects	12	Intersects	38
Large Gorgonian Corals	Intersects	12	Intersects	41
Sea Pens	Intersects	Intersects	Intersects	Intersects
United Nations Convention on Biological Diversity Ecologically and Biologically Significant Areas (EBSAs)				
Slopes of the Flemish Cap and Grand Bank	Intersects	Intersects	Intersects	Intersects

Special Areas	Minimum Distance (km)			
	Project Area	EL 1144 and/or EL 1150	LSA	Vessel Traffic Route
Orphan Knoll	211	239	201	252
Seabird Foraging Zone in the Southern Labrador Sea	179	200	169	202
Southeast Shoal and Adjacent Areas on the Tail of the Grand Bank	295	327	285	287
Important Bird Areas (IBAs)				
Quidi Vidi Lake	406	426	Intersects	Intersects
Cape St. Francis	408	428	13	23
Baccalieu Island	410	432	49	59
Witless Bay Islands	414	435	21	31
Grates Point	416	438	52	62
Mistaken Point	452	476	96	106
Funk Island	471	498	230	240
Cape Freels Coastline and Cabot Island	472	497	163	173
Terra Nova National Park	480	503	119	129
The Cape Pine and St. Shotts Barren	483	506	109	119
Placentia Bay	497	518	81	91
Wadham Islands and adjacent Marine Area	507	533	221	231
Cape St. Mary's	521	543	120	130
UNESCO World Heritage Sites				
Mistaken Point Ecological Reserve	459	483	101	110
<p>Grey cells in represent changes special areas listing from the original EIS.</p> <p>Sources: Birds Canada 2019a,b; DFO 2013, 2015, 2016, 2017, 2018a,b, 2019a,b,c,d,e,f,g,h, 2020a,b; Canadian Geoparks Network 2019; CBD 2018, 2019a,b,c; FAO 2019; FLR 2016, 2019; Government of Canada 2019; Kenchington et al. 2016, 2018; King 2016; NAFO 2016, 2019a,b,c; Nexen 2018; NRCan 2019; Parks Canada 2016, 2018, 2019a,b; UNESCO 2019, WDPA 2010; 2014, Wells et al 2017, Wells 2018.</p>				

3.3 Commercial Fisheries

Commercial fisheries activity in the Project Area based on available datasets (2014-2018) is similar to datasets presented in the EIS (2010-2015). Figure 3-2 to Figure 3-10 provide updated geographic distribution of domestic commercial fishing activity within and adjacent to the Project Area. The information provided in these maps is based on the geospatial data received from DFO. They show the general presence of recorded fishing activity for a series of 6 x 4 nautical mile "cells" that together comprise a map grid that covers the region. The information presented here represents the fishing intensity for all years from 2014 to 2018, aggregated for all species, the data is quantified using Jenk's (Natural Breaks) classification, where each grid square represents the number of fishing records for the location, the resulting heat map indicates areas of greatest activity.

Comparatively little domestic harvesting has been recorded within the Project Area itself, with Project Area Unit Area catches mostly occurring to the west. The higher fishing intensity locations (Figure 3-2, Figure 3-3, Figure 3-9, and Figure 3-10) and the primary list of fisheries species (Figure 3-4 to Figure 3-7) remain the same as was assessed in the EIS.

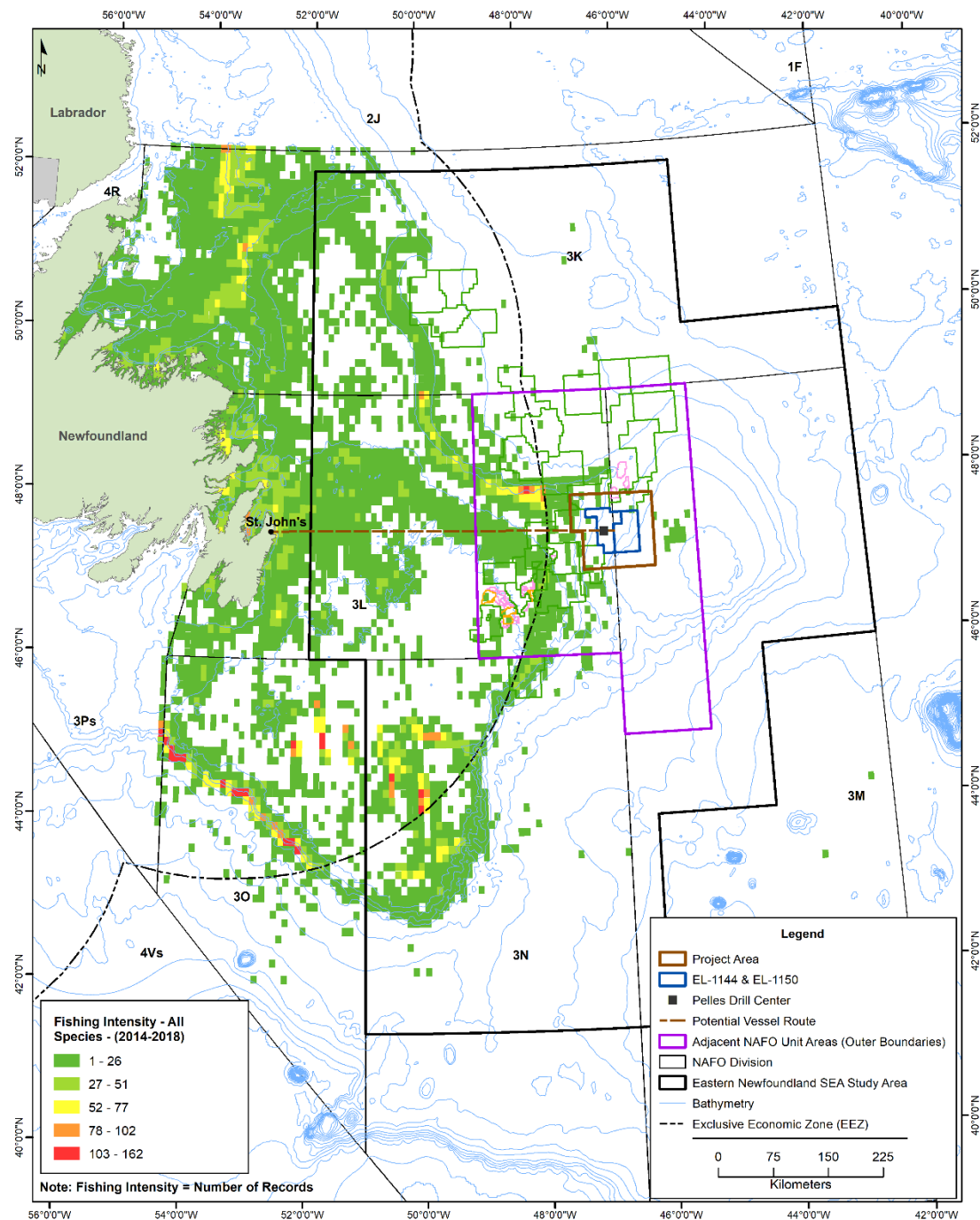


Figure 3-2 Commercial fishing intensity; all species (2014-2018).

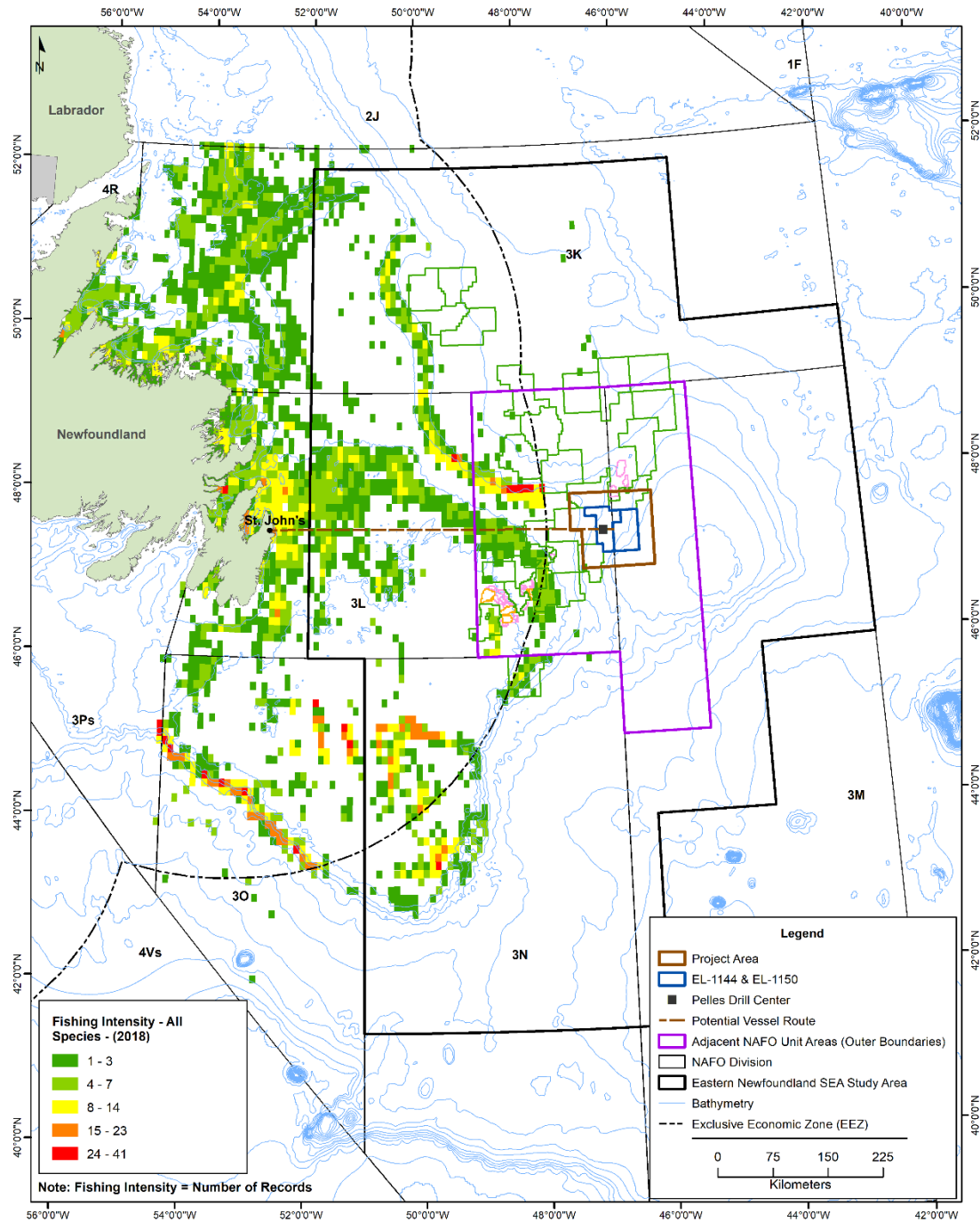


Figure 3-3 Commercial fishing intensity; all species (2018).

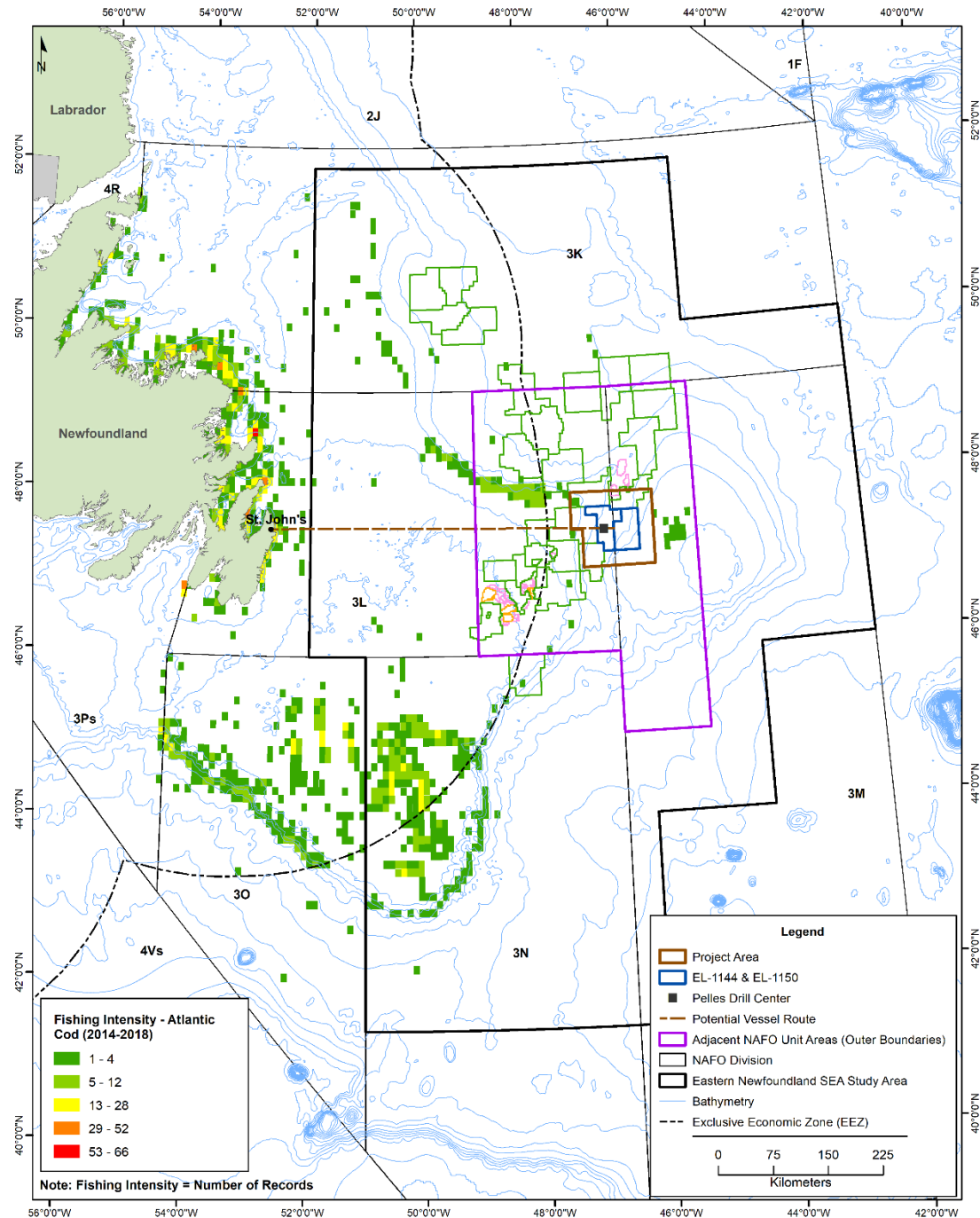


Figure 3-4 Commercial fishing intensity; Atlantic cod (2014-2018).

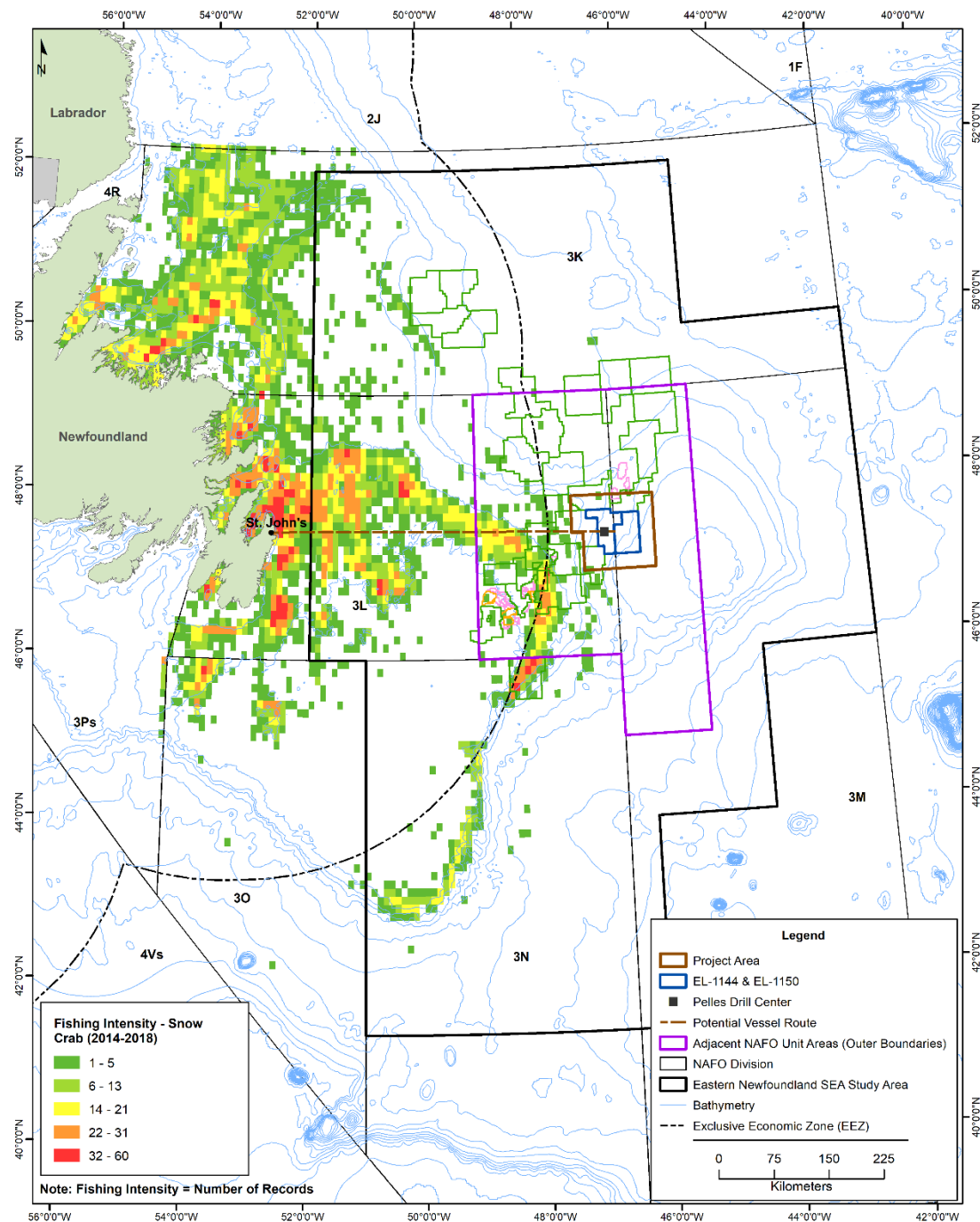


Figure 3-5 Commercial fishing intensity; queen/snow crab (2014-2018).

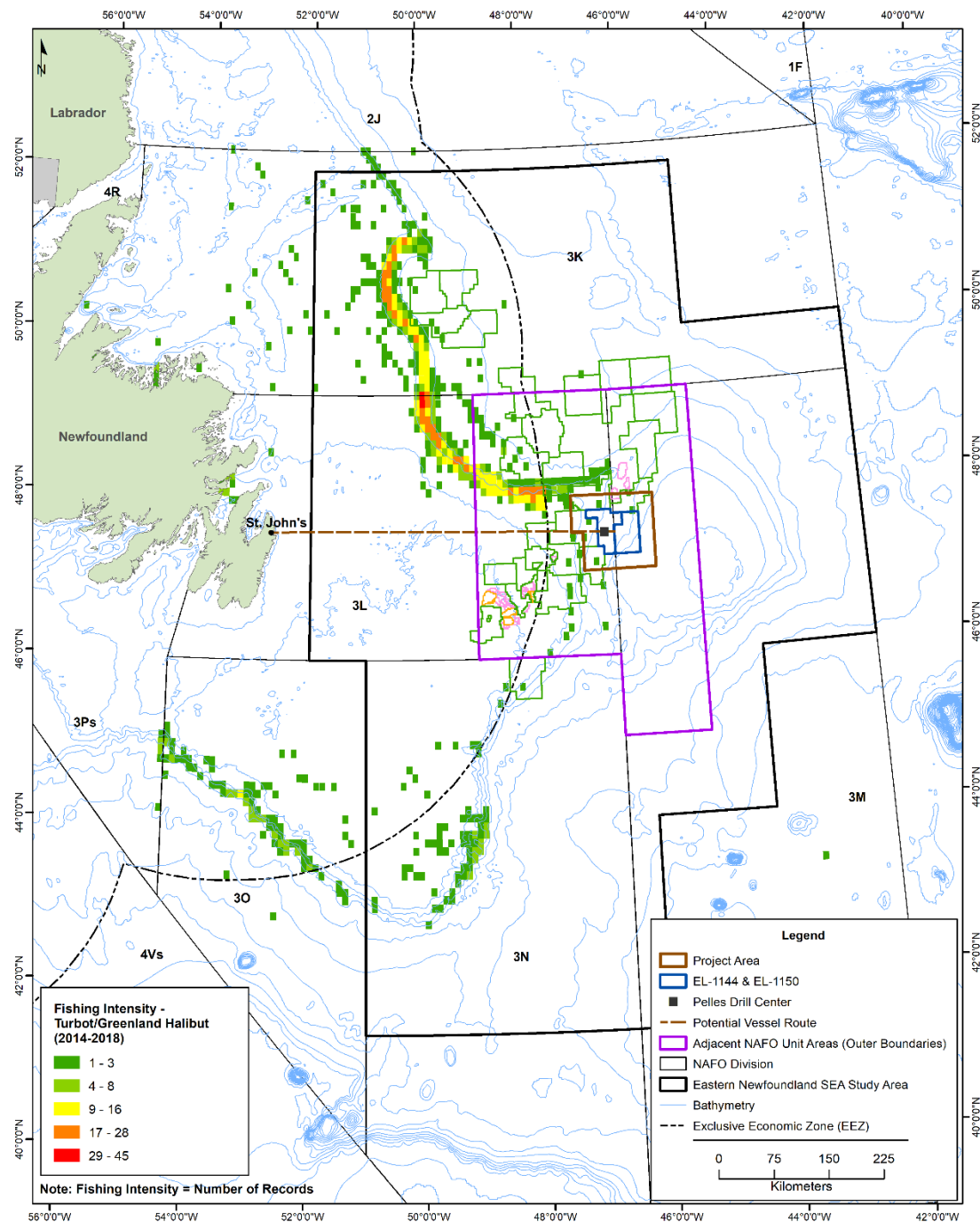


Figure 3-6 Commercial fishing intensity; turbot/Greenland halibut (2014-2018).

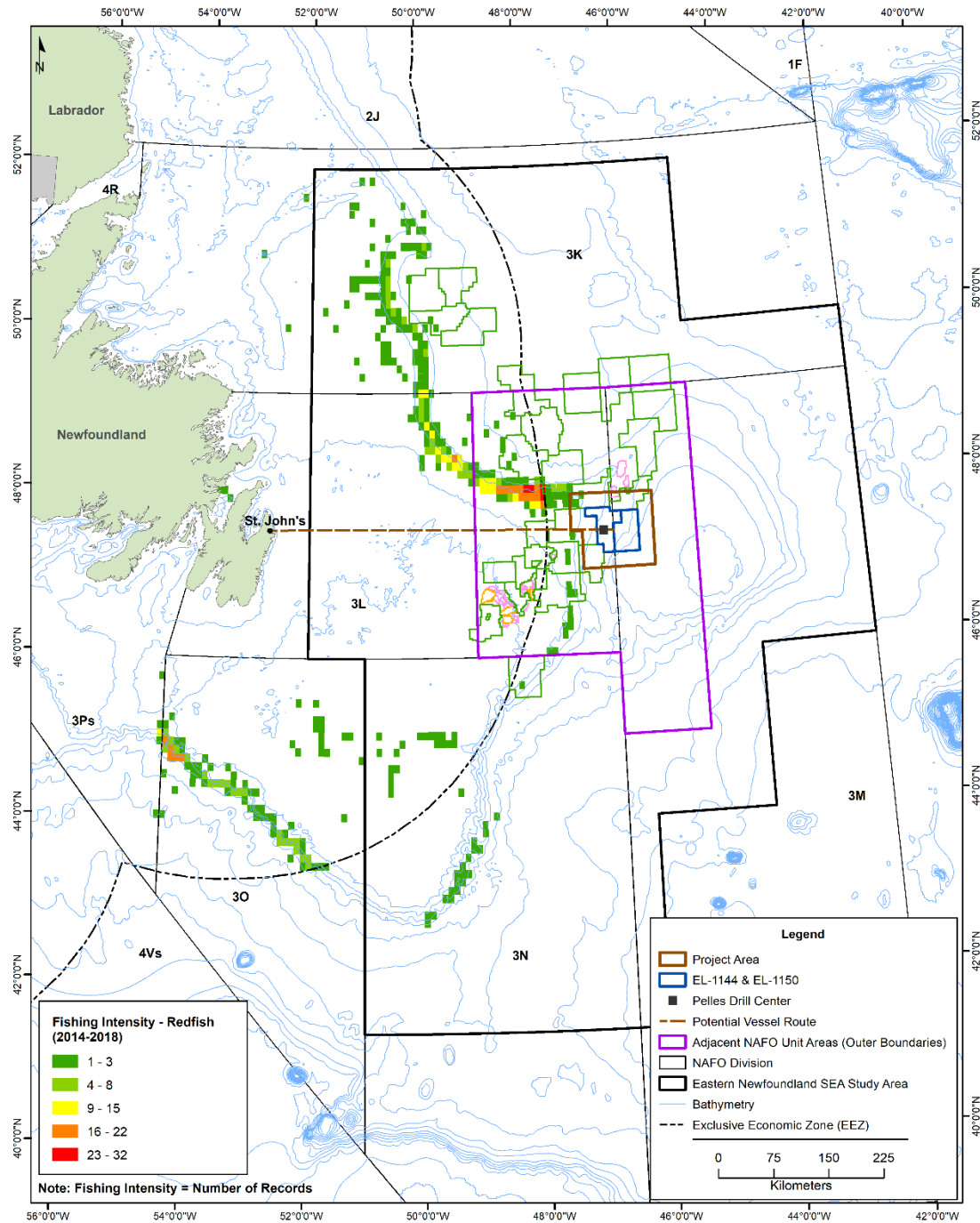


Figure 3-7 Commercial fishing intensity; redfish (2014-2018).

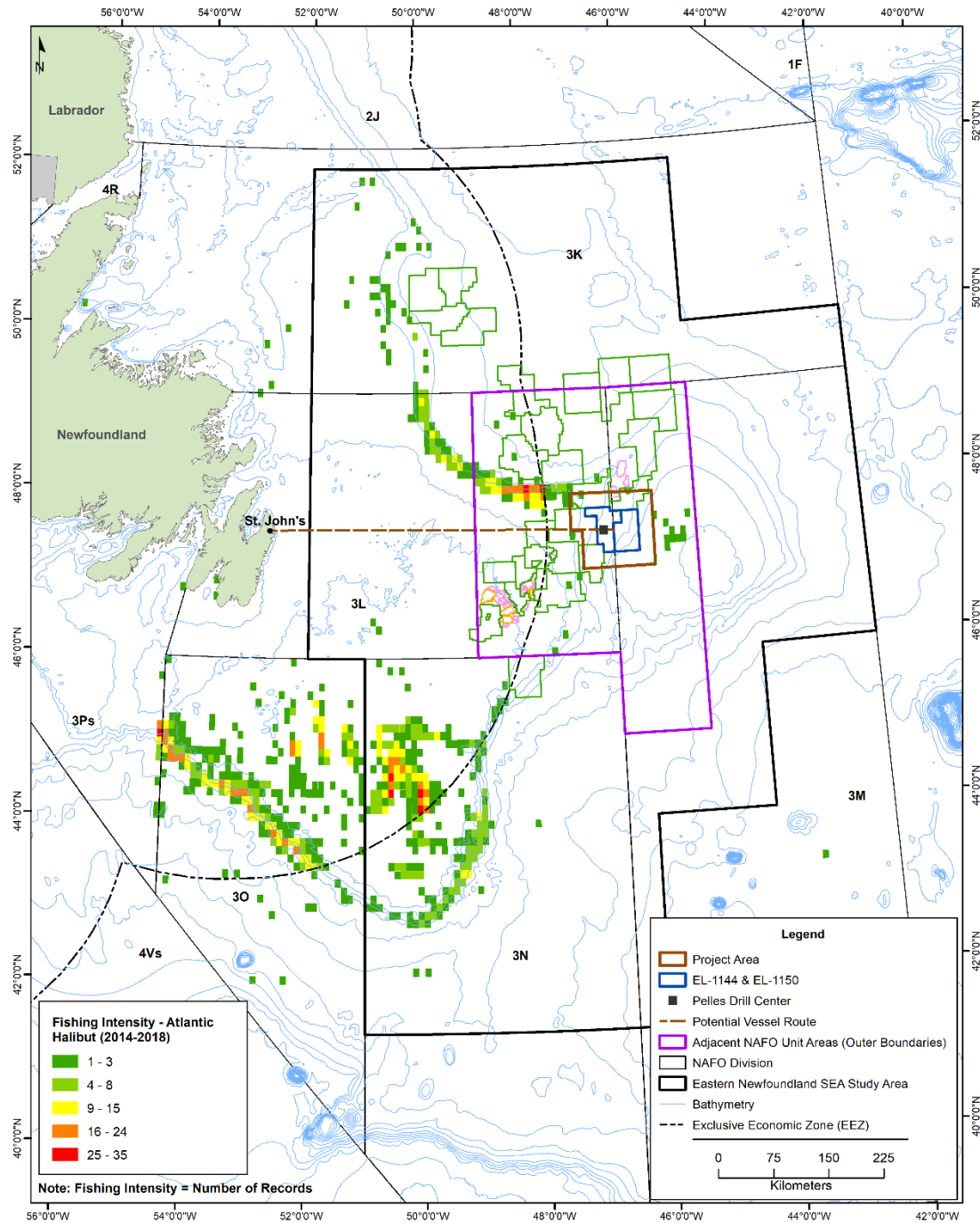


Figure 3-8 Commercial fishing intensity; Atlantic halibut (2014-2018).

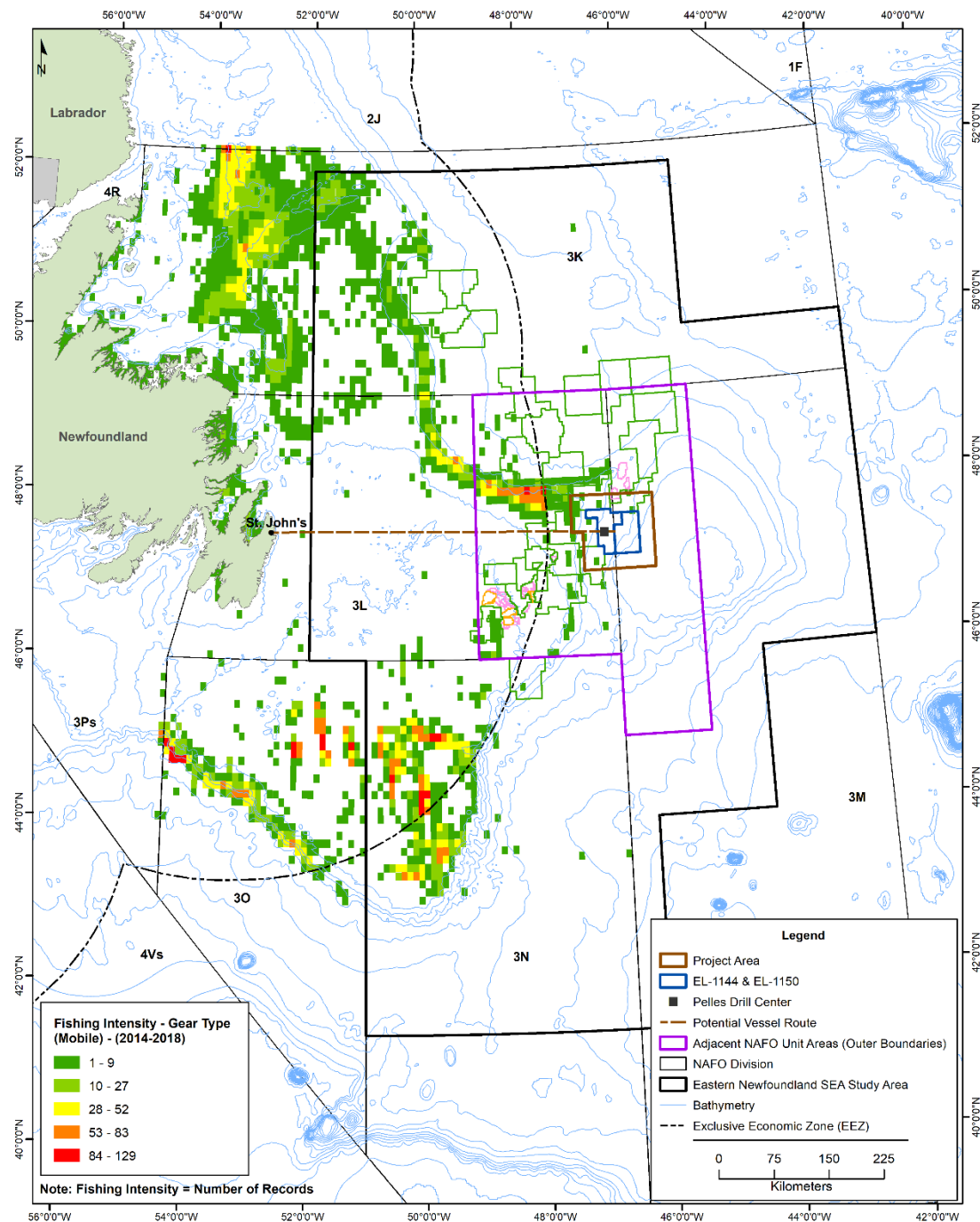


Figure 3-9 Commercial fishing locations; mobile gear types (2014-2018).

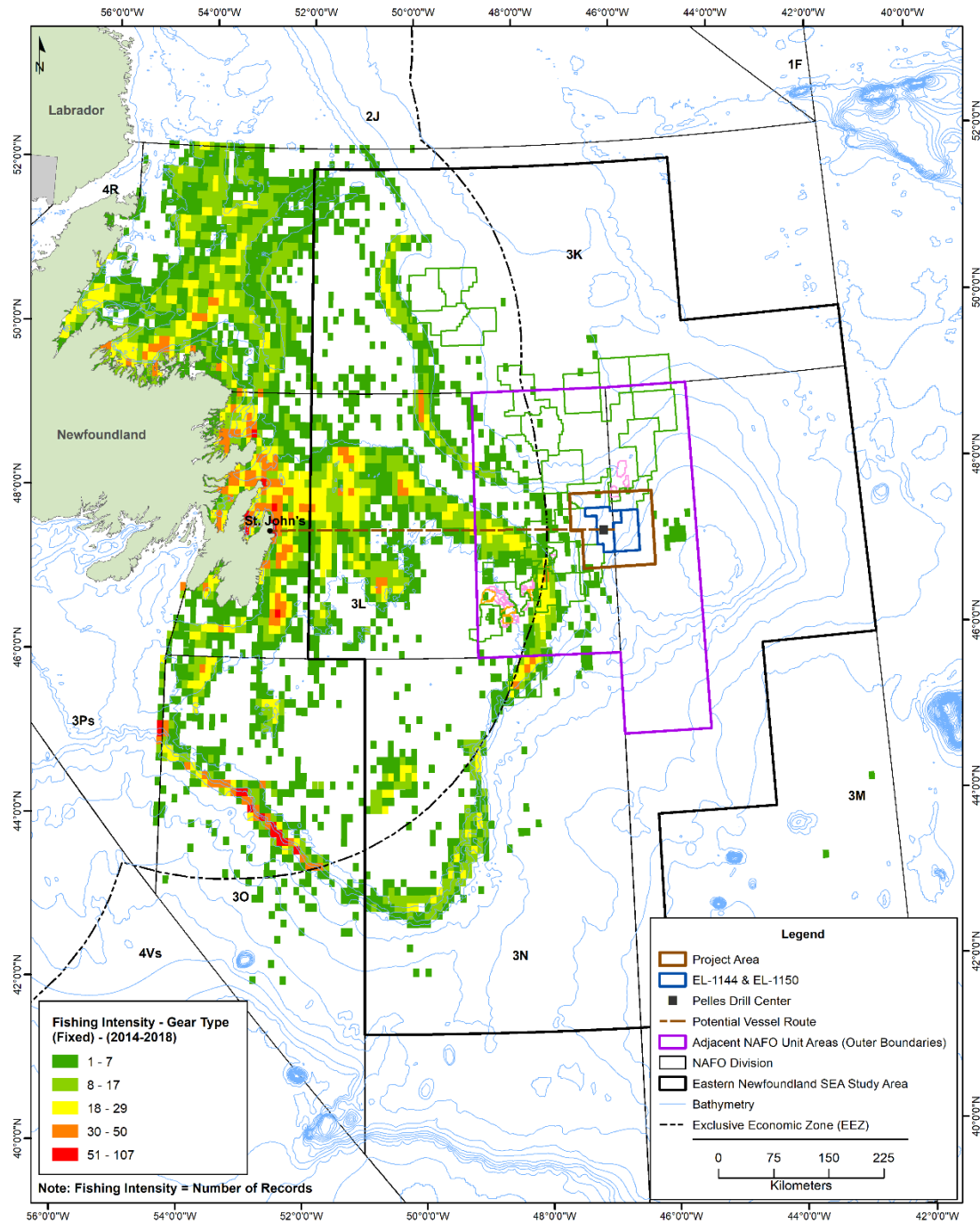


Figure 3-10 Commercial fishing locations; fixed gear types (2014-2018).

4.0 ENGAGEMENT

As part of current and planned operations offshore Newfoundland & Labrador, CNOOC regularly engages with ocean users and other stakeholders. These engagement sessions include, but are not limited to, the details of the planned activities, potential for interaction with other ocean users and mitigations that may be applicable to each activity.

Details of the 2021 drilling program described in this EA update were communicated to the Fish, Food and Allied Workers (FFAW-Unifor), Ocean Choice International, Atlantic Groundfish Council, the Association of Seafood producers and One Ocean in a notification on March 12, 2021 (Table 4.1). A follow up meeting was held with the FFAW-Unifor was held on March 18th, 2021 to provide additional details on the project and to consult on the need for a Fisheries Liaison Officer during transit. It was identified that the arrival of the Forth would coincide with the opening of the crab fishery and that a transit route will be provided before arrival. Additionally, it was requested that a Fisheries Liaison Officer be added to the vessel during transit from bay bulls which is in the planning process. A meeting was held with Ocean Choice on March 23, 2021 to provide additional details on the project and no concerns were raised. Atlantic Groundfish Council has requested engagement at a later date, and we have not received a response from the Association of Seafood Producers. The Atlantic Groundfish Council and the Association of Seafood Producers have not raised any concerns following the original notification and follow up emails. The two Exploration Licences (EL1144 and EL1150) overlap both the NAFO 3L and 3M zones. A Notice to Mariners will be communicated in advance of the 2021 field activities to advise other ocean users of the planned location and duration of the activities.

Details of the 2021 drilling program described in this EA update were communicated to Indigenous Fisheries on March 17th, 2021. No additional follow up discussions have been requested and no concerns were raised following this communication.

CNOOC recognizes that communication and coordination between ocean users is key to avoiding and/or minimizing any potential conflicts. CNOOC will continue to engage with all relevant stakeholders throughout the life of the project and in alignment with our approved communications plans.

CNOOC has also engaged with government agencies as identified in the conditions of the Decision Statement Issued under Section 54 of the CEAA, 2012 to develop the follow up programs required as part of this drilling campaign.

Table 4.1 Engagement activities for the 2021 exploration drilling program.

Stakeholder Group	Description of Engagement
Commercial Fisheries	<ul style="list-style-type: none"> February 2020 - Consulted with the C-NLOPB, Fish Food & Allied Workers Union (FFAW-Unifor), One Ocean, Ocean Choice International (OCI), Association of Seafood Producers (ASP) and Atlantic Groundfish Council (AGC) on Commercial Fisheries Communication Plan October 2020 – Provided project update to FFAW-Infor, One Ocean, OCI, ASP and AGC with relation to CNOOC's planned 2021 Program

Stakeholder Group	Description of Engagement
	<ul style="list-style-type: none"> March 2021 - Provided project update to FFAW-Infor, One Ocean, OCI, ASP and AGC with relation to CNOOC's planned 2021 Program March 2021 – Meeting with FFAW with respect to the requirement for a fisheries liaison for drillship transit from staging location to field site
Indigenous Groups	<ul style="list-style-type: none"> February 2020 – Consulted with Indigenous Groups on Indigenous Communications Plan and Oil Spill Response Plan for review and comment March 2020 – Provided final version of the Indigenous Fisheries Communication Plan and the feedback report from the engagement March 2020 – Provided the final electronic versions of the Oil Spill Response Plan and Oil Spill Response Exercise Report November 2020 – Provided project update to Indigenous Groups with relation to CNOOC's planned 2021 program March 2021 – Provided project update to Indigenous Groups with relation to CNOOC's planned 2021 program and notification of CEAA project information webpage
Fisheries and Oceans Canada	<ul style="list-style-type: none"> March 2020 – Consult with C-NLOPB and DFO for Acoustic Monitoring Plan August 2020 – Consult with C-NLOPB, Canadian Wildlife Service (CWS) and DFO for Wildlife Response Plan November 2020 - Consult with C-NLOPB, CWS and DFO for revised Wildlife Response Plan December 2020 – Consult with C-NLOPB and DFO for Drill Cuttings Dispersion Follow Up Program February 2021 – Consult with C-NLOPB and DFO for revised Acoustic Monitoring Plan and Drill Cuttings Dispersion Follow Up Program March 2021 – Consult with C-NLOPB and DFO regarding Acoustic Monitoring Plan and Drill Cuttings Dispersion Follow Up Plan
Environment and Climate Change Canada	<ul style="list-style-type: none"> March 2020 - Consult occurred between C-NLOPB and ECCC for Physical Environment Monitoring Plan August 2020 – Consult with C-NLOPB and CWS, DFO for Wildlife Response Plan November 2020 - Consult with C-NLOPB and CWS, DFO, ECCC for revised Wildlife Response Plan

Stakeholder Group	Description of Engagement
	<ul style="list-style-type: none"> November 2020 – Consult with C-NLOPB and CWS for Seabird Observation and Monitoring Follow Up Program, Seabird Observation and Monitoring Procedural Aid and Seabird Capture and Handling Procedural Aid February 2021 – Consult with C-NLOPB and CWS for revisions to Seabird Observation and Monitoring Follow Up Program, Seabird Observation and Monitoring Procedural Aid and Seabird Capture and Handling Procedural Aid
Science Table	<ul style="list-style-type: none"> July 2020 – Consult with C-NLOPB and Science Table on revisions to Spill Impact Mitigation Assessment

5.0 ENVIRONMENTAL EFFECTS ASSESSMENT AND SUMMARY

Planned 2021 exploration drilling and associated activities are within the Project scope, temporal scope, and spatial scope as assessed within the EIS. Since posting of the EIS and responses to information requirements, there have been updates to key environmental components, including species of conservation concern, special areas, and commercial fisheries. Conservation status has changed for several species with additional species listings (e.g., common lumpfish) and de-listing of species. Regionally, there are additional special areas including established critical habitat for spotted and northern wolffish. The updated distribution and intensity of commercial fishing activities are similar to data that was assessed for the original EIS. Although there have been changes in environmental components, the potential interactions with Project activities and components as assessed in the EIS remain unchanged (SOCC: Section 8.4, 9.4, 10.4, Special Areas: Section 11.0, Fisheries and Other Ocean Uses: Section 13.0).

Each of the potential environmental interactions and effects that may be associated with the Project can be avoided or otherwise mitigated through the use of good planning and proven operational practices and procedures, supported by standard mitigations that are well established and outlined in relevant regulatory procedures and guidelines, and which have been identified by CNOOC as part of the EIS (Section 18.2). Overall, the planned components and activities that will be associated with the Project will entail localized, and transient disturbances in the marine environment at any one location within an EL and time throughout the operational life of this exploration program, the potential effects of which will be effectively avoided or minimized through the various regulated or otherwise implemented mitigations referenced above. The Project is therefore not anticipated to disturb, displace, or otherwise affect marine fish, birds, mammals, sea turtles, Indigenous Groups, fisheries or other human components and activities in such a way that causes adverse, sustained and detectable effects to populations, species at risk or human activities in any location.

The additional information and clarifications provided through this EIS do not result in any changes in the original environmental effects predictions, required mitigation or associated determinations related to environmental effects significance for any component of the environment. The Project is not likely to result in significant adverse environmental effects.

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