Figure 3.32 Commercial Fishing Locations, All Species: August (2014 and 2015)

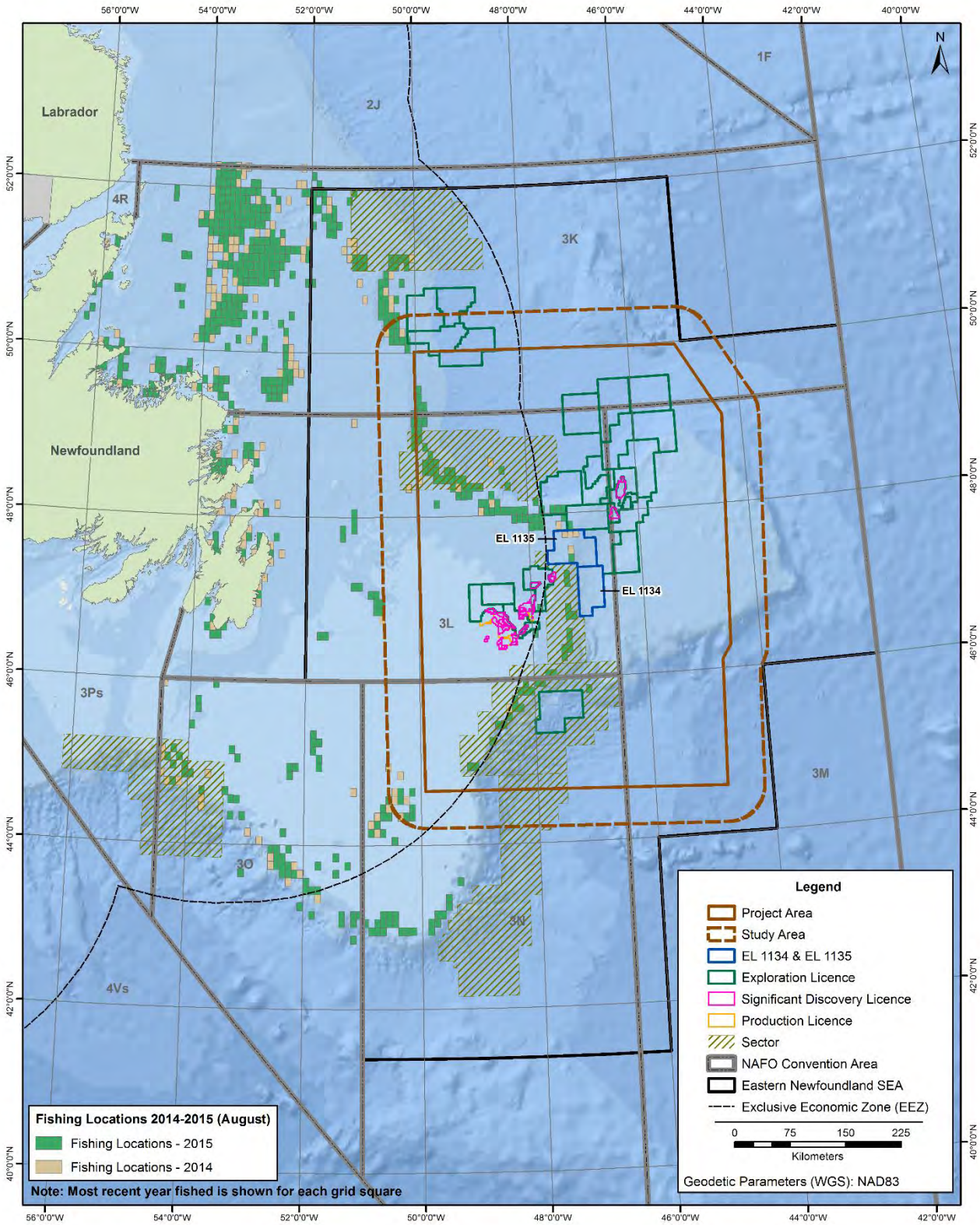


Figure 3.33 Commercial Fishing Locations, All Species: September (2014 and 2015)

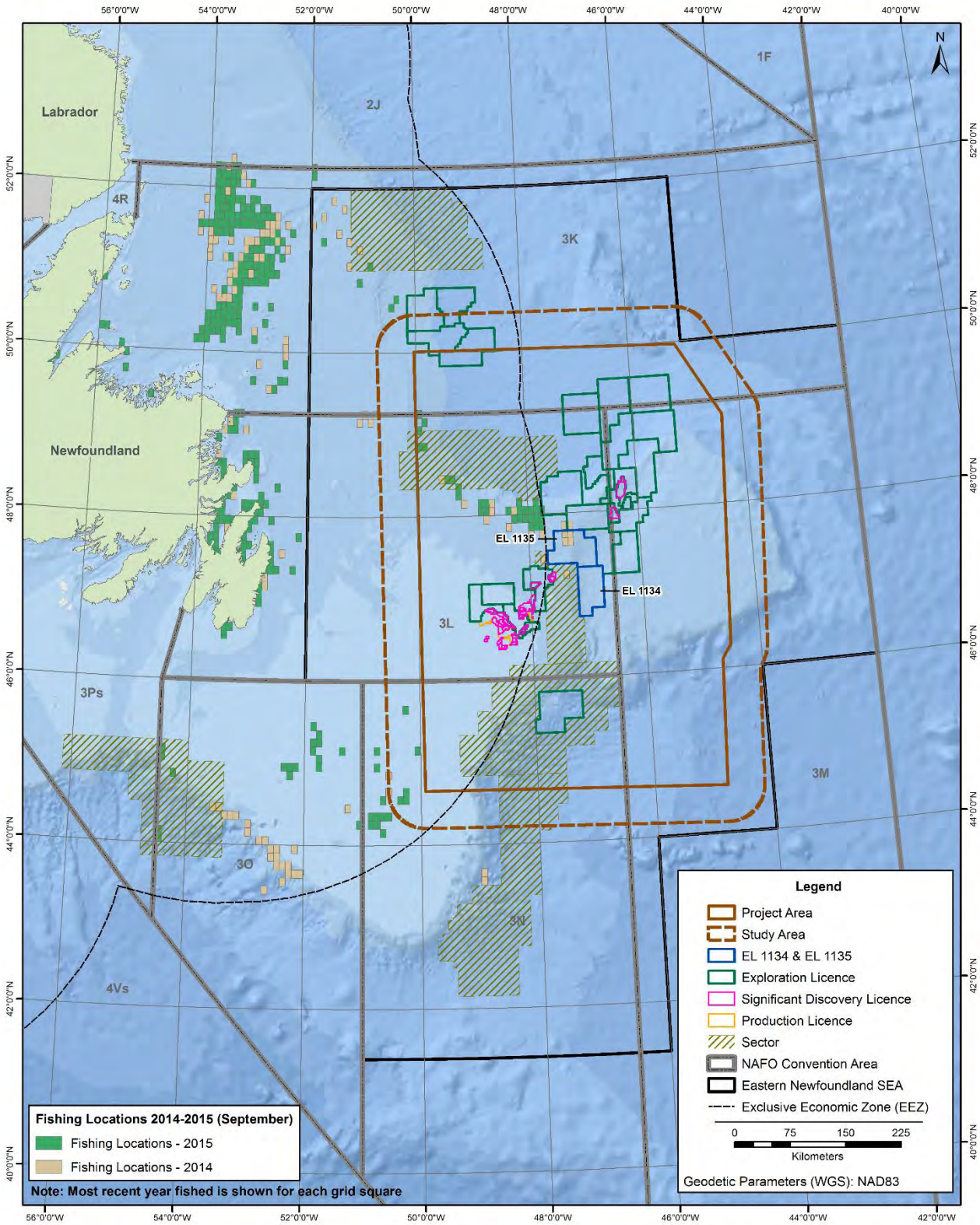


Figure 3.34 Commercial Fishing Locations, All Species: October (2014 and 2015)

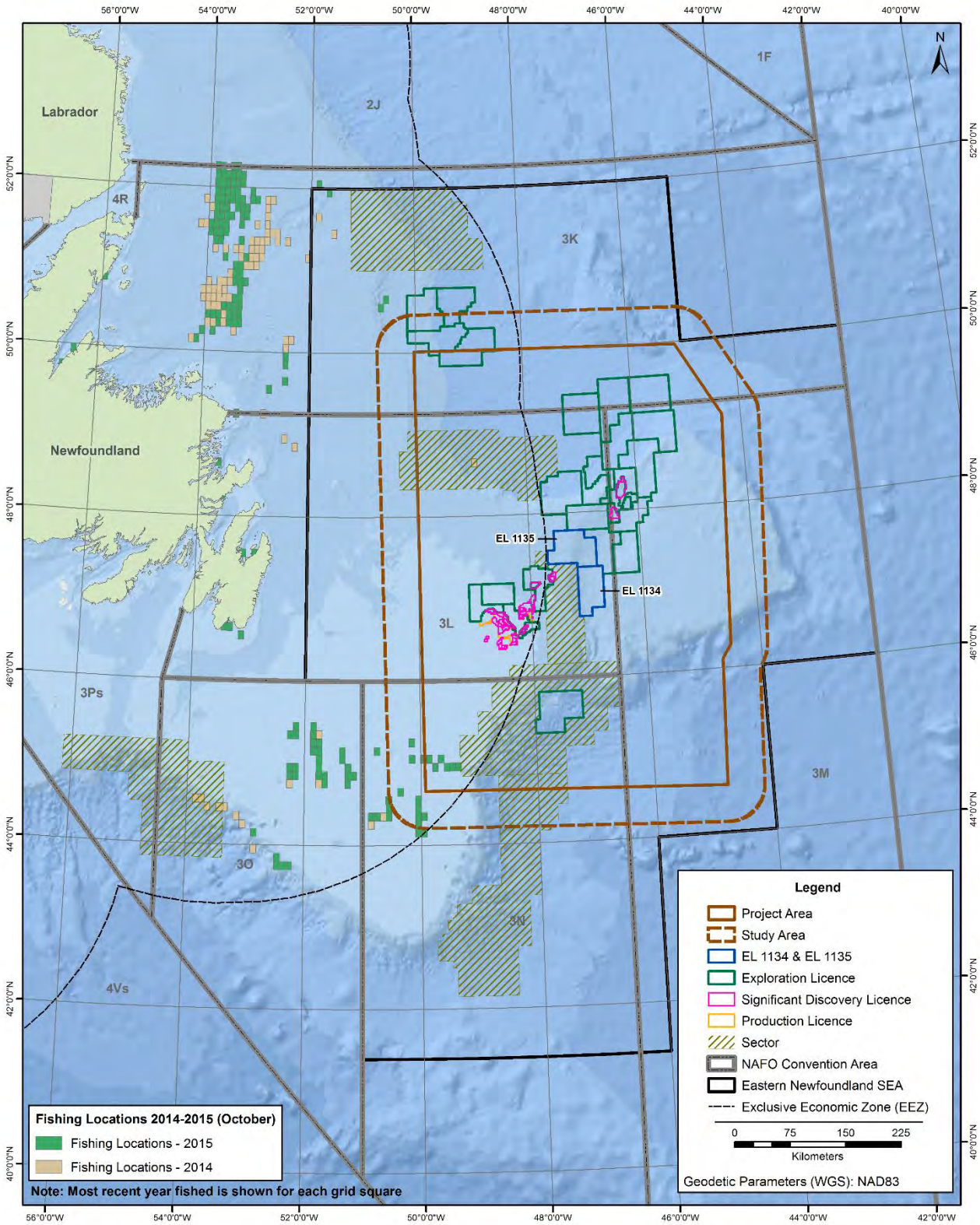
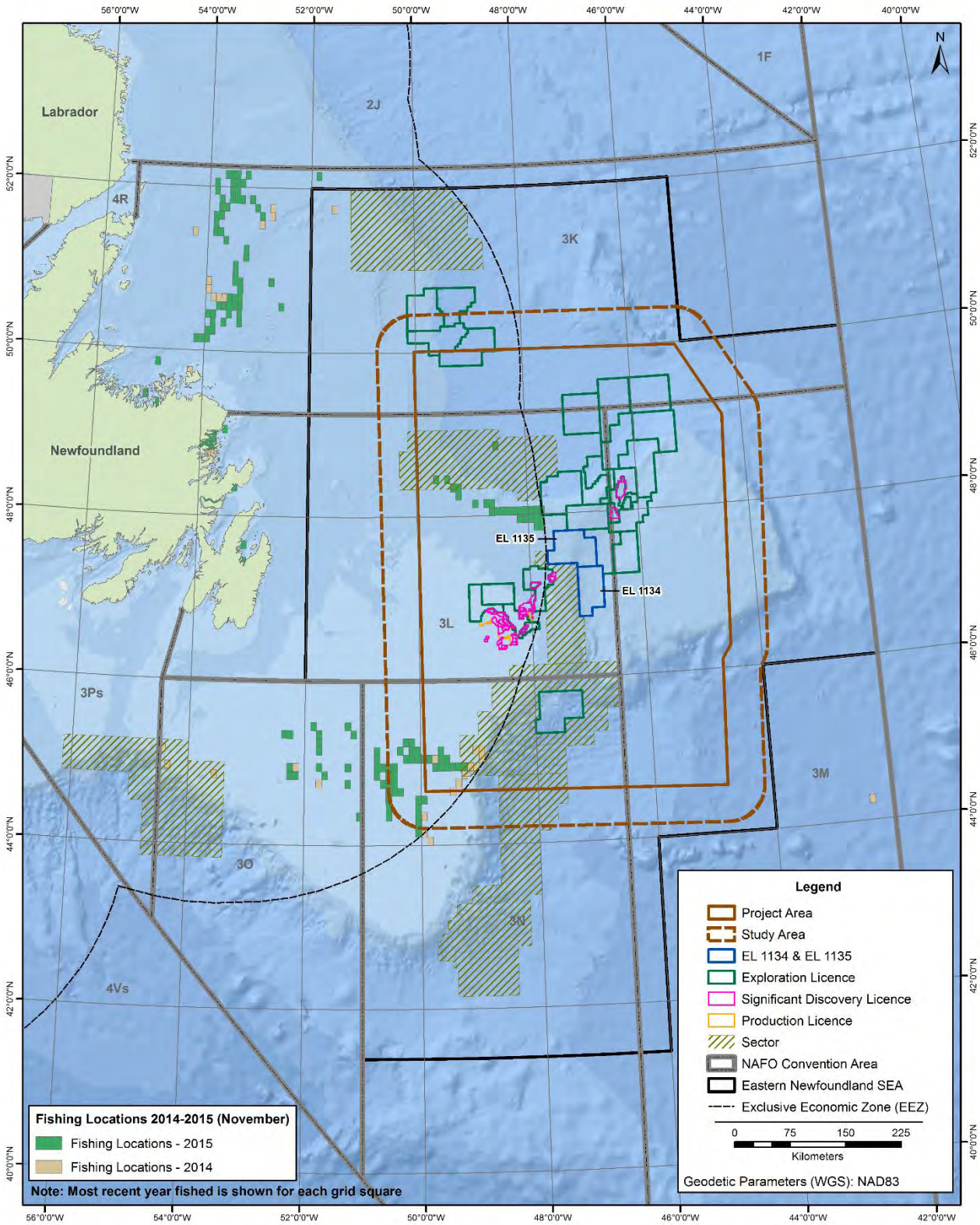


Figure 3.35 Commercial Fishing Locations, All Species: November (2014 and 2015)



Commercial Fish Harvests – Gear Types

The available DFO datasets also reflect that a variety of fishing gear types were used as part of the commercial fishery within the Study Area from 2014 to 2015 (Table 3.26).

Of these, pots (unspecified) accounted for approximately 87 percent of the total fish landings over that period by weight, followed by gill nets (11 percent), and shrimp trawls (two percent) (Figure 3.36).

In terms of landed value, pots used in the shellfish (especially crab) fisheries accounted for the large majority (92 percent) of the total value of the fishery in that area over that time period (Figure 3.37).

Table 3.26 Fish Harvests by Gear Type by Weight and Value (2014-2015, All Study Area NAFO Unit Areas)

Gear Type	Weight (kg)	Value ($)
Pot	25,734,202	136,407,355
Gillnet (set or fixed)	3,179,520	10,469,683
Shrimp trawl	720,386	1,684,917
Total	**29,634,108**	**148,561,955**

Figure 3.38 Fish Harvests Using Fixed Gear Types (May to November, 2014 and 2015)

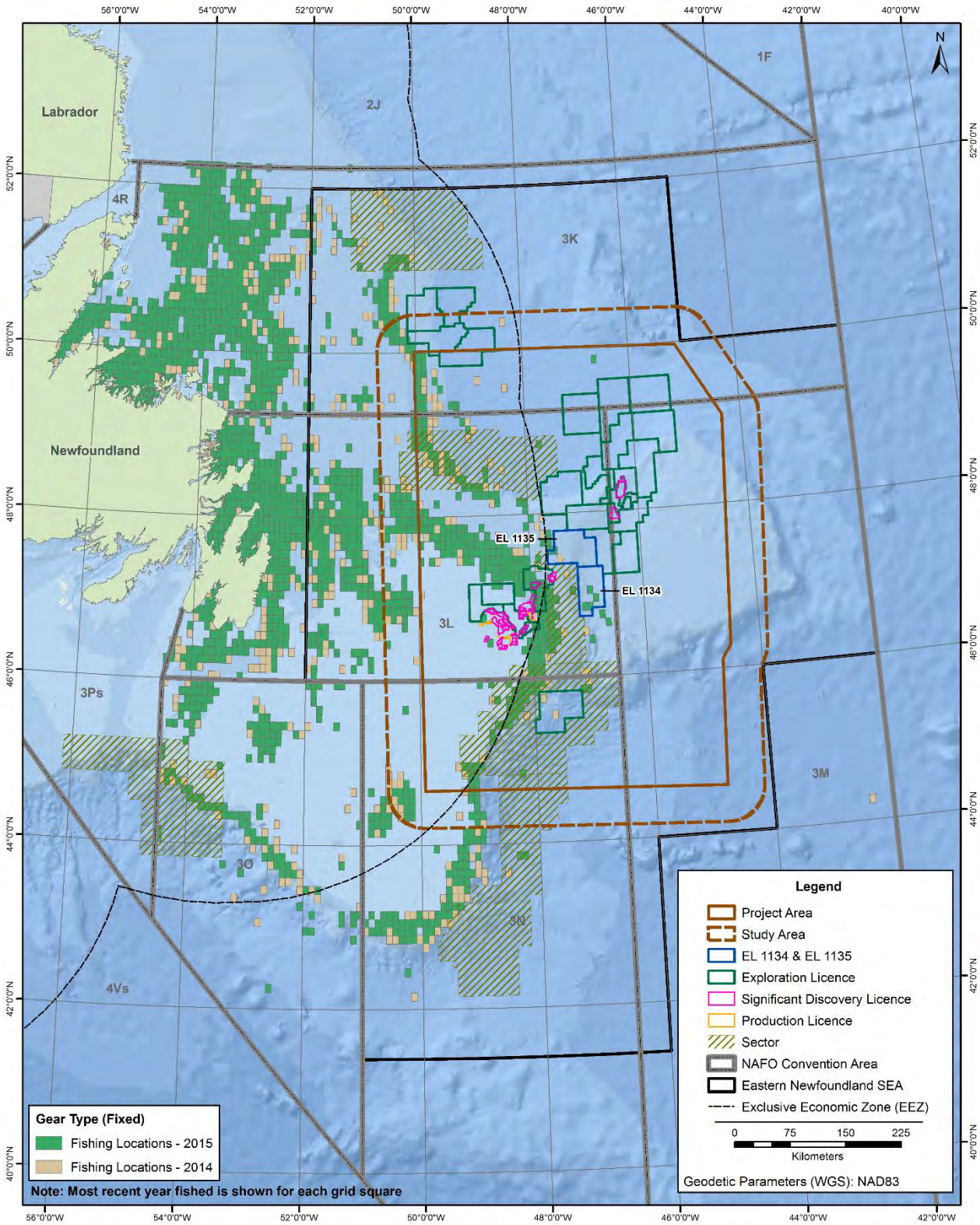


Figure 3.39 Fish Harvests Using Fixed Gear Types (By Season – May to Nov, 2014 and 2015)

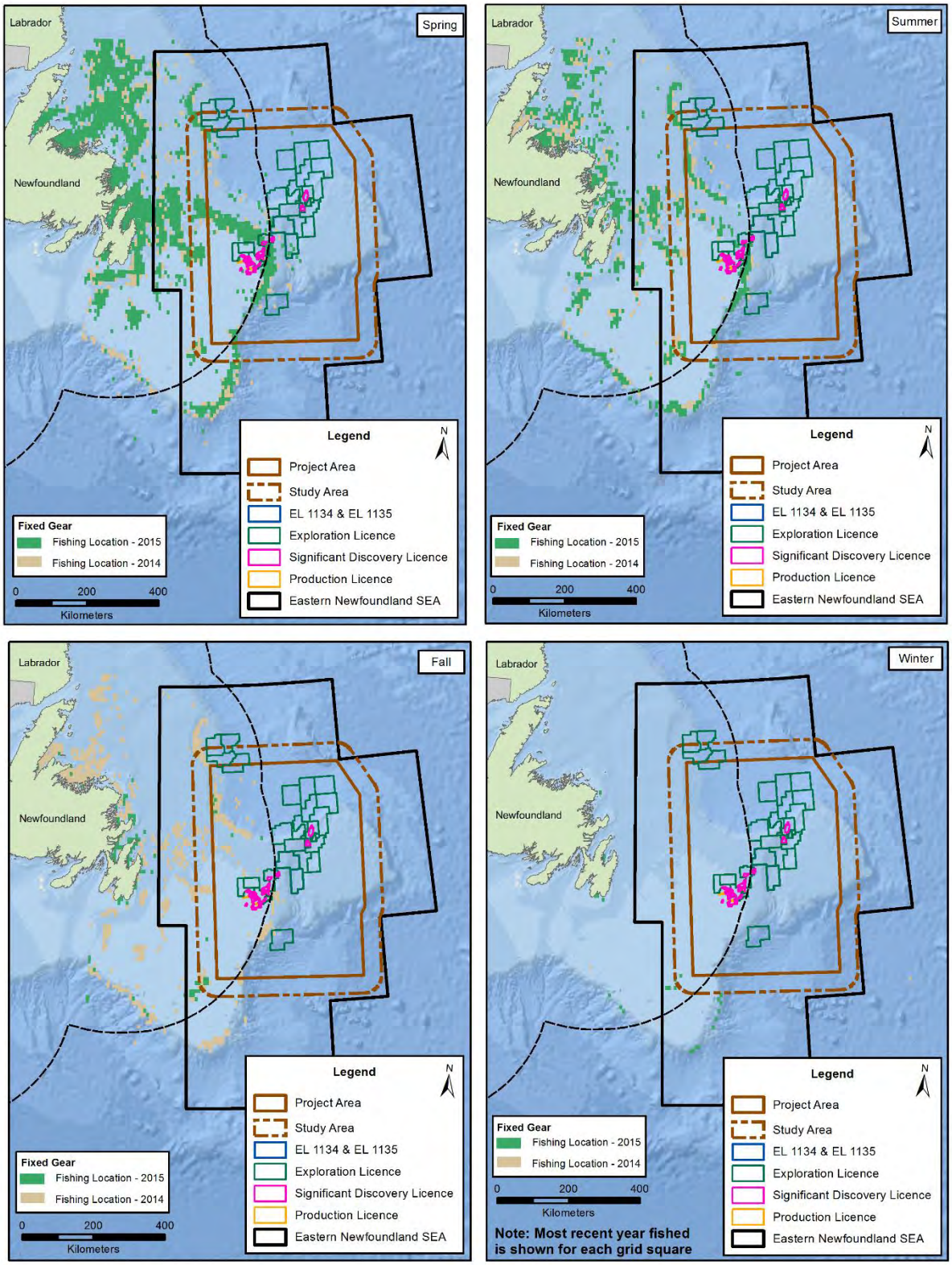


Figure 3.40 Fish Harvests Using Mobile Gear Types (May to November, 2014 and 2015)

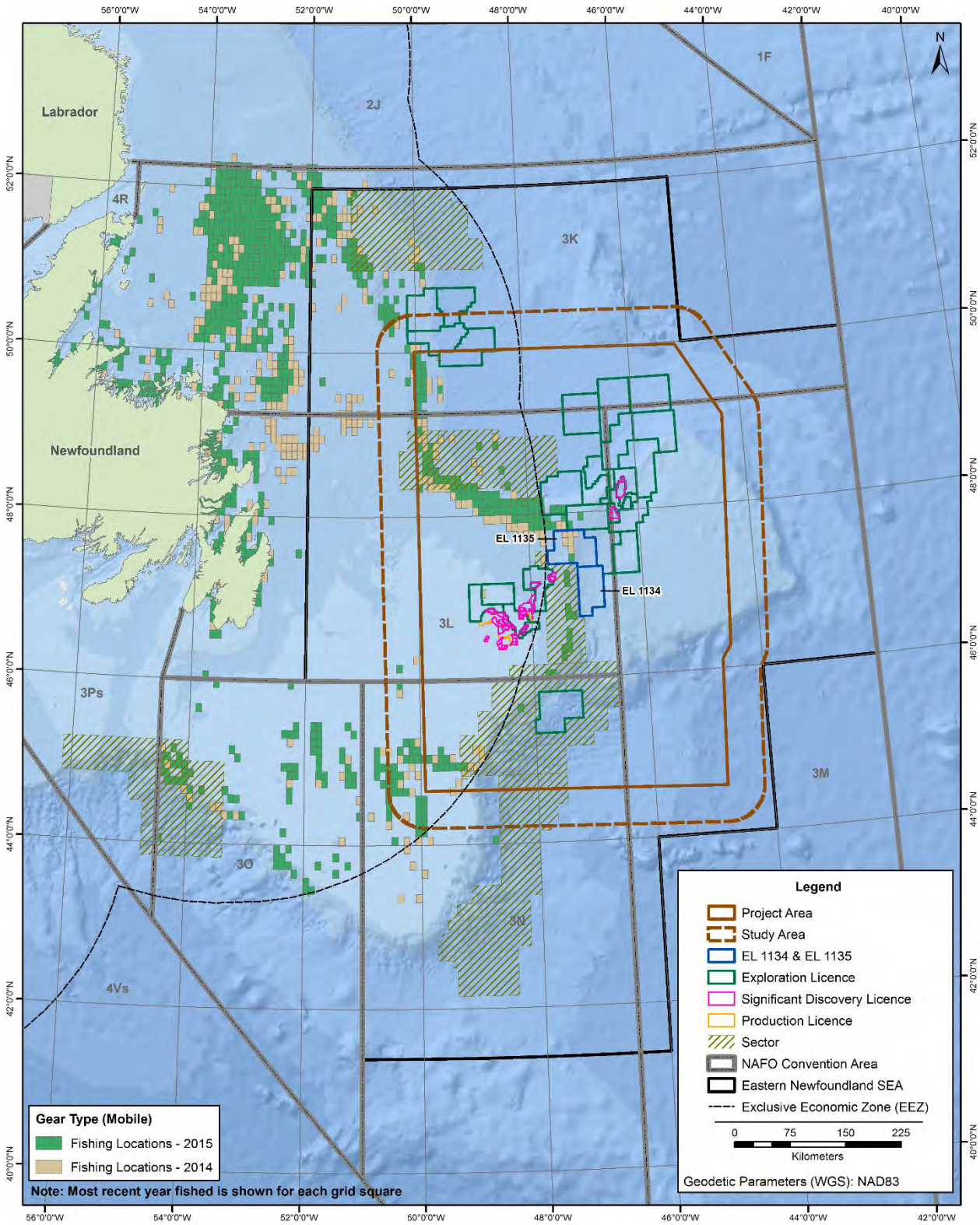
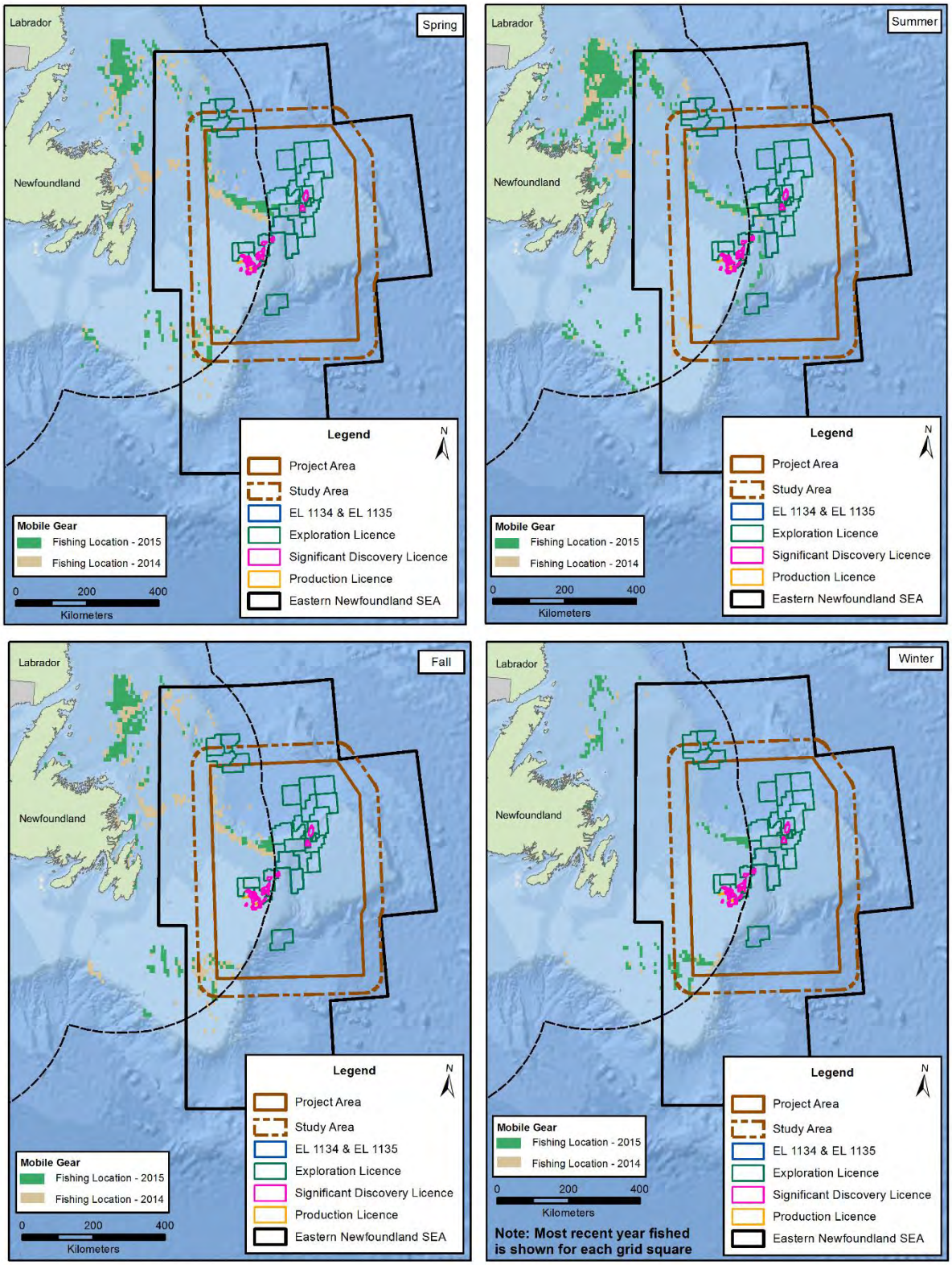


Figure 3.41 Fish Harvests Using Mobile Gear Types (By Season – May to Nov, 2014 and 2015)



Commercial Fishing Activity by Foreign Countries

As described previously, there are several regulatory jurisdictions that pertain to marine fish and fisheries within the Study Area. The Government of Canada has jurisdiction over fish stocks and fishing activities within the 200 nautical mile limit and for benthic invertebrates (such as crab) across the entire continental shelf, with NAFO managing groundfish activities and other resources beyond that 200 mile limit. NAFO currently manages 19 commercial stocks consisting of 11 species, and reported that in 2011 there were vessels from 13 flag states fishing in the Northwest Atlantic (Amec 2014). Other international agreements and conventions also apply to fishing and other human activities in international waters.

The preceding discussion has focussed upon recent (2014 and 2015) commercial fishing activity within the NAFO Unit Areas that occur completely or partially within the Study Area. The datasets used to conduct these analyses were obtained through DFO which record only the domestic and foreign harvests that are landed in Canada.

The following Tables and Figures provide updated summaries of the foreign fishing activity in various NAFO Divisions that overlap the Study Area (3KLMN) for the period 2014 to 2016. The Division level is the highest resolution that the data is available for (Table 3.27).

As indicated, Atlantic cod is the most commonly caught species of fish by foreign fishing vessels in this region, representing 34 percent of the total landed catch in 2016 (Table 3.28, Figure 3.42), with other key species including Atlantic redfish, Greenland halibut, skate, yellowtail flounder and others. Spain and Portugal were the two non-Canadian countries that carried out most fishing activity fished in the area in 2016 (Table 3.29, Figure 3.43).

Table 3.27 Foreign (non-Canadian) Fishing Activity by NAFO Division (tonnes) (2014 – 2016)

NAFO Division	2014	2015	2016	Total
3K	-	3	-	3
3L	10,068	9,824	10,574	30,466
3M	25,795	21,930	21,418	69,143
3N	8,617	6,345	8,864	23,826
Total	**44,480**	**38,102**	**40,856**	**123,438**
Source: NAFO Data Extraction Tool (Statlant 21A)				

Table 3.28 Foreign (non-Canadian) Fishing Activity by Species (2016)

Species	Total Catch (tonnes)
Atlantic Cod	13,764
Atlantic Redfishes (ns)	11,834
Greenland Halibut	8,499
Skates (ns)	2,828
Yellowtail Flounder	2,223
American Plaice	721
Other	987
Total	**40,856**
Source: NAFO Data Extraction Tool (Statlant 21A)	

Figure 3.42 Foreign (non-Canadian) Fishing Activity by Species (2016)

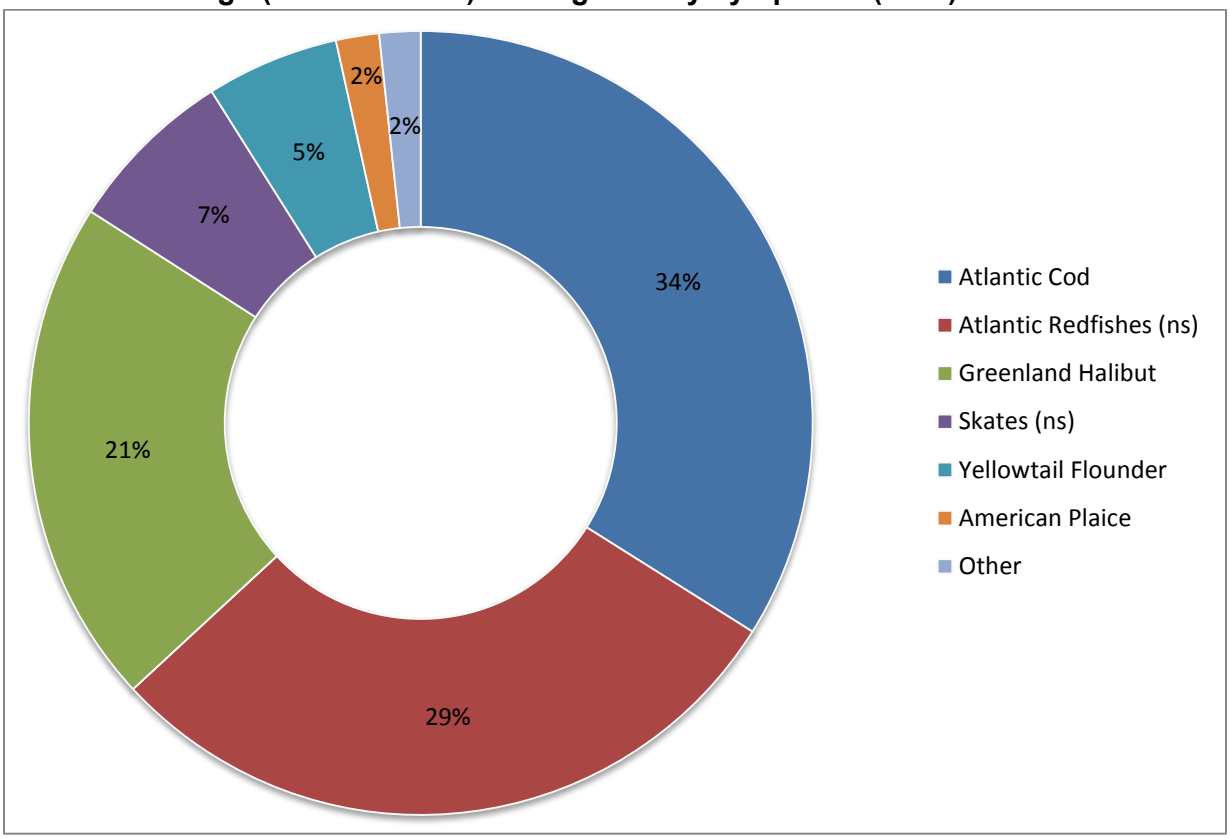
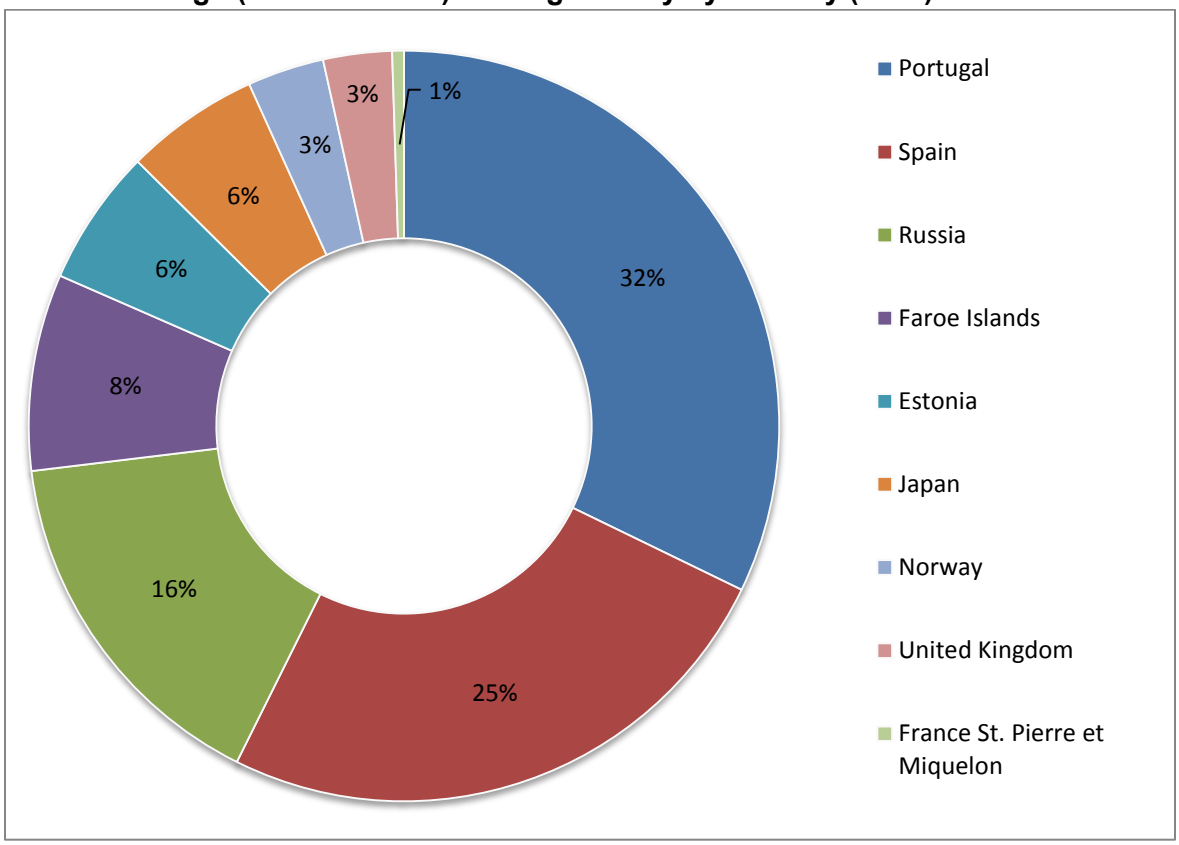


Table 3.29 Foreign (non-Canadian) Fishing Activity by Country (2016)

Species	Total Catch (tonnes)
Portugal	13,152
Spain	10,278
Russia	6,428
Faroe Islands	3,462
Estonia	2,406
Japan	2,365
Norway	1,350
United Kingdom	1,209
France St. Pierre et Miquelon	206
Total	**40,856**
Source: NAFO Data Extraction Tool (Statlant 21A)	

Figure 3.43 Foreign (non-Canadian) Fishing Activity by Country (2016)

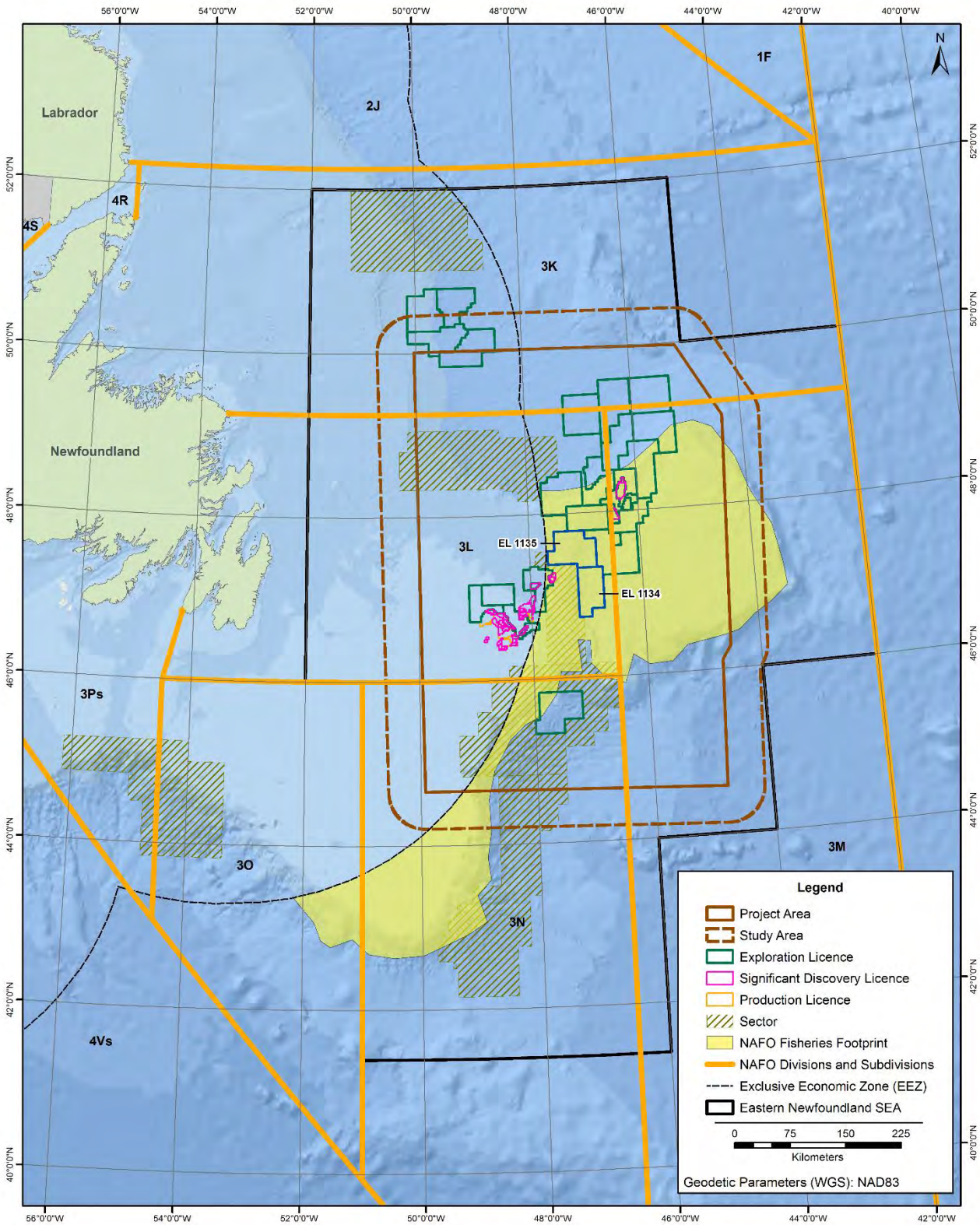


The NAFO Regulatory Area (NRA) is some 2,707,895 km^2 in size (or 41 percent of the total NAFO Convention Area) and comprises that part of the Northwest Atlantic high seas located adjacent to Canada's 200 mile EEZ. Fishing activity in the NRA targets a range of species, including cod, redfish, Greenland halibut, shrimp, skates, and other finfish, and has an approximate landed value of $200 million annually across all members. There are approximately 160 fishing vessels that are authorized to fish in the NRA, which are primarily large vessels (30-100 m), and in 2013 a total of 64 vessels fished in the region (NAFO 2014, cited in Amec 2014).

As a result of the 2007 United Nations General Assembly (UNGA Res. 61/105, paragraph 83) request that Regional Fisheries Management Organizations regulate bottom fisheries that cause a significant adverse impact on VMEs, NAFO undertook an exercise to identify bottom fishing areas in the NRA, and in doing so, to identify and map NAFO's bottom fishing footprint in the area.

The NAFO fisheries footprint is 120,048 km^2 in size (NAFO 2009, 2014, cited in Amec 2014), and its location and relationship to the Study Area is illustrated in Figure 3.44.

Figure 3.44 NAFO Fisheries "Footprint" and its Proximity to the Study Area



A number of fisheries survey programs by government and/or industry also occur in parts of the Eastern Newfoundland Offshore Area, including DFO Multispecies Research Vessel (RV) Trawl Surveys, which comprise annual (spring and fall) standardized bottom-trawl surveys to collect information for managing and monitoring fish resources in the Newfoundland and Labrador Region. Table 3.30 shows the 2017 schedule for DFO's surveys as obtained from DFO representatives (D. Power, DFO – NL Region, pers. comm.). ExxonMobil will obtain and verify 2018 survey plans with DFO as they are available, and will consider these and undertake associated consultations and communications with DFO in planning and undertaking its activities, as applicable.

Table 3.30 DFO RV Surveys off Eastern Newfoundland (2017)

Vessel	Activity	NAFO Division	Tentative Start Date	Tentative End Date
CCGS Needler	NL Spring Survey	3P	March 31	April 11
		3P	April 12	April 25
		3P+3O	April 26	May 9
		3O+3N	May 9	May 23
		3L+3N	May 24	June 10
	Shellfish Survey	2J+4R	August 31	September 12
	NL Fall Survey	3O	September 13	September 26
		3O+3N	September 26	October 10
		3N+3L	October 11	October 24
		3L	October 24	November 7
		3K+3L	November 8	November 21
			November 21	December 2
CCGS Teleost	NL Spring AZMP[1]	3L	April 4	April 25
	Capelin Survey	3KL	May 2	May 23
	NL Summer AZMP[1]		July 8	July 29
	NL Fall Survey	2H	October 5	October 10
		2H+2J	October 11	October 24
		2J+3K	October 24	November 7
		3K	November 8	November 21
		3K+3L Deep	November 21	December 5
			December 6	December 20

[1] Atlantic Zone Monitoring Program
Source: D Power, DFO-NL (2017)

There is also an annual Industry - DFO Collaborative Post-season Trap Survey for snow crab in NAFO Divisions 2J3KLOPs4R, which is conducted using commercial and modified snow crab traps at established trap stations starting in late August or early September after the commercial snow crab season has ended. The survey continues until all the stations selected for the year are finished, sometimes into late November. The station locations are determined by DFO, selected from a set of pre-established locations and up to 1,500 are surveyed annually. Each survey station is fixed and follows a general grid pattern.

Figure 4.105 of the original EA Report showed the locations of the longstanding stations, which have been the principal focus of this survey, in relation to the Project Area. For 2018 and beyond, it is expected that 50 percent of the stations surveyed will be selected from these locations. The remaining station coordinates will be part of a stratified random design (R. Lee, FFAW-Unifor, pers comm 2018).

ExxonMobil will obtain and verify 2018 survey plans when they are available, and will again consider these in planning and undertaking its activities.

3.5.1.2 Other Marine Components and Activities

The following sections describe various other human activities and components that occur or exist within the offshore area of Eastern Newfoundland. Additional information about the socioeconomic environment of the Study Area was provided in the original EA Report and in the Eastern Newfoundland SEA (Amec 2014), along with associated background information. This information is not repeated in this section, which is intended to update the previous EA Report where relevant.

Marine Transportation and Shipping

The Eastern Newfoundland region is host to a wide variety of transportation activities including small boat movements, ferry services, marine shipping and other general vessel traffic, most of which occur in inshore and nearshore areas and to a much lesser extent in the offshore. Large scale marine shipping is mainly limited to sea ports with the required infrastructure and services for larger vessels. A number of marine shipping routes, particularly those on trans-Atlantic voyages, cross the Project Area and Study Area.

St. John's is the primary supply centre for the offshore oil and gas industry, a container terminal, fishing port and a cruise ship port-of-call. Other operations include the Canadian Coast Guard (CCG), military activity, ship repair, industrial fabrication and seafood landing. Cargo shipping includes goods moved in and out of Oceanex's container ship facility, which operates weekly sailings to and from Halifax and Montreal (SJPA 2016). Given the routes typically taken, these container ships are not likely to cross the Project Area or Study Area. Various marine ferries operate in Eastern Newfoundland. These include ferry services to islands and remote communities, none of which cross the Project Area or Study Area. Eastern Newfoundland has several hundred small craft harbours. Core fishing harbours, including Prosser's Rock at St. John's, are maintained in support of the fishing industry (DFO 2017).

Offshore Petroleum Exploration and Production Activity

The Eastern Newfoundland offshore is subject to considerable oil and gas exploration activity, including geophysical surveys and drilling programs, with many thousands of kilometres of seismic survey data collected and several hundred wells drilled to date. Offshore production projects include four oilfields: Hibernia, Terra Nova, White Rose and Hebron (Amec 2014, EMCL 2017) These offshore oil and gas exploration and development activities also include a variety of ancillary and supporting activities including supply bases at Bay Bulls and St. John's. Vessels travelling to and from the offshore area intersect with the Project Area and Study Area.

Military Activities

The Royal Canadian Navy's Atlantic facilities include Canadian Forces Station St. John's, NL. The reservist fleet HMCS Cabot is mainly responsible for coastal surveillance and patrol, including search and rescue, law enforcement and natural resource (including fisheries) protection in Newfoundland and Labrador (DND 2016). Military activities including fisheries surveillance and Search and Rescue (SAR) operations may occur within the Project Area and Study Area.

Unexploded Ordnances and Legacy Sites

Various known unexploded ordnances (UXO) legacy sites and shipwrecks exist within the Newfoundland and Labrador offshore. These include legacy sites and explosive dumpsites, but the majority are shipwrecks (Amec 2014; DCC 2017). The current information indicates that none of these known sites are located within the Project Area or the Study Area.

Subsea Cables

A number of active, abandoned and proposed marine cables transect the waters off Eastern Newfoundland as discussed in the EA Report and the Eastern Newfoundland SEA. In 2016, ExxonMobil Canada Properties (EMCP) installed the Grand Banks Offshore Optical Cable (GBOOC) fibre-optic cable system to connect the Hibernia and Hebron projects off Eastern Newfoundland. The new cables are located within the Project Area and Study Area and the landing sites are at Cape Broyle and Logy Bay (EMCP 2017).

Marine Tourism and Recreation

Marine-based tourism and recreational activities occur along the coastline of Eastern Newfoundland. Many boat tours, sea kayaking routes, coastal hiking trails, marinas, beaches, bird watching areas, campsites, RV trailer parks and picnic sites are located in coastal areas (Amec 2014), all of which are far from the Project Area and Study Area. St. John's is the main cruise ship port-of-call in Eastern Newfoundland (CNL 2016). Based on the 2016 itineraries, most cruise ships are not likely to cross the Project or Study Areas.

3.5.2 Environmental Effects Assessment

As illustrated previously in Section 2.2, the 2018 survey activities that will be undertaken as part of the Project are in keeping with the nature and scope of those described and assessed in the original EA., and will occur within the previously defined and considered Project Area and surrounding EA Study Area.

As can be seen from the updated fisheries data and mapping provided above and those in the original EA Report, there are is a high degree of consistency in the overall nature, location and timing of fishing activities between the 2009-2013 and the 2014-2015 periods. His includes commercial fishing by species, gear type and other variables, with the notable exception of shrimp harvesting, which has now been closed in various areas. As also illustrated, large portions of the Project and Study Areas occur well outside the more intensive commercial fishing areas elsewhere on the Banks and along the shelf, and the planned 2018 Project activities in ELs 1134 and 1135 will not increase or otherwise change the nature or intensity of the Project's potential interaction with fishing activities, locations and times. Similarly, given the offshore locations of these ELs, the planned 2018 survey activities do not result in new or increased potential interactions with other marine activities in or near the region, including sealing areas, aquaculture operations, recreational fishing locations, unexploded ordnances and legacy sites, and others (EA Report, Section 4.3).

On-going coordination and effective and timely communication between offshore oil and gas operators and the fishing industry and other marine interests, through the various processes and measures described and committed to in the EA Report (see Section 5.10), remain the best means for ensuring that such activities are carried out in a safe and environmentally responsible manner, avoiding or reducing potential adverse interactions between offshore exploration programs and other users of the marine environment. Each of the mitigation measures and commitments outlined in the EA Report related to this VEC remain applicable and will continue to be implemented and adhered to by ExxonMobil.

The nature and scale of the planned 2018 activities and the updated baseline information provided above therefore do not change the results of the original (2015) environmental effects assessment for this VEC, and the Project is still not likely to result in significant adverse environmental effects on marine fisheries and other activities.

4 SUMMARY AND CONCLUSION

ExxonMobil is undertaking a marine petroleum exploration program, including geophysical, geochemical, environmental and geotechnical survey activities, in the eastern portion of the Canada-Newfoundland and Labrador Offshore Area. EA approval for the Project was received from the C-NLOPB on June 9, 2016. This document comprises the 2018 EA Update for the Project.

As described in the preceding sections, the planned 2018 activities associated with the Project are in keeping with the nature and scope of the Project as described, assessed and approved under the EA process for the Project. Each of the environmental interactions, potential effects and associated mitigation measures (as reflected in the EA Report and subsequent EA Addendum and Amendment submissions) therefore remain applicable to the nature and scope of the planned 2018 Project activities, including with regard to addressing any potential effects on species at risk and other marine biota and marine activities (including fisheries). These mitigations will continue to be implemented in accordance with ExxonMobil's commitments and obligations pursuant to the Project's EA approval and other applicable legislative and regulatory requirements (Appendix B).

The additional information provided through this EA Update 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. Overall, the proposed Project will entail a very localized, short-term and transient disturbance in the marine environment at any one location and time throughout the operational life of the exploration program. It is therefore not anticipated to displace or otherwise affect marine fish, birds, mammals, turtles, fisheries or other marine activities in such a way that causes negative and detectable effects to populations, species at risk or human activities in the region.

The Project – including the planned 2018 Project survey activities described herein - is therefore not likely to result in significant adverse environmental effects.