Fisheries and Oceans
Pêches et Océans
Canada

# Canadian Science Advisory Secretariat (CSAS) 

## Research Document 2014/115

## Quebec Region

Preliminary results from the groundfish and shrimp multidisciplinary survey in August 2014 in the Estuary and northern Gulf of St. Lawrence

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## Foreword

This series documents the scientific basis for the evaluation of aquatic resources and ecosystems in Canada. As such, it addresses the issues of the day in the time frames required and the documents it contains are not intended as definitive statements on the subjects addressed but rather as progress reports on ongoing investigations.
Research documents are produced in the official language in which they are provided to the Secretariat.

Published by:
Fisheries and Oceans Canada
Canadian Science Advisory Secretariat
200 Kent Street
Ottawa ON K1A 0E6
http://www.dfo-mpo.gc.ca/csas-sccs/
csas-sccs@dfo-mpo.gc.ca

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ISSN 1919-5044

## Correct citation for this publication:

Bourdages, H., Brassard, C., Desgagnés, M., Galbraith, P., Gauthier, J., Lambert, J., Légaré, B., Parent, E. and Schwab P. 2015. Preliminary results from the groundfish and shrimp multidisciplinary survey in August 2014 in the Estuary and northern Gulf of St. Lawrence. DFO Can. Sci. Advis. Sec. Res. Doc. 2014/115. v + 96 p.

## Aussi disponible en français :

Bourdages, H., Brassard, C., Desgagnés, M., Galbraith, P., Gauthier, J., Lambert, J., Légaré, B., Parent, E. et Schwab P. 2015. Résultats préliminaires du relevé multidisciplinaire de poissons de fond et de crevette d'août 2014 dans l'estuaire et le nord du golfe du SaintLaurent. Secr. can. de consult. sci. du MPO. Doc. de rech. 2014/115. v+96p.

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#### Abstract

The Department of Fisheries and Oceans conducts an annual multidisciplinary survey in the Estuary and northern Gulf of St. Lawrence. The objectives of this survey are quite varied: assess the biodiversity of the species near the floor, estimate the abundance of groundfish and invertebrates, assess physical and biological oceanographic conditions (phytoplankton and zooplankton), monitor the pelagic ecosystem, take an inventory of marine mammals, and collect samples for various research projects. In 2014, the survey was conducted between August 1 and September 2 on board the CCGS Teleost. During this survey, 185 trawl tows was successful and 113 CTD casts of the water column and 93 zooplankton samples.

This report presents the results from catches from the 185 tows. In total, 82 fish taxa and 195 invertebrate taxa were identified during the mission. Historical perspectives (catch rates, spatial distribution and length frequency) are presented for about 20 taxa. These commercial fisheryindependent data will be used in several stock assessments (cod, redfish, Greenland Halibut, Atlantic Halibut and Northern Shrimp). For these species, abundance and biomass indicators in 2014 are comparable to the average or show upward trends, especially for Atlantic Halibut and small redfish.

Preliminary data analysis for water temperature measured in 2014 shows hot conditions near the surface and under the cold intermediate layer, but near normal conditions for the cold intermediate layer.


## RÉSUMÉ

Le Ministère des Pêches et des Océans réalise annuellement un relevé multidisciplinaire dans l'estuaire et le nord du golfe du Saint-Laurent. Les objectifs de ce relevé sont multiples : évaluer la biodiversité des espèces présentes près du fond; estimer l'abondance des poissons de fonds et des invertébrés; évaluer les conditions océanographiques physiques et biologiques (phytoplancton et zooplancton); monitorer l'écosystème pélagique; inventorier les mammifères marins et récolter des échantillons pour divers projets de recherche. En 2014, le relevé s'est déroulé du $1^{\text {er }}$ août au 2 septembre, à bord du NGCC Teleost. Lors de cette mission, 185 traits de chalut ont été réussis ainsi que 113 profils verticaux de la colonne d'eau afin de caractériser les conditions océanographies et 93 échantillons de zooplanctons.

Ce rapport présente les résultats des captures des 185 traits de chalut. Au total, 82 taxons de poissons et 195 taxons d'invertébrés ont été identifiés lors de la mission. Les perspectives historiques (taux de capture, répartition spatiale, fréquence de longueur) sont présentées pour une vingtaine de taxons. Ces données indépendantes de la pêche commerciale serviront à plusieurs évaluations de stocks, dont la morue, les sébastes, le flétan du Groenland, le flétan atlantique et la crevette nordique. Pour ces espèces les indices d'abondance et biomasse en 2014 sont soit comparables à la moyenne ou montrent des tendances à l'augmentation, particulièrement pour le flétan atlantique et des petits sébastes.
L'analyse préliminaire des données de température de l'eau mesurée en 2014 montre des conditions chaudes près de la surface et sous la couche intermédiaire froide, mais près de la normale en ce qui concerne la couche intermédiaire froide.

## INTRODUCTION

The Department of Fisheries and Oceans conducts an annual bottom trawl survey in the Estuary and the northern Gulf of St. Lawrence. This is a multi-species, commercial fisheryindependent survey. Its purpose is to assess the ecosystem with consistent, standardized data to examine the spatial and temporal changes in 1) the distribution, relative abundance and assemblage of fish, and 2) commercial species' biological parameters.

The main objectives are to:

1. assess groundfish and Northern Shrimp population abundance and condition;
2. assess environmental conditions;
3. take a biodiversity inventory;
4. assess phytoplankton and mesozooplankton abundance;
5. monitor the pelagic ecosystem;
6. take a marine mammal inventory;
7. collect samples for various research projects.

In 2014, the survey was conducted between August 1 and September 2 on board the CCGS Teleost (mission \#IML-2014-021).

## SURVEY DESCRIPTION

The survey covers the waters of the Laurentian Channel and north of it, from the Lower Estuary in the west to the Strait of Belle Isle and the Cabot Strait in the east, namely, the Northwest Atlantic Fisheries Organization (NAFO) divisions 4R, 4S and the northern part of 4T (Figure 1). Since 2008, coverage of division 4T has been increased in the upstream part of the Lower Estuary in order to sample the depths between 37 and 183 m . The area of the study area is $118,587 \mathrm{~km}^{2}$.

A stratified random sampling strategy is used for this survey. This technique consists in subdividing the study area into more homogeneous strata. This area is divided into 54 strata, which were divided based on depth, NAFO division and substrate type (Figure 2). A total of 200 trawl stations was initially allocated in the study area, a number proportional to the stratum surface, with a minimum of two stations per stratum. The tow positions were chosen randomly within each stratum. For 2014, a new rules was added to respect a minimum distance of 10 km between stations in the same stratum.

The fishing gear used on the CCGS Teleost is a four-sided Campelen 1800 shrimp trawl equipped with a Rockhopper footgear ("bicycle") (McCallum and Walsh 2002). The trawl lengthening and codend are equipped with a $12.7-\mathrm{mm}$ knotless nylon lining. Standard trawling tows last 15 minutes, starting from the time the trawl touched the sea floor as determined by the Scanmar ${ }^{\text {TM }}$ hydroacoustic system. Towing speed is 3 knots. Information on trawl geometry (horizontal spread of the doors and wings, vertical opening of the trawl, depth) was recorded for each tow using Scanmar ${ }^{T M}$ hydroacoustic sensors mounted on the fishing gear.
In 2014, 185 fishing stations were successful, 65 in $4 R, 77$ in $4 S$ and 43 in $4 T$ (Appendix 1). Coverage of the study area was very good; all strata were covered with a minimum of two stations and sampling was conducted in the Strait of Belle Isle. This area was never covered in 2013 (Figure 3).
For each fishing tow, the catch was sorted and weighed by taxa; biological data were then collected. For fish, crab and squid, size and weight are gathered by individual and, for
some species, sex, gonad maturity, and the weight of certain organs (stomach, liver, gonads) are also evaluated. Count of soft rays of the anal fin for Redfish, and otoliths are saved for cod, Atlantic Halibut and Witch Flounder. A roughly 2-kg shrimp sample is sorted and weighed by species (and by stage of maturity for Northern Shrimp). The shrimp are measured individually. The other invertebrates are counted (no individual measurements) and photographed. The photos are archived in a photo catalogue with keywords (station description, scientific name, etc.).

Additional samples were taken for various scientific projects. These samples include:

1. Specimens taken for the Maurice Lamontagne Institute (MLI) collection;
2. Boxes of shrimp and capelin for requests for aquaculture purposes from the MLI tank room;
3. Black Dogfish embryos, ray capsules, Black Dogfish juveniles and redfish in order to study their developmental morphology and their chondrification and mineralization processes;
4. Invasive species (tunicates) to confirm their genetic and microscopic identification;
5. Fish stomachs (Atlantic Halibut, American Plaice, Black Dogfish, White Hake, Vahl's Eelpout, Labrador Wolf Eel) and squid (Short-fin Squid) to enhance knowledge of their diet;
6. Cod liver to study the spatial distribution of polybrominated diphenyl ethers (PBDEs) in fish in coastal areas of Newfoundland and Labrador;
7. Small redfish (< 11 cm ) for genetic identification of the species (Sebastes fasciatus or S. mentella) and the population of new cohorts observed in the Gulf;
8. Sea pens (4 species) collected to study their reproduction and pathologies;
9. Marine mammal prey (several fish species and Northern Shrimp) to follow the development of St. Lawrence ecosystem key species' isotropic signatures;.
10. Saïda (Arctic Cod) for genetic study of the populations.

Oceanographic conditions such as temperature, conductivity (salinity), pH , dissolved oxygen, luminosity and fluorescence were sampled during this survey. A total of 113 vertical profiles of the water column were done, fourteen of which were at extra stations that fall under the Atlantic Zone Monitoring Program (AZMP). The various equipment, CTD SeaBird 911Plus ${ }^{\text {TM }}$, dissolved oxygen sensor (SBE 43), WETStar ${ }^{\text {TM }}$ photometer and fluorometer, are coupled to the rosette of Niskin bottles. For each profile obtained using the rosette, water samples are also taken at predetermined depths to determine their salinity, dissolved oxygen concentration (Winkler titration), nutritive salt content (nitrite, nitrate, phosphate, silicate) and chlorophyll content. In addition, a CTD SBE 19P/us ${ }^{\text {TM }}$ device, coupled to a dissolved oxygen sensor (Aanderaa optode) and a WETStar ${ }^{\text {TM }}$ photometer and fluorometer, was also installed on the back of the trawl, thereby allowing oceanographic data to be collected for the 185 fishing tows.

To study zooplankton distribution and biomass for the entire territory covered by the survey, a sampling program component consisted in using a zooplankton net ( $202 \mu \mathrm{~m}$ ), pulled vertically from the floor to the surface at 93 of the 185 stations visited, to collect organisms.

Continuously throughout the mission, water column hydroacoustic data at four frequencies ( $38,70,120$ and 200 kHz ) were recorded using a SIMRAD ${ }^{T M}$ EK60 echosounder. These data will be used to develop a three-dimensional database to map the pelagic ecosystem.
A marine mammal inventory in the study area was taken by two observers stationed at the front of the bridge when conditions permitted.

## DATA ANALYSIS

The analysis of 2014 abundance and biomass data were integrated into the combined annual summer survey series initiated in 1990. This combined series was developed following a comparative study between the two vessel-gear tandems (1990-2005: CCGS Alfred Needler - URI 81'/114' trawl; 2004-2012: CCGS Teleost - Campelen 1800 trawl) to establish specific correction factors for about twenty species caught (Bourdages et al. 2007). This resulted in adjustment of Needler catches into Teleost equivalent catches. Note that the distinction between the two redfish species, Sebastes fasciatus and S. mentella, is based on the analysis of the soft anal fin rays count and the depth of capture of individuals (H. Bourdages, DFO Mont-Joli, pers. comm.).

Given that over the years, some strata were not sampled by a minimum of two successful tows (Appendix 1), a multiplicative model was used to estimate their catch rate indexes in number and weight. This model provides a predicted value for strata with less than two tows with the data of the current year and the previous three years. Thus, indicators presented for the series are representative of a standard total area $116115 \mathrm{~km}^{2}$, the sum of the area of all strata. In addition, reference points were also added to the catch rate figures. The solid line represents the 1990-2013 period average (long-term average) and the two dotted lines associated to the mean $\pm 0.5$ standard deviation corresponding respectively to the upper and lower reference limits. Note that for Capelin and Herring, the calculated indices are instead probability values (\%) of encountering species during the survey. Indeed, due to the pelagic character of these two species, the bottom trawl is not an ideal fishing gear for their capture and, therefore, to accurately estimate abundance.
Length frequency distributions are presented in two different forms. The first figure shows the distribution for the last two years of the series plus the average distribution for the 1990-2013 period (long-term average distribution). Frequency values are expressed as the average number of individuals caught per tow in increment of 1 cm , except for Northern Shrimp ( 0.5 mm ) and Atlantic Halibut ( 3 cm ). The second figure represents the length distributions in length mean per class length for each year of the historical surveys series (1990 to 2014).
The geographical distribution of catches by weight per tow (kg/15 minutes tow, except for sea pens number/15 minutes tow) was made for periods of four years. The interpolation of CPUE was performed on a grid covering the study area using a ponderation inversely proportional to the distance ( R version 2.13.0, Rgeos library; R Development Core Team 2011). The isoline contours were then plotted for four CPUE levels which approximate the $20^{\text {th }}, 40^{\text {th }}, 60^{\text {th }}$ and $80^{\text {th }}$ percentiles of the non-zero values. The catch rates distribution for the 2014 survey only is also presented in a bubbles type map.
The following section gives the preliminary results for the abundance and biomass indices, the catch rate distribution maps, and the size frequency distributions for about 20 taxa commercially fished. These results are preliminary and must be considered as such until validations and laboratory analyses have been completed.

Finally, Appendix 2 provides a list of all taxa, vertebrates and invertebrates, caught among the 185 successful tows achieved during the 2014 survey. The occurrence, or the number of tows where the species was identified, as well as the total catch, by weight and numbers, are also presented. The number of specimens measured per taxon and some descriptive statistics for the length parameter are also presented in Appendix 3. For 7 of the most common taxa, Appendix 4 presents per tow: geographic positions, depth, corresponding stratum and catches (number and weight).

## RESULTS

## ACADIAN REDFISH ${ }^{1}$

Mean numbers and mean weights per tow of Acadian Redfish (Sebastes fasciatus) dropped between 1990 and 1994 (Figure 4). They remained at a low and stable level until 2004. The increase observed between 2005 and 2007 resulted primarily from the recruitment of the strong 2003 year-class, whose abundance decreased in 2008. Thereafter, the numbers and weights averages remained at low levels. In 2013 and 2014, there was an increase of the indices due to the arrival of strong cohorts of small individuals. In 2014, mean numbers and mean weights per tow are above the 1990-2013 long term average.

The size frequency distributions indicate low abundances of individuals of large sizes since 1994 (Figure 5). The strong 2003-cohort, observed between 2005 and 2008, disappeared in 2009 before reaching 20 cm . The recruitment of fish around 10 cm observed in 2013 ( 2011 cohort) is still modal at 13 cm in 2014. Many individuals of around 10 cm are also present in 2014. It should be noted that several individuals of size around 4 to 5 cm were observed in 2012, 2013 and also in 2014.

In the early 1990s, significant concentrations were observed in the north and east of Anticosti Island, and in the southwest sector of the studied area. Thereafter, the distribution was concentrated in the southeast of Anticosti Island and the southern part of the Esquiman channel (Figure 6). In 2013 and 2014, there was a wide distribution of the species, with high catch rates west and south of Anticosti Island, as well as in Esquiman channel.

## AMERICAN PLAICE

Mean numbers and mean weights per tow for American Plaice (Hippoglossoides platessoides) fluctuated without notable trends between 1990 and 2003 (Figure 7). Between 2004 and 2009, these indices have stabilized near the series average. They increased thereafter and were above the averages in 2011. They have decreased since and the values for 2014 are slightly below the series averages with a mean number of 43 individuals per set and a mean weight of 4 kg .
Since the onset of the survey in 1990, the range of the length frequency distributions for American Plaice has remained relatively stable, with sizes ranging between 5 and 45 cm

[^0](Figure 8). Size structure in 2012 showed an important 8 cm mode found at $11-12 \mathrm{~cm}$ in 2013 and at 15 cm in 2014. The abundance of this cohort is, however, below the time series average. In 2014, the abundance of American Plaice whose size is between 5 and 30 cm is lower than the 1990-2013 long-term average.
The spatial distribution of American Plaice is generalized to the entire Estuary and Northern Gulf of St. Lawrence at depths of 250 m or less (Figure 9). In 2014, the species was caught in close to $80 \%$ of the fishing stations. In fact, it is the vertebrate species with the third highest occurrence value (Appendix 2). Catch rates for American Plaice in 2014 show the same spatial distribution as in previous years. Thus important catch rates were observed in the Estuary, in the area of Bay of Sept-lles, and all along the west coast of Newfoundland

## ATLANTIC HALIBUT

With low values throughout the 1990s, the average numbers and average weights per tow of Atlantic Halibut (Hippoglossus hippoglossus) have been steadily increasing until recent years (Figure 10). During last years, the observed yields remain high and well above the upper reference limit of the average of 1990-2013 period. In 2014, indices are at historical highs, for both abundance and biomass.

In 2014, the range of sizes remained very wide (23-155 cm), the median size being about 60 cm (Appendix 3). The numbers per tow are higher than both the 2013 values and the average distribution of the 1990-2013 period for almost every length classes (Figure 11).

The distribution pattern of Atlantic Halibut has changed little over the years, occupying the entire territory covered by the survey (Figure 12). However, since the mid-2000s, there was a marked increase in catch rates associated with higher yields per tow. The largest catch rates observed in 2014 were located along the 200 m isobath, on the slopes of Laurentian, Esquiman and Anticosti channels, and in the Sept-Iles sector and the Estuary.

## BLACK DOGFISH

Mean numbers and mean weights per tow varied over the years for Black Dogfish (Centroscyllium fabricii) (Figure 13). Large confidence intervals are generally associated with the highest values. This could be caused by the gregarious behaviour of this species and by its limited spatial distribution in the Gulf. Since 2012, the indices values remained high, staying above the upper reference limits of the 1990-2013 average.
In general, size structures observed over the years have two main modes. The first observed between 15 and 20 cm (Figure 14), represents young-of-the-year fish, which are released at 14 cm by ovoviviparous females. The second mode includes adult dogfish whose lengths vary between 50 and 65 cm . In addition to these two modes, which are of similar magnitude to the 1990-2013 average, the size structure for 2014 shows values well higher the average for fish from 30 cm to 50 cm .
In general, the Black Dogfish distribution observed in the survey was concentrated on all of the Laurentian Channel and the Estuary (Figure 15). High catch rates were recorded in 2014 upstream in the Laurentian Channel, off the coast of the Gaspé Peninsula, as well as at the limit of the survey coverage, in Cabot Strait.

## CAPELIN

Capelin (Mallotus villosus) is a common catch in the survey. Over the years, the highest catch rates have mainly been recorded in the St. Lawrence Estuary, around Anticosti Island, and in the Strait of Belle Isle area (Figure 16).

Compared to 2013, the probability of finding Capelin during the survey in 2014 was lower in the southern portion of the west coast of Newfoundland (sub-divisions and 4Rc 4Rd) and in the southeastern portion of the Anticosti Island (Figure 17).

In 4R division, the probability (average kriging) of finding Capelin has highly been highly variable since 1990 (Figure 18). The value obtained for 2014 dropped below the reference period 1990 to 2013 after a sharp upward trend between 2006 and 2013 where the values were even higher than the average between 2010 and 2013.
In division 4S, the probability of finding capelin has fluctuated less over the years (Figure 18). It is also higher than in 4R division. Between 2002 and 2010, the probability was stable and close to the average for the period 1990-2013, nearly $80 \%$. However, the calculated value for 2014 dropped below the lower reference limit from 1990 to 2013 after similar and higher than average values between 2011 and 2013.

## COD

Mean numbers and mean weighs per tow for Cod (Gadus morhua) have been low but stable since 1992 (Figure 19). In 2014, these indices have increased and are above the 1990-2013 series average. Since 1990, these values are respectively the second and fourth highest in mean numbers and mean weights per tow. It is noteworthy that all planed strata have been covered by 2014 the survey including the Strait of Belle Isle which has not always been the case, notably in 2013.
In 2014, the large frequency distribution reveals that the two modes observed in 2013 at 18 and 26 cm remained modal in 2014 at 23 cm (2 years) and 34 cm (3 years) (Figure 20). The abundance of these two modes is higher than the average of the 1990-2013 series. In contrast with years 2011, 2012 and 2013, no cod of less than 10 cm were captured in 2014.

From 1994 to 2005, concentrations of Cod in the north and west of Anticosti Island showed a gradual decrease to increase again from 2006 (Figure 21). The catch rate distributions from 1990-1994 and 2011-2014 are now comparable, with concentrations in the area of the Belle Isle strait, along the west coast of Newfoundland as well as in the north and west of Anticosti Island.

## DEEPWATER REDFISH ${ }^{2}$

Mean numbers and mean weights per tow of Deepwater Redfish (Sebastes mentella) decreased significantly between 1990 and 1994 (Figure 22). They remained at a low and stable level until 2012. In 2013 and 2014, there was a rise in the indices due to the arrival of small individuals. It is worth noting that genetic analyses have confirmed this new cohort

[^1]to be essentially composed of Deepwater Redfish. In 2014, mean numbers and mean weights per tow are above the 1990-2013 period average.
The size frequency distributions indicate low abundances of individuals of large sizes since 1994 (Figure 23). The 2003 cohort, observed between 2005 and 2007, disappeared in 2008 before reaching 20 cm . The 10 cm mode observed in 2013 becomes modal at 13 cm in 2014. The recruitment around 10 cm observed in 2013 (2011 cohort) is still modal at 13 cm in 2014. Many individuals of around 10 cm are also present in 2014. It should be noted that several individuals of size around 4 to 5 cm were observed in 2012, 2013 and also in 2014.

The pattern of distribution of Deepwater Redfish observed in the early 1990s indicates a wide distribution extending south and east of Anticosti Island. Thereafter, the distribution was more limited with significant concentrations southeast of Anticosti Island, especially in the deeper waters of the Laurentian Channel (Figure 24). In 2013 and 2014, we again observed a broad distribution that extended westward into the Estuary, south to Cabot Strait and eastward in Esquiman Channel. Strong catch rates were recorded in the Esquiman Channel, southwest Newfoundland, southeast of Anticosti Island, and in the western sector of the Gulf (Sept-Iles).

## GREENLAND HALIBUT

Mean catch per tow, in numbers and weights, of Greenland Halibut (Reinhardtius hippoglossoides) increased in 2014 and are above to the average for the 1990-2013 period (Figure 25).

The size frequency distribution in 2014 showed that the year-class $1(15-20 \mathrm{~cm})$, cohort of 2013, and the year-class $2(20-30 \mathrm{~cm})$, cohort of 2012 , was more abundant than the average for the 1990-2013 period (Figure 26). The year-class 3 ( $30-37 \mathrm{~cm}$ ), cohort of 2011, were few while the mean abundance of fish over three year-old (more than 37 cm ) were above the average of the 1990-2013 period.

The pattern of distribution of Greenland Halibut observed in 2014 was similar to that which prevails since 2000. The largest catch rates are found mainly in the Estuary and the western sector of Anticosti Island, and at the head of the Esquiman, Laurentian and Anticosti channels, at depths of over 200 m (Figure 27).

## HAGFISH

Mean numbers and mean weights per tow of Hagfish (Myxine glutinosa) fluctuated throughout the series (Figure 28). In 2014, they were similar to the average of the 19902013 period with a mean number of 20 individuals per tow for an average weight of about 1.1 kg .

The sampling of length data for this species began in 2003 (Figure 29). The size frequency distribution is composed of a single wide mode ranging between 20 and 50 cm . In 2014, the abundance of different size groups was similar to the 2003-2013 period average distribution.

Throughout the series, catches of Hagfish were concentrated in the Estuary and in the deep waters of the Laurentian Channel (Figure 30).

## HERRING

Although pelagic (i.e., low catchability in bottom trawl), Atlantic Herring (Clupea harengus harengus) are regularly caught on the survey. They are associated with four spawning stocks and are found throughout the sampled area, particularly along the channels (Figure 31). Over the years, the highest catch rates (kg/tow) have been recorded in the St. Lawrence Estuary, along the Laurentian Channel, between Anticosti Island and the west coast of Newfoundland, and in the Strait of Belle Isle.

Compared to 2013, the probability of finding Herring during the survey in 2014 were lower in the estuary as well as to the north and southeast of Anticosti island (Figure 32).

In 4R, probabilities (average kriging) of finding Herring were relatively stable between 1993 and 1997 (Figure 33). Thereafter, they increased to a maximum of about $75 \%$ in 2000 and 2001 before falling to $25 \%$ in 2004. They increased in 2005 and remained stable until 2009 to dropped again in 2010 below the lower reference limit. After rising in 2011, they fluctuated and the probability measured in 2014 is higher than in 2013 and above the average for the period 1990-2013. Similar results were observed in division 4 S but with smaller fluctuations (Figure 33). The chances of finding Herring there were higher than in 4R. However, unlike 4R, the 2014 value was lower than in 2013.

## LONGFIN HAKE

The general trend in average numbers and average weight per tow of Longfin Hake (Phycis chesteri) shows a decline since the early 1990s (Figure 34). In 2014, they reached the lowest values in the series, well below the lower reference limit the 1990-2013 average.

The size frequency distributions of Longfin Hake extend mainly between 12 and 40 cm and this, throughout years of the survey (Figure 35). In 2013, the abundance of different size classes of fish caught still falls far short of the average distribution for the 1990-2013 period. Note that compared to the previous year, catches of fish under 20 cm were significantly less in 2014.
Since the beginning of the survey in 1990, the Longfin Hake is distributed in the southern part of the area sampled, from Cabot Strait to the Estuary (Figure 36). The highest catch rates were found in the downstream half of the Laurentian Channel.

## LUMPFISH

Although regularly captured in the survey, the Lumpfish (Cyclopterus lumpus) is not too frequent. On average, the annual catch is composed of 30 individuals distributed in 20 fishing sets. In 2014, 41 individuals were captured in a total of 26 tows (Appendix 2). Mean numbers and mean weights per tow are generally low and stable (Figure 37). In 2014, they were slightly above the 1990-2013 period average with 0.29 individuals per tow for 0.16 kg on average.
The range of sizes of lumpfish caught in 2014 is similar to the series and varies from 4 to 48 cm (Figure 38); however, the abundance of the different mode is generally above the 1990-2013 average.
Over the survey series, Lumpfish catches occurred mainly north-west and north-east of Anticosti Island, at the head of Esquiman Channel and in the Strait of Belle Isle (Figure 39). Catches in 2014 were mainly localised in Bay of Sept-lles and north of Anticosti.

## NORTHERN SHRIMP

Preliminary data on Northern Shrimp (Pandalus borealis) are presented for the whole Northern Gulf rather than for each shrimp fishing area.

In 2014, the mean numbers of individuals caught per tow and the mean catches in weight showed a slight increase compared to 2013 and are similar to the average for the 19902013 period (Figure 40). However, the values of these indices are lower compared to those observed for mid-2000. In fact, these indices fell between 2003 and 2011.

The size frequency distributions show that in 2014, the majority of shrimp size categories were similar to the average for the 1990-2013 period, with exception for male of 14-17 mm (carapace length, CL) whose abundance is lower and for female larger than 21 mm whose abundance is higher (Figure 41).

Overall, the spatial distribution of Northern Shrimp in 2014 was similar to that observed in recent years (Figure 42). The best catch rates were observed along the Esquiman, Anticosti and Laurentian channels, as well as west of Anticosti Island through the Estuary.

## SEA PENS

The identification of different taxa of sea pen in the catches began in 2011. The data collected allowed following the pattern of distribution and catching rates of four species: Anthoptilum grandiflorum, Halipteris finmarchica, Pennatula aculeata and Pennatula grandis.

With four years of data, the distribution patterns were confirmed and compared from one year to the next (Figures 43 to 46). Pens are mainly encountered in deep waters (> 200 m ); they are not present in shallow areas on the west coast of Newfoundland and Labrador, in the Strait of Belle Isle or north of Anticosti Island. P. aculeata is the most widely distributed species in the northern Gulf; it is present in every channel (Esquiman, Anticosti and Laurentian). P. grandis and A. grandiflorum are mainly concentrated in the Laurentian Channel. Conversely, H. finmarchica distribution is limited to one area of the Laurentian Channel south of Anticosti Island.

## SILVER HAKE

Until the mid-2000s, catches of Silver Hake (Merluccius bilinearis) were infrequent and of little importance during the survey (Figure 47). Increasing since 2009, the abundance and biomass indices reached levels never seen before in 2013, before lowering in 2014. 2014 values are still above the $1990-2013$ average.
During the surveys, the sizes of Silver Hake caught ranged between 10 and 45 cm , the abundance of different size classes being very low until the late 2000s ( Figure 48). From the two modes observed in 2013 in the size frequency of the survey, only the one centered around 30 cm remain in 2014 and the magnitude is lower.
Except for the northern west coast of Newfoundland, the distribution of Silver Hake extends over the survey area, although infrequently captured (Figure 49). In recent years, the highest catch rates were observed at the entrance of the Cabot Strait, on the Newfoundland side, and along the northern edge of the Laurentian Channel.

## SMOOTH SKATE

Although variable throughout the 1990s, the average numbers of Smooth Skate (Malacoraja senta) caught per tow were low, ranging on or near the average for the 1990-

2013 period (Figure 50). Following a significant increase between 2002 and 2003 (two years where some species showed abnormal indices values in this survey), the abundance in number caught per tow declined somewhat to oscillate around the long-term period average up to 2013. In 2014, this index decreased and is below the long term average at a value comparable to those at the beginning of the time series. Meanwhile, the average catch weight per tow showed variations without tendencies between 1990 and 2003 and stabilised thereafter at values just under the long term average.

In 2014, the Smooth Skate length frequency distribution shows a range of sizes similar to previous years (Figure 51). The abundance of small ( $10-18 \mathrm{~cm}$ ) and large ( $50-70 \mathrm{~cm}$ ) individuals is comparable to the 1991-2013 long-term average. However, the abundance of skates of intermediate sizes ( $18-50 \mathrm{~cm}$ ) is largely inferior to the long-term average.
Since the 2000s, the species is captured in more than half of the fishing sets (59\%), the greatest abundances are met at depths greater than 100 m (Figure 52). In 2014, the highest catch rates were observed mainly south of Anticosti Island, in the Anticosti and Laurentian channels, and in the western part of the survey, in the Estuary and Sept-lles sector.

## SNOW CRAB

Declining from 2009 to 2013, the average number of Snow Crab (Chionoecetes opilio) per tow remained stable in 2014. It was well below the average for the 1990-2013 period (Figure 53). After a rising trend between 2006 and 2012, the average weight per tow declined significantly in 2013 and remained unchanged in 2014. The estimated weight for this last survey was also below the long term average.

Snow crabs were caught in each sampled survey sectors except in strait of Belle Isle and in the southern part of the Newfoundland west coast. Nonetheless, since 1999, its distribution pattern changed little over the years (Figure 54). This species is scarce beyond 200 meters.

In 2014, the distribution of catch rates showed a heterogeneous distribution, with a significant presence of the species in the western half area of the sampled area. The highest catch rates were observed mainly in the Sept-Iles and Rivière-au-Tonnerre sectors and in St-Lawrence estuary.

## THORNY SKATE

Mean number and mean weight per tow indices for Thorny Skate (Amblyraja radiatia) emerge in two periods. For 1990's, the general trend for the mean number of fish caught is one of decline compared to the average for the 1990-2013 period (Figure 55). Meanwhile, the mean weights are exception of 1991, below the lower reference limit. Both indices showed a significant increase between 2002 and 2003 then exceeding the upper reference limit of the long-term period average. The two indices decreased somewhat thereafter but remained close (number per tow) or higher (weight per tow) to the average for the 1990-2013 period. In 2014, average number and weight per tow are comparable to 2013 and are close and below the long term average.
The length frequency distribution of Thorny Skate caught during the survey show similar pattern year after year. In 2014, the abundance of small ( $10-18 \mathrm{~cm}$ ) and large ( $50-70 \mathrm{~cm}$ ) individuals is greater than the 1991-2013 long term average (Figure 56). However the abundance of the intermediate sizes $(18-50 \mathrm{~cm})$ is lower than the long-term average.

The spatial distribution of Thorny Skate extends to the entire study area of the survey (Figure 57). In 2014, the species was found in $77 \%(143 / 185)$ of tows, the highest catch rates are encountered at depths between 150 and 250 m . There is a recurring concentration at the head of the Laurentian Channel, in the St. Lawrence Estuary, while during the survey.

## WHITE HAKE

The mean numbers and mean weights per tow of White Hake (Urophycis tenuis) for Divisions 4RST declined significantly between 1990 and 1994 (Figure 58). They have subsequently fluctuated until the mid-2000s showing no clear trend. Since 2004, the values are near and below the averages of the 1990-2013 period. In 2014, there was a slight increase in the indices whose values are comparable to the long-term averages.

The average length frequency distribution observed between 1990 and 2013 ranges from 20 to 60 cm (Figure 59). In 2013, the abundance of individuals between 30 and 36 cm was largely greater than the series average for the period 1990-2013. In 2014 these individuals are still present at 39-42 cm and their abundance remains greater than the series average. Furthermore, the adult hakes of 45 cm and over are rare.

Generally, the highest White Hake catch rates were observed in the southern portion of the sampled area (Figure 60). In 2014, the high catch rates were found in the lower half part of the Laurentian channel and in the southern sector of the Esquiman channel.

## WITCH FLOUNDER

The mean numbers and mean weights per tow of Witch Flounder (Glyptocephalus cynoglossus) decreased between 1990 and 1993, then remained relatively stable and below the long term average from 1994 to 1998 (Figure 61). This period of stability was followed by two waves of increase and decrease between 1998 and 2005. Subsequently, the average numbers per tow increased gradually up to 2013 and remained near or somewhat above the average for the 1990-2013 period. In 2014, the abundance decreased to 14.6 below the long term average of 16.6. In contrast, the mean number per tow increased from 2010 and remains in 2014 above the long term average.
The size frequency distributions of Witch Flounder caught during the surveys remained relatively constant, with a range of lengths varying between 5 and 45 cm (Figure 62). However, the modes that characterize the different years are rather different and are mainly explained by the growth of stronger cohorts. Hence, the main mode observed at 26 cm in 2011, is observed at 28 cm in 2012, then $30-31 \mathrm{~cm}$ in 2013 and $33-34 \mathrm{~cm}$ in 2014. This abundant cohort is seen in the survey data since 2008. A second strong cohort identified since 2010 reaches $27-30 \mathrm{~cm}$ in 2014. The presence of these two strong cohorts explains that in 2014, the abundance of Witch Flounder between 25 and 42 cm is greater than the series average. Witch Flounder of less than 25 cm are however largely underrepresented in the 2014 survey.
Witch Flounder is present in close to $80 \%$ of the fishing sets of the sampled area (Figure 63). It is largely distributed in the Northern Gulf of St-Lawrence but is absent from the Strait of Belle Isle. The largest catches are usually made at the head and along the southern slope of the Laurentian Channel, and in the Estuary. For some years, significant catches are also observed along the west coast of Newfoundland and on Beaugé Bank. The spatial distribution of Witch flounder in 2014 is similar to previous years.

## WOLFFISHES

Three wolffish species were captured during the summer survey series (1990-2014): Atlantic Wolffish (Anarhichas lupus), Spotted Solffish (Anarhichas minor), and Northern Wolffish (Anarhichas denticulatus). According to the Act Species at Risk Act (SARA), Spotted Wolffish and Northern Wolffish have a threatened status, while the Atlantic Wolffish is considered as a special concern status.

Atlantic Wolffish is the most frequent of the three wolffish species in the study area. In 2014, 37 occurrences for a total of 628 individuals were recorded along the west coast of Newfoundland and Labrador and northeast of Anticosti Island (Figure 64). Individual lengths ranged from 7 to 76 cm . These observations are comparable to those of previous years.

Spotted Wolffish was caught occasionally during this survey. In 2014, 14 occurrences for a total of 23 individuals were recorded along the west coast of Newfoundland and Labrador and northeast of Anticosti Island (Figure 65). Individual lengths ranged from 9 to 90 cm . These observations are comparable to those of previous years.

There were no Northern Wolffish catches in 2014. Catches of this species during this mission are very rare; only five individuals have been caught since 1990.

## INVERTEBRATES - GENERALITY

In 2014, 195 invertebrate taxa were identified. These taxa belong to thirteen phyla: Mollusc (55 taxa), Arthropod (48), Echinoderm (34), Cnidarian (29), Annelid (9), Tunicates (sub-phylum) (6), Sponge (4), Bryozoan (3), Brachiopods (2), Sipunculid (2), Ctenophore (1), Platyhelminths (1) and Echiurid (1).

The most frequently observed taxa (occurrence) are: Northern Shrimp Pandalus borealis, Sponges (Porifera), Snow Crab Chionoecetes opilio, Mud Star Ctenodiscus crispatus, White Shrimp Pasiphea multidentata, Polychaetes (Polychaeta), Striped Pink shrimp Pandalus montagui, Crown Jellyfish Ptychogena lactea, Ascidians (Ascidiacea), Sea Pen Pennatula aculeate and Heart Urchin Brisaster fragilis (Appendix 2).
While the highest catches are: Northern Shrimp Pandalus borealis, Striped Pink shrimp Pandalus montagui, White Shrimp Pasiphea multidentata, Heart Urchin Brisaster fragilis, Mud Star Ctenodiscus crispatus, Brittle Star Ophiura sarsii and Greenland Shrimp Eualus macilentus (Appendix 2).
Note that a particular sampling has been done to document cases of invasive species associated with the group of Ascidians (Tunicates). In fact, some specimens of this group where observed. Depending upon the identification, this may well be the Tunicate Botrylloides violaceus, this species was observed for the first time in the Gulf of StLawrence in 2012.

## PHYSICAL OCEANOGRAPHIC CONDITIONS

Preliminary analysis of 2014 water temperature data shows warm conditions near the surface as well as under the cold intermediate layer, but near-normal conditions in the cold intermediate layer.
Air temperatures over the Gulf in July 2014 were the warmest for that month since the beginning of records in 1873 . This was followed in August by even warmer air temperatures in the northwest Gulf and in the estuary. This combination led to record high surface water temperatures in August, reaching an anomaly of $+2.5^{\circ} \mathrm{C}$ averaged over the
whole Gulf (relative to the 1985-2010 climatology) and of $+4^{\circ} \mathrm{C}$ in the estuary and northwestern Gulf.
After a particularly cold winter, the summer cold intermediate layer temperature and thickness returned to conditions close to the climatological normal for the first time since 2009, except in the estuary where they remained warm (Figures 66 and 67).
Below the cold intermediate layer, estuarine circulation that carries deep waters to the heads of the channels has transported warm waters that have been present for several years in Cabot Strait, central Gulf and Esquiman Channel upstream. Temperatures at 200 and 300 m have therefore increased in most areas since 2013, but in particular in these same three regions (Figure 66). Considering all data taken during the year, the regions of Cabot Strait and central Gulf are currently experiencing temperature records since 1915 at $200 \mathrm{~m}\left(6.4^{\circ} \mathrm{C}\right.$ temperature, anomaly of $+1.6^{\circ} \mathrm{C}$ or +2.7 S.D., and $5.9^{\circ} \mathrm{C},+1.4^{\circ} \mathrm{C}$ and +2.6 S.D. respectively for the two regions), while Anticosti Channel has record temperatures at $300 \mathrm{~m}\left(6.3^{\circ} \mathrm{C} ;+0.8^{\circ} \mathrm{C} ;+2.8\right.$ S.D.). Averaged over the entire Gulf, the temperature reached a record high at $300 \mathrm{~m}\left(6.0^{\circ} \mathrm{C},+0.5^{\circ} \mathrm{C},+3.3 \mathrm{SD}\right)$ and the highest value since 1980 at $200 \mathrm{~m}\left(5.9^{\circ} \mathrm{C},+0.5^{\circ} \mathrm{C},+2.0\right.$ S.D.).
Figure 67 summarizes these findings, showing the surface temperature records for the northern Gulf averaged for July and August and for May to August, the temperature record at 200 m and the maximum since 1980 at 300 m . The temperature of the cold intermediate layer is however back to near-normal.

## ACKNOWLEDGEMENTS

We would like to thank both crews of the CCGS Teleost and wish to highlight the excellent work of the 2014 scientific team. The science team consisted of Camille Alboury, Denis Bernier, Hugo Bourdages, Claude Brassard, Sylvain Chartrand, Pierre-Marc ChouinardScallon, Mathieu Desgagnés, Johanne Gauthier, Julie Joseph, Caroline Lafleur, Alexandra Leclerc, Sébastien Lemieux Lefebvre, Isabelle Lévesque, Marie-Claude Marquis, Chantal Méthot, Claude Nozeres, Éric Parent, Bernard Pettigrew, Michel Rousseau, Philippe Schwab, Sylvie St-Pierre, Hélèna Talbot and Fanny Vermandele.
Finally, we would like to thank Denis Bernier and Claude Savenkoff for reviewing this document.

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FIGURES


Figure 1. NAFO Divisions of the Estuary and Gulf of St. Lawrence and names of locations mentioned in the text.


Figure 2. Stratification scheme used for the groundfish and shrimp research survey in the Estuary and northern Gulf of St. Lawrence.


Figure 3. Locations of successful sampling stations (trawl and oceanography) and additional oceanographic stations for the 2014 survey.

## Acadian Redfish



Figure 4. Mean numbers and mean weights per 15 minutes tow observed during the survey for Acadian Redfish in 4RST. Error bars indicate the 95\% confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).


Figure 5. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Acadian Redfish in 4RST.


Figure 6. Acadian Redfish catch rates (kg/15 minutes tow) distribution.

American Plaice


Figure 7. Mean numbers and mean weights per 15 minutes tow observed during the survey for American Plaice in 4RST. Error bars indicate the $95 \%$ confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).

American Plaice



Figure 8. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for American Plaice in 4RST.

## American Plaice




Figure 9. American Plaice catch rates (kg/15 minutes tow) distribution.


Figure 10. Mean numbers and mean weights per 15 minutes tow observed during the survey for Atlantic Halibut in 4RST. Error bars indicate the $95 \%$ confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).


Figure 11. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Atlantic Halibut in 4RST.

## Atlantic Halibut




Figure 12. Atlantic Halibut catch rates (kg/15 minutes tow) distribution.

## Black Dogfish



Figure 13. Mean numbers and mean weights per 15 minutes tow observed during the survey for Black Dogfish in 4RST. Error bars indicate the 95\% confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).


Figure 14. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Black Dogfish in 4RST.

Black Dogfish



Figure 15. Black Dogfish catch rates (kg/15 minutes tow) distribution.

## Capelin




Figure 16. Capelin catch rates (kg/15 minutes tow) distribution.

## Capelin



Figure 17. Probabilities areas (\%) associated with the presence of Capelin.

## Capelin

DIVISION 4R


DIVISION 4S


Figure 18. Mean probabilities of finding Capelin in NAFO Divisions 4R and 4S. Error bars indicate the 95\% confidence interval and the horizontal lines indicate the mean of the 1990-2013 period (solid line) and upper and lower reference (see text) limits (dashed lines).


Figure 19. Mean numbers and mean weights per 15 minutes tow observed during the survey for Cod in 4RS. Error bars indicate the 95\% confidence interval and the horizontal lines indicate the mean of the 1990-2013 period (solid line) and upper and lower reference (see text) limits (dashed lines).


Figure 20. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Cod in $4 R S$.


Figure 21. Cod catch rates (kg/15 minutes tow) distribution.

Deepwater Redfish


Figure 22. Mean numbers and mean weights per 15 minutes tow observed during the survey for Deepwater Redfish in 4RST. Error bars indicate the $95 \%$ confidence interval and the horizontal lines indicate the mean of the 1990-2013 period (solid line) and upper and lower reference (see text) limits (dashed lines).

## Deepwater Redfish



Figure 23. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Deepwater Redfish in 4RST.

Deepwater Redfish



Figure 24. Deepwater Redfish catch rates (kg/15 minutes tow) distribution.

## Greenland Halibut



Figure 25. Mean numbers and mean weights per 15 minutes tow observed during the survey for Greenland Halibut in 4RST. Error bars indicate the 95\% confidence interval and the horizontal lines indicate the mean of the 1990-2013 period (solid line) and upper and lower reference (see text) limits (dashed lines).

## Greenland Halibut



Figure 26. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Greenland Halibut in 4RST.

## Greenland Halibut




Figure 27. Greenland Halibut catch rates (kg/15 minutes tow) distribution.


Figure 28. Mean numbers and mean weights per 15 minutes tow observed during the survey for Hagfish in 4RST. Error bars indicate the $95 \%$ confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).

## Hagfish



Figure 29. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Hagfish in 4RST.


Figure 30. Hagfish catch rates (kg/15 minutes tow) distribution.


Figure 31. Herring catch rates (kg/15 minutes tow) distribution.

## Herring



Figure 32. Probabilities areas (\%) associated with the presence of Herring.

## Herring

## DIVISION 4R



DIVISION 4S


Figure 33. Mean probabilities of finding Herring in NAFO Divisions 4R and 4S. Error bars indicate the 95\% confidence interval and the horizontal lines indicate the mean of the 1990-2013 period (solid line) and upper and lower reference (see text) limits (dashed lines).


Figure 34. Mean numbers and mean weights per 15 minutes tow observed during the survey for Longfin Hake in 4RST. Error bars indicate the $95 \%$ confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).

## Longfin Hake



Figure 35. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Longfin Hake in 4RST.

Longfin Hake



Figure 36. Longfin Hake catch rates (kg/15 minutes tow) distribution.

Lumpfish


Figure 37. Mean numbers and mean weights per 15 minutes tow observed during the survey for Lumpfish in 4RST. Error bars indicate the 95\% confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).

## Lumpfish




Figure 38. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Lumpfish in 4RST.


Figure 39. Lumpfish catch rates (kg/15 minutes tow) distribution.


Figure 40. Mean numbers and mean weights per 15 minutes tow observed during the survey for Northern Shrimp in 4RST. Error bars indicate the $95 \%$ confidence interval and the horizontal lines indicate the mean of the 1990-2013 period (solid line) and upper and lower reference (see text) limits (dashed lines).


Figure 41. Carapace length frequency distributions (mean number per 15 minutes tow) observed during the survey for Northern Shrimp in 4RST.


Figure 42. Northern Shrimp catch rates (kg/15 minutes tow) distribution.

## Sea pen (Anthoptilum grandiflorum)



Figure 43. Sea pen Anthoptilum grandiflorum catch rates (nb/15 minutes tow) distribution.

## Sea pen (Halipteris finmarchica)



Figure 44. Sea pen Halipteris finmarchica catch rates (nb/15 minutes tow) distribution.

## Sea pen (Pennatula aculeata)



Figure 45. Sea pen Pennatula aculeata catch rates (nb/15 minutes tow) distribution.

## Sea pen (Pennatula grandis)



Figure 46. Sea pen Pennatula grandis catch rates (nb/15 minutes tow) distribution.

## Silver Hake



Figure 47. Mean numbers and mean weights per 15 minutes tow observed during the survey for Silver Hake in 4RST. Error bars indicate the 95\% confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).

Silver Hake


Figure 48. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Silver Hake in 4RST.

Silver Hake



Figure 49. Silver Hake catch rates (kg/15 minutes tow) distribution.

Smooth Skate


Figure 50. Mean numbers and mean weights per 15 minutes tow observed during the survey for Smooth Skate in 4RST. Error bars indicate the $95 \%$ confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).

Smooth Skate


Figure 51. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Smooth Skate in 4RST.

## Smooth Skate




Figure 52. Smooth Skate catch rates (kg/15 minutes tow) distribution.

## Snow Crab



Figure 53. Mean numbers and mean weights per 15 minutes tow observed during the survey for Snow Crab in 4RST. Error bars indicate the 95\% confidence interval and the horizontal lines indicate the mean of the 1990-2013 period (solid line) and upper and lower reference (see text) limits (dashed lines).

## Snow Crab




Figure 54. Snow Crab catch rates (kg/15 minutes tow) distribution.

Thorny Skate


Figure 55. Mean numbers and mean weights per 15 minutes tow observed during the survey for Thorny Skate in 4RST. Error bars indicate the $95 \%$ confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).

Thorny Tkate


Figure 56. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Thorny Skate in 4RST.

Thorny Skate



Figure 57. Thorny Skate catch rates (kg/15 minutes tow) distribution.


Figure 58. Mean numbers and mean weights per 15 minutes tow observed during the survey for White Hake in 4RST. Error bars indicate the $95 \%$ confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).


Figure 59. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for White Hake in 4RST.

White Hake



Figure 60. White Hake catch rates (kg/15 minutes tow) distribution.


Figure 61. Mean numbers and mean weights per 15 minutes tow observed during the survey for Witch Flounder in 4RST. Error bars indicate the $95 \%$ confidence interval and the horizontal lines indicate the mean of the 19902013 period (solid line) and upper and lower reference (see text) limits (dashed lines).


Figure 62. Length frequency distributions (mean number per 15 minutes tow) observed during the survey for Witch Flounder in 4RST.


Figure 63. Witch Flounder catch rates (kg/15 minutes tow) distribution.

Wolffish, Atlantic Wolffish



Figure 64. Atlantic Wolffish catch rates (kg/15 minutes tow) distribution.

Wolffish, Spotted Wolffish



Figure 65. Spotted Wolffish catch rates (kg/15 minutes tow) distribution.

## Water temperatures in the Gulf

August-September 2014


Figure 66. Mean temperature profiles observed in each region of the Gulf during August 2014. The shaded area represents the 1981-2010 climatological monthly mean $\pm 0.5$ SD. Mean profiles for 2013 are also shown for comparison.

## Water temperatures in the Gulf



Figure 67. Water temperatures in the Gulf of St. Lawrence. July-August and May to August sea surface temperature averaged over the Estuary and northern Gulf (red lines). Layer-averaged temperature for the Gulf of St. Lawrence at 200 and 300 m (green lines). Cold intermediate layer minimum temperature index (adjusted to July 15) in the Gulf of St. Lawrence, with the 2014 value estimated using data from the August survey (blue line). Climatological averages based on the 1981-2010 period are indicated by thin dashed lines.

Appendix 1. Number of successful stations per stratum for the DFO survey.

| Stratum | NAFO | $\begin{aligned} & \text { Area } \\ & \left(\mathrm{km}^{2}\right) \\ & \hline \end{aligned}$ | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 401 | 4 T | 545 | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 2 | 2 |
| 402 | 4 T | 909 | 3 | 5 | 5 | 3 | 3 | 1 | 3 | 2 | 3 | 5 | 3 | 3 | 3 | 2 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| 403 | 4 T | 1190 | 3 | 3 | 3 | 3 | 3 | 3 | 10 | 10 | 3 | 5 | 3 | 3 | 3 | 3 | 6 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 |
| 404 | 4 T | 792 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 2 |
| 405 | 4 T | 1478 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| 406 | 4 T | 2579 | 5 | 3 | 3 | 3 | 3 | 3 | 5 | 5 | 3 | 5 | 3 | 4 | 5 | 3 | 5 | 6 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 3 | 3 |
| 407 | 4 T | 2336 | 5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 5 | 3 | 5 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 2 | 4 |
| 408 | 4 T | 2734 | 4 | 5 | 5 | 3 | 2 | 3 | 3 | 2 | 5 | 5 | 4 | 3 | 3 | 3 | 2 | 11 | 4 | 4 | 4 | 4 | 3 | 3 | 4 | 3 | 4 |
| 409 | 4 T | 909 | 3 | 3 | 3 | 3 | 0 | 3 | 4 | 3 | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 |
| 410 | 4 T | 1818 | 2 | 3 | 3 | 3 | 4 | 6 | 10 | 6 | 5 | 4 | 4 | 4 | 5 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 411 | 4 T | 1859 | 3 | 3 | 3 | 3 | 4 | 7 | 9 | 7 | 6 | 9 | 5 | 9 | 4 | 3 | 5 | 8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 412 | 4 T | 1283 | 3 | 3 | 3 | 3 | 4 | 5 | 3 | 3 | 3 | 4 | 4 | 4 | 3 | 3 | 2 | 5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| 413 | 4 T | 731 | 3 | 4 | 3 | 3 | 0 | 3 | 3 | 4 | 3 | 4 | 4 | 4 | 3 | 3 | 1 | 5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 |
| 414 | 4 T | 388 | 3 | 2 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 6 | 3 | 3 | 2 | 1 | 3 | 3 | 2 | 3 | 2 |
| 801 | 4R | 1214 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 2 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 |
| 802 | 4 R | 1369 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 8 | 3 | 8 | 2 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| 803 | 4 S | 6976 | 14 | 3 | 2 | 4 | 3 | 3 | 3 | 3 | 4 | 5 | 3 | 4 | 6 | 2 | 1 | 14 | 6 | 8 | 8 | 7 | 3 | 6 | 7 | 3 | 10 |
| 804 | 4 S | 2490 | 5 | 4 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 6 | 3 | 2 | 3 | 10 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 |
| 805 | 4 S | 5762 | 14 | 7 | 4 | 4 | 6 | 4 | 11 | 8 | 4 | 5 | 5 | 5 | 12 | 8 | 4 | 10 | 8 | 7 | 7 | 6 | 4 | 5 | 7 | 5 | 7 |
| 806 | 4 S | 2127 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 4 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 |
| 807 | 4 S | 2370 | 3 | 12 | 11 | 10 | 5 | 5 | 4 | 4 | 3 | 3 | 4 | 3 | 2 | 1 | 0 | 7 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 4 |
| 808 | 4 S | 2428 | 4 | 7 | 6 | 4 | 5 | 4 | 3 | 3 | 2 | 4 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 4 |
| 809 | 4R | 1547 | 3 | 9 | 7 | 6 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 |  | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 |
| 810 | 4R | 765 | 3 | 4 | 5 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 6 | 5 | 3 | 8 | 3 | 3 | 4 | 3 | 0 | 3 | 3 | 2 | 3 |
| 811 | 4R | 1506 | 3 | 4 | 4 | 4 | 5 | 3 | 8 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 7 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 2 | 2 |
| 812 | 4 R | 4648 | 7 | 9 | 8 | 11 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 3 | 5 | 3 | 8 |
| 813 | 4R | 3958 | 6 | 6 | 5 | 9 | 3 | 4 | 6 | 5 | 7 | 4 | 6 | 8 | 2 | 5 | 3 | 9 | 5 | 3 | 5 | 3 | 4 | 4 | 6 | 3 | 6 |
| 814 | 4 S | 1029 | 3 | 4 | 4 | 4 | 3 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| 815 | 4 S | 4407 | 9 | 15 | 11 | 8 | 5 | 4 | 3 | 3 | 8 | 9 | 9 | 2 | 6 | 3 | 3 | 14 | 5 | 5 | 6 | 5 | 5 | 3 | 6 | 4 | 6 |
| 816 | 4 S | 5032 | 9 | 11 | 9 | 9 | 6 | 6 | 17 | 17 | 20 | 21 | 21 | 1 | 6 | 4 | 4 | 11 | 7 | 7 | 7 | 6 | 4 | 4 | 3 | 6 | 6 |
| 817 | 4 S | 3646 | 7 | 18 | 11 | 7 | 9 | 10 | 9 | 5 | 11 | 17 | 13 | 14 | 8 | 5 | 2 | 7 | 5 | 5 | 4 | 5 | 3 | 3 | 4 | 4 | 5 |
| 818 | 4 S | 2774 | 4 | 7 | 5 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 7 | 5 | 1 | 6 | 4 | 4 | 2 | 4 | 3 | 4 | 3 | 3 | 4 |
| 819 | 4 S | 1441 | 3 | 7 | 9 | 5 | 4 | 5 | 3 | 2 | 3 | 3 | 4 | 1 | 1 | 3 | 0 | 8 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 |
| 820 | 4 R | 1358 | 3 | 3 | 3 | 3 | 3 | 3 | 7 | 5 | 6 | 5 | 5 | 3 | 2 | 3 | 3 | 14 | 3 | 3 | 3 | 3 | 0 | 2 | 3 | 3 | 3 |
| 821 | 4R | 1272 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 7 | 3 | 3 | 3 | 3 | 2 | 4 | 3 | 3 | 3 |
| 822 | 4 R | 3245 | 6 | 4 | 3 | 2 | 3 | 3 | 6 | 4 | 10 | 8 | 10 | 9 | 3 | 3 | 3 | 8 | 4 | 4 | 4 | 3 | 4 | 2 | 4 | 2 | 5 |
| 823 | 4 R | 556 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 1 | 3 | 2 | 3 | 2 | 5 | 2 | 10 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 |
| 824 | 4 R | 837 | 3 | 1 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 6 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 |
| 827 | 4 S | 3231 | 0 | 1 | 1 | 1 | 3 | 3 | 0 | 2 | 3 | 1 | 3 | 0 | 2 | 2 | 3 | 6 | 4 | 4 | 3 | 3 | 3 | 2 | 3 | 2 | 2 |
| 828 | 4 S | 2435 | 4 | 1 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 1 | 0 | 1 | 0 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 |
| 829 | 4 S | 2692 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 2 | 0 | 2 | 1 | 0 | 8 | 4 | 4 | 3 | 2 | 3 | 2 | 2 | 3 | 2 |
| 830 | 4 S | 1917 | 3 | 3 | 4 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 2 | 1 | 1 | 0 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 |
| 831 | 4 S | 1204 | 3 | 0 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 4 | 3 | 3 | 1 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 |
| 832 | 4 S | 3962 | 4 | 12 | 11 | 7 | 7 | 9 | 8 | 5 | 3 | 3 | 3 | 3 | 2 | 3 | 4 | 8 | 4 | 5 | 5 | 3 | 4 | 3 | 6 | 4 | 4 |
| 833 | 4 S | 559 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 2 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 2 |
| 835 | 4R | 2641 | 0 | 6 | 7 | 6 | 3 | 3 | 3 | 3 | 6 | 5 | 6 | 5 | 6 | 3 | 3 | 8 | 5 | 5 | 5 | 4 | 0 | 4 | 5 | 2 | 4 |
| 836 | 4R | 3149 | 0 | 7 | 8 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 4 | 10 | 5 | 3 | 5 | 4 | 3 | 4 | 4 | 3 | 5 |
| 837 | 4 R | 2668 | 0 | 5 | 6 | 3 | 2 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 5 | 5 | 2 | 4 | 4 | 3 | 5 | 3 | 3 | 2 | 5 | 1 | 4 |
| 838 | 4 R | 3378 | 0 | 9 | 8 | 7 | 5 | 5 | 0 | 0 | 0 | 2 | 0 | 4 | 4 | 0 | 3 | 10 | 6 | 3 | 6 | 0 | 0 | 3 | 5 | 0 | 6 |
| 839 | 4 S | 4390 | 0 | 2 | 5 | 5 | 3 | 2 | 2 | 1 | 2 | 3 | 3 | 0 | 0 | 3 | 2 | 3 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | 3 | 2 |
| 840 | 4 R | 765 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 5 | 3 | 0 | 3 | 0 | 0 | 1 | 3 | 0 | 2 |
| 841 | 4 S | 816 | 0 | 0 | 1 | 3 | 3 | 3 | 3 | 0 | 2 | 1 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 2 |
| Total |  | 116115 | 191 | 250 | 239 | 214 | 175 | 182 | 217 | 185 | 204 | 224 | 209 | 183 | 171 | 163 | 133 | 354 | 192 | 183 | 189 | 164 | 132 | 156 | 178 | 141 | 177 |
| 851 | 4 T | 456 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| 852 | 4 T | 427 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3 | 3 | 3 | 3 | 2 | 3 | 2 |
| 854 | 4 T | 83 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3 | 3 | 3 | 2 | 2 | 2 | 2 |
| 855 | 4 T | 465 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3 | 4 | 3 | 2 | 3 | 3 | 2 |

Appendix 2. Occurrences and total catches, in weight and number, by taxon during the 2014 survey (185 successful tows).

| STRAP* <br> code | Scientific name | French name | English name | Occurrence | Weight (kg) | Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Vertebrates |  |  |  |  |  |  |
| 1 |  | Vertébrés | Vertebrates | 2 | < 0.1 | 4 |
| 90 | Amblyraja radiata | Raie épineuse | Thorny Skate | 143 | 914.2 | 1755 |
| 696 | Ammodytes sp. | Lançons | Sand Lances | 39 | 3.6 | 1014 |
| 700 | Anarhichas lupus | Loup atlantique | Atlantic Wolffish | 37 | 157.1 | 628 |
| 701 | Anarhichas minor | Loup tacheté | Spotted Wolffish | 14 | 24.3 | 23 |
| 718 | Anisarchus medius | Lompénie naine | Stout Eelblenny | 6 | 0.3 | 40 |
| 320 | Arctozenus risso | Lussion blanc | White Barracudina | 116 | 26.5 | 1769 |
| 193 | Argentina silus | Grande argentine | Atlantic Argentine | 4 | 0.5 | 9 |
| 811 | Artediellus atlanticus | Hameçon atlantique | Atlantic Hookear Sculpin | 45 | 1.2 | 253 |
| 810 | Artediellus sp. | Hameçons | Hookear Sculpins | 9 | 0.2 | 71 |
| 812 | Artediellus uncinatus | Hameçon neigeux | Arctic Hookear Sculpin | 14 | 0.3 | 96 |
| 838 | Aspidophoroides monopterygius | Poisson-alligator atlantique | Alligatorfish | 46 | 0.8 | 282 |
| 102 | Bathyraja spinicauda | Raie à queue épineuse | Spinytail Skate | 5 | 37.6 | 9 |
| 451 | Boreogadus saida | Saïda franc | Arctic Cod | 24 | 3.8 | 264 |
| 865 | Careproctus reinhardti | Petite limace de mer | Sea Tadpole | 11 | 0.4 | 20 |
| 27 | Centroscyllium fabricii | Aiguillat noir | Black Dogfish | 23 | 1361.7 | 2857 |
| 227 | Chauliodus sloani | Chauliode très lumineux | Sloane's Viperfish | 1 | < 0.1 | 1 |
| 150 | Clupea harengus | Hareng atlantique | Atlantic Herring | 92 | 116.5 | 670 |
| 808 | Cottidae | Chaboisseaux | Sculpins | 3 | < 0.1 | 5 |
| 829 | Cottunculus microps | Cotte polaire | Polar Sculpin | 1 | < 0.1 | 1 |
| 721 | Cryptacanthodes maculatus | Terrassier tacheté | Wrymouth | 5 | 4.5 | 6 |
| 849 | Cyclopterus lumpus | Grosse poule de mer | Lumpfish | 26 | 20.6 | 41 |
| 208 | Cyclothone microdon | Cyclothone à petites dents | Small-Toothed Bristlemouth | 10 | < 0.1 | 10 |
| 461 | Enchelyopus cimbrius | Motelle à quatre barbillons | Fourbeard Rockling | 122 | 86.8 | 2177 |
| 711 | Eumesogrammus praecisus | Quatre-lignes atlantique | Fourline Snakeblenny | 25 | 4.9 | 180 |
| 844 | Eumicrotremus spinosus | Petite poule de mer atlantique | Atlantic Spiny Lumpsucker | 34 | 4.5 | 290 |
| 438 | Gadus morhua | Morue franche | Atlantic Cod | 129 | 6435 | 13648 |
| 439 | Gadus ogac | Ogac, morue ogac | Greenland Cod | 8 | 8.4 | 12 |
| 455 | Gaidropsarus argentatus | Mustèle argentée | Silver Rockling | 1 | < 0.1 | 1 |
| 453 | Gaidropsarus sp. | Mustèles | Threebeard Rocklings | 1 | < 0.1 | 1 |
| 426 | Gasterosteus aculeatus | Épinoche à trois épines | Threespine Stickleback | 10 | 0.1 | 35 |
| 890 | Glyptocephalus cynoglossus | Plie grise | Witch Flounder | 145 | 461.2 | 2745 |
| 205 | Gonostomatidae | Cyclothones | Bristlemouths | 1 | < 0.1 | 1 |
| 746 | Gymnelus viridis | Unernak caméléon | Fish Doctor | 8 | 0.2 | 27 |
| 823 | Gymnocanthus tricuspis | Tricorne arctique | Arctic Staghorn Sculpin | 18 | 8.4 | 106 |


| STRAP* code | Scientific name | French name | English name | Occurrence | Weight (kg) | Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 797 | Helicolenus dactylopterus | Chèvre impériale | Blackbelly Rosefish | 1 | 0.5 | 3 |
| 809 | Hemitripterus americanus | Hémitriptère atlantique | Sea Sculpin | 8 | 5.8 | 11 |
| 889 | Hippoglossoides platessoides | Plie canadienne | American Plaice | 146 | 829.7 | 11188 |
| 893 | Hippoglossus hippoglossus | Flétan atlantique | Atlantic Halibut | 56 | 644.9 | 146 |
| 831 | Icelus bicornis | Icèle à deux cornes | Twohorn Sculpin | 2 | $<0.1$ | 2 |
| 830 | Icelus sp. | Icèles | Spatulate and Twohorn Sculpin | 1 | < 0.1 | 3 |
| 832 | Icelus spatula | Icèle spatulée | Spatulate Sculpin | 13 | 0.3 | 61 |
| 285 | Lampadena speculigera | Lanterne-miroir | Mirror Lanternfish | 8 | 0.9 | 40 |
| 836 | Leptagonus decagonus | Agone atlantique | Atlantic Poacher | 22 | 12.2 | 599 |
| 717 | Leptoclinus maculatus | Lompénie tachetée | Daubed Shanny | 80 | 12 | 1884 |
| 891 | Limanda ferruginea | Limande à queue jaune | Yellowtail Flounder | 6 | 32.6 | 186 |
| 862 | Liparis gibbus | Limace marbrée | Variegated Snailfish | 12 | 3 | 48 |
| 966 | Lophius americanus | Baudroie d'Amérique | Monkfish, Goosefish | 6 | 33.9 | 7 |
| 716 | Lumpenus lampretaeformis | Lompénie-serpent | Snakeblenny | 25 | 20.5 | 850 |
| 750 | Lycenchelys paxillus | Lycode commune | Common Wolf Eel | 2 | $<0.1$ | 2 |
| 752 | Lycenchelys verrillii | Lycode à tête longue | Wolf Eelpout | 9 | < 0.1 | 13 |
| 727 | Lycodes esmarkii | Lycode d'Esmark | Esmark's Eelpout | 2 | 0.5 | 2 |
| 728 | Lycodes lavalaei | Lycode du Labrador | Newfoundland Eelpout | 23 | 16.2 | 108 |
| 733 | Lycodes polaris | Lycode polaire | Canadian Eelpout | 2 | 0.1 | 5 |
| 734 | Lycodes terraenovae | Lycode atlantique | Atlantic Eelpout | 7 | 0.3 | 9 |
| 730 | Lycodes vahlii | Lycode à carreaux | Vahl's Eelpout | 46 | 39.6 | 736 |
| 91 | Malacoraja senta | Raie lisse | Smooth Skate | 109 | 124 | 582 |
| 187 | Mallotus villosus | Capelan | Capelin | 99 | 166.9 | 11741 |
| 441 | Melanogrammus aeglefinus | Aiglefin | Haddock | 6 | 3.7 | 10 |
| 745 | Melanostigma atlanticum | Molasse atlantique | Atlantic Soft Pout | 63 | 6.2 | 1890 |
| 449 | Merluccius bilinearis | Merlu argenté | Silver Hake | 75 | 52.8 | 264 |
| 272 | Myctophidae | Poissons-lanterne | Lanternfishes | 21 | 0.7 | 197 |
| 271 | Myctophiformes | Poissons des profondeurs | Deepwater Fishes | 1 | < 0.1 | 3 |
| 820 | Myoxocephalus octodecemspinosus | Chaboisseau à dix-huit-épines | Longhorn Sculpin | 3 | 21 | 71 |
| 819 | Myoxocephalus scorpius | Chaboisseau à épines courtes | Shorthorn Sculpin | 30 | 175 | 356 |
| 817 | Myoxocephalus sp. | Chaboisseaux | Sculpins | 3 | < 0.1 | 5 |
| 12 | Myxine glutinosa | Myxine du nord | Northern Hagfish | 105 | 187.3 | 3487 |
| 278 | Neoscopelus macrolepidotus | Lanterne à grandes écailles | Glowingfish | 3 | 0.1 | 3 |
| 478 | Nezumia bairdii | Grenadier du grand Banc | Common Grenadier | 85 | 42.3 | 1149 |
| 874 | Paraliparis calidus | Limace ardente | Lowfin Snailfish | 8 | 0.1 | 9 |
| 856 | Paraliparis copei | Limace à museau noir | Blacksnout Seasnail | 4 | 0.2 | 18 |
| 444 | Phycis chesteri | Merluche à longues nageoires | Longfin Hake | 36 | 34 | 265 |
| 895 | Pseudopleuronectes americanus | Plie rouge | Winter Flounder | 1 | 0.1 | 1 |


| $\begin{aligned} & \text { STRAP* } \\ & \text { code } \end{aligned}$ | Scientific name | French name | English name | Occurrence | Weight (kg) | Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 892 | Reinhardtius hippoglossoides | Flétan du Groenland, turbot | Greeenland Halibut, Turbot | 140 | 4249.7 | 20583 |
| 572 | Scomber scombrus | Maquereau bleu | Atlantic Mackerel | 16 | 0.5 | 28 |
| 796 | Sebastes fasciatus | Sébaste acadien | Acadian Redfish | 167 | 6821.6 | 230785 |
| 794 | Sebastes mentella | Sébaste atlantique | Deepwater Redfish | 165 | 5254 | 106136 |
| 793 | Sebastes norvegicus | Sébaste orangé | Golden Redfish | 1 | 1.6 | 1 |
| 710 | Stichaeus punctatus | Stichée arctique | Arctic Shanny | 1 | < 0.1 | 1 |
| 814 | Triglops murrayi | Faux-trigle armé | Moustache Sculpin | 42 | 16.1 | 1458 |
| 815 | Triglops nybelini | Faux-trigle à grands yeux | Bigeye Sculpin | 2 | < 0.1 | 2 |
| 837 | Ulcina olrikii | Poisson-alligator arctique | Arctic Alligatorfish | 4 | 0.1 | 29 |
| 447 | Urophycis tenuis | Merluche blanche | White Hake | 86 | 328.6 | 659 |
| 725 | Zoarcidae | Lycodes, Loquettes, Molasses | Eelpouts, Pouts, Wolf Eels | 2 | < 0.1 | 2 |
|  | Total | Vertébrés | Vertebrates |  | 28823 | 424689 |
| Invertebrates |  |  |  |  |  |  |
| 1100 |  | Invertébrés | Invertebrates | 8 | < 0.1 | 24 |
| 2182 | Actinauge cristata | Anémone de mer | Anemone | 40 | 15.3 | 1128 |
| 2165 | Actiniaria | Actinies et Anémones | Sea Anemones | 5 | < 0.1 | 14 |
| 2162 | Actinostola callosa | Anémones de mer | Anemone | 60 | 245.2 | 1924 |
| 6771 | Aega psora | Isopode | Isopod | 15 | < 0.1 | 22 |
| 2675 | Alcyonidium sp. | Bryozoaire | Bryozoan | 5 | 0.2 | 15 |
| 3164 | Amicula vestita | Chiton | Chiton | 2 | < 0.1 | 2 |
| 6930 | Amphipoda | Amphipodes | Amphipods | 8 | < 0.1 | 44 |
| 8593 | Amphiura sp. | Ophiures | Brittle star | 5 | < 0.1 | 20 |
| 4219 | Anomia sp. | Pétoncle | Jingle shells | 1 | < 0.1 | 1 |
| 7389 | Anonyx sp. | Gammarides | Gammarids | 14 | $<0.1$ | 20 |
| 2218 | Anthoptilum grandiflorum | Plume de mer | Sea pen | 52 | 43.3 | 2757 |
| 5002 | Aphroditella hastata | Polychète errante | Sea Mouse | 6 | 0.4 | 10 |
| 6594 | Arcoscalpellum michelottianum | Balane | Barnacle | 2 | 0.1 | 5 |
| 8138 | Argis dentata | Crevette verte | Arctic Argid | 36 | 18 | 3733 |
| 3418 | Arrhoges occidentalis | Pied-de-pélican | American Pelicanfoot | 17 | 0.6 | 68 |
| 8680 | Ascidiacea | Ascidies, tuniqués sessiles | Ascidians, Sessile Tunicates | 82 | 2.7 | 587 |
| 4227 | Astarte sp. | Astartes | Astartes | 37 | 0.2 | 102 |
| 8390 | Asteroidea | Étoiles de mer | Sea Stars | 1 | $<0.1$ | 1 |
| 8113 | Atlantopandalus propinqvus | Crevette | Shrimp | 16 | 0.3 | 83 |
| 2097 | Atolla wyvillei | Méduse | Jellyfish | 3 | 0.5 | 9 |
| 2085 | Aurelia aurita | Méduse de lune | Moon Jelly | 59 | 109.4 | 872 |
| 6595 | Balanidae | Balanes | Barnacles | 9 | 0.4 | 61 |
| 4904 | Bathypolypus bairdii | Poulpe | North Atlantic Octopus | 37 | 1.2 | 52 |


| STRAP* code | Scientific name | French name | English name | Occurrence | Weight (kg) | Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3995 | Bivalvia | Bivalves | Bivalves | 8 | < 0.1 | 26 |
| 2158 | Bolocera tuediae | Anémone de mer | Anemone | 75 | 54.1 | 661 |
| 8793 | Boltenia echinata | Cactus de mer | Cactus Sea Squirt | 4 | 0 | 16 |
| 8792 | Boltenia ovifera | Patate de mer | Sea Potato | 28 | 8.6 | 121 |
| 3487 | Boreotrophon clathratus | Murex | Clathrate Trophon | 3 | $<0.1$ |  |
| 3488 | Boreotrophon sp. | Murex | Murex | 6 | $<0.1$ | 25 |
| 8798 | Botrylloides sp. | Ascidie | Tunicate | 1 | < 0.1 |  |
| 5755 | Brada inhabilis | Polychète | Flabelligerid worm | 1 | < 0.1 | 2 |
| 8378 | Brisaster fragilis | Oursin coeur | Heart Urchin | 79 | 126.9 | 15182 |
| 2670 | Bryozoa | Bryozoaires | Bryozoans | 29 | 1.1 | 924 |
| 3515 | Buccinidae | Buccinidés | Whelks | 1 | < 0.1 | 1 |
| 3523 | Buccinum scalariforme | Buccin | Ladder Whelk | 4 | < 0.1 | 4 |
| 3516 | Buccinum sp. | Buccins | Whelk | 20 | 0.9 | 63 |
| 3517 | Buccinum undatum | Buccin commun | Waved Whelk | 6 | 0.1 | 9 |
| 8429 | Ceramaster granularis | Étoile de mer | Sea Star | 18 | 0.8 | 33 |
| 8213 | Chionoecetes opilio | Crabe des neiges | Snow Crab | 108 | 193.9 | 1130 |
| 6593 | Chirona hameri | Balane turbané | Turban Barnacle | 3 | 0.1 | 4 |
| 4167 | Chlamys islandica | Pétoncle d'Islande | Iceland Scallop | 17 | 1.4 | 40 |
| 4351 | Ciliatocardium ciliatum ciliatum | Coque d'Islande | Iceland Cockle | 5 | 0.7 | 36 |
| 3908 | Colga villosa | Nudibranche | Nudibranch | 14 | $<0.1$ | 35 |
| 3575 | Colus sp. | Buccins | Whelks | 1 | < 0.1 | 1 |
| 3576 | Colus stimpsoni | Buccin | Whelk | 3 | 0.1 | 3 |
| 4124 | Crenella faba | Crénella fauve | Bean crenella | 2 | < 0.1 | 2 |
| 8447 | Crossaster papposus | Soleil de mer épineux | Spiny Sun Star | 33 | 3.4 | 306 |
| 3422 | Cryptonatica affinis | Lunaties | Arctic moonsnail | 1 | < 0.1 | 1 |
| 8407 | Ctenodiscus crispatus | Étoile de mer | Mud Star | 105 | 97.6 | 14725 |
| 8312 | Cucumaria frondosa | Concombre de mer | Orange Footed Sea Cucumber | 5 | 2.1 | 8 |
| 4525 | Cuspidaria sp. | Myes | Dipperclams | 32 | 0.1 | 73 |
| 2080 | Cyanea capillata | Crinière de lion | Lion's Mane | 62 | 23.6 | 122 |
| 4268 | Cyclocardia borealis | Vénéricarde boréale | Northern Cyclocardia | 3 | $<0.1$ | 5 |
| 3893 | Dendronotus sp. | Nudibranche | Nudibranch | 6 | < 0.1 | 8 |
| 8408 | Diplopteraster multipes | Étoile de mer | Sea Star | 1 | 0.3 | 1 |
| 3965 | Doridoxa ingolfiana | Nudibranche | Nudibranch | 1 | < 0.1 | 5 |
| 2191 | Drifa glomerata | Corail mou | Soft coral | 26 | 0.4 | 84 |
| 2183 | Duva florida | Corail mou | Sea Cauliflower | 4 | 0.1 | 8 |
| 8373 | Echinarachnius parma | Dollar de sable | Common Sand Dollar | 4 | 1.6 | 129 |
| 5930 | Echiura | Échiure | Echiurid | 2 | < 0.1 | 3 |
| 7383 | Epimeria loricata | Gammaride | Gammarid |  | <0.1 | 16 |


| STRAP* <br> code | Scientific name | French name | English name | Occurrence | Weight (kg) | Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2156 | Epizoanthus erdmanni | Zoanthide | Zoanthid | 1 | < 0.1 | 2 |
| 2157 | Epizoanthus sp. | Anémone de mer | Sea Anemone | 41 | 0.1 | 638 |
| 8075 | Eualus fabricii | Bouc Arctique | Arctic Eualid | 19 | 0.4 | 609 |
| 8081 | Eualus gaimardii belcheri | Bouc | Circumpolar Eualid | 1 | $<0.1$ | 6 |
| 8080 | Eualus gaimardii gaimardii | Bouc | Circumpolar Eualid | 12 | 0.1 | 166 |
| 8077 | Eualus macilentus | Bouc du Groenland | Greenland Shrimp | 20 | 8.1 | 7443 |
| 8778 | Eudistoma vitreum | Ascidie | Tunicate | 20 | 0.3 | 158 |
| 5461 | Euphrosine borealis | Polychète | Seaworm | 3 | $<0.1$ | 3 |
| 7195 | Eusirus cuspidatus | Gammaride | Gammarid | 15 | $<0.1$ | 60 |
| 2295 | Fecampiidae | Vers flats | Flatworms | 4 | $<0.1$ | 8 |
| 2224 | Flabellum alabastrum | Madrépore | Cup coral | 6 | 0.1 | 8 |
| 3175 | Gastropoda | Gastéropodes | Gastropods | 9 | $<0.1$ | 19 |
| 2184 | Gersemia rubiformis | Corail mou | Sea Strawberry | 35 | 0.5 | 270 |
| 8541 | Gorgonocephalus arcticus | Gorgonocéphale | Northen Basket Star | 1 | 5.1 | 18 |
| 8540 | Gorgonocephalus sp. | Gorgonocéphales | Basket Stars | 27 | 48.9 | 339 |
| 2217 | Halipteris finmarchica | Plume de mer | Sea pen | 19 | 3.6 | 242 |
| 8797 | Halocynthia pyriformis | Pêche de mer | Sea Peach | 1 | $<0.1$ | 1 |
| 8263 | Heliometra glacialis | Lis de mer | Feather star | 1 | $<0.1$ | 2 |
| 3090 | Hemithiris psittacea | Brachiopode | Lamp Shell | 10 | 0.4 | 196 |
| 8483 | Henricia sp. | Étoiles de mer | Sea Stars | 59 | 0.6 | 267 |
| 4437 | Hiatella arctica | Saxicave arctique | Arctic Saxicave | 3 | $<0.1$ | 6 |
| 8431 | Hippasteria phrygiana | Étoile de mer | Sea Star | 34 | 14.9 | 52 |
| 8290 | Holothuroidea | Cocombres de mer | Sea Cucumbers | 2 | 0.2 | 12 |
| 2167 | Hormathia nodosa | Anémone noduleuse | Rugose Anemone | 10 | 0.8 | 28 |
| 8217 | Hyas araneus | Crabe lyre | Atlantic Lyre Crab | 20 | 4.5 | 330 |
| 8218 | Hyas coarctatus | Crabe lyre | Arctic Lyre Crab | 55 | 7.9 | 718 |
| 1341 | Hydrozoa | Hydrozoaires | Hydrozoans | 61 | 0.4 |  |
| 6977 | Hyperia galba | Hypéride | Hyperiid | 8 | $<0.1$ | 28 |
| 4753 | Illex illecebrosus | Encornet rouge nordique | Northern Shortfin Squid | 28 | 9.3 | 69 |
| 5003 | Laetmonice filicornis | Polychète | Seaworm | 4 | $<0.1$ | 10 |
| 8092 | Lebbeus groenlandicus | Bouc | Spiny Lebbeid | 16 | 7.5 | 2415 |
| 8095 | Lebbeus microceros | Bouc | Shrimp | 6 | $<0.1$ | 8 |
| 8093 | Lebbeus polaris | Bouc | Polar Lebbeid | 56 | 2.1 | 1600 |
| 8511 | Leptasterias polaris | Étoile de mer polaire | Polar Sea Star | 8 | 5.1 | 63 |
| 8510 | Leptasterias sp. | Étoiles de mer | Sea Stars | 15 | 0.1 | 36 |
| 8521 | Leptychaster arcticus | Stelléridé | Sea Star | 5 | $<0.1$ | 10 |
| 3459 | Limneria undata | Veloutée rayée | Wavy Lamellaria | 5 | $<0.1$ | 6 |
| 2207 | Liponema multicorne | Anémone | Sea anemone | 10 | 1.4 | 28 |


| STRAP* <br> code | Scientific name | French name | English name | Occurrence | Weight (kg) | Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 8196 | Lithodes maja | Crabe épineux du Nord | Norway King Crab | 53 | 50 | 124 |
| 3437 | Lunatia pallida | Lunatie | Pale Moonsnail | 7 | $<0.1$ | 7 |
| 4395 | Macoma calcarea | Bivalve | Chalky Macoma | 9 | 0.1 | 22 |
| 7279 | Maera loveni | Gammaride | Gammarid | 1 | $<0.1$ | 1 |
| 3219 | Margarites costalis | Margarite rosé du Nord | Boreal Rosy Margarite | 13 | $<0.1$ | 33 |
| 3216 | Margarites groenlandicus | Troque | Greenland marguerite | 3 | < 0.1 | 7 |
| 3212 | Margarites sp. | Patelle | Topsnail | 3 | $<0.1$ | 3 |
| 4025 | Megayoldia thraciaeformis | Bivalve | Broad Yoldia | 17 | 0.8 | 127 |
| 5646 | Melinna cristata | Polychète | Seaworm | 1 | $<0.1$ | 1 |
| 7268 | Melita dentata | Gammaride | Gammarid | 1 | < 0.1 | 1 |
| 8164 | Munidopsis curvirostra | Munidopsis curvirostra | Squat Lobster | 25 | 0.3 | 273 |
| 4127 | Musculus niger | Moule noire | Black Mussel | 1 | $<0.1$ | 1 |
| 4126 | Musculus sp. | Moules | Mussels | 2 | < 0.1 | 2 |
| 4428 | Mya truncata | Mye tronquée | Truncate Softshell Clam | 1 | $<0.1$ | 5 |
| 4121 | Mytilus sp. | Moules | Mussels | 14 | 0.4 | 62 |
| 3420 | Naticidae | Lunaties | Moonsnails | 2 | $<0.1$ | 2 |
| 7483 | Neohela monstrosa | Gammaride | Gammarid | 7 | < 0.1 | 12 |
| 2219 | Nephtheidae | Coraux mous | Soft corals | 8 | 0.1 | 41 |
| 5113 | Nephtys sp. | Polychète errante | Red-Lined Worm | 1 | < 0.1 | 8 |
| 3566 | Neptunea decemcostata | Neptunée à dix côtes | Wrinkle Whelk | 2 | 0.1 | 2 |
| 3567 | Neptunea despecta | Neptunée commune du nord | Lader Whelk | 1 | 0.1 | 1 |
| 3565 | Neptunea sp. | Buccins | Whelks | 1 | < 0.1 | 1 |
| 5236 | Nereis pelagica | Polychète | Clam worm | 1 | $<0.1$ | 1 |
| 3483 | Nucella lapillus | Pourpre de l'Atlantique | Atlantic Dogwinkle | 1 | < 0.1 | 1 |
| 4019 | Nuculana sp. | Bivalves | Nutclams | 8 | 0.1 | 86 |
| 3850 | Nudibranchia | Nudibranches | Nudibranchs | 3 | $<0.1$ | 4 |
| 5961 | Nymphon sp. | Araignées de mer | Sea Spiders | 10 | 0.1 | 244 |
| 8575 | Ophiacantha bidentata | Ophiure épineuse | Brittle Star | 38 | 1 | 2881 |
| 8583 | Ophiopholis aculeata | Ophiure paquerette | Daisy Brittle Star | 61 | 4.6 | 3035 |
| 8585 | Ophioscolex glacialis | Ophiure | Brittle star | 6 | $<0.1$ | 30 |
| 8552 | Ophiura robusta | Ophiure | Brittle Star | 8 | < 0.1 | 22 |
| 8553 | Ophiura sarsii | Ophiure | Brittle Star | 40 | 14.1 | 10044 |
| 8530 | Ophiuroidea | Ophiures | Brittle Stars | 9 | 0.1 | 195 |
| 8178 | Pagurus sp. | Bernards hermites droitiers | Hermits Crabs | 22 | 1.1 | 40 |
| 8111 | Pandalus borealis | Crevette nordique | Northern Shrimp | 152 | 5184.6 | 860206 |
| 8112 | Pandalus montagui | Crevette ésope | Striped Pink Shrimp | 97 | 224 | 84329 |
| 4438 | Panomya norvegica | Saxicave | Arctic Roughmya | 1 | 0.1 |  |
| 7586 | Paramphithoe hystrix | Gammaride | Gammarid | 9 | $<0.1$ | 20 |


| STRAP* code | Scientific name | French name | English name | Occurrence | Weight (kg) | Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 8057 | Pasiphaea multidentata | Sivade rose, Crevette blanche | Pink Glass Shrimp | 99 | 119.7 | 41283 |
| 2203 | Pennatula aculeata | Plume de mer | Sea Pen | 80 | 0.9 | 448 |
| 2210 | Pennatula grandis | Plume de mer | Sea Pen | 33 | 36.8 | 705 |
| 2096 | Periphylla periphylla | Méduse à coronne | Crown jellyfish | 58 | 142 | 150 |
| 5907 | Phascolion strombus strombus | Sipunculide | Hermit Sipunculid | 3 | < 0.1 | 3 |
| 2255 | Pleurobrachia pileus | Groseille de mer ronde | Sea Gooseberry | 36 | 0.5 | 460 |
| 3578 | Plicifusus kroeyeri | Colus | Arctic Whelk | 2 | $<0.1$ | 2 |
| 4950 | Polychaeta | Polychètes | Polychaetes | 99 | 0.5 | 612 |
| 1109 | Polymastia sp. | Éponge | Sponge | 1 | $<0.1$ | 4 |
| 5264 | Polyphysia crassa | Polychète | Sea worm | 3 | $<0.1$ | 10 |
| 3125 | Polyplacophora | Chitons | Chitons | 1 | $<0.1$ | 1 |
| 8135 | Pontophilus norvegicus | Crevette | Norwegian Shrimp | 77 | 3.8 | 2182 |
| 8435 | Poraniomorpha sp. | Étoile de mer | Sea star | 1 | $<0.1$ | 1 |
| 1101 | Porifera | Éponges | Sponges | 123 | 436.8 |  |
| 8433 | Pseudarchaster parelii | Étoile de mer | Sea Star | 3 | 0.1 | 3 |
| 8520 | Psilaster andromeda | Étoile de mer | Sea Star | 10 | 1.7 | 339 |
| 8294 | Psolus phantapus | Holothurie | Sea Cucumber | 6 | $<0.1$ | 10 |
| 8410 | Pteraster militaris | Étoile de mer | Sea Star | 15 | 0.5 | 50 |
| 8412 | Pteraster obscurus | Étoile de mer | Sea Star | 2 | 0.1 | 5 |
| 8411 | Pteraster pulvillus | Étoile de mer | Sea Star | 14 | 0.2 | 108 |
| 1353 | Ptychogena lactea | Méduse | Jellyfish | 83 | 5.5 | 1029 |
| 5951 | Pycnogonida | Araignées de mer | Sea Spiders | 7 | $<0.1$ | 12 |
| 7211 | Rhachotropis aculeata | Gammaride | Gammarid | 19 | 0.1 | 168 |
| 4557 | Rossia sp. | Sépioles | Bobtails | 43 | 0.7 | 69 |
| 8129 | Sabinea sarsii | Crevette | Sars Shrimp | 18 | 0.7 | 312 |
| 8128 | Sabinea septemcarinata | Crevette | Sevenline Shrimp | 28 | 1 | 639 |
| 8127 | Sabinea sp. | Crevette | Shrimp | 1 | $<0.1$ |  |
| 3491 | Scabrotrophon fabricii | Murex | Murex | 2 | $<0.1$ | 4 |
| 3715 | Scaphander punctostriatus | Céphalaspide | Giant Canoe Bubble | 25 | 0.2 | 171 |
| 3975 | Scaphopoda | Scaphopodes | Tuskshells | 1 | $<0.1$ | 93 |
| 8119 | Sclerocrangon boreas | Crevette de roche | Scultured Shrimp | 14 | 22.9 | 2970 |
| 2040 | Scyphozoa | Scyphozoaires | Scyphozoans | 63 | 28.4 | 493 |
| 2679 | Securiflustra securifrons | Bryozoaires marins | Marine bryozoans | 14 | $<0.1$ | 29 |
| 8033 | Sergestes arcticus | Crevette | Shrimp | 13 | $<0.1$ | 40 |
| 4352 | Serripes groenlandicus | Coque du Groenland | Greenland Smoothcockle | 2 | $<0.1$ | 2 |
| 4191 | Similipecten greenlandicus | Pétoncle | Greenland Glass-Scallop | 3 | $<0.1$ | 9 |
| 5900 | Sipuncula | Sipunculides | Sipunculids | 13 | < 0.1 | 36 |
| 8445 | Solaster endeca | Soleil de mer pourpre | Purple Sunstar | 4 | 0.2 | 5 |


| STRAP* <br> code | Scientific name | French name | English name | Occurrence | Weight (kg) | Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 8087 | Spirontocaris lilljeborgii | Bouc épineux | Friendly Blade Shrimp | 36 | 0.3 | 277 |
| 8086 | Spirontocaris phippsii | Bouc | Punctate Blade Shrimp | 3 | < 0.1 | 10 |
| 8084 | Spirontocaris sp. | Boucs | Blade Shrimps | 4 | < 0.1 |  |
| 8085 | Spirontocaris spinus | Bouc perroquet | Parrot Shrimp | 29 | 1.3 | 788 |
| 1352 | Staurophora mertensii | Méduse à croix blanche | Whitecross Jellyfish | 8 | 0.4 | 18 |
| 7750 | Stegocephalus inflatus | Gammaride | Gammarid | 32 | 0.1 | 185 |
| 8515 | Stephanasterias albula | Étoile de mer | Sea star | 9 | $<0.1$ | 15 |
| 2159 | Stephanauge nexilis | Anémone de mer | Sea anemone | 13 | 0.5 | 52 |
| 2173 | Stomphia coccinea | Anémone marbrée | Anemone | 31 | 0.6 | 136 |
| 8363 | Strongylocentrotus sp. | Oursins | Sea Urchins | 59 | 33.6 | 2153 |
| 1112 | Stylocordyla borealis | Éponge | Sponge | 28 | < 0.1 | 164 |
| 6791 | Syscenus infelix | Isopode | Isopod | 43 | 0.2 | 110 |
| 1108 | Tentorium semisuberites | Éponge | Sponge | 1 | < 0.1 | 13 |
| 3101 | Terebratulina septentrionalis | Térébratule du Nord | Northern Lamp Shell | 12 | $<0.1$ | 25 |
| 4498 | Teredo navalis | Taret commun | Naval shipworm | 2 | < 0.1 | 21 |
| 6972 | Themisto libellula | Hypéride | Hyperiid | 32 | < 0.1 | 287 |
| 1357 | Thuiaria thuja | Hydrozoaire | Bottlebrush Hydroid | 17 | 0.1 | 132 |
| 3134 | Tonicella sp. | Chitons | Chitons | 3 | $<0.1$ | 3 |
| 2176 | Urticina felina | Anémone de mer | Sea Anemone | 1 | 0.1 | 3 |
| 7691 | Wimvadocus torelli | Gammaride | Gammarid | 2 | $<0.1$ | 2 |
| 4074 | Yoldia sp. | Bivalves | Bivalves | 2 | $<0.1$ | 18 |
|  | Total | Invertebrés | Invertebrates |  | 7400 | 1079989 |
| Other |  |  |  |  |  |  |
| 9995 |  | Déchets | Trash | 185 | 110.3 |  |
| 9970 |  | Capsule de raie | Skate Egg | 25 | 0.9 | 66 |

*: STRAP code based in part on works of Akenhead LeGrow (1981) for vertebrates and Lilly (1982) for invertebrates, as well as works on predation by marine organisms by the region of Quebec.

Appendix 3. Number of measured and weighed specimens and descriptive statistics for the length in 2014.

| STRAP* code | Scientific name | Sampled number |  | Length (cm ) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Length | Weight | Min | P1 ${ }^{\text {" }}$ | Median | P99** | Max |
| Vertebrates |  |  |  |  |  |  |  |  |
| 1 |  | 4 | 4 | 3.3 | 3.3 | 3.45 | 4.2 | 4.2 |
| 90 | Amblyraja radiata | 1271 | 1112 | 8.4 | 11.1 | 26.9 | 66 | 77 |
| 696 | Ammodytes sp. | 222 | 164 | 5.3 | 5.7 | 8.95 | 21.9 | 22.1 |
| 700 | Anarhichas lupus | 532 | 354 | 6.5 | 7 | 16.3 | 72.3 | 76 |
| 701 | Anarhichas minor | 23 | 22 | 9 | 9 | 23 | 89.5 | 89.5 |
| 718 | Anisarchus medius | 40 | 29 | 8.4 | 8.4 | 13.2 | 15.5 | 15.5 |
| 320 | Arctozenus risso | 1457 | 1136 | 12.5 | 17.8 | 23 | 27.5 | 28.2 |
| 193 | Argentina silus | 9 | 9 | 11.2 | 11.2 | 16.6 | 29.7 | 29.7 |
| 811 | Artediellus atlanticus | 253 | 235 | 3.6 | 3.6 | 6.6 | 13.1 | 13.8 |
| 810 | Artediellus sp. | 65 | 50 | 3.1 | 3.1 | 6.1 | 8.6 | 8.6 |
| 812 | Artediellus uncinatus | 81 | 66 | 4.4 | 4.4 | 6.4 | 10.5 | 10.5 |
| 838 | Aspidophoroides monopterygius | 273 | 244 | 3.6 | 6.2 | 12 | 15.9 | 16.6 |
| 102 | Bathyraja spinicauda | 9 | 9 | 12.1 | 12.1 | 57.5 | 145.1 | 145.1 |
| 451 | Boreogadus saida | 264 | 175 | 8.2 | 8.3 | 11.8 | 20.5 | 22.5 |
| 865 | Careproctus reinhardti | 20 | 20 | 6.6 | 6.6 | 9.45 | 15.5 | 15.5 |
| 27 | Centroscyllium fabricii | 520 | 317 | 13.4 | 15.1 | 50 | 69.5 | 71 |
| 227 | Chauliodus sloani | 1 | 1 | 13.2 | 13.2 | 13.2 | 13.2 | 13.2 |
| 150 | Clupea harengus | 651 | 558 | 14.7 | 16.8 | 28.6 | 37 | 38 |
| 808 | Cottidae | 5 | 5 | 2.7 | 2.7 | 3.4 | 4 | 4 |
| 829 | Cottunculus microps | 1 | 1 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| 721 | Cryptacanthodes maculatus | 6 | 4 | 56 | 56 | 79.5 | 87.5 | 87.5 |
| 849 | Cyclopterus lumpus | 37 | 35 | 3.8 | 3.8 | 14.7 | 37.2 | 37.2 |
| 208 | Cyclothone microdon | 7 | 7 | 5.2 | 5.2 | 5.9 | 7.5 | 7.5 |
| 461 | Enchelyopus cimbrius | 1223 | 809 | 4.7 | 6.1 | 20.4 | 28.3 | 30.5 |
| 711 | Eumesogrammus praecisus | 157 | 126 | 5.4 | 8.8 | 15 | 21 | 22.4 |
| 844 | Eumicrotremus spinosus | 256 | 196 | 2 | 2.6 | 5.05 | 12.3 | 13 |
| 438 | Gadus morhua | 5226 | 2574 | 10.2 | 14.5 | 34.9 | 63.1 | 92 |
| 439 | Gadus ogac | 12 | 12 | 19.4 | 19.4 | 39.75 | 45.8 | 45.8 |
| 455 | Gaidropsarus argentatus | 1 | 1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
| 453 | Gaidropsarus sp. | 1 | 1 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| 426 | Gasterosteus aculeatus | 35 | 34 | 3.1 | 3.1 | 6.6 | 7.5 | 7.5 |
| 890 | Glyptocephalus cynoglossus | 2620 | 1847 | 6.2 | 11.1 | 29.4 | 42.7 | 47.9 |
| 746 | Gymnelus viridis | 27 | 27 | 5.5 | 5.5 | 12 | 17.4 | 17.4 |
| 823 | Gymnocanthus tricuspis | 94 | 75 | 9.5 | 9.5 | 17.15 | 27.1 | 27.1 |
| 797 | Helicolenus dactylopterus | 3 | 3 | 21.9 | 21.9 | 22.2 | 23 | 23 |
| 809 | Hemitripterus americanus | 11 | 11 | 5.1 | 5.1 | 31 | 42.5 | 42.5 |
| 889 | Hippoglossoides platessoides | 5603 | 2757 | 4.5 | 7.2 | 20 | 43.4 | 59.4 |
| 893 | Hippoglossus hippoglossus | 146 | 145 | 22.9 | 29.1 | 60.1 | 149.5 | 155.4 |
| 831 | Icelus bicornis | 2 | 2 | 4 | 4 | 5.55 | 7.1 | 7.1 |
| 830 | Icelus sp. | 3 | 3 | 4.3 | 4.3 | 4.5 | 5.7 | 5.7 |
| 832 | Icelus spatula | 61 | 61 | 4.1 | 4.1 | 7.1 | 13.7 | 13.7 |
| 285 | Lampadena speculigera | 40 | 33 | 9.7 | 9.7 | 14.5 | 15.7 | 15.7 |
| 836 | Leptagonus decagonus | 258 | 159 | 3.9 | 4.1 | 17.8 | 22 | 23 |
| 717 | Leptoclinus maculatus | 809 | 541 | 8.2 | 8.6 | 11 | 18 | 18.9 |
| 891 | Limanda ferruginea | 114 | 44 | 16.2 | 16.7 | 26.1 | 36 | 37.4 |
| 862 | Liparis gibbus | 48 | 48 | 3.1 | 3.1 | 10.35 | 25.4 | 25.4 |
| 966 | Lophius americanus | 7 | 7 | 46.8 | 46.8 | 58.5 | 84.5 | 84.5 |
| 716 | Lumpenus lampretaeformis | 318 | 222 | 9.6 | 12.5 | 29.6 | 42 | 46.5 |
| 750 | Lycenchelys paxillus | 2 | 2 | 18.3 | 18.3 | 19.55 | 20.8 | 20.8 |
| 752 | Lycenchelys verrillii | 13 | 13 | 9.6 | 9.6 | 12.1 | 14.1 | 14.1 |
| 727 | Lycodes esmarkii | 2 | 2 | 38.3 | 38.3 | 38.75 | 39.2 | 39.2 |
| 728 | Lycodes lavalaei | 108 | 108 | 7.1 | 8.9 | 21.15 | 54.3 | 57.5 |
| 733 | Lycodes polaris | 5 | 5 | 10 | 10 | 18.1 | 21.5 | 21.5 |
| 734 | Lycodes terraenovae | 9 | 9 | 13.2 | 13.2 | 18.2 | 26 | 26 |
| 730 | Lycodes vahlii | 429 | 293 | 7.8 | 8.6 | 23.1 | 37.7 | 40.3 |
| 91 | Malacoraja senta | 569 | 468 | 8.8 | 9 | 14.9 | 59.2 | 61.6 |


| STRAP* code | Scientific name | Sampled number |  | Length (cm ) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Length | Weight | Min | P1* | Median | P99 ${ }^{\text {* }}$ | Max |
| 187 | Mallotus villosus | 1532 | 950 | 5.3 | 6.8 | 14.9 | 18 | 19.5 |
| 441 | Melanogrammus aeglefinus | 10 | 10 | 19.5 | 19.5 | 33.45 | 42.8 | 42.8 |
| 745 | Melanostigma atlanticum | 801 | 517 | 4.9 | 6.9 | 11 | 13.6 | 16.2 |
| 449 | Merluccius bilinearis | 264 | 255 | 16.5 | 18.9 | 29.2 | 35.7 | 37.4 |
| 272 | Myctophidae | 63 | 60 | 4.4 | 4.4 | 5.6 | 15.6 | 15.6 |
| 271 | Myctophiformes | 3 | 3 | 8.7 | 8.7 | 8.9 | 10 | 10 |
| 820 | Myoxocephalus octodecemspinosus | 39 | 24 | 8.9 | 8.9 | 29.6 | 39.7 | 39.7 |
| 819 | Myoxocephalus scorpius | 217 | 160 | 12.5 | 14.1 | 29.5 | 42.1 | 48.5 |
| 817 | Myoxocephalus sp. | 5 | 5 | 3.1 | 3.1 | 4 | 8.6 | 8.6 |
| 12 | Myxine glutinosa | 1620 | 1087 | 14.3 | 23 | 36.15 | 47.1 | 53.2 |
| 278 | Neoscopelus macrolepidotus | 3 | 3 | 9.1 | 9.1 | 10.5 | 18 | 18 |
| 478 | Nezumia bairdii | 978 | 719 | 5.6 | 8.5 | 21.8 | 32 | 34.8 |
| 874 | Paraliparis calidus | 9 | 9 | 5.6 | 5.6 | 11.5 | 12 | 12 |
| 856 | Paraliparis copei | 18 | 18 | 7.1 | 7.1 | 10.1 | 14.7 | 14.7 |
| 444 | Phycis chesteri | 263 | 232 | 13.2 | 14.8 | 25.1 | 38 | 38.4 |
| 895 | Pseudopleuronectes americanus | 1 | 1 | 22.1 | 22.1 | 22.1 | 22.1 | 22.1 |
| 892 | Reinhardtius hippoglossoides | 7654 | 3848 | 6 | 14.1 | 26.6 | 51.8 | 76.5 |
| 572 | Scomber scombrus | 27 | 27 | 4.7 | 4.7 | 12.5 | 19.5 | 19.5 |
| 793 | Sebastes norvegicus | 1 | 1 | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 |
| 792 | Sebastes sp. | 12910 | 7068 | 2.7 | 4.7 | 14.5 | 43.2 | 52.4 |
| 710 | Stichaeus punctatus | 1 | 1 | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 |
| 814 | Triglops murrayi | 578 | 359 | 3.3 | 6.9 | 11.5 | 15.5 | 17.8 |
| 815 | Triglops nybelini | 2 | 2 | 11.2 | 11.2 | 12 | 12.8 | 12.8 |
| 837 | Ulcina olrikii | 29 | 29 | 6 | 6 | 8 | 9.2 | 9.2 |
| 447 | Urophycis tenuis | 628 | 540 | 23.1 | 25.7 | 37.95 | 65.2 | 77.7 |
| 725 | Zoarcidae | 2 | 2 | 7.7 | 7.7 | 9.45 | 11.2 | 11.2 |
| Invertebrates |  |  |  |  |  |  |  |  |
| 2218 | Anthoptilum grandiflorum | 69 | 0 | 40.5 | 40.5 | 58.0 | 72.0 | 72.0 |
| 8138 | Argis dentata | 811 | 0 | 0.6 | 0.7 | 1.5 | 2.4 | 2.5 |
| 8113 | Atlantopandalus propinqvus | 33 | 0 | 1.2 | 1.2 | 1.7 | 2.4 | 2.4 |
| 8213 | Chionoecetes opilio | 757 | 325 | 0.5 | 0.5 | 5.1 | 12.3 | 13.0 |
| 8075 | Eualus fabricii | 178 | 0 | 0.5 | 0.5 | 0.8 | 1.1 | 1.2 |
| 8081 | Eualus gaimardii belcheri | 6 | 0 | 0.7 | 0.7 | 0.9 | 1.5 | 1.5 |
| 8080 | Eualus gaimardii gaimardii | 52 | 0 | 0.5 | 0.5 | 0.8 | 1.3 | 1.3 |
| 8077 | Eualus macilentus | 380 | 0 | 0.6 | 0.7 | 1.0 | 1.3 | 1.4 |
| 2217 | Halipteris finmarchica | 30 | 0 | 23.0 | 23.0 | 67.1 | 95.4 | 95.4 |
| 8217 | Hyas araneus | 249 | 124 | 0.4 | 0.5 | 1.2 | 7.2 | 7.3 |
| 8218 | Hyas coarctatus | 561 | 307 | 0.4 | 0.5 | 1.5 | 6.6 | 8.0 |
| 4753 | Illex illecebrosus | 69 | 55 | 10.1 | 10.1 | 18.5 | 22.0 | 22.0 |
| 8092 | Lebbeus groenlandicus | 259 | 0 | 0.5 | 0.6 | 1.2 | 2.3 | 2.4 |
| 8095 | Lebbeus microceros | 5 | 0 | 0.7 | 0.7 | 1.1 | 1.2 | 1.2 |
| 8093 | Lebbeus polaris | 504 | 0 | 0.5 | 0.6 | 1.0 | 1.3 | 1.4 |
| 8196 | Lithodes maja | 123 | 91 | 0.7 | 4.3 | 8.3 | 12.3 | 12.4 |
| 8111 | Pandalus borealis | 27168 | 932 | 0.6 | 0.9 | 2.3 | 2.8 | 3.1 |
| 8112 | Pandalus montagui | 3016 | 0 | 0.6 | 0.7 | 1.4 | 2.1 | 2.3 |
| 8057 | Pasiphaea multidentata | 2765 | 0 | 0.9 | 1.4 | 2.4 | 3.0 | 3.3 |
| 2203 | Pennatula aculeata | 69 | 0 | 4.5 | 4.5 | 11.2 | 25.0 | 25.0 |
| 2210 | Pennatula grandis | 74 | 0 | 0.1 | 0.1 | 44.6 | 55.1 | 55.1 |
| 8135 | Pontophilus norvegicus | 838 | 0 | 0.6 | 0.6 | 1.2 | 1.7 | 1.8 |
| 8129 | Sabinea sarsii | 138 | 0 | 0.5 | 0.5 | 1.2 | 1.5 | 1.8 |
| 8128 | Sabinea septemcarinata | 377 | 0 | 0.5 | 0.5 | 1.1 | 1.6 | 1.7 |
| 8119 | Sclerocrangon boreas | 442 | 0 | 0.6 | 0.9 | 1.5 | 2.7 | 3.0 |
| 8033 | Sergestes arcticus | 27 | 0 | 1.2 | 1.2 | 1.6 | 1.9 | 1.9 |
| 8087 | Spirontocaris lilljeborgii | 86 | 0 | 0.6 | 0.6 | 1.1 | 1.4 | 1.4 |
| 8086 | Spirontocaris phippsii | 6 | 0 | 0.6 | 0.6 | 0.7 | 0.8 | 0.8 |
| 8085 | Spirontocaris spinus | 339 | 0 | 0.4 | 0.5 | 0.9 | 1.5 | 1.7 |

* STRAP code based in part on works of Akenhead LeGrow (1981) for vertebrates and Lilly (1982) for invertebrates, as well as works on predation by marine organisms by the region of Quebec.
** P1: $1^{\text {st }}$ percentile $\quad$ P99:99 ${ }^{\text {th }}$ percentile

Appendix 4. Set positions and depth of successful fishing sets, and standardized catches ( 0.75 nm ) in number and weight for cod, Greenland halibut, redfish, northern shrimp, Atlantic halibut, herring and capelin during the 2014 survey.

| Set | Stratum | Latitude <br> Deg-Min | Longitude Deg-Min | Depth <br> (m) | Cod |  | Greenland Halibut |  | Redfish |  | Northern Shrimp |  | Atlantic Halibut |  | Herring |  | Capelin |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | n | kg | n | kg | n | kg | n | kg | n | kg | n | kg | n | kg |
| 1 | 406 | $48^{\circ} 58^{\prime}$ | $63^{\circ} 33^{\prime}$ | 390 | 12.0 | 4.9 | 62.0 | 20.3 | 200 | 42.3 | 623 | 5.4 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.1 |
| 2 | 807 | $48^{\circ} 55^{\prime}$ | $62^{\circ} 38^{\prime}$ | 311 | 2.0 | 0.5 | 8.0 | 1.5 | 159 | 37.0 | 993 | 7.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3 | 804 | $48^{\circ} 45^{\prime}$ | $62^{\circ} 22^{\prime}$ | 378 | 0.0 | 0.0 | 20.0 | 11.7 | 120 | 61.6 | 1634 | 13.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | 807 | $48^{\circ} 45^{\prime}$ | $62^{\circ} 00^{\prime}$ | 365 | 1.0 | 0.4 | 12.0 | 2.8 | 128 | 55.6 | 811 | 6.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5 | 807 | $48^{\circ} 46^{\prime}$ | $61^{\circ} 21^{\prime}$ | 335 | 24.0 | 11.4 | 17.0 | 2.9 | 299 | 82.8 | 1675 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6 | 807 | $48^{\circ} 44^{\prime}$ | $61^{\circ} 14^{\prime}$ | 339 | 5.0 | 2.7 | 18.0 | 5.1 | 386 | 95.7 | 1314 | 9.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7 | 819 | $48^{\circ} 45^{\prime}$ | $60^{\circ} 30^{\prime}$ | 339 | 1.9 | 0.7 | 5.8 | 2.6 | 979 | 63.5 | 49 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8 | 819 | $48^{\circ} 52^{\prime}$ | $60^{\circ} 41^{\prime}$ | 193 | 22.0 | 3.4 | 0.0 | 0.0 | 426 | 18.3 | 137 | 0.4 | 0.0 | 0.0 | 12.0 | 1.6 | 0.0 | 0.0 |
| 9 | 830 | $48^{\circ} 59^{\prime}$ | $60^{\circ} 45^{\prime}$ | 153 | 184.5 | 71.4 | 0.0 | 0.0 | 517 | 10.8 | 4 | 0.0 | 2.0 | 14.9 | 4.0 | 0.7 | 0.0 | 0.0 |
| 10 | 808 | $48^{\circ} 60^{\prime}$ | $60^{\circ} 04^{\prime}$ | 280 | 23.0 | 25.4 | 29.0 | 6.9 | 11065 | 543.7 | 5804 | 43.2 | 1.2 | 12.0 | 1.2 | 0.4 | 0.0 | 0.0 |
| 11 | 809 | $49^{\circ} 03^{\prime}$ | $59^{\circ} 52^{\prime}$ | 289 | 7.5 | 5.2 | 32.8 | 5.4 | 1866 | 174.3 | 15151 | 92.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 | 808 | $49^{\circ} 06^{\prime}$ | $60^{\circ} 17^{\prime}$ | 285 | 15.0 | 11.6 | 73.5 | 13.6 | 4779 | 194.7 | 12152 | 75.0 | 0.0 | 0.0 | 2.0 | 0.6 | 0.0 | 0.0 |
| 13 | 815 | $49^{\circ} 07^{\prime}$ | $60^{\circ} 31^{\prime}$ | 245 | 53.0 | 26.0 | 12.0 | 5.1 | 516 | 39.2 | 3522 | 26.0 | 0.0 | 0.0 | 35.0 | 7.1 | 0.0 | 0.0 |
| 14 | 815 | $49^{\circ} 12^{\prime}$ | $60^{\circ} 15^{\prime}$ | 271 | 9.0 | 4.5 | 77.6 | 14.7 | 1844 | 76.1 | 18943 | 108.1 | 0.0 | 0.0 | 3.0 | 0.9 | 0.0 | 0.0 |
| 15 | 815 | $49^{\circ} 14^{\prime}$ | $60^{\circ} 03^{\prime}$ | 249 | 18.8 | 11.4 | 20.6 | 2.2 | 6296 | 201.5 | 1602 | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 | 812 | $49^{\circ} 21^{\prime}$ | $59^{\circ} 55^{\prime}$ | 239 | 18.8 | 16.2 | 6.6 | 2.9 | 712 | 26.3 | 420 | 3.4 | 0.0 | 0.0 | 0.9 | 0.2 | 0.0 | 0.0 |
| 17 | 815 | $49^{\circ} 24^{\prime}$ | $60^{\circ} 10^{\prime}$ | 232 | 16.0 | 7.3 | 5.0 | 2.3 | 383 | 17.7 | 15 | 0.1 | 0.0 | 0.0 | 7.0 | 1.6 | 6.0 | 0.1 |
| 19 | 833 | $49^{\circ} 34^{\prime}$ | $60^{\circ} 05^{\prime}$ | 89 | 123.0 | 35.4 | 0.0 | 0.0 | 7 | 0.1 | 0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 0.0 |
| 20 | 812 | $49^{\circ} 34^{\prime}$ | $59^{\circ} 39^{\prime}$ | 273 | 11.0 | 8.0 | 41.0 | 15.0 | 1608 | 89.1 | 8675 | 44.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 21 | 814 | $49^{\circ} 48^{\prime}$ | $59^{\circ} 43^{\prime}$ | 190 | 71.0 | 20.7 | 58.0 | 2.6 | 777 | 20.7 | 4474 | 18.5 | 1.0 | 8.9 | 9.0 | 1.3 | 1.0 | 0.0 |
| 22 | 833 | $49^{\circ} 50$ | $60^{\circ} 11^{\prime}$ | 76 | 8.0 | 5.1 | 0.0 | 0.0 | 17 | 1.3 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| 24 | 827 | $50^{\circ} 05^{\prime}$ | $60^{\circ} 01^{\prime}$ | 117 | 12.1 | 4.6 | 2.4 | 0.0 | 5 | 0.0 | 316 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 |
| 25 | 812 | $49^{\circ} 55^{\prime}$ | $59^{\circ} 16^{\prime}$ | 261 | 2.0 | 2.2 | 70.0 | 48.2 | 9527 | 419.0 | 4469 | 28.2 | 0.0 | 0.0 | 2.0 | 0.5 | 8.0 | 0.1 |
| 26 | 812 | $49^{\circ} 56^{\prime}$ | $59^{\circ} 06^{\prime}$ | 271 | 5.0 | 3.3 | 51.0 | 25.4 | 26641 | 870.3 | 3270 | 26.8 | 0.0 | 0.0 | 1.0 | 0.3 | 1.0 | 0.0 |
| 27 | 814 | $50^{\circ} 05^{\prime}$ | $59^{\circ} 08^{\prime}$ | 222 | 9.1 | 6.4 | 160.2 | 26.3 | 1336 | 46.1 | 27083 | 141.1 | 1.0 | 1.2 | 30.0 | 5.8 | 0.0 | 0.0 |
| 29 | 813 | $50^{\circ} 11^{\prime}$ | $58^{\circ} 54 '$ | 190 | 48.0 | 20.1 | 33.0 | 9.7 | 3151 | 58.3 | 24596 | 91.3 | 2.0 | 4.0 | 72.0 | 10.9 | 2.0 | 0.0 |
| 31 | 801 | $50^{\circ} 14^{\prime}$ | $58^{\circ} 29^{\prime}$ | 333 | 14.0 | 6.5 | 152.3 | 84.2 | 200 | 5.7 | 10271 | 58.5 | 0.0 | 0.0 | 1.0 | 0.3 | 45.5 | 0.8 |
| 32 | 801 | $50^{\circ} 14^{\prime}$ | $58^{\circ} 36$ | 301 | 1.9 | 0.4 | 170.0 | 64.5 | 187 | 5.0 | 6291 | 39.5 | 0.0 | 0.0 | 0.0 | 0.0 | 48.7 | 0.8 |
| 33 | 813 | $50^{\circ} 16^{\prime}$ | $58^{\circ} 42^{\prime}$ | 203 | 15.0 | 6.9 | 52.5 | 9.5 | 784 | 14.4 | 7385 | 27.9 | 0.0 | 0.0 | 21.6 | 3.9 | 36.6 | 0.5 |
| 34 | 824 | $50^{\circ} 29^{\prime}$ | $58^{\circ} 19^{\prime}$ | 161 | 84.2 | 16.5 | 1.2 | 0.0 | 42 | 0.7 | 648 | 0.8 | 3.5 | 4.1 | 1.2 | 0.1 | 18.5 | 0.3 |
| 35 | 813 | $50^{\circ} 30^{\prime}$ | $58^{\circ} 09^{\prime}$ | 207 | 109.0 | 41.4 | 46.0 | 11.4 | 2315 | 59.9 | 22669 | 140.6 | 1.0 | 3.0 | 13.0 | 2.7 | 35.0 | 0.6 |
| 37 | 824 | $50^{\circ} 42^{\prime}$ | $57^{\circ} 50$ | 101 | 89.1 | 40.4 | 0.0 | 0.0 | 36 | 0.5 | 6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 0.1 |
| 38 | 837 | $50^{\circ} 49^{\prime}$ | $57^{\circ} 53^{\prime}$ | 73 | 31.0 | 15.0 | 0.0 | 0.0 | 5 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 186.4 | 0.5 |
| 40 | 837 | $51^{\circ} 19^{\prime}$ | $57^{\circ} 09^{\prime}$ | 83 | 715.7 | 483.3 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.2 | 14.0 | 0.1 |
| 42 | 838 | $51^{\circ} 19^{\prime}$ | $56^{\circ} 49^{\prime}$ | 61 | 284.8 | 328.1 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 11.3 | 4.0 | 0.0 | 0.0 |
| 43 | 838 | $51^{\circ} 26^{\prime}$ | $56^{\circ} 47^{\prime}$ | 50 | 2626.1 | 1135.0 | 0.0 | 0.0 | 7 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 17.0 | 6.6 | 27.0 | 0.5 |
| 44 | 838 | $51^{\circ} 29^{\prime}$ | $56^{\circ} 39^{\prime}$ | 51 | 538.2 | 372.0 | 0.0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.6 | 3.0 | 0.1 |


| Set | Stratum | Latitude Deg-Min | Longitude Deg-Min | Depth <br> (m) | Cod |  | Greenland Halibut |  | Redfish |  | Northern Shrimp |  | Atlantic Halibut |  | Herring |  | Capelin |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | n | kg | n | kg | n | kg | n | kg | n | kg | n | kg | n | kg |
| 46 | 838 | $51^{\circ} 37$ | $56^{\circ} 30 '$ | 68 | 188.5 | 107.2 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 0.0 |
| 47 | 840 | $51^{\circ} 47 \prime$ | $56^{\circ} 01^{\prime}$ | 101 | 19.0 | 18.0 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 48 | 840 | $51^{\circ} 51^{\prime}$ | $55^{\circ} 51^{\prime}$ | 122 | 26.0 | 11.0 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| 50 | 838 | $51^{\circ} 43^{\prime}$ | $55^{\circ} 52^{\prime}$ | 61 | 132.1 | 77.9 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 2.8 | 0.2 | 841.6 | 18.6 |
| 51 | 838 | $51^{\circ} 40^{\prime}$ | $56^{\circ} 10^{\prime}$ | 75 | 200.7 | 46.8 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.2 | 0.3 |
| 52 | 837 | $51^{\circ} 14^{\prime}$ | $57^{\circ} 04^{\prime}$ | 56 | 1641.4 | 688.1 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1.0 | 0.5 | 4.0 | 1.5 | 6.0 | 0.1 |
| 53 | 837 | $50^{\circ} 59^{\prime}$ | $57^{\circ} 22^{\prime}$ | 67 | 497.6 | 137.2 | 0.0 | 0.0 | 32 | 0.2 | 1 | 0.0 | 0.0 | 0.0 | 3.0 | 0.6 | 0.0 | 0.0 |
| 54 | 813 | $50^{\circ} 41^{\prime}$ | $57^{\circ} 33^{\prime}$ | 264 | 1.0 | 0.1 | 322.5 | 94.8 | 1141 | 37.4 | 43467 | 227.0 | 1.0 | 6.2 | 15.4 | 3.6 | 16.3 | 0.3 |
| 55 | 823 | $50^{\circ} 28^{\prime}$ | $57^{\circ} 34^{\prime}$ | 142 | 273.9 | 136.9 | 0.0 | 0.0 | 76 | 1.5 | 4 | 0.0 | 0.9 | 3.6 | 0.9 | 0.2 | 2.8 | 0.0 |
| 56 | 801 | $50^{\circ} 27^{\prime}$ | $58^{\circ} 02^{\prime}$ | 284 | 10.0 | 7.2 | 83.0 | 30.4 | 198 | 5.7 | 23208 | 144.8 | 1.5 | 9.5 | 1.0 | 0.2 | 21.0 | 0.3 |
| 57 | 813 | $50^{\circ} 23^{\prime}$ | $57^{\circ} 56$ | 251 | 4.0 | 1.7 | 102.6 | 18.7 | 3350 | 72.4 | 37799 | 201.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.1 |
| 58 | 823 | $50^{\circ} 16^{\prime}$ | $57^{\circ} 44^{\prime}$ | 176 | 38.0 | 24.6 | 26.0 | 7.8 | 45179 | 662.1 | 2546 | 4.7 | 3.0 | 3.8 | 63.0 | 14.1 | 0.0 | 0.0 |
| 59 | 823 | $50^{\circ} 12^{\prime}$ | $57^{\circ} 50^{\prime}$ | 172 | 63.5 | 42.9 | 6.7 | 1.8 | 4350 | 102.3 | 1077 | 1.1 | 1.9 | 2.0 | 7.7 | 1.5 | 5.8 | 0.1 |
| 60 | 836 | $49^{\circ} 58^{\prime}$ | $57^{\circ} 59$ | 67 | 344.3 | 154.4 | 0.0 | 0.0 | 100 | 1.8 | 0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.4 | 0.0 | 0.0 |
| 61 | 822 | $49^{\circ} 54^{\prime}$ | $58^{\circ} 22^{\prime}$ | 140 | 77.0 | 27.8 | 0.0 | 0.0 | 103 | 3.6 | 160 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| 62 | 813 | $49^{\circ} 53^{\prime}$ | $58^{\circ} 41^{\prime}$ | 208 | 11.0 | 9.1 | 49.3 | 8.6 | 2591 | 71.1 | 9741 | 43.6 | 1.0 | 6.3 | 2.0 | 0.3 | 2.0 | 0.0 |
| 65 | 836 | $49^{\circ} 33^{\prime}$ | $58^{\circ} 23^{\prime}$ | 90 | 25.0 | 16.6 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 66 | 822 | $49^{\circ} 34^{\prime}$ | $58^{\circ} 35^{\prime}$ | 103 | 38.0 | 19.3 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67 | 822 | $49^{\circ} 31^{\prime}$ | $58^{\circ} 56$ | 168 | 83.7 | 20.3 | 0.0 | 0.0 | 565 | 10.8 | 316 | 0.4 | 0.0 | 0.0 | 12.5 | 2.1 | 0.0 | 0.0 |
| 68 | 812 | $49^{\circ} 28^{\prime}$ | $59^{\circ} 10^{\prime}$ | 194 | 3.8 | 1.2 | 1.0 | 0.2 | 1403 | 30.3 | 7 | 0.0 | 1.9 | 10.1 | 1.0 | 0.1 | 0.0 | 0.0 |
| 69 | 812 | $49^{\circ} 18^{\prime}$ | $59^{\circ} 14^{\prime}$ | 200 | 6.7 | 4.1 | 1.0 | 0.0 | 602 | 15.7 | 0 | 0.0 | 0.0 | 0.0 | 1.9 | 0.3 | 0.0 | 0.0 |
| 70 | 822 | $49^{\circ} 14^{\prime}$ | $59^{\circ} 11^{\prime}$ | 181 | 13.5 | 2.1 | 4.5 | 0.5 | 253 | 7.1 | 93 | 0.1 | 0.0 | 0.0 | 1.5 | 0.5 | 0.0 | 0.0 |
| 71 | 812 | $49^{\circ} 16^{\prime}$ | $59^{\circ} 30^{\prime}$ | 248 | 2.0 | 0.9 | 14.0 | 4.7 | 13887 | 418.3 | 405 | 3.1 | 0.0 | 0.0 | 1.0 | 0.3 | 0.0 | 0.0 |
| 72 | 812 | $49^{\circ} 12^{\prime}$ | $59^{\circ} 17{ }^{\prime}$ | 192 | 13.0 | 5.2 | 19.0 | 1.2 | 756 | 64.2 | 35 | 0.2 | 0.0 | 0.0 | 45.0 | 6.2 | 0.0 | 0.0 |
| 73 | 821 | $48^{\circ} 59^{\prime}$ | $59^{\circ} 18^{\prime}$ | 127 | 107.7 | 48.2 | 0.0 | 0.0 | 75 | 3.3 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 74 | 821 | $48^{\circ} 54^{\prime}$ | $59^{\circ}$ 21' | 107 | 587.5 | 283.6 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.3 | 0.0 | 0.0 |
| 75 | 835 | $48^{\circ} 48^{\prime}$ | $59^{\circ} 06^{\prime}$ | 51 | 112.3 | 79.5 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3.2 | 4.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 76 | 835 | $48^{\circ} 48^{\prime}$ | $58^{\circ} 54^{\prime}$ | 41 | 17.0 | 4.5 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| 77 | 836 | $49^{\circ} 03^{\prime}$ | $58^{\circ} 56$ | 60 | 36.0 | 18.5 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 78 | 836 | $49^{\circ} 07$ | $58^{\circ} 44^{\prime}$ | 74 | 130.3 | 85.2 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 79 | 822 | $49^{\circ} 15^{\prime}$ | $58^{\circ} 41^{\prime}$ | 97 | 217.6 | 82.9 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.2 | 0.0 | 0.0 |
| 80 | 836 | $49^{\circ} 16^{\prime}$ | $58^{\circ} 34^{\prime}$ | 82 | 88.5 | 63.5 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1.0 | 1.8 | 1.0 | 0.3 | 0.0 | 0.0 |
| 81 | 809 | $48^{\circ} 48^{\prime}$ | $59^{\circ} 47$ | 291 | 1.0 | 0.3 | 8.7 | 3.7 | 315 | 29.8 | 237 | 2.4 | 0.0 | 0.0 | 1.0 | 0.2 | 0.0 | 0.0 |
| 82 | 808 | $48^{\circ} 52^{\prime}$ | $60^{\circ} 06^{\prime}$ | 317 | 1.0 | 0.5 | 16.0 | 8.2 | 904 | 91.5 | 110 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83 | 808 | $48^{\circ} 43^{\prime}$ | $60^{\circ} 03^{\prime}$ | 335 | 0.0 | 0.0 | 8.0 | 3.7 | 234 | 32.8 | 580 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 84 | 803 | $48^{\circ} 32^{\prime}$ | $60^{\circ} 37{ }^{\prime}$ | 388 | 0.0 | 0.0 | 9.0 | 5.8 | 75 | 41.6 | 14 | 0.1 | 0.0 | 0.0 | 1.0 | 0.2 | 0.0 | 0.0 |
| 85 | 803 | $48^{\circ} 23^{\prime}$ | $60^{\circ} 14^{\prime}$ | 388 | 0.0 | 0.0 | 5.0 | 3.1 | 87 | 45.4 | 483 | 4.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86 | 809 | $48^{\circ} 26^{\prime}$ | $59^{\circ} 56^{\prime}$ | 331 | 2.0 | 1.1 | 4.0 | 0.2 | 394 | 59.4 | 447 | 4.4 | 0.0 | 0.0 | 1.0 | 0.2 | 0.0 | 0.0 |
| 87 | 811 | $48^{\circ} 23^{\prime}$ | $59^{\circ} 43^{\prime}$ | 237 | 2.0 | 1.1 | 1.0 | 0.1 | 5505 | 215.3 | 12 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 88 | 835 | $48^{\circ} 26^{\prime}$ | $59^{\circ} 14^{\prime}$ | 67 | 61.0 | 33.3 | 0.0 | 0.0 | 7 | 0.2 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 89 | 835 | $48^{\circ} 19^{\prime}$ | $59^{\circ} 21^{\prime}$ | 70 | 187.8 | 89.3 | 0.0 | 0.0 | 91 | 3.7 | 0 | 0.0 | 3.0 | 4.4 | 2.0 | 0.4 | 0.0 | 0.0 |


| Set | Stratum | Latitude Deg-Min | Longitude Deg-Min | Depth <br> (m) | Cod |  | Greenland Halibut |  | Redfish |  | Northern Shrimp |  | Atlantic Halibut |  | Herring |  | Capelin |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | n | kg | n | kg | n | kg | n | kg | n | kg | n | kg | n | kg |
| 90 | 820 | $48^{\circ} 10^{\prime}$ | $59^{\circ} 27^{\prime}$ | 142 | 41.0 | 22.1 | 0.0 | 0.0 | 48 | 1.7 | 217 | 0.2 | 1.0 | 6.7 | 1.0 | 0.1 | 1.0 | 0.0 |
| 91 | 821 | $48^{\circ} 18^{\prime}$ | $59^{\circ} 38^{\prime}$ | 152 | 14.0 | 5.3 | 0.0 | 0.0 | 203 | 6.6 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 92 | 820 | $48^{\circ} 09^{\prime}$ | $59^{\circ} 39^{\prime}$ | 167 | 57.0 | 41.5 | 0.0 | 0.0 | 747 | 24.6 | 12 | 0.0 | 1.0 | 0.3 | 5.0 | 1.3 | 0.0 | 0.0 |
| 93 | 811 | $48^{\circ} 16^{\prime}$ | $59^{\circ} 46$ | 254 | 0.0 | 0.0 | 0.0 | 0.0 | 1963 | 160.5 | 12 | 0.1 | 1.0 | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 94 | 810 | $48^{\circ} 12^{\prime}$ | $59^{\circ} 55^{\prime}$ | 350 | 0.0 | 0.0 | 3.0 | 0.1 | 121 | 53.5 | 250 | 2.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| 95 | 803 | $48^{\circ} 07$ | $60^{\circ} 08^{\prime}$ | 481 | 0.0 | 0.0 | 25.0 | 13.0 | 68 | 46.2 | 211 | 1.9 | 0.0 | 0.0 | 1.0 | 0.2 | 0.0 | 0.0 |
| 96 | 810 | $48^{\circ} 03^{\prime}$ | $59^{\circ} 43^{\prime}$ | 351 | 0.0 | 0.0 | 5.0 | 1.4 | 410 | 114.2 | 331 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 97 | 820 | $48^{\circ} 00^{\prime}$ | $59^{\circ} 29^{\prime}$ | 170 | 15.6 | 2.9 | 0.0 | 0.0 | 1436 | 39.0 | 0 | 0.0 | 0.0 | 0.0 | 11.0 | 2.2 | 0.0 | 0.0 |
| 98 | 802 | $47^{\circ} 56$ | $59^{\circ} 52^{\prime}$ | 484 | 0.0 | 0.0 | 13.5 | 7.5 | 55 | 41.9 | 33 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100 | 407 | $47^{\circ} 43^{\prime}$ | $60^{\circ} 05^{\prime}$ | 516 | 0.0 | 0.0 | 18.0 | 11.0 | 26 | 12.8 | 13 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 102 | 802 | $47^{\circ} 43^{\prime}$ | $59^{\circ} 45^{\prime}$ | 519 | 0.0 | 0.0 | 13.0 | 7.9 | 34 | 20.0 | 1 | 0.0 | 0.0 | 0.0 | 1.0 | 0.3 | 0.0 | 0.0 |
| 103 | 802 | $47^{\circ} 36$ | $59^{\circ} 30^{\prime}$ | 425 | 0.0 | 0.0 | 2.5 | 1.3 | 113 | 59.7 | 6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105 | 810 | $47^{\circ} 37$ | $59^{\circ} 27^{\prime}$ | 332 | 0.0 | 0.0 | 1.0 | 0.0 | 315 | 133.9 | 7 | 0.1 | 1.0 | 7.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 109 | 407 | $47^{\circ} 29^{\prime}$ | $60^{\circ} 15^{\prime}$ | 471 | 0.0 | 0.0 | 10.0 | 6.5 | 97 | 64.3 | 25 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110 | 407 | $47^{\circ} 32^{\prime}$ | $60^{\circ} 22^{\prime}$ | 392 | 0.0 | 0.0 | 10.0 | 8.6 | 133 | 50.1 | 26 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 111 | 404 | $47^{\circ} 35^{\prime}$ | $60^{\circ} 25^{\prime}$ | 352 | 0.0 | 0.0 | 3.0 | 3.6 | 132 | 15.9 | 30 | 0.2 | 1.0 | 9.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112 | 407 | $47^{\circ} 55^{\prime}$ | $60^{\circ} 38^{\prime}$ | 386 | 0.0 | 0.0 | 12.2 | 3.6 | 105 | 60.7 | 228 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 2.8 | 0.0 |
| 114 | 803 | $48^{\circ} 10^{\prime}$ | $60^{\circ} 38$ | 435 | 0.0 | 0.0 | 11.3 | 4.5 | 98 | 73.5 | 142 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 115 | 803 | $48^{\circ} 23^{\prime}$ | $60^{\circ} 44^{\prime}$ | 437 | 0.0 | 0.0 | 7.0 | 4.8 | 160 | 142.8 | 95 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 116 | 803 | $48^{\circ} 21^{\prime}$ | $61^{\circ} 07$ | 411 | 0.0 | 0.0 | 14.0 | 6.8 | 122 | 60.5 | 193 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 117 | 803 | $48^{\circ} 18^{\prime}$ | $61^{\circ} 16^{\prime}$ | 399 | 0.0 | 0.0 | 15.4 | 7.5 | 78 | 48.6 | 1235 | 11.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118 | 401 | $48^{\circ} 06^{\prime}$ | $61^{\circ} 13^{\prime}$ | 248 | 0.0 | 0.0 | 15.0 | 2.8 | 3953 | 160.0 | 780 | 6.1 | 0.0 | 0.0 | 1.0 | 0.2 | 0.0 | 0.0 |
| 119 | 401 | $48^{\circ} 10^{\prime}$ | $61^{\circ} 29^{\prime}$ | 218 | 27.9 | 34.1 | 7.7 | 0.4 | 2826 | 559.2 | 7 | 0.0 | 2.9 | 7.5 | 3.8 | 0.7 | 0.0 | 0.0 |
| 120 | 404 | $48^{\circ} 13^{\prime}$ | $61^{\circ} 28^{\prime}$ | 354 | 0.0 | 0.0 | 20.2 | 1.6 | 324 | 45.2 | 1180 | 9.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 121 | 803 | $48^{\circ} 34^{\prime}$ | $61^{\circ} 27$ | 409 | 0.0 | 0.0 | 23.0 | 9.7 | 93 | 48.5 | 314 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 122 | 803 | $48^{\circ} 28^{\prime}$ | $61^{\circ} 42^{\prime}$ | 425 | 0.0 | 0.0 | 38.0 | 11.9 | 114 | 59.7 | 1468 | 13.8 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| 123 | 803 | $48^{\circ} 40^{\prime}$ | $61^{\circ} 58$ | 406 | 0.0 | 0.0 | 33.7 | 20.1 | 101 | 60.0 | 533 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 124 | 804 | $48^{\circ} 38^{\prime}$ | $62^{\circ} 03^{\prime}$ | 414 | 0.0 | 0.0 | 35.0 | 20.5 | 59 | 28.8 | 1524 | 13.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 125 | 405 | $48^{\circ} 21^{\prime}$ | $61^{\circ} 57$ | 336 | 0.0 | 0.0 | 27.0 | 11.0 | 193 | 68.1 | 45 | 0.3 | 1.0 | 13.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 126 | 402 | $48^{\circ} 20^{\prime}$ | $62^{\circ} 05^{\prime}$ | 218 | 1.0 | 0.9 | 33.0 | 2.1 | 278 | 63.5 | 98 | 0.8 | 1.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 127 | 405 | $48^{\circ} 22^{\prime}$ | $62^{\circ} 17^{\prime}$ | 299 | 0.0 | 0.0 | 13.0 | 3.9 | 4792 | 218.2 | 241 | 2.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128 | 408 | $48^{\circ} 27^{\prime}$ | $62^{\circ} 24^{\prime}$ | 373 | 0.0 | 0.0 | 43.0 | 14.7 | 331 | 70.8 | 1388 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| 129 | 408 | $48^{\circ} 33^{\prime}$ | $62^{\circ} 24^{\prime}$ | 433 | 2.0 | 0.3 | 135.3 | 43.6 | 76 | 31.6 | 5363 | 45.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130 | 804 | $48^{\circ} 41^{\prime}$ | $62^{\circ} 29^{\prime}$ | 382 | 1.0 | 1.4 | 29.0 | 9.8 | 147 | 85.7 | 3011 | 24.8 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| 131 | 408 | $48^{\circ} 37$ | $62^{\circ} 37$ | 434 | 0.0 | 0.0 | 133.0 | 42.8 | 85 | 39.7 | 3772 | 32.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 132 | 408 | $48^{\circ} 48^{\prime}$ | $62^{\circ} 58^{\prime}$ | 389 | 1.0 | 0.2 | 112.5 | 28.4 | 101 | 31.4 | 1194 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 133 | 402 | $48^{\circ} 42^{\prime}$ | $63^{\circ} 13^{\prime}$ | 203 | 4.7 | 3.7 | 105.0 | 30.1 | 943 | 50.8 | 2025 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 137 | 406 | $49^{\circ} 06^{\prime}$ | $64^{\circ} 03^{\prime}$ | 355 | 1.0 | 0.7 | 728.8 | 168.1 | 896 | 21.8 | 5919 | 51.2 | 0.0 | 0.0 | 1.0 | 0.2 | 1.0 | 0.0 |
| 138 | 403 | $49^{\circ} 00^{\prime}$ | $64^{\circ} 15^{\prime}$ | 212 | 42.5 | 45.7 | 63.8 | 55.5 | 592 | 96.5 | 5588 | 34.9 | 2.8 | 20.2 | 4.7 | 0.8 | 27.2 | 0.4 |
| 139 | 403 | $49^{\circ} 13^{\prime}$ | $64^{\circ} 44^{\prime}$ | 259 | 3.0 | 1.0 | 85.0 | 49.2 | 1910 | 20.3 | 4165 | 37.3 | 0.0 | 0.0 | 5.0 | 0.7 | 52.0 | 0.7 |
| 140 | 406 | $49^{\circ} 20^{\prime}$ | $64^{\circ} 30^{\prime}$ | 384 | 1.0 | 0.5 | 326.0 | 134.0 | 351 | 15.6 | 2718 | 26.3 | 0.0 | 0.0 | 1.0 | 0.2 | 5.0 | 0.1 |


| Set | Stratum | Latitude Deg-Min | Longitude Deg-Min | Depth (m) | Cod |  | Greenland Halibut |  | Redfish |  | Northern Shrimp |  | Atlantic Halibut |  | Herring |  | Capelin |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | n | kg | n | kg | n | kg | n | kg | n | kg | n | kg | n | kg |
| 141 | 818 | 490 $24^{\prime}$ | $63^{\circ} 52^{\prime}$ | 268 | 4.8 | 2.7 | 37.5 | 17.0 | 295 | 15.4 | 4805 | 42.7 | 0.0 | 0.0 | 1.9 | 0.4 | 2.9 | 0.0 |
| 142 | 841 | $49^{\circ} 39^{\prime}$ | $64^{\circ} 04^{\prime}$ | 62 | 235.3 | 16.0 | 0.0 | 0.0 | 124 | 1.2 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 143 | 818 | $49^{\circ} 41^{\prime}$ | $64^{\circ} 51^{\prime}$ | 240 | 81.0 | 59.1 | 117.0 | 46.6 | 479 | 11.5 | 8246 | 63.9 | 0.0 | 0.0 | 12.0 | 1.2 | 0.0 | 0.0 |
| 144 | 806 | $49^{\circ} 33^{\prime}$ | $64^{\circ} 51^{\prime}$ | 321 | 0.0 | 0.0 | 301.3 | 131.1 | 352 | 8.7 | 21909 | 158.7 | 0.0 | 0.0 | 1.9 | 0.5 | 16.9 | 0.3 |
| 145 | 804 | $49^{\circ} 28^{\prime}$ | $65^{\circ} 01^{\prime}$ | 375 | 0.0 | 0.0 | 547.6 | 115.5 | 1521 | 30.7 | 2118 | 21.3 | 0.0 | 0.0 | 0.0 | 0.0 | 2.9 | 0.0 |
| 146 | 805 | $49^{\circ} 28^{\prime}$ | $65^{\circ} 10^{\prime}$ | 372 | 0.0 | 0.0 | 673.7 | 129.4 | 1436 | 32.8 | 1991 | 21.3 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.1 |
| 147 | 409 | $49^{\circ} 19^{\prime}$ | $65^{\circ} 14^{\prime}$ | 228 | 7.3 | 3.8 | 126.3 | 41.1 | 418 | 11.0 | 11359 | 65.0 | 2.4 | 32.6 | 9.7 | 0.9 | 88.6 | 1.3 |
| 148 | 410 | $49^{\circ} 21^{\prime}$ | $65^{\circ} 38^{\prime}$ | 295 | 0.0 | 0.0 | 376.3 | 152.8 | 3205 | 62.1 | 7339 | 64.2 | 0.0 | 0.0 | 0.0 | 0.0 | 64.9 | 0.9 |
| 149 | 409 | $49^{\circ} 19^{\prime}$ | $65^{\circ} 42^{\prime}$ | 237 | 8.8 | 3.1 | 215.7 | 117.8 | 554 | 13.0 | 13868 | 98.1 | 0.0 | 0.0 | 7.5 | 0.6 | 125.1 | 1.7 |
| 150 | 805 | $49^{\circ} 30^{\prime}$ | $66^{\circ} 18^{\prime}$ | 331 | 0.0 | 0.0 | 533.0 | 69.5 | 3624 | 75.1 | 11392 | 101.4 | 0.0 | 0.0 | 0.0 | 0.0 | 30.8 | 0.5 |
| 151 | 805 | $49^{\circ} 23^{\prime}$ | $66^{\circ} 15^{\prime}$ | 338 | 0.0 | 0.0 | 512.7 | 62.8 | 3255 | 61.8 | 6706 | 61.1 | 0.0 | 0.0 | 0.0 | 0.0 | 28.8 | 0.5 |
| 152 | 410 | $49^{\circ} 18^{\prime}$ | $66^{\circ} 56$ | 310 | 0.0 | 0.0 | 398.1 | 82.8 | 865 | 13.1 | 8275 | 81.1 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.1 |
| 153 | 410 | $49^{\circ} 09^{\prime}$ | $67^{\circ} 09^{\prime}$ | 326 | 0.0 | 0.0 | 437.9 | 125.2 | 278 | 5.0 | 3882 | 38.9 | 1.0 | 11.6 | 1.0 | 0.2 | 2.0 | 0.0 |
| 154 | 852 | $48^{\circ} 58^{\prime}$ | $67^{\circ} 17$ | 152 | 418.3 | 227.4 | 20.6 | 0.9 | 146 | 3.9 | 285 | 1.9 | 3.6 | 7.7 | 3.6 | 0.2 | 2.4 | 0.0 |
| 155 | 851 | $48^{\circ} 51^{\prime}$ | $67^{\circ} 39^{\prime}$ | 80 | 11.0 | 6.8 | 1.0 | 0.0 | 21 | 0.1 | 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 | 0.1 |
| 156 | 851 | $48^{\circ} 49^{\prime}$ | $67^{\circ} 50^{\prime}$ | 86 | 21.0 | 10.9 | 3.0 | 0.1 | 30 | 0.1 | 35 | 0.0 | 1.0 | 0.1 | 0.0 | 0.0 | 40.2 | 0.7 |
| 158 | 412 | $48^{\circ} 41^{\prime}$ | $68^{\circ} 22^{\prime}$ | 211 | 34.9 | 26.7 | 280.6 | 14.6 | 733 | 3.7 | 1936 | 17.3 | 21.6 | 38.2 | 2.8 | 0.6 | 4.7 | 0.1 |
| 159 | 414 | $48^{\circ} 36^{\prime}$ | $68^{\circ} 41^{\prime}$ | 268 | 0.0 | 0.0 | 922.3 | 46.4 | 3140 | 62.3 | 113 | 0.6 | 1.1 | 2.5 | 4.3 | 0.5 | 3.2 | 0.0 |
| 160 | 852 | $48^{\circ} 29^{\prime}$ | $68^{\circ} 51^{\prime}$ | 115 | 6.0 | 0.9 | 325.4 | 9.8 | 184 | 1.8 | 9652 | 70.9 | 0.0 | 0.0 | 0.0 | 0.0 | 31.6 | 0.8 |
| 161 | 414 | $48^{\circ} 38^{\prime}$ | $68^{\circ} 54^{\prime}$ | 247 | 0.0 | 0.0 | 1195.3 | 73.8 | 1825 | 25.7 | 1514 | 14.9 | 7.6 | 12.3 | 52.1 | 4.1 | 3.8 | 0.1 |
| 162 | 413 | $48^{\circ} 37$ | $68^{\circ} 41^{\prime}$ | 313 | 0.0 | 0.0 | 1254.5 | 105.6 | 575 | 8.8 | 23 | 0.1 | 0.0 | 0.0 | 2.8 | 0.4 | 0.9 | 0.0 |
| 163 | 413 | $48^{\circ} 40^{\prime}$ | $68^{\circ} 49^{\prime}$ | 334 | 0.0 | 0.0 | 984.1 | 145.5 | 188 | 3.0 | 94 | 0.6 | 0.0 | 0.0 | 5.0 | 0.7 | 0.0 | 0.0 |
| 164 | 854 | $48^{\circ} 45^{\prime}$ | $68^{\circ} 56$ | 61 | 0.0 | 0.0 | 0.0 | 0.0 | 100 | 0.4 | 9751 | 27.4 | 0.0 | 0.0 | 1.0 | 0.0 | 6797.3 | 90.6 |
| 165 | 855 | $48^{\circ} 53^{\prime}$ | $68^{\circ} 34^{\prime}$ | 130 | 45.9 | 2.3 | 419.9 | 10.4 | 867 | 5.4 | 12644 | 78.2 | 0.0 | 0.0 | 1.1 | 0.0 | 223.7 | 2.9 |
| 166 | 854 | $49^{\circ} 01^{\prime}$ | $68^{\circ} 18^{\prime}$ | 85 | 5.9 | 0.3 | 0.0 | 0.0 | 43 | 0.2 | 18988 | 55.5 | 0.0 | 0.0 | 0.0 | 0.0 | 1531.1 | 23.3 |
| 167 | 855 | $49^{\circ} 01^{\prime}$ | $68^{\circ} 10^{\prime}$ | 113 | 260.5 | 17.9 | 48.1 | 1.3 | 504 | 2.7 | 18384 | 126.9 | 0.0 | 0.0 | 2.4 | 0.3 | 79.5 | 1.1 |
| 168 | 411 | $49^{\circ} 00^{\prime}$ | $67^{\circ} 44^{\prime}$ | 290 | 0.0 | 0.0 | 566.3 | 95.0 | 51 | 1.5 | 4832 | 46.7 | 2.0 | 32.6 | 1.0 | 0.3 | 0.0 | 0.0 |
| 169 | 412 | $49^{\circ} 05^{\prime}$ | $67^{\circ} 45^{\prime}$ | 262 | 0.0 | 0.0 | 463.7 | 76.7 | 163 | 2.9 | 3032 | 26.4 | 1.3 | 52.1 | 0.0 | 0.0 | 3.8 | 0.1 |
| 170 | 411 | $49^{\circ} 09^{\prime}$ | $67^{\circ} 35^{\prime}$ | 290 | 0.0 | 0.0 | 530.8 | 147.9 | 255 | 4.1 | 8816 | 83.5 | 1.3 | 15.1 | 0.0 | 0.0 | 6.4 | 0.1 |
| 171 | 411 | $49^{\circ} 13^{\prime}$ | $67^{\circ} 21^{\prime}$ | 312 | 0.0 | 0.0 | 504.1 | 130.3 | 568 | 7.9 | 1041 | 11.0 | 0.0 | 0.0 | 1.0 | 0.2 | 1.0 | 0.0 |
| 172 | 805 | $49^{\circ} 22^{\prime}$ | $66^{\circ} 57$ | 304 | 0.0 | 0.0 | 452.3 | 93.1 | 2218 | 34.1 | 5726 | 53.9 | 0.0 | 0.0 | 0.0 | 0.0 | 21.0 | 0.3 |
| 173 | 805 | $49^{\circ} 27^{\prime}$ | $66^{\circ} 54^{\prime}$ | 297 | 0.0 | 0.0 | 321.2 | 43.5 | 1096 | 18.3 | 8892 | 63.8 | 0.9 | 4.3 | 0.9 | 0.2 | 76.6 | 1.1 |
| 174 | 832 | $49^{\circ} 42^{\prime}$ | $66^{\circ} 59^{\prime}$ | 160 | 172.7 | 59.8 | 23.1 | 6.2 | 789 | 14.1 | 1494 | 5.3 | 4.8 | 5.7 | 1.9 | 0.1 | 10.6 | 0.1 |
| 176 | 805 | $49^{\circ} 47$ | $66^{\circ} 20^{\prime}$ | 304 | 0.0 | 0.0 | 421.4 | 73.7 | 3805 | 71.4 | 8477 | 72.5 | 1.0 | 4.2 | 0.0 | 0.0 | 190.3 | 3.0 |
| 177 | 832 | $49^{\circ} 54^{\prime}$ | $66^{\circ} 45^{\prime}$ | 170 | 62.9 | 34.6 | 143.8 | 17.2 | 825 | 14.1 | 3671 | 22.1 | 6.0 | 64.2 | 2.4 | 0.3 | 67.7 | 0.8 |
| 178 | 832 | $50^{\circ} 01^{\prime}$ | $66^{\circ} 39^{\prime}$ | 172 | 73.6 | 60.0 | 140.8 | 28.9 | 174 | 1.7 | 7759 | 37.9 | 0.9 | 2.3 | 1.9 | 0.1 | 36.8 | 0.4 |
| 179 | 817 | $49^{\circ} 55^{\prime}$ | $66^{\circ} 30^{\prime}$ | 241 | 1.0 | 0.2 | 361.8 | 76.5 | 28260 | 423.5 | 33537 | 189.8 | 3.0 | 52.8 | 14.0 | 1.2 | 60.2 | 0.8 |
| 180 | 817 | $49^{\circ} 52^{\prime}$ | $66^{\circ} 19^{\prime}$ | 274 | 0.0 | 0.0 | 266.5 | 49.9 | 3774 | 47.7 | 13796 | 108.0 | 2.3 | 18.4 | 2.3 | 0.4 | 122.2 | 1.8 |
| 181 | 817 | $49^{\circ} 59^{\prime}$ | $65^{\circ} 34^{\prime}$ | 221 | 51.0 | 34.6 | 202.8 | 51.8 | 29717 | 519.8 | 75469 | 401.9 | 1.9 | 4.2 | 15.9 | 2.6 | 9.4 | 0.1 |
| 182 | 805 | $49^{\circ} 42^{\prime}$ | $65^{\circ} 49^{\prime}$ | 336 | 0.0 | 0.0 | 651.1 | 83.6 | 595 | 11.9 | 11228 | 98.9 | 0.0 | 0.0 | 0.0 | 0.0 | 16.1 | 0.2 |
| 183 | 817 | $49^{\circ} 45^{\prime}$ | $65^{\circ} 15^{\prime}$ | 308 | 0.0 | 0.0 | 411.0 | 190.7 | 169 | 4.3 | 9855 | 73.2 | 1.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 |


| Set | Stratum | Latitude Deg-Min | Longitude Deg-Min | Depth <br> (m) | Cod |  | Greenland Halibut |  | Redfish |  | Northern Shrimp |  | Atlantic Halibut |  | Herring |  | Capelin |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | n | kg | n | kg | n | kg | n | kg | n | kg | n | kg | n | kg |
| 184 | 817 | $50^{\circ} 00^{\prime}$ | $65^{\circ} 13^{\prime}$ | 204 | 44.3 | 40.8 | 101.8 | 18.7 | 2305 | 36.0 | 7419 | 31.1 | 0.0 | 0.0 | 4.9 | 0.6 | 61.5 | 0.7 |
| 185 | 831 | $49^{\circ} 54^{\prime}$ | $64^{\circ} 55^{\prime}$ | 153 | 140.8 | 61.4 | 9.0 | 3.1 | 951 | 16.0 | 804 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 36.1 | 0.4 |
| 186 | 831 | $49^{\circ} 55^{\prime}$ | $64^{\circ} 44^{\prime}$ | 167 | 121.9 | 73.3 | 24.4 | 5.1 | 1231 | 13.0 | 1409 | 6.8 | 3.8 | 2.6 | 0.0 | 0.0 | 28.8 | 0.4 |
| 187 | 832 | $50^{\circ} 06^{\prime}$ | $64^{\circ} 50^{\prime}$ | 126 | 71.5 | 46.7 | 1.8 | 0.2 | 290 | 2.3 | 492 | 0.7 | 0.0 | 0.0 | 0.9 | 0.0 | 24.2 | 0.1 |
| 188 | 839 | $50^{\circ} 07$ | $64^{\circ} 16^{\prime}$ | 75 | 43.5 | 17.1 | 0.0 | 0.0 | 21 | 0.2 | 0 | 0.0 | 0.0 | 0.0 | 7.5 | 1.3 | 28.5 | 0.1 |
| 189 | 828 | $49^{\circ} 59^{\prime}$ | $63^{\circ} 21^{\prime}$ | 129 | 12.0 | 4.8 | 13.5 | 0.3 | 72 | 0.5 | 168 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 70.4 | 0.7 |
| 190 | 839 | $50^{\circ} 07$ | $63^{\circ} 20^{\prime}$ | 78 | 4.2 | 4.6 | 5.7 | 0.0 | 37 | 0.1 | 44 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 32.5 | 0.2 |
| 191 | 816 | $49^{\circ} 55^{\prime}$ | $62^{\circ} 53^{\prime}$ | 203 | 57.2 | 45.4 | 48.3 | 3.2 | 350 | 5.8 | 1955 | 10.2 | 0.0 | 0.0 | 0.0 | 0.0 | 14.0 | 0.2 |
| 192 | 816 | $49^{\circ} 48^{\prime}$ | $62^{\circ} 50^{\prime}$ | 226 | 20.0 | 20.1 | 156.9 | 22.2 | 804 | 72.9 | 55673 | 197.0 | 2.0 | 16.3 | 0.0 | 0.0 | 128.3 | 1.8 |
| 193 | 828 | $49^{\circ} 51^{\prime}$ | $62^{\circ} 18^{\prime}$ | 190 | 1.0 | 0.6 | 256.1 | 16.0 | 348 | 7.7 | 13990 | 50.9 | 10.6 | 35.2 | 1.9 | 0.4 | 14.6 | 0.2 |
| 195 | 827 | $49^{\circ} 52^{\prime}$ | $61^{\circ} 14^{\prime}$ | 163 | 3.8 | 4.0 | 127.1 | 8.2 | 720 | 3.4 | 2188 | 3.0 | 10.2 | 34.6 | 0.0 | 0.0 | 40.7 | 0.4 |
| 196 | 816 | $49^{\circ} 45^{\prime}$ | $61^{\circ} 23^{\prime}$ | 251 | 0.0 | 0.0 | 172.9 | 24.2 | 3438 | 99.5 | 3263 | 16.9 | 0.0 | 0.0 | 6.6 | 0.8 | 11.0 | 0.2 |
| 197 | 816 | $49^{\circ} 37$ | $61^{\circ} 48^{\prime}$ | 263 | 0.0 | 0.0 | 241.0 | 56.1 | 627 | 13.4 | 23477 | 147.4 | 0.9 | 12.1 | 0.0 | 0.0 | 124.7 | 1.8 |
| 198 | 816 | $49^{\circ} 32$ | $61^{\circ} 45^{\prime}$ | 212 | 76.3 | 41.9 | 83.9 | 7.5 | 650 | 13.7 | 4294 | 13.6 | 1.3 | 3.1 | 3.8 | 0.5 | 12.7 | 0.2 |
| 199 | 816 | $49^{\circ} 29^{\prime}$ | $61^{\circ} 20^{\prime}$ | 234 | 13.1 | 10.1 | 183.9 | 37.3 | 3766 | 71.8 | 12560 | 70.8 | 0.0 | 0.0 | 8.4 | 0.9 | 4.1 | 0.1 |
| 200 | 815 | $49^{\circ} 38^{\prime}$ | $60^{\circ} 44^{\prime}$ | 289 | 1.9 | 0.7 | 99.7 | 34.8 | 1277 | 65.1 | 145 | 0.8 | 0.9 | 9.5 | 0.0 | 0.0 | 115.5 | 1.7 |
| 201 | 815 | $49^{\circ} 20^{\prime}$ | $60^{\circ} 42^{\prime}$ | 261 | 3.9 | 1.7 | 55.3 | 14.1 | 11288 | 369.4 | 1459 | 12.8 | 0.0 | 0.0 | 2.6 | 0.4 | 67.5 | 1.1 |
| 202 | 829 | $49^{\circ} 12^{\prime}$ | $61^{\circ} 14^{\prime}$ | 102 | 531.9 | 127.1 | 0.0 | 0.0 | 107 | 3.4 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.1 | 0.1 |
| 203 | 829 | $49^{\circ} 07$ | $60^{\circ} 56$ | 96 | 246.3 | 50.4 | 0.0 | 0.0 | 3 | 0.1 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 204 | 830 | $48^{\circ} 60^{\prime}$ | $62^{\circ} 28^{\prime}$ | 189 | 150.2 | 37.6 | 17.8 | 0.6 | 6949 | 147.3 | 223 | 0.3 | 10.2 | 6.6 | 44.5 | 4.9 | 2.5 | 0.0 |
| 205 | 818 | $49^{\circ} 00^{\prime}$ | $62^{\circ} 43^{\prime}$ | 261 | 9.0 | 5.0 | 46.9 | 9.8 | 13898 | 434.6 | 4213 | 34.1 | 0.0 | 0.0 | 0.9 | 0.1 | 0.0 | 0.0 |
| 206 | 818 | $49^{\circ} 06^{\prime}$ | $63^{\circ} 02^{\prime}$ | 229 | 25.3 | 19.7 | 11.3 | 5.0 | 8415 | 247.2 | 2159 | 18.1 | 2.8 | 15.3 | 5.6 | 1.3 | 0.0 | 0.0 |
| 208 | 841 | $49^{\circ} 14^{\prime}$ | $63^{\circ} 15^{\prime}$ | 112 | 40.7 | 8.1 | 0.0 | 0.0 | 24 | 0.2 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 0.1 |
| 209 | 806 | $49^{\circ} 16^{\prime}$ | $63^{\circ} 48^{\prime}$ | 350 | 2.5 | 0.7 | 126.2 | 23.1 | 2274 | 672.0 | 3049 | 25.9 | 0.0 | 0.0 | 0.0 | 0.0 | 21.6 | 0.3 |
| 210 | 806 | $49^{\circ} 19^{\prime}$ | $63^{\circ} 48^{\prime}$ | 316 | 2.8 | 2.7 | 55.3 | 31.8 | 433 | 31.2 | 1984 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 33.8 | 0.5 |


[^0]:    ${ }^{1}$ Determining redfish species is based on a count of soft rays of the anal fin on a maximum of 60 redfish per tow. This method may skew the results, especially when the arrival of a strong cohort. Genetic analyzes are therefore essential to confirm the identification and the proportion of each species (S. fasciatus and S. mentella).

[^1]:    ${ }^{2}$ Determining redfish species is based on a count of soft rays of the anal fin on a maximum of 60 redfish per tow. This method may skew the results, especially when the arrival of a strong cohort. Genetic analyzes are therefore essential to confirm the identification and the proportion of each species (S. fasciatus and S. mentella).

