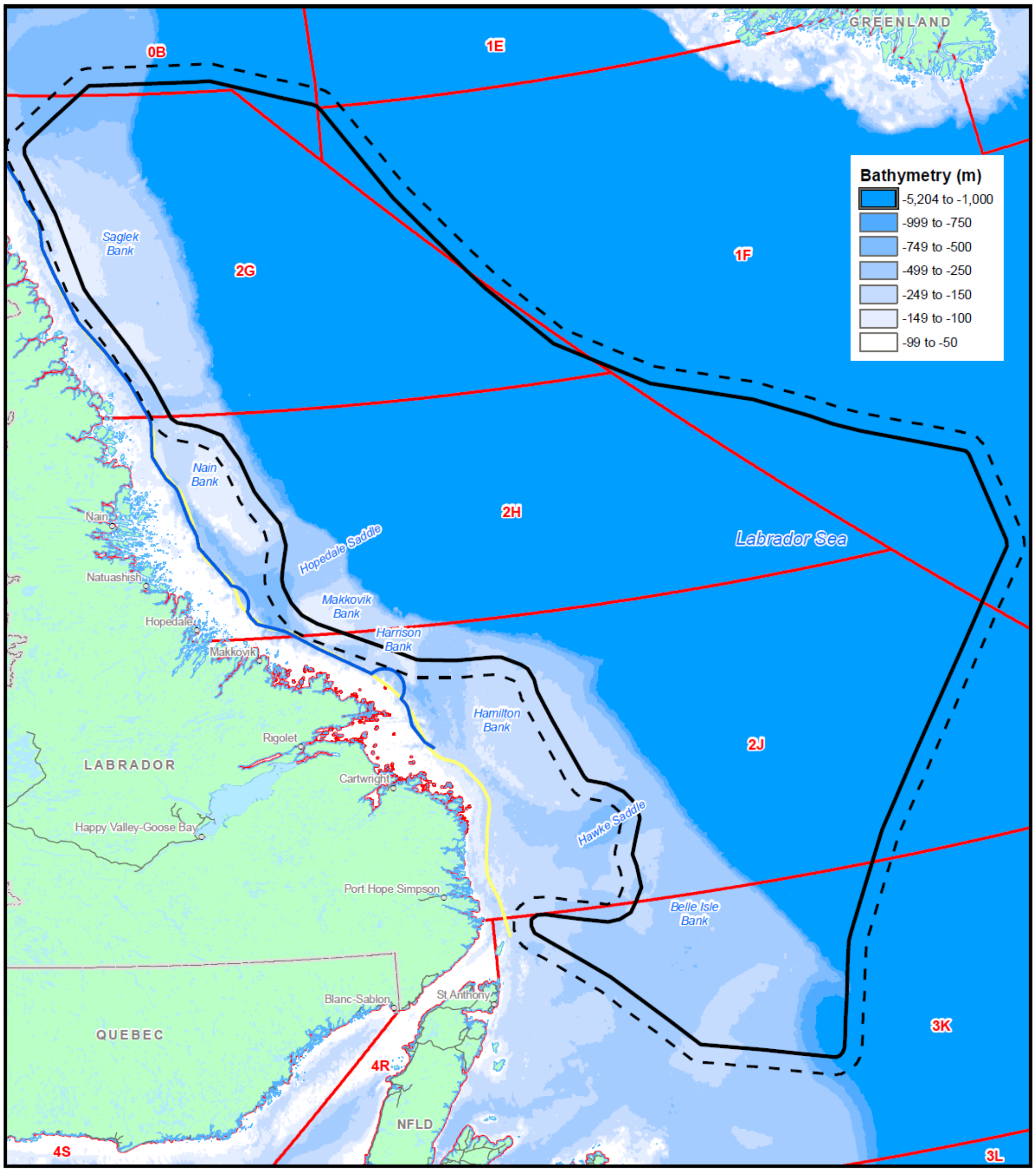

Figure 5.38: Harvesting Locations, Snow Crab, 2005 to 2009, November

5.11.6 Greenland Halibut / Turbot (*Reinhardtius hippoglossoides)*

Greenland halibut (often called turbot) represents about 0.1% of the Study Area catch by quantity and value, an average of just over 20 t between July and December over the five-year period. Most (about 99%) of this harvest in the Study Area is taken using fixed gear gillnets. For 2011, the quota is 0t in OB but here is a catch of 2122 t, 0t for 2J but a catch of 26 t and quota of 2,365 t for 3K.

Figures 5.39 to 5.43 indicate that the Study Area July to November domestic harvest.

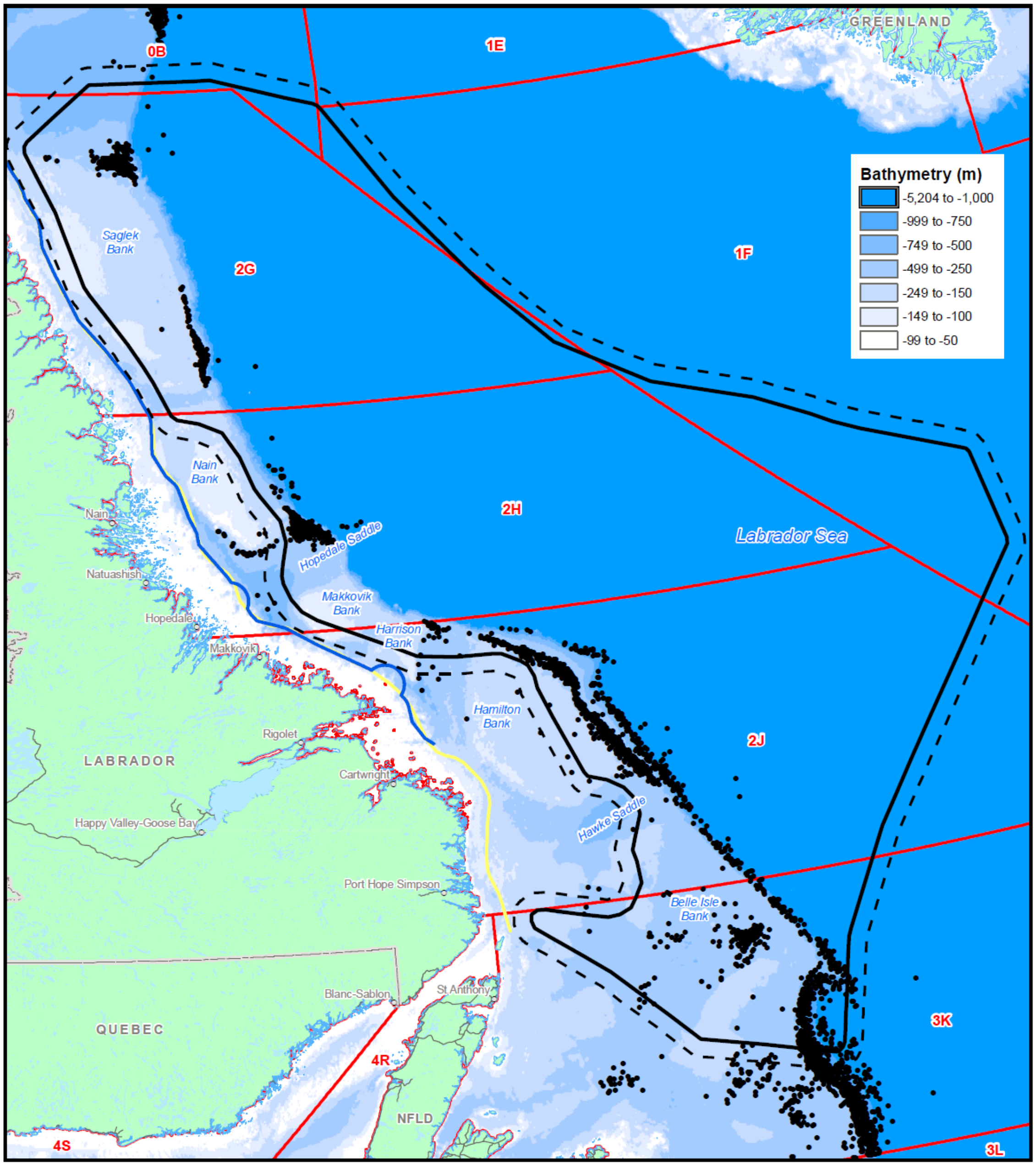

Figure 5.39: Harvest Locations, Greenland Halibut, 2005-2009, July

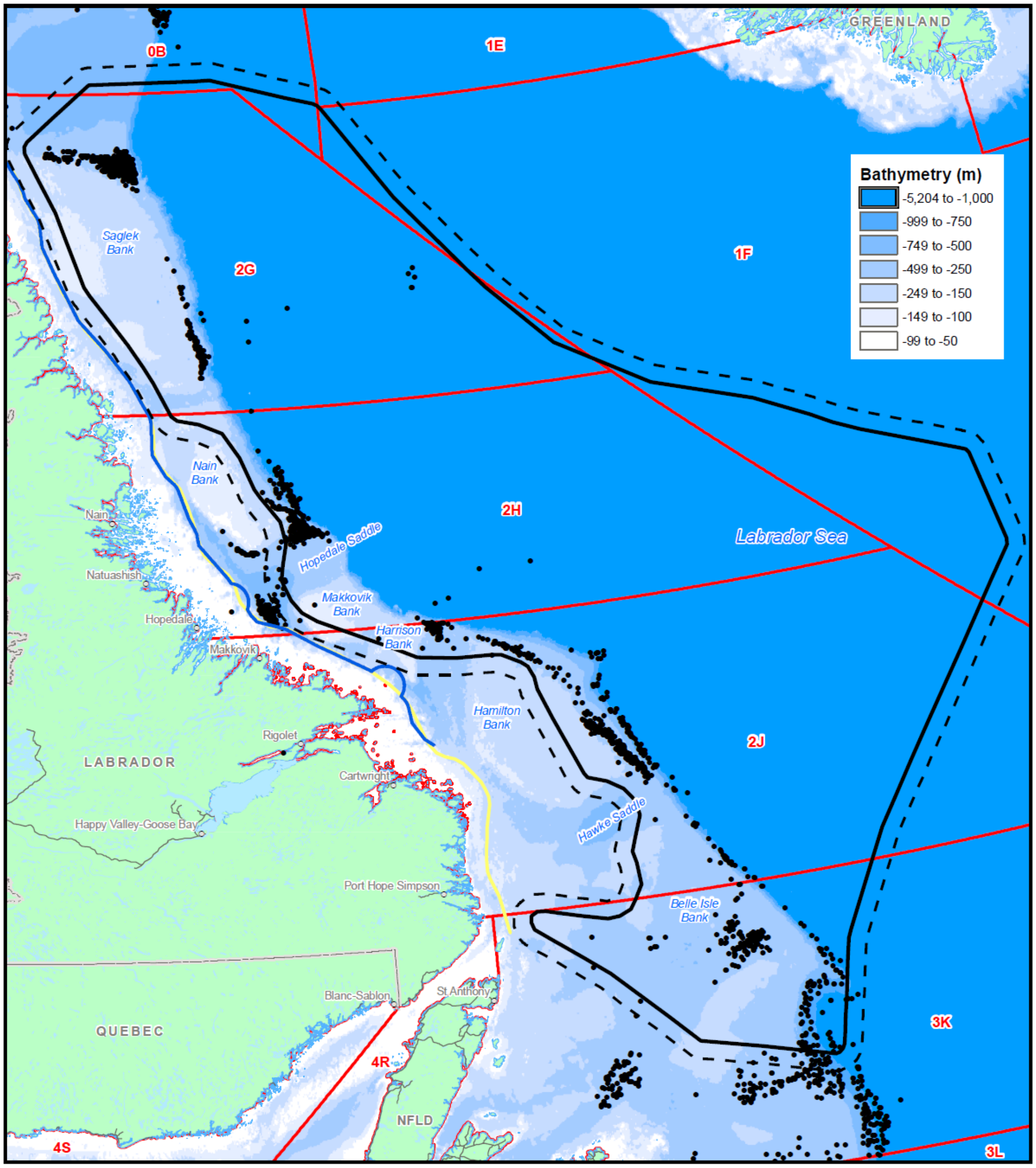

Figure 5.40: Harvest Locations, Greenland Halibut, 2005-2009, August

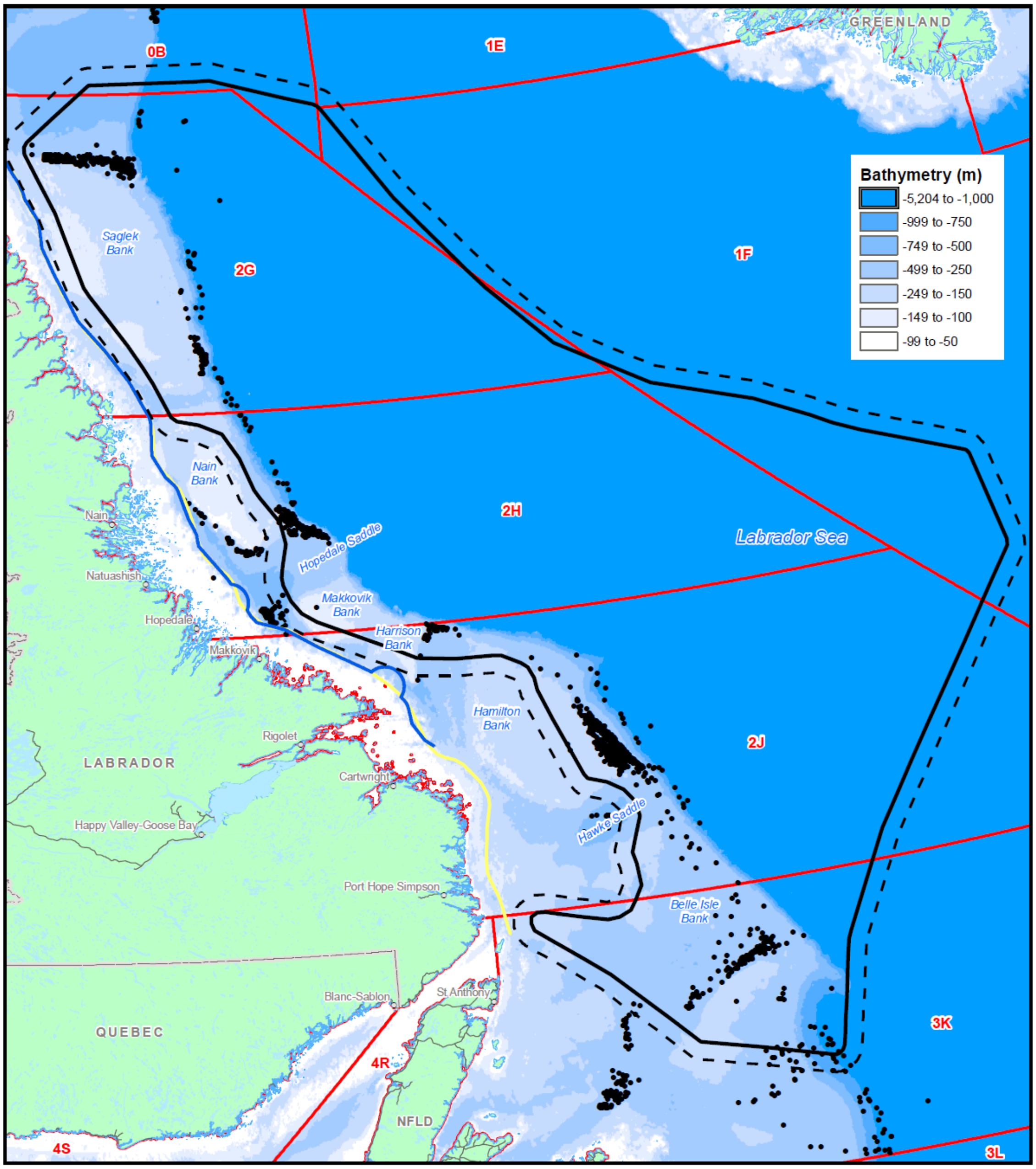

Figure 5.41: Harvest Locations, Greenland Halibut, 2005-2009, September

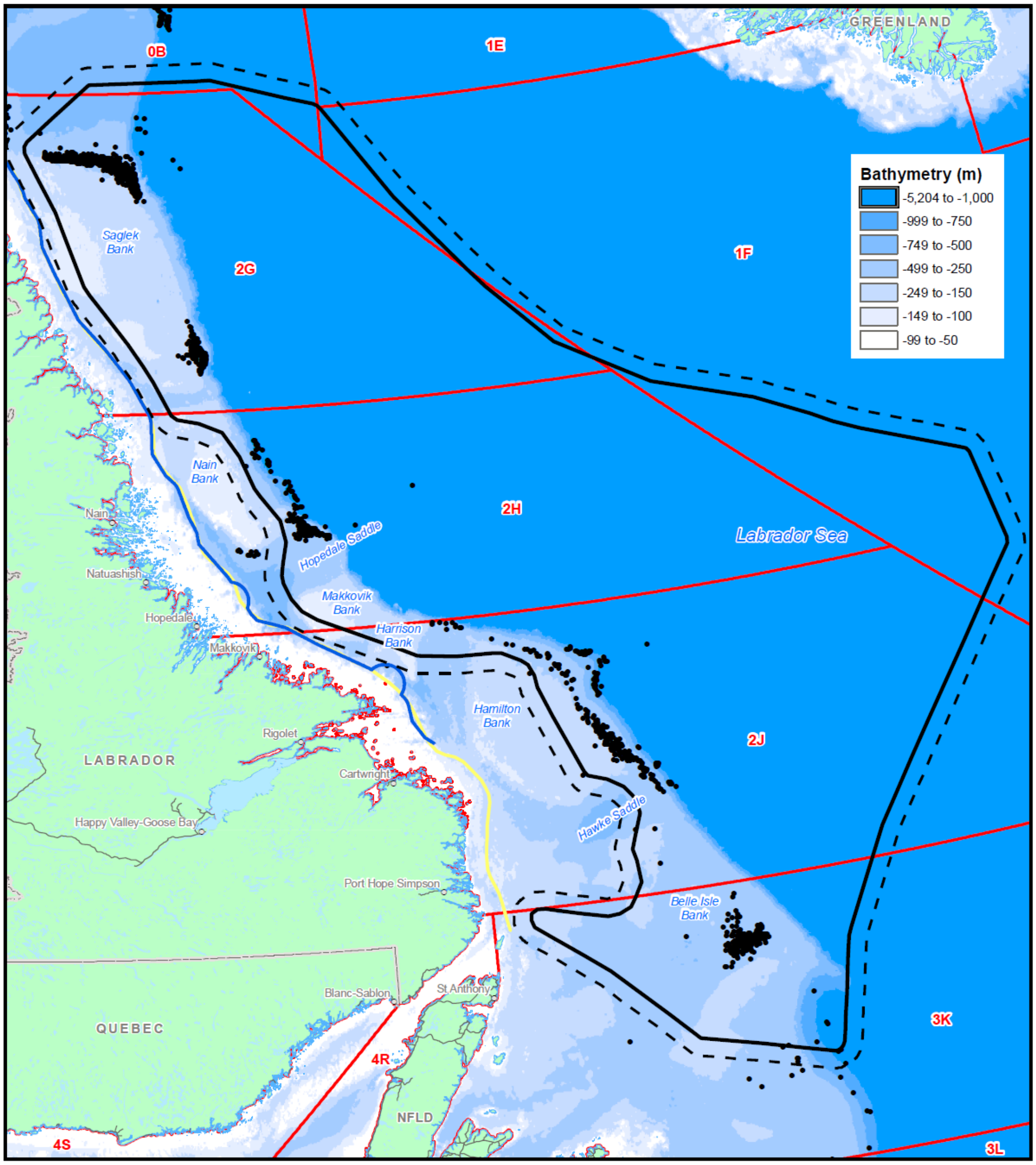

Figure 5.42 Harvest Locations, Greenland Halibut, 2005-2009, October

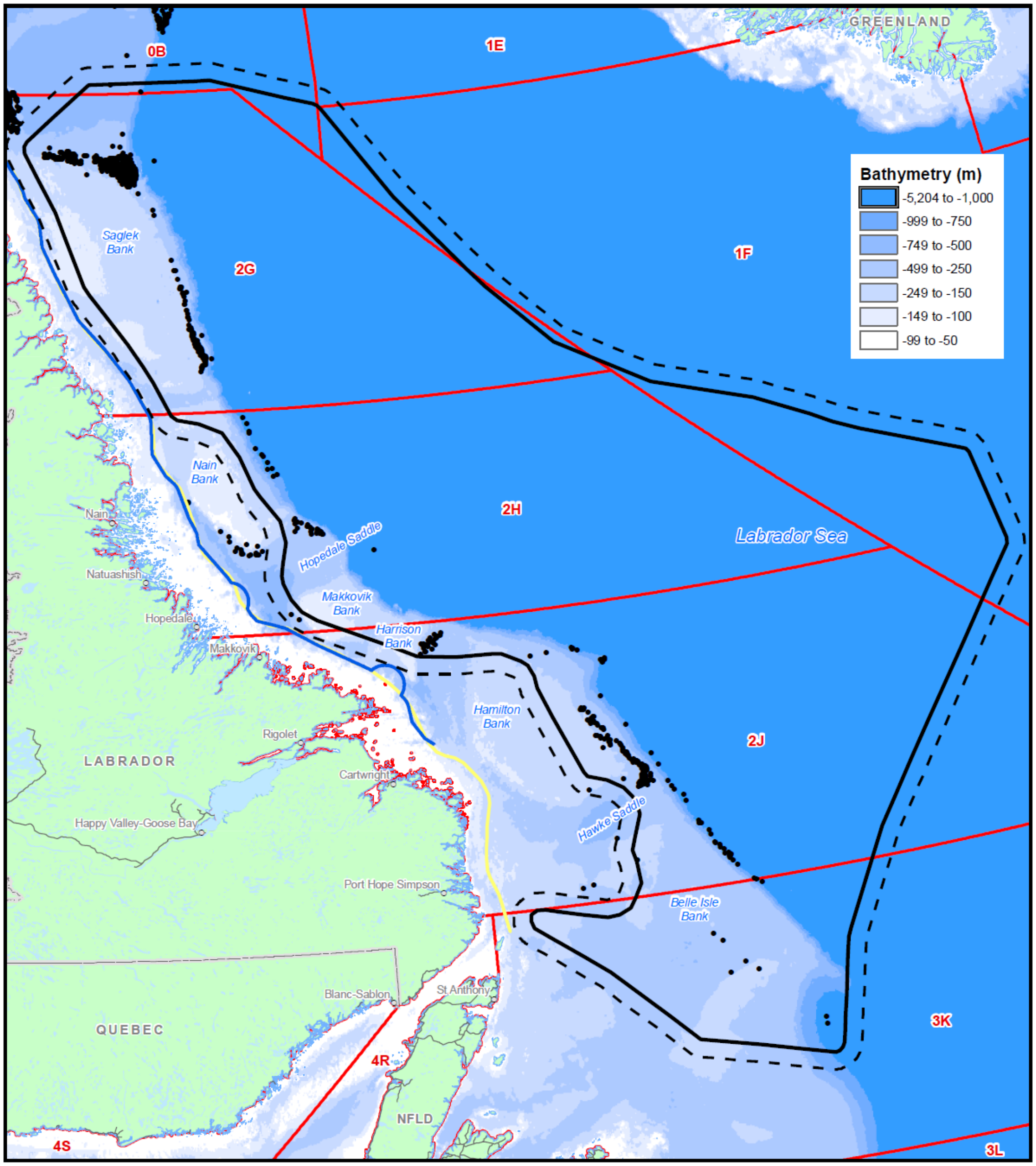

Figure 5.43 Harvest Locations, Snow Crab, 2005-2009, November

The following graph in Figure 5.44 shows the monthly Greenland halibut harvest from the Study Area, indicating a widely varied fishery in this area.

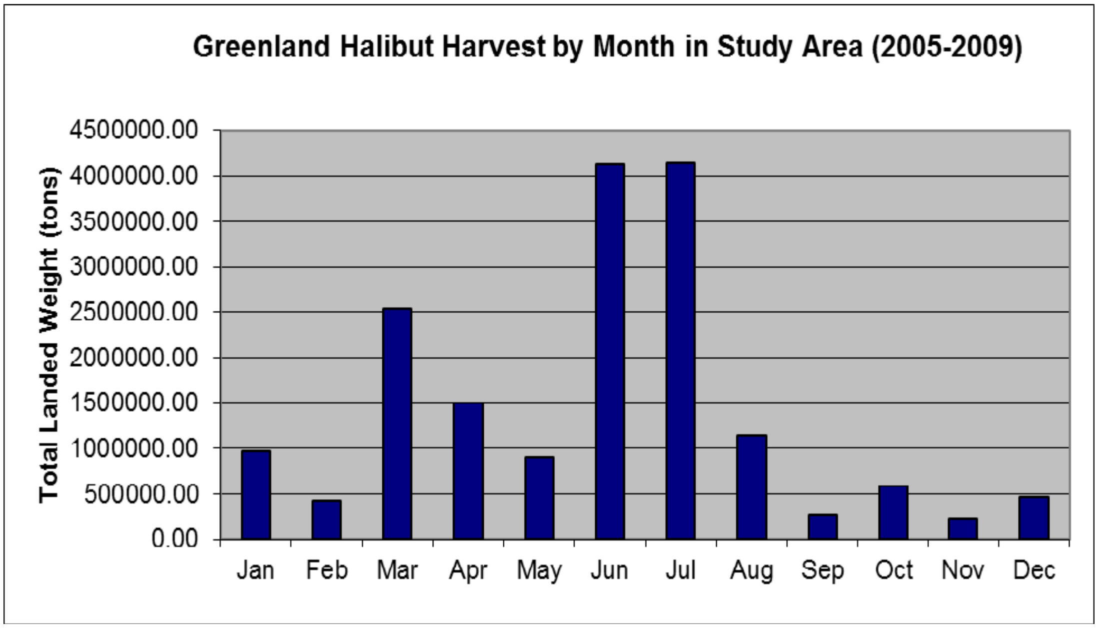

Figure 5.44: Monthly Greenland Halibut Harvesting, 2005 to 2009

5.12 FISHING GEAR

The commercial fisheries within the Study and Project Areas are conducted using both mobile gear (shrimp trawls) and fixed gear (crab pots and gillnets), although only a minority of the overall catch is harvested using gillnets. In general, fixed gear poses a much greater potential for conflicts with towed survey gear since it is often hard to detect when there is no fishing vessel nearby, and it may be set out over long distances in the water. In particular, crab pots pose a significant potential for conflict if a seismic survey vessel encounters them. Crab pots are set on the seabed in strings buoyed at the surface. Crab gear generally has a highflyer (radar reflector) at one end and a large buoy at the other. Some fishers use highflyers at both ends. Depending on weather, they may be left unattended several days at a time. Fishers typically try to leave about 20 fathoms (36.5 metres or 120 feet) on the seabed between each pot. Thus, allowing slack for the anchor ropes on either end of the string to extend upwards at an angle, the distance between the typical highflyer and end-buoy of, for example, a 50 to 60 pot string of crab gear would be 6,000 feet to 7,500 feet, or approximately 1.8 km to 2.3 km. The 2011 seismic survey is planned to occur in crab fishing areas, thus interaction is anticipated.

Greenland halibut gillnets (*e.g.,* 200 nets per boat) are also fixed gear and may pose a potential to conflict with seismic gear if in the same area at the same time.

Shrimp harvesting uses mobile shrimp trawls. These are modified stern otter trawls, for both inshore and offshore vessels, though some use beam trawls. Over the past several years in offshore Newfoundland and Labrador, shrimp vessels and survey ships, with good communications, typically avoid each other without interference to either industry, as has been noted by industry participants during previous consultations.

Because of the potential for conflict between shrimp trawls and fixed gears, the two fisheries generally stay apart.

5.13 INDUSTRY AND DFO SCIENCE SURVEYS

Fisheries research surveys conducted by DFO, and sometimes by the fishing industry, are important to the commercial fisheries to determine stock status, as well as for scientific investigation. The Canadian Association of Prawn Producers in conjunction with DFO survey shrimp from water depths between 100 to 750 m in 2G. Since 2005, this annual survey runs from July 15 through the first week of September and will continue for a minimum of five consecutive years (B. Davis, DFO pers. comm.2011). Similarly, the multi-species survey (groundfish, shellfish, benthos and oceanography) is conducted between late October to mid December annually in divisions 2J and 3K, while NAFO division 2H is surveyed every second year.

5.14 AQUACULTURE

At present, there is no approved aquaculture site in the Labrador Shelf SEA Area [Newfoundland and Labrador Department of Fisheries and Aquaculture (NFDLA) review comment, pers. comm.]).

5.15 MARINE TRAFFIC

The tourism industry is increasing in Labrador and is playing a more important role in rural economies than it has before. Scenic, natural, and cultural attractions translate into economic opportunities for the resident population and provide domestic, national and international travelers with world-class outdoor recreation activities. The Project Area is about 100 km off the coast thus relevant offshore-related tourism activities discussed in the SEA include cruise ship and private vessel (sailing) visitation.

The cruise ship industry is promoted by a tourist industry association [Cruise Association of Newfoundland and Labrador (CANAL)] and supported by both the federal and provincial governments. The cruise routing in Labrador is mainly from south to north and return; however, the east to west routing from Europe ports via Iceland, Greenland, Baffin, and south to Labrador is being developed. Developments in Labrador such as the Torngat National Park Reserve will increase tourist interest and cruise ships is considered one of the most convenient means of visiting such areas. Table 5.10 provides the ports of call from 2003 to 2008 (Roger Haynes, pers. comm. 2009).

Table 5.10: Labrador Ports of Call

Labrador Ports	2003	2004	2005	2006	2007	2008
Bateau	0	0	0	0	1	0
Battle Harbour	6	5	2	7	7	7
Black Tickle	0	0	0	0	1	0

Labrador Ports	2003	2004	2005	2006	2007	2008
Button Island	0	2	2	1	2	3
Cape Chidley	0	0	0	0	0	0
Cape Harrison	0	2	1	0	0	0
Cape Mugford	0	0	1	0	0	2
Cape Porcupine	0	0	0	0	0	1
Cape St. Charles	1	0	0	1	3	1
Cartwright	1	1	1	2	0	2
Davis Inlet	0	0	0	2	0	0
Gannet Arm	0	0	0	2	0	0
Goose Arm	0	0	0	0	0	3
Goose Bay	0	1	2	0	4	0
Grey River	0	1	1	2	1	1
Groswater Bay	0	0	0	0	0	1
Hamilton Inlet	0	0	0	0	0	1
Hawkes Harbour	0	0	0	0	0	1
Hebron	0	4	3	2	1	8
Hopedale	0	0	2	4	3	4
Indian Harbour	0	0	1	0	0	1
Killinq Island	0	0	0	0	0	1
Makkovik	0	0	0	2	1	1
Man of War Cove	0	0	1	1	0	3
Nachvack Bay/Eclipse Harbour	0	0	2	0	3	3
Nain	0	0	1	3	1	5
North West River	0	0	0	0	1	0
Okak Bay	0	0	0	0	0	1
Pinsent Arm	0	0	0	2	0	0
Red Bay	6	11	3	2	4	3
Rigolet	0	1	0	2	2	1
Saglek Bay/Fjord	0	0	0	1	1	4
Seven Islands Bay	0	0	2	0	1	0

Labrador Ports	2003	2004	2005	2006	2007	2008
St. Lewis	0	0	0	0	1	0
Torngat Mountains	0	0	0	0	0	5
Voisey's Bay	0	0	1	0	0	0
WhiteBear Islands	0	0	1	0	0	0
Williams Harbour	0	0	1	0	0	1
Wunderstrands	0	0	1	0	1	1
Totals	14	28	29	36	39	65

Source: NLDTRC 2009

The Woodward Group provides shipping service along the coast of Labrador. It is called the Coastal Labrador Service and is supported by the MV Northern Ranger and MV Astron which runs coastal supplies from Cartwright to ports north as far as Nain. Because this service virtually hugs the coast there will be no interaction with the seismic vessels in the Project Activity Area.

5.16 PETROLEUM INDUSTRY

There are three others operators with planned seismic programs: Husky Energy, Chevron Canada Resources and Investcan Energy Corporation.

RPS Energy proposes to undertake 2-D and 3-D seismic and follow-up geo-hazard surveys on its recently acquired exploration acreage on the Labrador Shelf. Husky Energy undertook a ship-borne geophysical program consisting of approximately 2,000 to 3,000 km 2-D seismic survey in the summer of 2009 while other surveys - 2-D, 3-D or geo-hazard – may occur at various times between 2010 and 2017. Some adjacent lands are also included as part of the overall Project Area in order to ensure inclusion of ship turning, holding and streamer deployment areas.

Chevron Canada Resources is planning on undertaking one or more marine seismic programs from 2010 to 2012 on or adjacent to Parcel EL1109, offshore Labrador. It is anticipated that data acquisition will begin between July 15, 2010 and August 15, 2010. The Labrador 2010 Seismic Test program, estimated at 2 to 4 weeks in duration, requires a vessel with the capability to simultaneously test various source depths and various streamer depths in a single pass. A 1,000 to 2,000 km^2 3-D marine seismic survey is anticipated in the operating season of 2011 or 2012.

Investcan Energy Corporation plans to conduct multi-year, multi-survey seismic exploration on Labrador Exploration Licence EL1107. The 2-D surveys will occur in 2010, followed by a 3-D survey in 2011. Subsequent surveys will occur at any time in any given year. It is anticipated that individual surveys could occur any time within an eight year (2010 to 2017) time period. There is the potential for geohazard surveys in areas of interest.

5.17 MILITARY

DND is likely to be transiting and conducting naval exercises within the Study Area during the July to November 2011 to 2013 timeframe. Unexploded ordinate (UXO) data is available for the Study Area so a search of the records was conducted to determine the possible presence of UXO within the MKI Project Description survey area. DND records indicate that the following four shipwrecks are present within the Survey Area: *Everoja, Flynerborg, Gretavale*, and *Empire Gemsbuck* from convoy SC-52 were sunk by German U-boats U-202 and 203 on 3 November 1941. Further, a vessel (*Mount Maycale*) from convoy SC-117 was sunk by U-boat U-413 on 22 January 1943. Records indicate that all five ships were carrying general cargo at the time; consequently, it is possible munitions were part of that cargo. One aircraft wreck, a B-24J Bomber, was reported to be present in the northern part of the survey area (Long - 58.666667 Lat 59.216667). However, given that supporting information is limited, it is assessed that the reported position of this aircraft is only approximate. B24 aircrafts used in the Maritime Patrol role were typically of Very Long Range (VLR) configuration, carrying a maximum load of 2700lbs of torpedoes, depth charges, and 0.50 caliber machine gun ammunition. Consequently, it is possible that munitions were aboard.

Given our understanding of the survey activities to be conducted, the associated UXO risk is assessed as low. Nonetheless, due to the inherent dangers associated with UXO and the fact that the Atlantic Ocean was exposed to many naval engagements during WWII, it should be suspected that UXO may be encountered during the course of the operations. UXO should not be disturbed/manipulated. If discovered, locations must be marked and reported immediately to the Coast Guard. Additional information is available in the 2010 Annual Edition – Notice to Mariners 2010, Section F, No. 37.

In the event of activities which may have contact with the seabed (such as drilling or mooring), it is strongly advised that operational aids, such as remote operated vehicles, be used to conduct the seabed survey to prevent unintentional contact with harmful UXO items that may have gone unreported or undetected.

Further UXO general information is available site at: www.uxocanada.forces.gc.ca