

Revision of fish and invertebrate catches based on original records and photos from the CCGS Teleost ecosystem survey in the Estuary and northern Gulf of St. Lawrence from 2004-2015

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ABSTRACT

Nozères, C., Bernier, D., Bourdages, H., and Isabel, L. 2022. Revision of fish and invertebrate catches based on original records and photos from the CCGS *Teleost* ecosystem survey in the Estuary and northern Gulf of St. Lawrence from 2004-2015. Can. Manuscr. Rep. Fish. Aquat. Sci. 3239: iv + 164 p.

This report aims to revise the database on marine faunal species from the annual ecosystem survey in the Estuary and northern Gulf of St. Lawrence from 2004 to 2015. The review of taxa using original records and photos was done to validate identifications, and where necessary, the values of catches and measurements. The catch survey database for this time series is thus be improved for use in ecosystem analyses and publishing as open data.

RÉSUMÉ

Nozères, C., Bernier, D., Bourdages, H., and Isabel, L. 2022. Revision of fish and invertebrate catches based on original records and photos from the CCGS *Teleost* ecosystem survey in the Estuary and northern Gulf of St. Lawrence from 2004-2015. Can. Manuscr. Rep. Fish. Aquat. Sci. 3239: iv + 164 p.

Ce rapport présente la révision des informations de la base des données sur les espèces de la faune marine du relevé annuel écosystémique dans l'estuaire maritime et le nord du golfe du Saint-Laurent pour la période 2004 à 2015. La revue des taxons a été réalisée à l'aide des enregistrements originaux et des photos pour valider les identifications et des valeurs des captures et des mesures biologiques, lorsque nécessaire. La base de données pour cette série temporelle des captures du relevé sera ainsi améliorée pour servir aux analyses écosystémiques et à l'affichage des données en accès ouvert.

INTRODUCTION

Since 1990, the Department of Fisheries and Oceans (DFO), Quebec Region, conducts an ecosystem survey with a bottom trawl each summer in the lower estuary and northern Gulf of St. Lawrence. In addition to providing information for targeted commercial species, this survey collects data on numerous other marine faunal species (Bourdages et al. 2016). Versions of the data are accessible on Open Data (<https://open.canada.ca/en>), the St. Lawrence Global Observatory (SLGO, <https://slgo.ca/bio>), and the Ocean Biodiversity Information System (OBIS, <https://obis.org/>).

Data on species occurrences are in demand for ecosystemic analyses, and thus there is a need for confirmation of their quality and usefulness (Orr et al. 2014, Nozères et al. 2015). Previously, a review was conducted of fish species data from the survey between 1978 to 2005 (Dutil et al. 2006). In 2004, the survey ship was changed, with a different trawl and finer net mesh, resulting in increased catchability of species. In addition, efforts were increased over the years to improve identifications. From the accumulated experiences, it was deemed useful to undertake a systematic review of survey records from 2004-2015, for both fish and invertebrate taxa. This report documents the results of this review, the changes to be made to the catch database, and recommended actions for future captures.

While the report strives to be a detailed action log of modifications, it is not practical to list in text every change made. In some instances, this review may refer to a specific record, while other cases may be batch edits. The modifications can be generalized as:

- obvious errors in identification or measurement values (weight and numbers);
- adjustments to taxonomic levels (higher or lower) or names (synonymy);
- incorrect attributed values due to contamination between sets or subsampling.

These different types of modifications are discussed later on and are mentioned here to prepare the reader for the presentation of the results.

MATERIAL AND METHODS

Each year around August, the ecosystem survey of the estuary and northern Gulf of St. Lawrence samples approximately 200 stations with the fisheries research vessel CCGS *Teleost* using a *Campelen* otter trawl and 12.7 net mesh in codend. The stations are randomly depth-stratified, taking place in strata varying in depth from 37 m to more than 500 m (Figure 1). The study area extends from the head of the Laurentian Channel in the Lower Estuary to Cabot Strait in the south and the Strait of Belle Isle in the north. The southern Gulf, including the Magdalen Plateau (white area, Figure 1), is covered by the September survey conducted by DFO Gulf Region, and thus is not discussed in this review. A comparison between the two surveys was presented in Nozères et al. 2015.

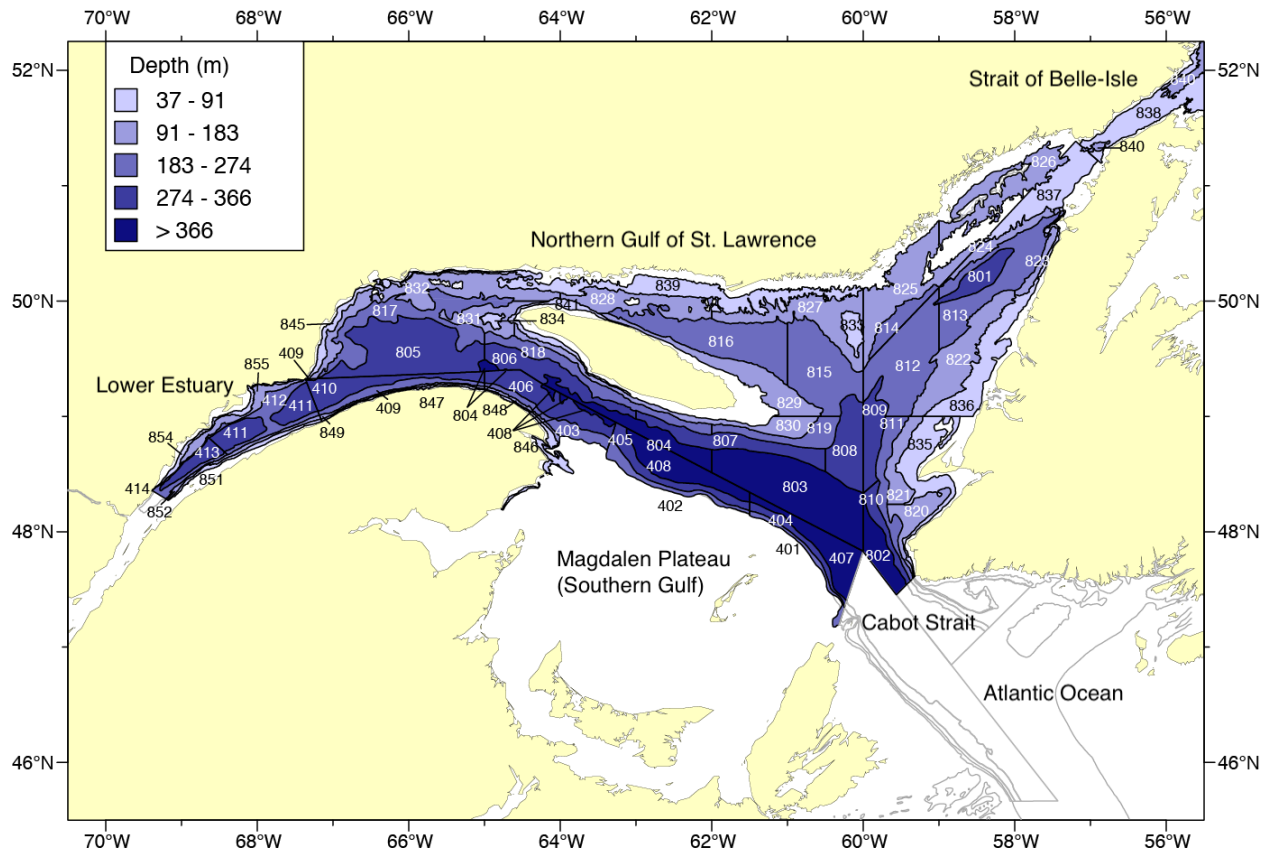


Figure 1. Map of the strata (coloured in shades of blue by depth and showing their numerical codes) sampled by the Estuary and Northern Gulf of St. Lawrence trawl survey.

At each haul, the catch is sorted by types (e.g., species, genus, family) and weighed, then recorded by name, catch code, and weight on paper form sheets. The catch form, along with the trawl set form, are then entered into a MS Access database while at sea, then later uploaded to an Oracle database at the Maurice-Lamontagne Institute (MLI), Mont-Joli, Qc. The database uses region-specific numeric codes for each catch type (e.g., Miller and Chabot 2014).

Initially, two entry forms were used for catch data: one for fishes and invertebrates, and another for shrimp. During a biodiversity project (Lévesque 2009), the need to document all types of invertebrates led to the creation of a third form that recorded names, quantities, comments, and other information that are not present in the catch database.

To help confirm identifications, photos were taken of the sorted catch, usually for non-commercial invertebrates, and occasionally of fishes and shrimp. The review was thus carried out using three sources of information: 1) survey forms, 2) survey photo catalogue, and 3) an extraction of the survey database, each of which are summarized below. For reference, the review context and initial work plan is listed in Appendix 1.

Forms

The paper forms of all fisheries surveys are stored in boxes at the MLI warehouse. To allow for easy review, the forms were scanned into PDF files (minimum 300 dpi) and archived on the internal network. Because most information is handwritten, OCR treatment to make machine-readable text is not available and instead the files were named and consulted manually by type (set, capture, invertebrate; Figure 2), in blocks of 30 sets (e.g., TE06_001-030_inverts) as they are organized in the folders in the boxes.

CARACTERISTIQUES DU TRAIT / SET DETAILS

ENREGISTREMENT DES PRISES / DECK SHEET

Feuille de saisie invertebrés

Groupes taxonomique	Code	Pds capture	Nb total	Sous échantillon
Porifera	1101	1.0	—	—
Strongylobatractus sp.	8303	835	299	20.0.204
Geryonidae sp.	8571	0.600	10	certaines très petits
Ophuroidea (Dendroidea)	8531	0.0703	114	80=0.0123
Stomatopoda	8173	0.0592	4	—
Caridea	8184	0.01305	—	—
Mollusca sp.	8493	0.0089	5	—
Asterias sp.	8398	0.0037	5	—
Crossaster papposus	8303	0.0085	8	+très petites
Rhachotropis aculeata	7211	0.00785	19	—
Epimeria longicauda	7326	0.00045	1	—
Anonyx sp. (Amphipoda)	7289	0.00035	1	—
Sipunculata	8208	0.00045	1	—
Polycheta	4870	0.0170	8	—
Hydrozoa	1341	0.00038	—	—
Bryozoa (Bryozoa)	2670	0.0011	—	—
Margarites sp.	3212	0.0014	2	—

Figure 2. Examples of the entry forms scanned to PDF: set (left); capture, for both fishes and invertebrates (centre), and invertebrate captures (right; done from 2008 onwards).

Photos

To show examples of species, digital photos began to be taken with the 2001 and 2002 surveys (Nozères and Bérubé 2003). Over time, photos were increasingly used to document captures (Figure 3), becoming systematic for most invertebrates by 2008. The photos are compiled in a SQLite database as an Adobe Photoshop Lightroom catalogue (in 2021: version 10 Classic). Photos are organized by survey and date (YYYY-MM-DD) and tagged in standardized metadata fields, with the name of each tow set in *keyword* (e.g., ship-survey-set: TE-005-123) and the name of the taxon visible in the photo in *keyword* (e.g., *Actinostola callosa*). This database is currently only available via external hard drives and is not linked to the networked catch survey database. Selected examples to show species have been posted on the Canadian Register of Marine Species (CaRMS) Photogallery (<http://www.marinespecies.org/carms/photogallery.php>), as well as iNaturalist Canada (<https://inaturalist.ca/>). The public storage online of survey catch photos is presently being explored, to enable collaborative image review (<https://github.com/biigle/>).



Figure 3. Example of species in a catalogued photo, several of which were only correctly identified when reviewed years later.

Extraction

This database review covers *Teleost* surveys 1 through 12, conducted from 2004 to 2015. The process began in fall 2015 with employment of C. Nozères. While a review is conducted following each survey, enhanced efforts began in 2016 and thus there was no need to document database corrections in recent years, except with selected cases that are mentioned in this review. In 2020, L. Isabel took on responsibility of the survey, notably for invertebrates, and is thus included in this review exercise. The data extraction is provided by D. Bernier who manages the ship *Access* and the MLI Oracle databases. The survey chief scientist from 2004-2013 was D. Archambault, succeeded by H. Bourdages in 2014, who approved this review by C. Nozères. Not included in this review were catches from the vessel *CCGS Needler*, which surveyed the estuary and northern Gulf of St. Lawrence from 1990 to 2005. Both ships, *Needler* and *Teleost*, were involved in the 2004 and 2005 surveys for comparative fishing (Bourdages et al 2007).

The Oracle database is periodically exported by D. Bernier as several files on the internal network at MLI for analysis in commercial species stock evaluations. For the the review (begun on 2016-04-05), the consulted files were for records of the tow haul (*Te_set.csv*, for trawl depth and station coordinates) and catch (*Te_capt.csv*, for catch code, name, weight, and number) that were combined into a single Microsoft Excel (*Te_capt_corr.xlsx*) file to facilitate enquiries. An additional exported file, for biological characteristics such as individual lengths and weights (*Te_Cbio.csv*), was occasionally consulted to validate records with unusual catch values. Finally, the calculated individual taxon weight in a capture (weight divided by number of specimens) was used occasionally for validation. This brought attention to relatively very small or large values that may have been due to misidentifications or data entry errors. The current data are available by contacting the MLI data management team (dbsaisb-gddaiss@dfo-mpo.gc.ca). The archived versions (dating 2016-04-05) are also available upon request. Currently, survey catch records of fishes are published on SLGO (<https://ogsl.ca/bio/?lg=en>), OpenData Canada (e.g., <https://open.canada.ca/data/en/dataset/d4ec2d6b-f4bc-4c6c-b866-b26e507a3b76>), and OBIS Canada (<https://obis.org/dataset/ce3c5c7d-daa0-42ed-9cdb-7100b1274b55>). Records for all invertebrate catches will be included by the time of publication of the present report. The review spreadsheet (*Te_capt_corr.xlsx*) is also available for consultation on request (Figure 4).

action	no_ref	no_stn	prof_moy	espece_nom	revue_CN	note_de_saisie	action-raison	esp_mod	nom_mod	pds_capt	pds_ech	nb_capt	nb_ech	pds_mod	nb_mod	pds_moy	note
nom à changer	1	1	200	12 Myxine glutinosa			espèce nord-américaine (M. glutinosa est européenne)	13	Myxine limosa	0,27	0,27	6	6				0,045
	1	1	200	90 Anchoa hepsetus						0,44	0,44	1	1				0,44
	1	1	200	91 Malacosteus aeneus						0,71	0,71	2	2				0,355
	1	1	200	438 Gasterosteus aculeatus						14,2	14,2	15	15				0,946666667
	1	1	200	441 Melanogrammus aeglefinus						5,4	5,4	4	4				1,35
	1	1	200	447 Urophycis tenuis						8,2	8,2	9	9				0,911111111
	1	1	200	461 Echinops cimbrius						0,05	0,05	2	2				0,025
	1	1	200	478 Nezumia bairdi						0,01	0,01	4	4				0,0025
	1	1	200	572 Scomber scombrus						0,28	0,28	2	2				0,14
	1	1	200	700 Anarhichas lupus						3,85	3,85	5	5				0,77
	1	1	200	792 Sebastes sp.						10,9	10,9	110	110				0,099090909
	1	1	200	811 Arctiella atlantica						0,084	0,084	19	19				0,004421053
	1	1	200	812 Arctiella arctica						0,003	0,003	1	1				0,003
correction pour Denis Bernier	1	1	200	817 Myoxocephalus sp.	aucun des étal répert. trop nombreux, petits, profonds, prob. Triglops ou autres	Chabotseaux sp.	confirmé en mesures JOD	811	Arctiella atlantica	0,17	0,17	47	47				0,003617021

Figure 4. Preview of the spreadsheet documenting changes to extracted records.

The review was performed by C. Nozères, examining each line record by tow set and catch code in the Excel spreadsheet. Columns were added to record modifications and comments (gray, Table 1), and rows added for new taxa when necessary. To maintain a trace of changes to the spreadsheet file, a version was created for each day a new change was added, with the last version named 2020-12-06. The review follows the order of DFO Quebec Region catch codes, with fish taxa from 1 to 999 and invertebrates and other types from 1000 to 9999. While the codes are archived in Miller and Chabot (2014), new taxa, especially for invertebrates, but also some species of fishes, resulted in new codes continually being added to the survey list, several of which are included here as they were discovered during the review exercise. The latest codes may be consulted online (<https://github.com/claudenozeres/Taxon-IML>). A national reference data workgroup for marine species names begun in 2021 aims to consolidate regional fisheries survey codes. During this review exercise, modifications were made to the Oracle catch survey database by C. Nozères, L. Isabel, and D. Bernier (database administrator).

Table 1. Variables in extraction files (*Te_capt.csv*, *Te_set.csv*) of the survey database for the *Teleost* 2004-2015, compiled into a single Excel file (*Te_capt_corr.xlsx*), with additional columns to follow the modifications indicated in gray shading.

Variable	Description
action	Action to be undertaken by a data manager
no_rel	<i>Teleost</i> survey number (1 to 12, conducted annually since 2004)
no_stn	Tow set number on a survey (incremental from 1, done each year)
prof_moy	Mean tow set depth (m) = (start + end depth)/2
espece	Numerical code displayed for data record by taxon or type
nom	Name displayed for data record by taxon or type (e.g., skate capsule)
revue_CN	Comment based on review of photo or capture entry sheet
note de saisie	Note read on paper entry sheet (capture or set)
action-raison	Justification to modify a data value
esp_mod	Modified capture code
nom_mod	Modified capture name
pds_capt	Total tow capture weight (kg) by taxon or type
pds_ech	Sample weight (kg) by taxon or type
nb_capt	Total abundance by taxon or type
nb_ech	Number in a sample by taxon or type
pds_mod	Modified value for tow capture weight (kg) by taxon or type
nb_mod	Modified value for total abundance by taxon or type
pds_moy	Mean tow capture weight (displayed to indicate abnormal values)
note	Additional notes or comments
supprime	Suggestion to erase a data record (e.g., debris, duplicate)
ajout	Suggestion to insert a data record (splitting taxa in another record)

To ensure future reference, this report summarizes the findings and suggested changes to the 2004-2015 capture records on the survey database, with comments on special cases, and including reference weblinks to current taxonomy and photos on WoRMS and iNaturalist. Occasionally, more recent records (2016-2021) may be mentioned to confirm information on captures, especially for rare species.

As a final note on methods, this review based on captures, notes, and photos is not exhaustive, with further corrections likely necessary to be in the future. These will arise from systematic examination of individual measurements (incorrect values or taxon entered), as only certain obvious cases were investigated here. There are also numerous captured taxa documented in photos that are not recorded in the database, of which only a few are mentioned here when pertinent to the catch data for this exercise.

RESULTS

Review

The exercise was conducted for all 514 codes of 74,509 records from 2004 to 2015. Skate egg capsules and seaweed (likely debris) were reviewed, but not evaluated. In total, 344 codes had records with corrections, 175 for misidentifications, 135 for taxonomic level changes, 51 for catch values, and 72 suggested as contaminating or debris (Appendix 2). Key taxonomic revisions are shown in Table 2. For records, names were suggested to be modified (misidentification or taxonomic level) for 7,559 records, or approximately 10% of all captures. Weights and counts were also modified for 375 records, or about 0.5% of all captures.

Table 2. Selected taxonomic revisions performed for name changes (correction to another known taxon), replacements (change to a new taxon), and additions (new taxon), with a note for the reason for the change (taxon distribution, identified error, or photo evidence).

Code	Name	Action	Result	Note
12	<i>Myxine glutinosa</i>	change	<i>Myxine limosa</i>	distribution
97	<i>Dipturus laevis</i>	change	<i>Bathyraja spinicauda</i>	error
453	<i>Gaidropsarus</i>	change	<i>Enchelyopus cimbrius</i>	error
455	<i>Gaidropsarus argentatus</i>	change	<i>Enchelyopus cimbrius</i>	error
616	<i>Howella sherborni</i>	change	<i>Epigonus</i>	error
705	<i>Pholis gunnellus</i>	change	<i>Gymnelus viridis</i>	error
729	<i>Lycodes reticulatus</i>	change	<i>Lycodes lavalaei</i>	distribution
740	<i>Lycodes pallidus</i>	change	<i>Lycodes vahlII</i>	distribution
844	<i>Eumicrotremus spinosus</i>	change	<i>Eumicrotremus terraenovae</i>	distribution
862	<i>Liparis gibbus</i>	change	<i>Liparis bathyarcticus</i>	distribution
1380	Rhodaliidae	Add	added	photo
2153	<i>Ptychodactis patula</i>	Add	added	photo
2176	<i>Urticina felina</i>	replace	<i>Cribrinopsis similis</i>	distribution
2182	<i>Actinauge cristata</i>	replace	<i>Hormathia digitata</i>	distribution
2178	<i>Epizoanthus papillosa</i>	Add	added	photo
2190	<i>Paramuricea</i>	change	various	error
2681	<i>Reteporella grimaldii</i>	replace	<i>Phidolopora elongata</i>	distribution
3453	Velutiniidae	Add	<i>Onchidiopsis corys</i>	photo
3708	<i>Haminoe</i>	change	<i>Scaphander punctostriatus</i>	error
3895	<i>Dendronotus elegans</i>	Add	added	photo
3910	<i>Palio dubia</i>	change	<i>Colga villosa</i>	error
3965	<i>Doridoxa ingolfiana</i>	replace	<i>Aldisa zetlandica</i>	error
3970	<i>Cadlina laevis</i>	replace	<i>Aldisa zetlandica</i>	error
4179	<i>Placopecten magellanicus</i>	replace	<i>Similipecten greenlandicus</i>	error
4569	<i>Semirossia tenera</i>	change	<i>Rossia</i>	distribution
6084	<i>Calanus finmarchicus</i>	replace	<i>Hanleya hanleya</i>	photo
6588	<i>Lepas</i>	change	<i>Arcoscalpellum michelottianum</i>	distribution
6590	<i>Lepas hillii</i>	change	<i>Arcoscalpellum michelottianum</i>	distribution
8218	<i>Hyas coarctatus</i>	change	<i>Hyas aleuticus</i>	distribution
8444	<i>Lophaster furcifer</i>	Add	added	photo
8510	<i>Leptasterias</i>	replace	<i>Leptasterias groenlandica</i>	photo

8761	<i>Dendrodoa pulchellus</i>	Add	added	photo
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The following is a summary of the review and changes to the survey catch database. Weblinks are provided where deemed pertinent for names, photos, and special examples. Suggested changes are listed as recommendations to be applied. In some instances, changes will result in records being added, merged, or deleted, which will not be evident when consulting the survey database, and thus these actions are documented in detail whenever feasible. The Oracle database record modifications are still underway, being more complicated to perform for fish records and for deletions. For codes with no recommended changes, their cases are still summarized here to confirm the review of the captures.

Vertebrates

Code 1 Vertebrata (fish)

There were nine cases recorded of small (<5 g) unknown fish: five in 2007, two in 2008, and one each in 2012 and 2013. The one in 2007 from set 19, was a Silver Roughy, code 527, (see: <http://www.marinespecies.org/aphia.php?p=image&tid=126404&pic=31950>) and is kept in the MLI collection. In 2008, a specimen from set 81 had a written note for a Shorthorn Sculpin, but there is no photo and therefore it is to be placed in the genus *Myoxocephalus* (code 817). In 2012, set 15, code 1 designated two small Redfish (*Sebastes* sp., code 792) of 29 mm, 0.2 g and 31 mm, 0.2 g. In 2013, set 46, a specimen of 0.4 g had no other information.

Recommendations: In 2007, set 19, change code 1 to code 527, *Hoplostethus mediterraneus*. In 2008, set 81, change code 1 to code 817, *Myoxocephalus* sp. In 2012, set 15, change code 1 to code 792, *Sebastes* sp., and enter the measurements (29 mm, 0.2 g, 31 mm, 0.2 g).

Code 12 *Myxine glutinosa* (Atlantic Hagfish)

<urn:lsid:marinespecies.org:taxname:101170>
<https://inaturalist.ca/taxa/49096-Myxine-glutinosa>

There were 3,164 cases recorded. The Atlantic Hagfish is a northeast Atlantic (European) species, while the species present in the northwest Atlantic species is *Myxine limosa*, code 13 (<https://inaturalist.ca/taxa/317235-Myxine-limosa>), confirmed by genetic analyses (Fernholm et al. 2013). As of 2021, it is recorded on the survey as *M. limosa*.

As a deepwater fish, large captures at depth may be followed by some specimens collected at subsequent sets. There were 27 cases of catches above 150 m, with three cases above 100 m. For example, a specimen was recorded in 2008, set 221 (82 m), following the capture of 44 at set 220 (318 m). Similarly, an individual in 2014, set 120 (64 m), followed a capture of 46 individuals at the preceding set from 340 m. In 2014, at

set 155 (80 m), there was one individual recorded, while the previous tow had six individuals from 154 m, and 135 were recorded in the preceding tow at 326 m, making it likely that all individuals were originally from this latter catch.

Recommendations: Replace all instances of code 12 with code 13, *Myxine limosa*. Review small catches from shallow depths (<160 m). Remove these contaminants from the catch, or to add to the previous line if the original catch is identified.

Code 15 *Petromyzon marinus* (Marine Lamprey)

<urn:lsid:marinespecies.org:taxname:101174>

<https://inaturalist.ca/taxa/49223-Petromyzon-marinus>

There were three cases recorded, of individuals in photos from 2011, 2013, and 2015.

Recommendations: None to declare.

Code 24 *Squalus acanthias* (Spiny Dogfish)

<urn:lsid:marinespecies.org:taxname:105923>

<https://inaturalist.ca/taxa/52306-Squalus-acanthias>

There were 10 cases recorded. The Spiny Dogfish is a relatively small (about 1 m) pelagic shark, more commonly seen south of the survey region and rarely present in catches with bottom trawl, with only nine catches of a few individuals, and a verified case of 21 individuals in 2005, set 114. Spiny Dogfish is easily distinguished from the Black Dogfish, *Centroscyllium fabricii*, code 27, which is the only other shark species in the database.

Occasionally, large species such as a Basking Shark (*Cetorhinus maximus*) in 2010 and a Greenland Shark (*Somniosus microcephalus*) in 2015, are noted on the capture sheets and in photos. These were not measured or weighed before being released into the sea, and therefore there was no record of large sharks in the survey database for the period 2004-2015. Basking Sharks are also observed alongside the ship during the survey, usually near northeast Anticosti Island (<https://inaturalist.ca/observations/42105957>). Other large species, such as the Porbeagle (*Lamna nasus*), and a recent arrival to the northern Gulf, the Blue Shark (*Prionace glauca*), may be caught by longlining fishing boats, also when near Anticosti Island (<https://inaturalist.ca/observations/42000994>), but they are too fast to be caught in a bottom trawl. Sometimes mistaken for the more common porbeagle is another large species, the Great White Shark (*Carcharodon carcharias*), a common predator of seals (Phocidae), that may be venturing more often into the region, as indicated by satellite tracks of tagged individuals recorded along the Laurentian Channel in 2020 and 2021 (<https://www.ocearch.org/tracker/>).

Recommendations: None to declare for this species. However, suggest modifying the survey protocol to record rare catches of large shark species in the survey database by estimating weights according to lengths, either directly measured or in photos.

Code 27 *Centroscyllium fabricii* (Black Dogfish)

<urn:lsid:marinespecies.org:taxname:105906>

<https://inaturalist.ca/taxa/96968-Centroscyllium-fabricii>

There were 241 cases recorded. The Black Dogfish is a small deepwater shark, frequent and abundant in the Laurentian Channel, especially off the slope of the Gaspé Peninsula. There were no catches above 200 m depth. Similar species occur at greater depths in the Atlantic Ocean, but none of these have been confirmed for the St. Lawrence.

Recommendations: None to declare.

Code 55 Scyliorhinidae (Catsharks, Family)

<urn:lsid:marinespecies.org:taxname:105693>

<https://inaturalist.ca/taxa/51892-Scyliorhinidae>

There was only one catch record for this taxon, in 2012, set 87. This record was in fact 55 individuals of a sea anemone, code 2158, *Bolocera tuediae*, weighing 11 kg. The value of 55 was confused for the shark taxon code.

Recommendations: Confirm deletion of the sole record of code 55 as the capture has now been entered under the taxon code 2158.

Code 80 Rajiformes (Skates, Order)

<urn:lsid:marinespecies.org:taxname:10216>

<https://inaturalist.ca/taxa/47272-Rajiformes>

There were 14 cases recorded, 12 on the first survey in 2004 and two in 2005. Following the 2004 survey, for set 6, J.-D. Dutil (Access database, custodian: C. Nozères) identified a skate of 286 mm as *Bathyraja spinicauda*, code 102 (identifier in Dutil records: 04006141), which corresponded to code 80, specimen 3008, in the survey database. There were seven other large (468 mm to 1002 mm) specimens not identified in this set, and eight other small (<180 mm) specimens of *Amblyraja radiata* and *Malacoraja senta*. Based on the length-weight regressions, these appear to be *A. radiata* (code 90), not *M. senta* (code 91). Measurements were used to deduce the following corrections: for set 7, one specimen is *M. senta* and the other three are *A. radiata*; in set 8, one is *B. spinicauda* and 10 are *A. radiata*; for set 9, one is *B. spinicauda* and five are *A. radiata*, for sets 23 and 56, the specimen is *A. radiata*; for set 65, specimen 3001 is *A. radiata* and 3002 is *B. spinicauda*.

Recommendations: In 2004, set 6, code 80, change specimen 3008 to code 102 and the remaining seven to code 90. In set 7, code 80, change the specimens 3004, 3007, 3008 to code 90 and specimen 3009 to code 91. For sets 8 and 9, change code 80, specimen 3005, to code 102, then place the other specimens in code 90. For both sets

23 and 56, place all specimens of code 80 in code 90. In set 65, place specimen 3001 in code 90 and 3002 in code 102.

Code 90 *Amblyraja radiata* (Thorny Skate)

urn:lsid:marinespecies.org:taxname:105865

<https://inaturalist.ca/taxa/48402-Amblyraja-radiata>

There were 1,677 cases recorded. Thorny skate is the most frequent and abundant skate on the survey. Small specimens (<200 mm) are often confused with the Smooth Skate (*Malacoraja senta*, code 91) which also has dorsal thorns when small. However, the two species may be distinguished by their differing sizes upon hatching from egg capsules, the Smooth Skate being <100 mm and Thorny Skate >100 mm. The smooth skate is also proportionately lighter than the Smooth Skate, which is evident in length-weight regressions if measurements are available for specimens. Using this information, several specimens entered in code 90 were either too small (<100 mm) or too light relative to their length to be Thorny Skate. In 2006, 70 sets may have juveniles that need review. In 2007, the key character of yellow tail spots on juvenile Smooth Skates was used for the first time, resulting in fewer errors that year. Measurements suggest some errors have continued with each survey, especially for smaller specimens.

Recommendations: Change the code 90 for specimens that are <100 mm in length, but without weight, to code 91. Evaluate the relationship of length-weight measurements for code 90 juvenile specimens (100–200 mm) and change to either code 91 or 94 when length-weight values plot as expected on species-specific regression curves.

Code 91 *Malacoraja senta* (Smooth Skate)

urn:lsid:marinespecies.org:taxname:158554

<https://inaturalist.ca/taxa/105124-Malacoraja-senta>

There were 1,353 cases recorded. Large specimens of Smooth Skate are difficult to confuse with any other species, but small ones are thorny and could have been listed as code 90, Thorny Skate (see section above). This seems to be the case in 2006, set 31, where there was one large Smooth Skate, then 17 small skates entered in code 90 (Thorny Skate), seven of which measured <100 mm in length, and therefore were most likely Smooth Skates. In 2008, the total Code 91 catch of set 126 was 1.05 kg, with 0.786 kg non-measurable, giving a catch sample weight of 0.264 kg recorded on the entry sheet. In the database, this was incorrectly entered as 0.0263 kg in sample weight whereas the 14 measured specimens summed to 0.306 kg. As the total catch abundance is extrapolated from sample weight and abundance, this resulted in an abnormally high abundance of 559 individuals, when there likely were only 15 individuals: 14 measured, and at least one large specimen that was damaged but not measured. In 2014, set 7, there were two small smooth skates recorded. On the sheet, the value of 0.0010 kg is crossed out and replaced by 0.011 kg. In the database, the value displayed is 0.0001 kg in capture, which is abnormally low.

Recommendations: In 2008, set 126, change the sample weight from 0.0263 to 0.264 kg. Remove the value of 559 from total abundance and replace by 15 or no value. In 2014, set 7, change the catch and sample weight from 0.0001 to 0.011 kg.

Code 94 *Rajella fyllae* (Round Skate)

urn:lsid:marinespecies.org:taxname:105894

<https://inaturalist.ca/taxa/111545-Rajella-fyllae>

There were 10 cases recorded. This small, deepwater species was not known during the previous catch review by Dutil et al. (2006) and was confirmed in photo for the first time in 2007, set 28. The following year, in 2008, set 29, a large specimen of 2.5 kg was recorded on the sheet as Skate sp. It was later recorded in the database as Round Skate. Further review by photo and location (shallow water, off west coast of Newfoundland) indicates this was a Winter Skate (*Leucoraja ocellata*, code 100). The large size suggests it is probably of the Atlantic-type population and not the endemic population of the southern Gulf (Gauthier and Nozères 2016).

Round Skate has the longest tail and is thus proportionally lighter than the five other skate species in the region, which can be useful for validation. In 2012, set 133, specimen 3001 is reported as 555 mm but should be 455 mm for a weight of 464.4 g. In 2013, set 81, there was a small specimen that seems to have the heavier weight characteristic of a Thorny Skate, but it cannot be verified (no photo). On the entry sheet is written: 'Inscribed as a Round Skate. To be checked'. It does not appear that there was a post-survey verification. In 2016, there was a large specimen of 458 mm and 830 g in measurements, but listed as 0.45 kg in catches, which seems more likely.

Recommendations: Check whether the case of code 94 in 2008, set 29, was modified for code 100. Check if necessary to correct the following measurements: in 2012, set 133, change the length from 555 mm to 455 mm; in 2016, set 104, change the measurement weight from 830 g to the catch weight of 0.45 kg. In future, photograph all Round Skates to ensure this very rare species is correctly recorded.

Code 97 *Dipturus laevis* (Barndoor Skate)

urn:lsid:marinespecies.org:taxname:158548

<https://inaturalist.ca/taxa/99407-Dipturus-laevis>

A single capture in 2005, set 228, is seen in photos as a Spinytail Skate, (*Bathyraja spinicauda*, code 102). In the review for 1990-2004 (Dutil et al. 2006), no records were confirmed for Barndoor Skate in northern Gulf surveys. Numbers of this species have been greatly reduced in the Northwest Atlantic in recent decades, which could be a factor in its absence, if ever it was present (Cavanaugh and Damon-Randall 2009).

Recommendations: In 2005, set 228, change code 97 for code 102, *Bathyraja spinicauda*.

Code 100 *Leucoraja ocellata* (Winter Skate)

[urn:lsid:marinespecies.org:taxname:158553](https://www.marinespecies.org/taxname/158553)

<https://inaturalist.ca/taxa/104540-Leucoraja-ocellata>

Prior to the current review, there were eight records of this endangered species from the survey, none of which seems probable. Errors occur because Thorny and Round Skate are similar in coloration and shape. Round Skate is proportionally lighter due to a longer tail, while the patterns of tail thorns are used to distinguish Thorny from Winter Skate.

Winter Skate in the region are from one of two populations: the large Atlantic type encountered on the west coast of Newfoundland, and the small, early-maturing type endemic to the southern Gulf that was also once seen in the St. Lawrence estuary, (<https://www.marinespecies.org/aphia.php?p=image&tid=158553&pic=40968>) (Gauthier and Nozères 2016). The very low population numbers and nearshore habitat of Winter Skate makes them unlikely to be captured on the survey. The only confirmed Winter Skate was an Atlantic-type specimen misidentified in 2008 as a Round Skate (see above). More recently, in 2017 and 2021, two large Atlantic-type Winter Skates were again collected from shallow depths (80-160 m) off the southwest coast of Newfoundland.

Recommendations:

2004, set 5, 434 m depth, change to code 94 (*R. fyllae*). Length is 110 mm, not 11 mm;

2004, set 11, 341 m depth, from measurements, change to code 91 (*M. senta*);

2004, set 51, 278 m depth, without measurement, to be coded 88 (Rajidae);

2005, set 155, 292 m depth, from measurements, change to code 90 (*A. radiata*);

2005, set 195, 123 m depth, from measurements, change to code 90 (*A. radiata*);

2005, set 198, 203 m depth, from measurements, change to code 90 (*A. radiata*);

2006, set 10, 375 m depth, from photos, change to code 94 (*R. fyllae*).

Code 102 *Bathyraja spinicauda* (Spinytail Skate)

[urn:lsid:marinespecies.org:taxname:105868](https://www.marinespecies.org/taxname/105868)

<https://inaturalist.ca/taxa/95526-Bathyraja-spinicauda>

There were 41 cases recorded for this species, usually of single individuals. While the species is easily distinguished by its very large size, grey-mauve colour, and tail spines, sometimes errors have occurred during data entry due to confusion with the names of two other species: the Barndoor Skate (*Dipturus laevis*, code 97), because the name indicates it is large, and the Thorny Skate, (*Amblyraja radiata*, code 90), which is called 'raie épineuse' in French, similar to the name 'raie à queue épineuse' for *B. spinicauda* which is written shorthand as 'raie. q. épin.' and then selected as 'raie épineuse' on the dropdown name list during data entry. These errors are verifiable by reviewing capture sheets or measurements. Three cases were Thorny Skates according to their abundance and measurements, including one in 2014, set 15, with 'raie épineuse (sp90)' written on

the sheet. There were also cases with improbable values for individual measurements. In 2005, set 26, there were two measured individuals, one recorded at sea for 89.9 g and another done post-survey (MLI collection, specimen no. 5001), for 90 g. The second specimen is a duplicate record. This is an example of the need to have a unique identifier per specimen to trace records in the database, including those examined post-survey.

There was a special case in 2006, set 37, from 92 m depth. The 1.35 kg individual is confirmed in photos, but the shallow depth is extraordinary for this deepwater species, usually captured at >200 m (<https://obis.org/taxon/105868>). On the other hand, the previous set was at 342 m. The large flat disk sometimes makes these skates stick to ship ramps, as occurs when releasing them live after measurement or receiving them in the ship hold (C. Nozères, pers. obs.). It seems plausible that this individual came from the deepwater set but was not washed down to the sorting belt until the next set.

Recommendations:

In captures, change code 102 for code 90 in:

2005, set 44 (17 Thorny Skates) and 158 (12 Thorny Skates);

2007, set 70 (7 Thorny Skates);

2014, sets 14 and 15.

In measurements:

2005, set 26, delete the duplicate of specimen 5001 (same as that of 3001);

2009, set 100, change length of 1730 to 1130 mm (more likely by weight);

2012, set 112, 345 mm, change weight of 64.1 g for 164.5 g (as entered in catches).

In contaminants:

2006, set 37, move the capture to the preceding set 36.

Code 150 *Clupea harengus* (Atlantic Herring)

<urn:lsid:marinespecies.org:taxname:126417>

<https://inaturalist.ca/taxa/97990-Clupea-harengus>

There were 1,201 cases recorded of this common, pelagic species. In 2006, set 42, the sheet notes Herring, 2.24 kg, for 1, while in measurements, the specimen was 222 g for 286 mm, which is more likely correct.

Recommendations: In 2006, set 42, for code 150, change weight from 2.24 to 0.222 kg.

Code 152 *Alosa sapidissima* (American Shad)

<urn:lsid:marinespecies.org:taxname:158670>

<https://inaturalist.ca/taxa/49243-Alosa-sapidissima>

There were two cases recorded. A small specimen in 2012, set 210, 13 g, was confirmed by photo. The case in 2011, set 156 had 6 smaller specimens of 5 to 7 g. None had

lengths, which would be useful as Shad are deeper-bodied than herring and should have different length-weight regression curves. Presumably, these small specimens had spots like Shad <https://www.marinespecies.org/aphia.php?p=image&tid=158670&pic=31949>. Of note, both cases occurred near Rimouski where small specimens are occasionally sampled in the eelgrass beds, as seen with the example linked above.

Recommendations: In future, either conserve or weigh and measure length for specimens of all rare species.

Code 168 *Xenodermichthys copei* (Bluntnout Slickhead)

<urn:lsid:marinespecies.org:taxname:126714>

<https://inaturalist.ca/taxa/317453-Xenodermichthys-copei>

There were five cases recorded since 2011, with single specimens of this deepwater pelagic fish, all confirmed by photo.

Recommendations: None to declare.

Code 187 *Mallotus villosus* (Capelin)

<urn:lsid:marinespecies.org:taxname:126735>

<https://inaturalist.ca/taxa/165100-Mallotus-villosus>

There were 1,393 cases recorded. Once considered pan-boreal, the North Pacific type of Capelin was recently separated as a second species, *Mallotus catervarius* (Mecklenburg et al. 2018). Two morphotypes are encountered in the North Atlantic. In the northern Gulf, the larger 'blueback' kind is may be observed near the Strait of Belle Isle.

Recommendations: In future, confirm status of different types encountered in the region.

Code 188 *Osmerus mordax* (Rainbow Smelt)

<urn:lsid:marinespecies.org:taxname:126737>

<https://inaturalist.ca/taxa/179504-Osmerus-mordax>

There was one case recorded in 2008, set 205, at great depth (241 m), and entered as 'smelt' on the sheet. While no photo exists, the record was confirmed by survey staff and is presumed correct. This is an exceptional case for a common coastal species otherwise never seen on this survey.

Recommendations: In future, photograph or conserve rare species.

Code 192 Argentinidae (Argentines, Family)

<urn:lsid:marinespecies.org:taxname:125508>

<https://inaturalist.ca/taxa/51409-Argentinidae>

There were four cases recorded, all on the first survey in 2004. The only species present in the region is *Argentina silus*, code 193.

Recommendations: Change the four cases in code 192 to code 193, *Argentina silus*.

Code 193 *Argentina silus* (Greater Argentine)

<urn:lsid:marinespecies.org:taxname:126715>

<https://inaturalist.ca/taxa/318007-Argentina-silus>

There were 45 cases recorded. The species is distinctive, with large eyes and a small mouth, but juvenile specimens may be mistaken for other pelagic fishes. The largest catch was in 2005, set 12, with 45 individuals totaling 13 kg, including the largest specimen recorded: 395 mm for 780 g (confirmed in photo). The first three specimens (3001, 3002, 3003) should have 100 mm added to each of their lengths. In 2006, set 8, there were 2 specimens, also seen in photos, but no value is shown in abundance.

Recommendations: In 2005, set 12, for code 193, add 100 mm to each of specimens 3001, 3002, 3003. In 2006, set 8, for code 193, change the number captured from 0 to 2.

Code 202 *Bathylagus euryops* (Goiter Blacksmelt)

<urn:lsid:marinespecies.org:taxname:126719>

<https://inaturalist.ca/taxa/459177-Bathylagus-euryops>

There was one case recorded in 2013, confirmed in photos.

Recommendations: None to declare.

Code 205 Gonostomatidae (Bristlemouths, Family)

<urn:lsid:marinespecies.org:taxname:125601>

<https://inaturalist.ca/taxa/85792-Gonostomatidae>

There were 31 cases recorded of these luminous fish. 'Cyclothone' was written in seven cases on the sheets. In 2010, set 106, the specimen was recorded as Largescale Lanternfish (= *Neoscopelus macrolepidotus*), but without a photo. The size of individuals might help, as cyclothones are small (1 g or less) relative to other luminous fish. The use of several names for luminous fish is a longstanding issue even in recent years. Photos or measurements are needed to validate order, family, genus, or species. Length should be standard (to caudal peduncle) as total length may be unreliable for these fragile fish.

Recommendations:

Change code 205 to code 208 (*Cyclothone microdon*) for:

2005, set 26 and 28, according to sheet, and weight;
2006, set 102, according to photo, an individual to be added to code 208;
2008, sets 109, 119, and 126, according to sheets;
2009, set 95, according to sheets;
2011, sets 150 and 151, according to capture sheets.

Validate whether all in code 205 should be changed to 208 based on individual weight <1 g.
In 2010, line 1006, change code 205 to code 278, *Neoscopelus macrolepidotus*.

Code 206 *Cyclothone* sp. (Bristlemouths, Genus)

urn:lsid:marinespecies.org:taxname:126187
<https://inaturalist.ca/taxa/87782-Cyclothone>

There was one case recorded in 2005, validated by photo as *Cyclothone microdon*.

Recommendation: In 2005, set 214, change code 206 for code 208, *Cyclothone microdon*.

Code 208 *Cyclothone microdon* (Smalltooth Bristlemouth)

urn:lsid:marinespecies.org:taxname:127286
<https://inaturalist.ca/taxa/217974-Cyclothone-microdon>

There were 31 cases recorded. A tiny mesopelagic fish, extremely abundant, but very rarely noticed in bottom trawl samples. Several cases were confirmable by photos.

Recommendations: None to declare.

Code 214 *Maurollicus muelleri* (Mueller's Pearlside)

urn:lsid:marinespecies.org:taxname:127312
<https://inaturalist.ca/taxa/459325-Maurollicus-muelleri>

There was one case recorded, in 2012, set 74, that was conserved and photographed.

Recommendations: None to declare.

Code 220 Sternoptychidae (Hatchetfishes, Family)

urn:lsid:marinespecies.org:taxname:125603
<https://inaturalist.ca/taxa/86081-Sternoptychidae>

There were four cases were recorded. From photos, two were *Argyropelecus gigas* and one was a *Polyipnus clarus*. In 2012, set 1, has a note for 'silver hatchet, 2.8 g', and measured 55 mm, which fits with other *Polyipnus clarus* records.

Recommendations: Change code 220 to 222, *Polyipnus clarus* in 2007, set 201. Change code 220 to 225, *Argyropelecus gigas* in 2007, set 94, and in 2008, set 130.

Code 221 *Argyropelecus aculeatus* (Silver Hatchetfish)

<urn:lsid:marinespecies.org:taxname:127306>

<https://inaturalist.ca/taxa/459327-Argyropelecus-aculeatus>

There was one case recorded in 2013, set 76, validated by photo as *Argyropelecus gigas*.

Recommendations: In 2013, set 76, change code 221 for code 225, *A. gigas*.

Code 222 *Polyipnus clarus* (Slope Hatchetfish)

<urn:lsid:marinespecies.org:taxname:158840>

<https://inaturalist.ca/taxa/109976-Polyipnus-clarus>

There were 18 cases recorded from 2004-2015; four were validated with photos.

Recommendations: None to declare.

Code 225 *Argyropelecus gigas* (Greater Silver Hatchetfish)

<urn:lsid:marinespecies.org:taxname:127308>

<https://inaturalist.ca/taxa/459328-Argyropelecus-gigas>

There were two cases recorded, in 2004, set 140 and 2011, set 106. The latter has no photos, but the specimen from 2004 is conserved in the MLI collection (no. 11725, <https://www.marinespecies.org/aphia.php?p=image&tid=127308&pic=49612>).

Recommendations: None to declare.

Code 227 *Chauliodus sloani* (Sloan's Viperfish)

<urn:lsid:marinespecies.org:taxname:127338>

<https://inaturalist.ca/taxa/120645-Chauliodus-sloani>

There were six records of this bathypelagic fish, with four validated by photos. In 2010, set 15, the specimen, examined post-survey, has incorrect measurements as the photo shows a length of at least 130 mm, while the database has 79 mm or 1.6 g. It was not recorded on the entry sheet. Previously, on set 13, a specimen measured 149 mm and 8.9 g, suggesting this latter one could be estimated as 140 mm total length and 8 g.

Recommendations: In 2010, set 15, for code 227, change weight from 0.0016 to 0.008 kg; in measurements, change length from 79 to 140 mm and weight from 1.6 to 8 g.

Code 230 *Stomias boa* (Boa Dragonfish)

urn:lsid:marinespecies.org:taxname:158737 (as *Stomias boa ferox*)

<https://inaturalist.ca/taxa/786506-Stomias-boa-ferox>

There were five cases recorded, four with photos. A deepwater species. The recognized type in the North Atlantic is the subspecies *ferox*, code 236.

Recommendations: Update all cases of code 230 to code 236, *Stomias boa ferox*.

Code 234 *Borostomias antarcticus* (Snaggletooth)

urn:lsid:marinespecies.org:taxname:127334

<https://inaturalist.ca/taxa/459178-Borostomias-antarcticus>

There was one case recorded in 2013, set 61, 481 m, and validated in photos.

Recommendations: None to declare.

Code 271 Myctophiformes (Lanternfish, Order)

urn:lsid:marinespecies.org:taxname:10309

<https://inaturalist.ca/taxa/85530-Myctophiformes>

There were four cases recorded. In 2004, set 121, a 'lantern, 7.2 g' is written on the sheet. It may have been Myctophidae, code 272, but this could not be confirmed. Another case in 2006, set 15, is noted as 'Neoscopelidae, Order Myctophiformes', which is confirmed by photo as *Neoscopelus macrolepidotus*. In 2013, set 103, a specimen in poor condition was seen in a photo but its identity was not certain. In recent years, the code 271 is often used to record larger myctophids when uncertain, usually for *Notoscopelus kroyeri*.

Recommendations: In 2006, set 15, change code 271 for code 278, *Neoscopelus macrolepidotus*. In future, photograph or conserve specimens for validation.

Code 272 Myctophidae (Lanternfish, Family)

urn:lsid:marinespecies.org:taxname:125498

<https://inaturalist.ca/taxa/85910-Myctophidae>

There were 174 cases recorded. The family consists of several bathypelagic species that are difficult to identify without noting the photophores on their fragile skin which is often damaged when hauled up in the net. Several species are present, represented by two subfamilies: Myctophinae <100 mm (e.g., *Benthoosema glaciale*, *Myctophum punctatum*), and Lampanyctinae >100 mm (*Notoscopelus kroyeri*, *Lampadena speculigera*, *Lampanyctus macdonaldi*). A few records were of the Largescaled Lanternfish, *Neoscopelus macrolepidotus*, Family Neoscopelidae, confirmed in 2006, set 126 and 2007, set 27. At the beginning of the survey, in 2004, set 2, a code 272 is noted as

'snailfish', which is likely of the abyssal and dark *Paraliparis* sp., code 854. In 2015, set 79, photos revealed two large *N. kroyeri* and one *M. punctatum*, though the remaining specimens in the capture were not photographed and are unconfirmable.

Recommendations:

2004, set 2, change code from 272 to 854, *Paraliparis*, and weight from 0.01 to 0.003 kg.
2006, set 126, change code from 272 to 278, *Neoscopelus macrolepidotus*.
2007, set 27, change code from 272 to 278, *Neoscopelus macrolepidotus*.
2015, set 79, change specimens 3001, 3002 from code 272 to code 275, *Notoscopelus kroyeri*, and specimen 3003 to 281 *Myctophum punctatum*, then update the catch and abundance values for code 272.

Review all cases with individual measurements. In the future, take photos and measure standard length whenever feasible (at sea or conserved specimens).

Code 273 *Notoscopelus* sp.

<urn:lsid:marinespecies.org:taxname:125831>
<https://inaturalist.ca/taxa/90370-Notoscopelus>

There were two cases recorded in 2011. Only one species is found in the Atlantic, *Notoscopelus kroyeri*, sometimes incorrectly listed as *Notoscopelus elongatus kroyeri*. At set 93, this was a *N. kroyeri* along with two small myctophids. At set 94, there is a photo of *N. kroyeri* with a note for *Lampadena speculigera*, a more robust myctophid.

Recommendations: In 2011, set 93, change code 273 to 272, Myctophidae, and modify the catch weight from 0.0127 kg for 3 individuals to 0.0039 kg for 2 individuals, then make a new record for a specimen in code 275, *Notoscopelus kroyeri*, with a catch weight of 0.0088 kg. For set 94, change code 273 to 275, *Notoscopelus kroyeri*.

Code 275 *Notoscopelus kroyeri* (Lancetfish)

<urn:lsid:marinespecies.org:taxname:272728>
<https://inaturalist.ca/taxa/458048-Notoscopelus-kroyeri>

There were six cases recorded with several individuals each, five of which were occurred from 2011 and 2012. A large lanternfish (subfamily Lampanyctinae), catches may be recorded in Myctophiformes (code 271), to distinguish these larger specimens in the database from the smaller *Benthosema* and *Myctophum* types (subfamily Myctophinae) recorded under Myctophidae (code 272), although this practice occurred mostly in recent years. Lanternfishes were rarely measured or photographed. When this information exists, some may be confirmed by size (larger than 100 mm or 10 g) and number to be *N. kroyeri* as, unlike this species, the other species in Lampanyctinae were only solitary individuals in the catches.

Recommendations: Review Myctophidae and Myctophiformes to see if large specimens could be recoded as *Notoscopelus kroyeri*. In future, measure standard length and take photos for validation.

Code 278 *Neoscopelus macrolepidotus* (Large-scaled Lanternfish)

urn:lsid:marinespecies.org:taxname:126634

<https://inaturalist.ca/taxa/225733-Neoscopelus-macrolepidotus>

There were 10 cases recorded of this large lightfish species, usually as one or two individuals, except in 2005, set 23, with eight individuals for 0.1072 kg (including two conserved at the Atlantic Reference Center-Huntsman Marine Science Center). On the catch sheet is noted Myctophidae, 79.0 g for 36 individuals and Poisson [Fish] sp., 26.2 g for two. Dutil et al. (2006) recorded the latter as 104 mm, 12.2 g and 118 mm, 16 g, which is similar to values recorded in other catches. In 2015, set 92, photos suggest one specimen may be the lightfish, *Polymetme corythaeola*, but this is uncertain. In set 100, photos more clearly indicated *P. corythaeola*. This species has been confirmed in several catches after 2015.

Recommendations: In 2005, set 23, change the catch to the two measured specimens of 0.0282 kg, and create a new record for code 272, Myctophidae, 0.079 kg for 36. In 2015, set 100, change code 278 to code 244, *Polymetme thaeocoryla*.

Code 285 *Lampadena speculigera* (Mirror Lanternfish)

urn:lsid:marinespecies.org:taxname:126608

<https://inaturalist.ca/taxa/222641-Lampadena-speculigera>

There were 12 cases recorded, but only one was correct (in 2006, set 126). This is an easily identifiable species in catches because of its relatively robust and large body. However, it is rare and solitary, and may be mistaken for the other large, but more common and abundant species, *Notoscopelus kroyeri*. The latter is more fragile (lose their scales easily), unlike *L. speculigera*.

Recommendations:

2006, set 111, change code 285 to code 272, Myctophidae.

2007, set 91, add the measured values in sample: 0.0212 kg for 120 mm.

2015, sets 3, 94, 95, 98, 100, 102, 114, 117: depending on the measurements of the specimens, change code 285 to 272, Myctophidae, or 275, *N. kroyeri*.

2016, set 106, change the code from 285 to 275, *N. kroyeri*.

Code 290 *Benthoosema glaciale* (Glacier Lanternfish)

urn:lsid:marinespecies.org:taxname:126580

<https://inaturalist.ca/taxa/215151-Benthoosema-glaciale>

There were two cases recorded, in 2005, sets 2 and 4, and 2015, set 102. It is difficult to identify because specimens are often in poor condition when recorded in catches. Dissection for otoliths will distinguish *B. glaciale* from *Myctophum punctatum*, another small myctophid (subfamily Myctophinae) common in the region and confirmed on the survey in 2016. While likely abundant, these mesopelagic fishes are not easily captured in a bottom trawl, and when present, may be overlooked as debris.

Recommendations: In future, measure standard length and conserve specimens to examine otoliths for confirmation.

Code 320 *Arctozenus risso* (White Barracudina)

[urn:lsid:marinespecies.org:taxname:126352](https://marinespecies.org/taxname/126352)

<https://inaturalist.ca/taxa/214112-Arctozenus-risso>

There were 1,142 cases recorded. A mesopelagic species, frequent in deepwater catches, their long, fragile bodies may become entangled in net mesh. There were 72 captures above 200 m depth, and 13 captures (in small quantities) above 100 m, all of which may be contamination from the larger catches at greater depth in preceding sets.

Recommendations: Validate catches from sets at 50 to 200 m depth or flag these records as contamination.

Code 368 *Nemichthys scolopaceus* (Slender Snipe Eel)

[urn:lsid:marinespecies.org:taxname:126306](https://marinespecies.org/taxname/126306)

<https://inaturalist.ca/taxa/67619-Nemichthys-scolopaceus>

There were eight cases recorded of this very slender and rare bathypelagic species. The specimen seen in photos in 2006, set 22, is *Serrivomer beanii*, code 369. Another specimen, in 2015, set 114, was written as 'Avocet' (French name of the species) on the capture sheet and was relatively heavy (57 g). Confirmed specimens caught on a later survey (2017) had similar weights, so the earlier record seems reasonable.

Recommendations: For 2006, set 22, change code from 368 to 369, *Serrivomer beanii*.

Code 369 *Serrivomer beanii* (Stout Sawpalate)

[urn:lsid:marinespecies.org:taxname:126319](https://marinespecies.org/taxname/126319)

<https://inaturalist.ca/taxa/459451-Serrivomer-beanii>

There were three cases recorded, all in 2004, of this deepwater species, with measurements like those of Snipe Eel. No value was entered on the capture sheet for set 4, while 'Avocet ruban' (French name of the species) was written down for sets 5 and 9.

Recommendations: For 2004, change code 369 to code 368, *Nemichthys scolopaceus*.

Code 373 *Synaphobranchus kaupii* (Northern Cutthroat Eel)

[urn:lsid:marinespecies.org:taxname:126328](https://marinespecies.org/taxname/126328)

<https://inaturalist.ca/taxa/113564-Synaphobranchus-kaupii>

There were eight cases recorded, five with photos, of this deepwater eel that is common in the Atlantic Ocean. An unusual, shallow water (73 m) case was in 2012, set 42, 42 g for 1. The entry sheet has 'anguille égorgée bécue [cutthroat eel], 373, 1, 0.042' added on the bottom, evidently written during a post-survey review done on 2012-09-13. The preceding set 41, 58 m, was difficult on rough bottom. Both sets were very cold (0.5°C) and had shallow water rock shore species such as *Gymnelus viridis*. The size is also unusual as other specimens were either smaller (10 or 20 g) or larger (100-260 g) and from warmer water (5-6°C). It is likely the specimen was mistaken for the set number. This species was also captured in 2012 at set 113, with 2 specimens for 0.36 kg, but measurements had 155 and 90 g (total=245 g), and thus missing 115 g, which is still too much to be the unusual 42 g specimen of set 42, and thus cannot be explained.

Recommendations: In 2012, set 42, for code 373, flag capture as invalid, with comment stating the original set number is unknown, or delete the record.

Code 398 *Scomberesox saurus* (Atlantic Saury)

[urn:lsid:marinespecies.org:taxname:126392](https://marinespecies.org/taxname/126392)

<https://inaturalist.ca/taxa/120672-Scomberesox-saurus>

There were 17 cases recorded of this warmwater, epipelagic species, mostly from 2006.

Recommendations: None to declare.

Code 422 Gasterosteidae (Sticklebacks, Family)

[urn:lsid:marinespecies.org:taxname:125476](https://marinespecies.org/taxname/125476)

<https://inaturalist.ca/taxa/48405-Gasterosteidae>

There was one case recorded in 2012, set 51. The sheet has 'épineche' [stickleback]. The species captured in the survey is *Gasterosteus aculeatus*, code 426.

Recommendations: In 2012, line 51, change code 422 to code 426, *Gasterosteus aculeatus*.

Code 426 *Gasterosteus aculeatus* (Threespine Stickleback)

[urn:lsid:marinespecies.org:taxname:126505](https://marinespecies.org/taxname/126505)

<https://inaturalist.ca/taxa/48403-Gasterosteus-aculeatus>

There were 85 cases recorded of this small pelagic fish, usually as single individuals or in small numbers. Only a few cases had photos, but no unusual values were noticed.

Recommendations: None to declare.

Code 430 Gadiformes (Codfishes, Order)

urn:lsid:marinespecies.org:taxname:10313

<https://inaturalist.ca/taxa/63741-Gadiformes>

There was one case recorded, in 2009, set 80, depth 83 m, 0.0004 kg, 3.7 cm, listed as 'unknown fish'. On the same set were 26 large (24-60 cm) Atlantic Cod, *Gadus morhua*, code 438, and eight small (10-11 cm) Arctic Cod, *Boreogadus saida*, code 451.

Recommendations: Unable to confirm or refute, so no change is suggested.

Code 436 Gadidae (Codfishes, Family)

urn:lsid:marinespecies.org:taxname:125469

<https://inaturalist.ca/taxa/63742-Gadidae>

There were five cases recorded. This group is used for juveniles gadids that were difficult to identify to species level. In 2008, set 23, is written 'Gadidae (merluche écureuil [squirrel hake])', which is a southern species, *Urophycis chuss*, not present in the region. The photo is suggestive of White Hake, *Urophycis tenuis*, code 447. In 2009, set 64, a small gadid of 46 mm, 0.8 g, was taken with a large catch of Atlantic Cod, *Gadus morhua*, code 438. Also in 2009, set 114, another small specimen of 29 mm, 0.7 g, was taken at the same place as Fourbearded Rockling, *Enchelyopus cimbrius*, code 461. In two instances, the specimen was an Arctic Cod, *Boreogadus saida*, code 451: in 2012, set 22, according to the entry sheet; and in 2013, set 18, according to the photo.

Recommendations:

2008, set 23, add specimen in code 436 to those in code 447, totaling 2.4169 kg for 7.

2009, validate the cases according to the measurements in the case of cod or rockling.

2012, set 22, change code 436 to code 451.

2013, set 18, add the specimen in code 436 to code 451, to make 0.0132 kg for 2.

Code 437 *Gadus* sp. (Codfishes, Genus)

urn:lsid:marinespecies.org:taxname:125732

<https://inaturalist.ca/taxa/63743-Gadus>

There was one case recorded, in 2013, set 120, for a small (59 g) specimen, with photos showing it as *Gadus ogac* (<https://inaturalist.ca/observations/90951912>). This code is for juveniles (<20 cm) of Atlantic Cod, *Gadus morhua*, code 438, or Greenland Cod, *Gadus ogac*, code 439. In some instances, differing colour patterns and a strongly arched,

broken lateral line can be used to identify *Gadus ogac* (Corey Morris, DFO-NL, pers. comm, Aug. 2021). Genetic analyses should be performed when in doubt.

Recommendations: In 2013, set 120, change code 437 to code 439, *Gadus ogac*.

Code 438 *Gadus morhua* (Atlantic Cod)

[urn:lsid:marinespecies.org:taxname:126436](https://www.marinespecies.org/taxname/126436)

<https://inaturalist.ca/taxa/63740-Gadus-morhua>

There were 1,228 cases recorded. Juveniles (<20 cm) may be confounded with Arctic Cod, code 451, and Greenland Cod, code 439, but lacked photos for validation.

Recommendations: In future, pay special attention to small specimens (see entries below for Arctic Cod and Greenland Cod), and photograph or conserve for validation.

Code 439 *Gadus ogac* (Greenland Cod)

[urn:lsid:marinespecies.org:taxname:254538](https://www.marinespecies.org/taxname/254538) (as *Gadus macrocephalus*)

<https://inaturalist.ca/taxa/180029-Gadus-macrocephalus> (as *Gadus macrocephalus*)

There were 95 cases recorded of this solitary gadid of rocky shores. When large (>20 cm), the stockier body, marbled coloration, and dark peritoneum (if dissected) readily distinguishes it from the Atlantic Cod, *Gadus morhua*, code 438. Nearly all cases had few specimens, except for five captures of 10 to 32 individuals. Some captures had small individuals, that may need genetics to distinguish them from *Gadus morhua*.

Greenland Cod form a distinctive population in Arctic and Atlantic waters of Pacific Cod, *Gadus macrocephalus*. While the species *Gadus ogac* is no longer recognized, and the subspecies or population status is not yet resolved, it is useful to continue with code 439.

Recommendations: In future, photograph or conserve all small specimens to confirm species. Include note in catch database about taxon status as *Gadus macrocephalus*.

Code 440 *Micromesistius poutassou* (Blue Whiting)

[urn:lsid:marinespecies.org:taxname:126439](https://www.marinespecies.org/taxname/126439)

<https://inaturalist.ca/taxa/120702-Micromesistius-poutassou>

There was one case recorded in 2006, seen in photo, of this northeast Atlantic fish.

Recommendations: None to declare.

Code 441 *Melanogrammus aeglefinus* (Haddock)

[urn:lsid:marinespecies.org:taxname:126437](https://www.marinespecies.org/taxname/126437)

<https://inaturalist.ca/taxa/82351-Melanogrammus-aeglefinus>

There were 30 cases recorded of this benthic codfish that is common to the south.

Recommendations: None to declare.

Code 442 *Microgadus tomcod* (Atlantic Tomcod)

<urn:lsid:marinespecies.org:taxname:158928>

<https://inaturalist.ca/taxa/105765-Microgadus-tomcod>

There was one case recorded in 2010, set 138, 69 m depth, with two specimens (15 and 19 cm) of this nearshore codfish. No photos, but it was confirmed by ship staff. As with the other nearshore species of Shad and Smelt (see above), this catch occurred in the Lower Estuary between Rimouski and Mont-Joli and are common in eelgrass beds.

Recommendations: None to declare.

Code 443 *Pollachius virens* (Pollock)

<urn:lsid:marinespecies.org:taxname:126441>

<https://inaturalist.ca/taxa/228496-Pollachius-virens>

There were 10 cases recorded of this pelagic codfish that is common to the south.

Recommendations: None to declare.

Code 444 *Phycis chesteri* (Longfin Hake)

<urn:lsid:marinespecies.org:taxname:158988>

<https://inaturalist.ca/taxa/450418-Phycis-chesteri>

There were 472 cases recorded of this deepwater hake.

Recommendations: None to declare.

Code 447 *Urophycis tenuis* (White Hake)

<urn:lsid:marinespecies.org:taxname:126504>

<https://inaturalist.ca/taxa/233277-Urophycis-tenuis>

There were 782 cases recorded. Most are deepwater, but some may occur nearshore.

Recommendations: None to declare.

Code 449 *Merluccius bilinearis* (Silver Hake)

urn:lsid:marinespecies.org:taxname:158962

<https://inaturalist.ca/taxa/224886-Merluccius-bilinearis>

There were 439 cases recorded of this pelagic gadiform common in the south.

Recommendations: None to declare.

Code 451 *Boreogadus saida* (Arctic Cod)

urn:lsid:marinespecies.org:taxname:126433

<https://inaturalist.ca/taxa/215318-Boreogadus-saida>

There were 263 cases recorded of these coldwater, small gadids (very rarely > 20 cm). Sometimes confused with juvenile cods (*Gadus* sp.), though easily distinguished by their lower protruding jaw (upper jaw protrudes in *Gadus* sp.). Upstream of the Estuary, in the Saguenay Fjord, exceptionally large (30-45 cm) and dark-bodied specimens are caught during the ice fishery and are now also reported in the summer (<https://inaturalist.ca/observations/89495421>), but such sizes have not been seen on the survey. Catches ranged from 48 to 476 m depth. These size and distribution notes may be important when validating records for unusual specimens in the future.

Reviewing the catch and measured values indicated several records needing correction. In 2004, set 14, there is a specimen of 0.2 kg, which displays 16 g for 132 mm in measurements. Also in 2004, set 60, there is 0.09 kg in catch while there is 0.095 kg in measures, of which a specimen of 35 mm and 7 g should be 0.7 g. In 2005, set 175, there is a 0.66 kg specimen, which displays 66 g for 190 mm in measurements. In 2009, set 177, there is a catch of 0.6 kg for 3 specimens, whose measurements total 57.7 g, then at set 203, specimen 1002 with length 186 mm is missing 20 g for its size.

Recommendations:

2004, set 14, correct the catch from 0.2 kg to 0.016 kg.

2004, set 60, correct specimen 3005, 35 mm, from 7.0 g to 0.7 g.

2005, set 175, correct the catch of 0.66 kg for 0.066 kg.

2009, set 177, correct the catch from 0.6 kg to 0.0577 kg.

2009, set 203, correct specimen 1002, 186 mm, from 18.9 g to 38.9 g.

In future, photograph all captures to confirm they are not of *Gadus* sp.

Code 453 *Gaidropsarus* sp. (Threebeard Rocklings, Genus)

urn:lsid:marinespecies.org:taxname:125743

<https://inaturalist.ca/taxa/88432-Gaidropsarus>

There were 28 cases of threebearded rocklings (*Gaidropsarus* sp.) recorded. Two were confirmable by photo as being the Fourbeard Rockling, *Enchelyopus cimbrius* (code 461):

in 2006, set 200 and 2011, set 2. Most catches attributed to *Gaidropsarus* sp. were likely of small juveniles that were confused with the Fourbeard Rockling, a common species in the region, while *Gaidropsarus* sp. usually occur in the deeper Atlantic Ocean. The confusion on the survey arose from a misidentification of a very small specimen as *Gaidropsarus argentatus*, published in a photoguide in Nozères and Bérubé (2003). A juvenile specimen of *Gaidropsarus ensis* (code 454) in 2013 is the only validated capture to date. In 2010, set 106, there was a large specimen measured as 74 g and 232 mm, along with a small one of 1.4 g. The total capture weight should be 75.9 and not 759 g. There is no photo or conserved specimen, but the catch sheet states 'mustèle (French for Threebeard Rockling, whereas 'motelle' is Fourbeard Rockling), 0.0759'. The catch took place at depth (347 m), in the Laurentian Channel off Gaspé, similar location to the small (17 g) specimen in 2013. However, if indeed Threebeard Rockling, such a special capture would have been conserved.

Recommendations: In 2010, set 106, code 453, change 0.759 kg to 0.0759 kg. Change code 453 to code 461, *Enchelyopus cimbrius*, for all 28 cases.

Code 454 *Gaidropsarus ensis* (Threebeard Rockling)

urn:lsid:marinespecies.org:taxname:126453

<https://inaturalist.ca/taxa/459173-Gaidropsarus-ensis>

There were four cases recorded of this deepwater species. Genetic barcoding analyses (e.g., <http://www.boldsystems.org/>) suggest that specimens in the NW Atlantic are most often *Gaidropsarus ensis*, with *Gaidropsarus argentatus* more common in the NE Atlantic. A small specimen (17 g) in 2013, set 178, is the only confirmed catch of *G. ensis*. The other three cases were smaller (5 g or less). Very small rocklings are silvery and pelagic, and often misidentified with Fourbeard Rockling, *Enchelyopus cimbrius* (code 461).

Recommendations: For the three cases of small <0.010 kg specimens (2006, set 57; 2012, set 34, 2013: set 64), change code 454 to code 461, *Enchelyopus cimbrius*.

Code 455 *Gaidropsarus argentatus* (Silver Rockling)

urn:lsid:marinespecies.org:taxname:126451

<https://inaturalist.ca/taxa/459172-Gaidropsarus-argentatus>

There were 32 cases recorded, all very small specimens, and all likely to be the common species, Fourbeard Rockling, *Enchelyopus cimbrius* (code 461). The confusion arose from a misidentified specimen in a 2003 photoguide (see above for *Gaidropsarus* sp.).

Recommendations: Change all cases of code 455 for 461 *Enchelyopus cimbrius*.

Code 461 *Enchelyopus cimbrius* (Fourbeard Rockling)

urn:lsid:marinespecies.org:taxname:126450

<https://inaturalist.ca/taxa/219127-Enchelyopus-cimbrius>

There were 1,337 cases recorded of this deepwater species. Pelagic juveniles were often mistaken for those of *Gaidropsarus* spp. (see above). There were 15 catches at less than 100 m, with several being of small specimens. Nearshore small specimens have been observed in the St. Lawrence (<https://inaturalist.ca/observations/55293463>).

Recommendations: Adjust catches and measurements to include specimens that were coded 451, 453, 454, 455. Evaluate catches of large individuals from < 100 m depth for potential cases of contamination of previous hauls.

Code 471 Macrouridae (Grenadiers, Family)

<urn:lsid:marinespecies.org:taxname:125471>
<https://inaturalist.ca/taxa/85881-Macrouridae>

There were 15 cases recorded, all on the first survey in 2004. Several specimens were identified during post-survey examination as code 478, *Nezumia bairdii*, becoming duplicate records. All catches of code 471 are to be changed to code 478. In some cases, there have been errors in the catch values and measurements.

Recommendations: In 2004, sets 91, 108, 116, 132 examine sample weights and numbers in code 471 which are the originals before selected specimens were examined in post-survey under code 478. To use the values of sums of weights and numbers in the capture file (Capt), and not the measured sample file (CBio).

Code 478 *Nezumia bairdii* (Marlin-spike grenadier)

<urn:lsid:marinespecies.org:taxname:183289>
<https://inaturalist.ca/taxa/225943-Nezumia-bairdii>

There were 1,100 cases recorded of this deepwater species. The only other grenadier was a specimen of *Malacocephalus occidentalis*, code 484, collected in 2014, set 147 (<https://inaturalist.ca/taxa/105109-Malacocephalus-occidentalis>). Several shallow water cases are likely contamination from large catches in preceding deepwater sets.

Recommendations: Evaluate catches < 200 m for contamination from previous sets.

Code 572 *Scomber scombrus* (Atlantic Mackerel)

<urn:lsid:marinespecies.org:taxname:127023>
<https://inaturalist.ca/taxa/118678-Scomber-scombrus>

There were 129 cases recorded of this epipelagic fish, usually of single large individuals, and occasionally of many small ones. The spotted species, *Scomber colias*, was not seen. (<https://www.marinespecies.org/aphia.php?p=image&tid=151174&pic=139984>).

Recommendations: None to declare.

Code 616 *Howella sherborni* (Sherborn's Pelagic Bass)

[urn:lsid:marinespecies.org:taxname:126995](https://marinespecies.org/taxname/126995)

<https://inaturalist.ca/taxa/317150-Howella-sherborni>

There was one case recorded in 2014, set 17, written on the sheet as *Synagrops spinosus*. The photo shows a damaged specimen of *Epigonus* sp., code 614.

Recommendations: In 2014, set 17, change code 616 to code 614, *Epigonus* sp.

Code 694 *Ammodytes dubius* (Northern Sandlance)

Code 695 *Ammodytes americanus* (American Sandlance)

Code 696 *Ammodytes* sp. (Sandlance, genus)

[urn:lsid:marinespecies.org:taxname:125909](https://marinespecies.org/taxname/125909)

<https://inaturalist.ca/taxa/86396-Ammodytes>

There were 194 cases recorded of these benthopelagic fish. Along with lanternfishes, capelan, and herring, these fishes are very abundant, but are poorly sampled by the bottom trawl. Sand lances have a long history of problematic taxonomy (Mecklenburg et al. 2018). In recent decades, the name of *Ammodytes hexapterus* was replaced in the NW Atlantic by *A. americanus* (inshore) and *A. dubius* (offshore). Meanwhile, in the NE Pacific, *A. hexapterus* was called Pacific Sand Lance, now the name of the new species, *A. personatus*, with *A. hexapterus* renamed Arctic Sand Lance. Genetic analyses indicate that *A. hexapterus* is absent in Pacific, and present in Arctic and NW Atlantic, *A. americanus/A. dubius* may be a species complex. This confusion between distributions, common names, and species persists with errors in recent publications (Falardeau et al. 2017, Staudinger et al. 2020) when analyzing historical and current records of sand lances in the Pacific, Arctic, and Atlantic.

In 2007, set 128, code 696, two specimens were over 10 g that should have been 1 g.

In 2008, set 208, code 696, the specimen was 0.087 kg, but 8.7 g, in measurements.

In 2012, a large specimen (240 mm) was changed from *A. americanus* on the catch sheet to *A. dubius*, code 694 during post-survey examination. Large size is a criterion sometimes cited for the species, but its distinction is uncertain.

In 2013, there were nine captures in code 695, *A. americanus*. This inshore species is difficult to distinguish from *A. dubius*, the species commonly reported as being offshore.

Recommendations: Change all cases of species (codes 694 and 695) to genus (code 696, *Ammodytes* sp.). Correct the measurements:

In 2007, set 128, code 696, change 3004 from 10.9 g to 1.09 g, 3005 from 10.6 g to 1.06 g.

In 2008, set 208, code 696, change capture weight from 0.087 kg to 0.0087 kg.

Code 699 *Anarhichas denticulatus* (Northern Wolffish)

<urn:lsid:marinespecies.org:taxname:126757>

<https://inaturalist.ca/taxa/213518-Anarhichas-denticulatus>

There was one case recorded in 2012, set 96, 355 m depth, confirmed by photo.

Recommendations: None to declare.

Code 700 *Anarhichas lupus* (Atlantic Wolffish)

<urn:lsid:marinespecies.org:taxname:126758>

<https://inaturalist.ca/taxa/213519-Anarhichas-lupus>

There were 445 cases recorded.

Recommendations: None to declare.

Code 701 *Anarhichas minor* (Spotted Wolffish)

<urn:lsid:marinespecies.org:taxname:126759>

<https://inaturalist.ca/taxa/213520-Anarhichas-minor>

There were 119 cases recorded.

Recommendations: None to declare.

Code 702 *Anarhichas* sp. (Wolffishes, Genus)

<urn:lsid:marinespecies.org:taxname:125912>

<https://inaturalist.ca/taxa/86443-Anarhichas>

There was one case recorded in 2007, set 78, 269 m depth, 8.6 g. On the sheet is written 'loup sp. [wolffish sp.], 1, 0.0086'. No length or photo was available.

Recommendations: No information to put to the species, so no change suggested.

Code 705 *Pholis gunnellus* (Rock Gunnel)

<urn:lsid:marinespecies.org:taxname:126996>

<https://inaturalist.ca/taxa/152974-Pholis-gunnellus>

There was one case recorded in 2004, set 29, 46 m, for 132 mm and 6.6 g. An intertidal, rocky shore species, it was not seen again on the survey. A similar fish, *Gymnelus viridis*, code 746, was recorded in five subsequent sets in 2004. From nearshore surveys (see Dutil 2013, <https://obis.org/dataset/18e4fa5b-5f92-4e09-957b-b242003287e9>), the size of the 2004 specimen fits with the stouter *Gymnelus viridis* rather than slender *Pholis gunnelus*, and is thus more likely to be the former species.

Recommendations: Change the sole specimen of code 705 from 2004, set 29, to code 746, *Gymnelus viridis*.

Code 709 Stichaeidae (Pricklebacks, Eelblennies and Shannies, Family)

<urn:lsid:marinespecies.org:taxname:125566>

<https://inaturalist.ca/taxa/61378-Stichaeidae>

There were four cases recorded, all of which could be changed. This code was used to record uncertain catches of subfamily Lumpeninae, called 'lompénies' in French. In 2005, set 160, the sheet shows 'Stichaeidae Lompénie, 0.125 kg', while the database shows 0.011, which is the weight for Smooth Skate shown on the line above on the sheet. The capture was already recorded in code 717, *Leptoclinus maculatus*, so the record in 709 is to be deleted. Similarly, in 2005, set 171, the sheet states 'Stichaeidae, 0.0316 (lompénie family)', while the catch as code 717 is already in the database. In 2007, set 134, there is a Stout Eelblenny, code 718, visible in the photo. In 2012, set 33, is noted 'lompénie sp.'; on a weight-length regression, this specimen fits as *Leptoclinus maculatus*, code 717.

Recommendations:

In 2005, sets 160 and 171, delete the cases of code 709 (records are duplicates).

In 2007, set 134, change the code from 709 to 718.

In 2012, set 33, change the code from 709 to 717.

Code 710 Stichaeus punctatus (Arctic Shanny)

<urn:lsid:marinespecies.org:taxname:159819>

<https://inaturalist.ca/taxa/231735-Stichaeus-punctatus>

There were 19 cases recorded of this nearshore, rocky habitat species. Half were sampled from sets of <50 m; all were from <100 m.

Recommendations: None to declare.

Code 711 Eumesogrammus praecisus (Fourline Snakeblenny)

<urn:lsid:marinespecies.org:taxname:159817>

<https://inaturalist.ca/taxa/219756-Eumesogrammus-praecisus>

There were 359 cases recorded of this abundant circalittoral species. A similar nearshore species, *Ulvaria subbifurcata* (<https://inaturalist.ca/taxa/621185-Ulvaria-subbifurcata>), was not seen on the survey.

Recommendations: None to declare.

Code 715 *Lumpenus fabricii* (Slender Eelblenny)

<urn:lsid:marinespecies.org:taxname:127073>

<https://inaturalist.ca/taxa/224162-Lumpenus-fabricii>

There were three captures in 2010 of this uncommon 'lompénie', with one or two individuals each, and at shallow depths (56-110 m). The name was noted on the sheet, and they were of large size as is typical of the species.

Recommendations: None to declare.

Code 716 *Lumpenus lamprætaeformis* (Snakeblenny)

<urn:lsid:marinespecies.org:taxname:154675>

<https://inaturalist.ca/taxa/224163-Lumpenus-lamprætaeformis>

There were 437 cases recorded of this very elongated 'lompénie'. Small specimens may be mistaken for *Leptoclinus maculatus* (code 717), as revealed in measurements.

Recommendations: To validate the identity of measured specimens.

Code 717 *Leptoclinus maculatus* (Daubed Shanny)

<urn:lsid:marinespecies.org:taxname:127072>

<https://inaturalist.ca/taxa/223433-Leptoclinus-maculatus>

There were 707 cases recorded of this 'lompénie'. Small specimens may be confused with other species, as may be revealed in length-weight regressions.

Recommendations: To validate the identity of measured specimens.

Code 718 *Anisarchus medius* (Stout Eelblenny)

<urn:lsid:marinespecies.org:taxname:127070>

<https://inaturalist.ca/taxa/213639-Anisarchus-medius>

There were 23 cases recorded of this 'lompénie', similar in appearance to Daubed Shanny, *Leptoclinus maculatus*, but usually in shallower water. Only two cases had photos; other cases could be validated by measurements.

Recommendations: To validate the identity of measured specimens.

Code 721 *Cryptacanthodes maculatus* (Wrymouth)

[urn:lsid:marinespecies.org:taxname:159675](https://marinespecies.org/taxname/159675)

<https://inaturalist.ca/taxa/217788-Cryptacanthodes-maculatus>

There were 96 cases recorded. A distinctive species, unlikely to be misidentified.

Recommendations: None to declare.

Code 725 Zoarcidae (Eelpouts, Family)

[urn:lsid:marinespecies.org:taxname:125575](https://marinespecies.org/taxname/125575)

There were five cases recorded. In 2005, set 15, the specimen was identified in post-survey as *Lycodes lavalaei*, code 728, becoming a duplicate record.

Recommendations: In 2005, line 15, delete the capture in code 725 (duplicate for the one in code 728). Validate the other four cases according to measurements.

Code 726 *Lycodes* sp. (Eelpouts, Genus)

[urn:lsid:marinespecies.org:taxname:126104](https://marinespecies.org/taxname/126104)

<https://inaturalist.ca/taxa/89655-Lycodes>

There were 50 cases recorded. The genus *Lycodes* is present in three groups (*L. vahli*, *L. lavalaei/polaris*, *L. esmarkii/terraenovae*), distinct in weight-length regressions, but when small can be confused with specimens of genus *Lycenchelys*.

Recommendations:

In 2004, set 62, identified post-survey as *Lycodes lavalaei*, code 728;

In 2006, set 102, identified by photos as *Lycodes esmarkii*, code 727;

In 2006, set 147, identified by photos as *Lycodes lavalaei*, code 728;

In 2007, set 139, identified by photos as juveniles of *Lycodes lavalaei*, add to the others already in code 728. Validate the other cases according to the measurements.

Code 727 *Lycodes esmarkii* (Greater Eelpout)

[urn:lsid:marinespecies.org:taxname:127103](https://marinespecies.org/taxname/127103)

<https://inaturalist.ca/taxa/224186-Lycodes-esmarkii>

There were 40 cases recorded of the large, deepwater species. Genetics suggest it may be a white-banded form of the non-banded species *Lycodes terraenovae*, code 724.

Recommendations: None to declare, while awaiting further study of this and the related species, *Lycodes terraenovae*, code 724.

Code 728 *Lycodes lavalaei* (Labrador Eelpout)

[urn:lsid:marinespecies.org:taxname:127107](https://marinespecies.org/taxname/127107)

<https://inaturalist.ca/taxa/224187-Lycodes-lavalaei>

There were 359 cases recorded of this large, circumlittoral species. It may be the same species as *Lycodes polaris*, code 733.

Recommendations: Confirm additions from corrected cases of genus *Lycodes*, code 726, and *Lycodes reticulatus*, code 729.

Code 729 *Lycodes reticulatus* (Arctic Eelpout)

[urn:lsid:marinespecies.org:taxname:127112](https://marinespecies.org/taxname/127112)

<https://inaturalist.ca/taxa/224193-Lycodes-reticulatus>

There were two cases recorded, sets 81 and 82, to change to *Lycodes lavalaei*, code 729. An Arctic species, *L. reticulatus* was once confused with the regional *L. lavalaei*.

Recommendations: In 2005, sets 81 and 82, add captures in code 729 to those already in code 728, *Lycodes lavalaei*.

Code 730 *Lycodes vahlii* (Checker Eelpout)

[urn:lsid:marinespecies.org:taxname:127118](https://marinespecies.org/taxname/127118)

<https://inaturalist.ca/taxa/224199-Lycodes-vahlii>

There were 578 cases recorded of this circalittoral species. It may be confounded in coloration with *Lycenchelys verrillii*, code 752, and in form with *Lycodes lavalaei*, code 728. Some cases in the early years seem suspect as being very deep (>400 m), and were perhaps mistaken for *Lycodes terraenovae*, code 734, or *Lycenchelys paxillus*, code 750.

Recommendations: Validate cases with measurements when available.

Code 733 *Lycodes polaris* (Canadian Eelpout)

[urn:lsid:marinespecies.org:taxname:127111](https://marinespecies.org/taxname/127111)

<https://inaturalist.ca/taxa/224192-Lycodes-polaris>

There were 10 cases recorded of this small (< 20 cm) circalittoral species that may be the same species as *Lycodes lavalaei* except for the absence of scales.

Recommendations: May require confirmation if it is a different species from *Lycodes lavalaei*, code 728.

Code 734 *Lycodes terraenovae* (Atlantic Eelpout)

[urn:lsid:marinespecies.org:taxname:127117](https://marinespecies.org/taxname/127117)

<https://inaturalist.ca/taxa/224197-Lycodes-terraenovae>

There were 60 cases recorded of this deepwater species. Distinguished by its uniformly dark body, it may be the same species as the white-marked *Lycodes esmarkii*, code 727.

Recommendations: May require confirmation if it is a different species from *Lycodes esmarkii*, code 727.

Code 740 *Lycodes pallidus* (Pale Eelpout)

[urn:lsid:marinespecies.org:taxname:127110](https://marinespecies.org/taxname/127110)

<https://inaturalist.ca/taxa/224191-Lycodes-pallidus>

There was one case recorded, in 2010, set 175, measuring 65 mm and 1 g. Written on the sheet as *Lycodes* sp. The other species in the catch was *Lycodes lavalaei*. The measurements fit to *Lycodes vahlii* rather than the similar-looking *Lycenchelys verrillii* (also called 'lycodes' in French). An Arctic species, *Lycodes pallidus* has been historically mistaken for *Lycodes vahlii*, and has not been confirmed present in the region.

Recommendations: In 2010, set 175, change code 740 to code 730, *Lycodes vahlii*.

Code 745 *Melanostigma atlanticum* (Atlantic Soft Pout)

[urn:lsid:marinespecies.org:taxname:127120](https://marinespecies.org/taxname/127120)

<https://inaturalist.ca/taxa/224813-Melanostigma-atlanticum>

There were 700 cases recorded. Unique among the region's zoarcids, this is a small, mesopelagic species. In summer, it burrows into the sediment to lay eggs, which could explain its frequent occurrence in the bottom trawl captures in August. Warming of deep waters seems to have advanced the period of this activity because it is far less frequent in captures in recent years. This species has a flaccid, gelatinous body that sticks to netmesh, resulting in contamination of subsequent sets following a capture. There were 64 captures above 200 m, of which 21 were above 100 m.

Recommendations: To flag or delete the cases of contamination at shallow depths, or else add them together with the previous sets from deeper water.

Code 746 *Gymnelus viridis* (Fish Doctor)

[urn:lsid:marinespecies.org:taxname:127096](https://marinespecies.org/taxname/127096)

<https://inaturalist.ca/taxa/101883-Gymnelus-viridis>

There were 121 cases recorded A small, coldwater and nearshore zoarcid. According to recent genetic barcoding, the Arctic species *Gymnelus retrodorsalis* is also present (http://www.boldsystems.org/index.php/Public_RecordView?processid=SCFAC814-06), as a specimen collected in 2006, set 45.

Recommendations: in 2006, set 45, change code 746 to 722, *Gymnelus retrodorsalis*. Monitor for other presences in future catches (note differences in dorsal fin).

Code 747 *Lycenchelys* sp. (Wolf Eels, Genus)

<urn:lsid:marinespecies.org:taxname:126103>

<https://inaturalist.ca/taxa/60632-Lycenchelys>

There were five cases recorded for this genus present as two distinct species in the region, *Lycenchelys paxillus* and *L. verrillii*. Both are usually small and more elongated relative to *Lycodes* sp. In 2007, set 3, the entry sheet has written 'lycodes à tête longue' [= *Lycenchelys verrillii*], code 752, but no photo. In 2011, set 7, there is one case that is not on the sheet, and without catch weights or measures.

Recommendations: In 2007, set 3, change code 747 to code 752, *Lycenchelys verrillii*. In 2011, set 7, delete the catch (no weight or measurement, on sheet or database). To validate the other cases based on measurements.

Code 750 *Lycenchelys paxillus* (Common Wolf Eel)

<urn:lsid:marinespecies.org:taxname:159257>

<https://inaturalist.ca/taxa/224173-Lycenchelys-paxillus>

There were 34 cases recorded of this very elongated, deepwater species. Often confused with other zoarcids, especially in early years, but with few photos; it may be possible to validate with measurements and depths.

Recommendations: To validate based on measurements and other values.

Code 752 *Lycenchelys verrillii* (Wolf Eelpout)

<urn:lsid:marinespecies.org:taxname:159258>

<https://inaturalist.ca/taxa/60629-Lycenchelys-verrillii>

There were 136 cases recorded of this very elongated and small, circalittoral species. It may be confused with small specimens of *Lycodes vahlii*, code 730. In 2005, set 158, the specimen was misentered as 1284 m when it should be 128 mm for 4 g.

Recommendations: In 2005, set 158, change length from 1284 mm to 128 mm for 4 g. To confirm with measurements that no specimens are mistaken for *Lycodes vahlii*, code 730.

Code 783 *Peprilus triacanthus* (Butterfish)

urn:lsid:marinespecies.org:taxname:159828

<https://inaturalist.ca/taxa/179507-Peprilus-triacanthus>

There was one case recorded in 2013, set 151, at 236 m, in the Anticosti Channel, and confirmed by photo. A pelagic species associated with sandy beaches and warmwater, it is a common catch on the southern Gulf survey. A second specimen is visible in photos (<https://inaturalist.ca/observations/103319313>) in 2009, but with no record on the sheet or database. The sheet notes for sets 93 and 95 (near Anticosti) indicate it was rough bottom, with gear damage. The photo timestamps indicate the specimen was from the failed set 94, southeast of Anticosti Island, which explains why no fish were recorded.

Recommendations: None to declare.

Code 792 *Sebastes* sp. (Redfishes, Genus)

urn:lsid:marinespecies.org:taxname:126175

<https://inaturalist.ca/taxa/47762-Sebastes>

There were 2,253 cases recorded. The code applies to two species of beaked redfishes: Acadian Redfish, *Sebastes fasciatus* (<https://inaturalist.ca/taxa/112417-Sebastes-fasciatus>) and Deepwater Redfish, *Sebastes mentella* (<https://inaturalist.ca/taxa/112419-Sebastes-mentella>). The genus code 792 is not intended to apply to the occasional presence of the non-beaked Golden Redfish, *Sebastes norvegicus*, code 793, but this may occur, especially with smaller specimens (<30 cm) that are not obviously beaked. Information is to be reviewed for 2005, set 25, where a large capture of *S. norvegicus* was entered because the 50 measurements in code 793 were identical to those entered in code 792. Because of the large capture (1 vs 0.5 t), it was important to verify this record.

Code 792, capt = 992.17 kg, nb = 1525, ech = 130.796 kg, nb = 201,
to be corrected to capt = 473.17 kg, scale = 104.47 kg.

Code 793, capt = 412.1 kg, nb = 233, ech = 88.35 kg, nb = 50.

In measurements, are duplicates with code 792, so code 793 must be deleted.

Recommendations: To settle the duplicates with code 793 in 2005, set 25.

Code 793 *Sebastes norvegicus* (Golden Redfish)

urn:lsid:marinespecies.org:taxname:151324

<https://inaturalist.ca/taxa/230758-Sebastes-norvegicus>

There were five cases recorded. A rare species in catches, it is often only noticed when of very large size (>30 cm, usually greater than other redfish), because it is lacking a chin beak, and orange rather than red in colour. Usually few in numbers, except in 2005, set 25, where 412.1 kg was recorded, except that the 50 in measurements are identical to those recorded in code 792 (*Sebastes* sp.). The duplicates were deleted (see above).

Of special note when reviewing older datasets: the older name, *Sebastes marinus*, was used in past decades for all redfish in the region, then updated to *Sebastes norvegicus*, while two new species were designated for beaked redfishes: *fasciatus* and *mentella*. Thus, older reports of *marinus/norvegicus* do pertain to all three species.

Recommendations: To settle the duplicates with code 792 in 2005, set 25.

Code 797 *Helicolenus dactylopterus* (Blackbelly Rosefish)

<urn:lsid:marinespecies.org:taxname:127251>

<https://inaturalist.ca/taxa/118629-Helicolenus-dactylopterus>

There were four cases recorded. Also in the redfish family, but never in great numbers, this species from the south (Gulf of Maine) is very rare in catches, but it is possible that individuals go unnoticed among the extremely large catches of redfish (*Sebastes* sp.), as happened with a specimen photographed in 2007 (not in catch database). Four individuals were confirmed in 2012, 2014 and 2015.

Recommendations: None to declare.

Code 808 Cottidae (Sculpins, Family)

<urn:lsid:marinespecies.org:taxname:125589>

<https://inaturalist.ca/taxa/47645-Cottidae>

There were seven cases recorded, mostly because they are small and uncertain. In 2004, set 88, this is a duplicate already entered in code 819 (*Myoxocephalus scorpius*), noted in capture sheets. Also in 2004, set 125, 27 small ones were collected from 52 m depth. Other small sculpins (*Myoxocephalus*, *Triglops*) were identified, and these were likely of *Artediellus* sp., as confirmed by length-weight regressions. Station 126 had an additional 10 specimens, but from 367 m which were also likely of *Artediellus* (cf. *atlanticus*) as other sculpins are not found at such depths in the region.

Recommendations: in 2004, set 88, move capture weight in code 808 to code 819, *Myoxocephalus scorpius*, because specimen is measured in that code. For sets 125 and 126, change code 808 to code 810, *Artediellus* sp.

Code 809 *Hemitripterus americanus* (Sea Raven)

<urn:lsid:marinespecies.org:taxname:159518>

<https://inaturalist.ca/taxa/47634-Hemitripterus-americanus>

There were 53 cases recorded of this nearshore species.

Recommendations: None to declare.

Code 810 *Artediellus* sp. (Hookear Sculpins, Genus)

<urn:lsid:marinespecies.org:taxname:126147>

<https://inaturalist.ca/taxa/86649-Artediellus>

There were 74 cases recorded. It is very difficult to distinguish between the two species, *Artediellus atlanticus*, code 811, and *A. uncinatus*, code 812, though *A. atlanticus* may be stouter and more often in deepwater. For both species, mature males have distinctive coloring, and thus the genus level is often used for females or immature specimens.

Recommendations: None to declare.

Code 811 *Artediellus atlanticus* (Atlantic Hookear Sculpin)

<urn:lsid:marinespecies.org:taxname:127193>

<https://inaturalist.ca/taxa/214212-Artediellus-atlanticus>

There were 533 cases recorded of this small sculpin. Apart from mature males, they are difficult to distinguish from *Artediellus uncinatus*, code 812 (Van Guelpen 1986).

Recommendations: None to declare.

Code 812 *Artediellus uncinatus* (Snowflake Sculpin)

<urn:lsid:marinespecies.org:taxname:127195>

<https://inaturalist.ca/taxa/214215-Artediellus-uncinatus>

There were 221 cases recorded of this small sculpin. Apart from mature males, they are difficult to distinguish from *Artediellus atlanticus*, code 811.

Recommendations: None to declare.

Code 813 *Triglops* sp. (Moustache Sculpins, Genus)

<urn:lsid:marinespecies.org:taxname:126154>

<https://inaturalist.ca/taxa/92631-Triglops>

There were 16 captures recorded in the genus. Most were likely of *Triglops murrayi*, the common species. Captures in 2007, sets 42 and 134, were verified in photos as the rare species *Triglops nybelini*, code 815.

Recommendations: In 2007, sets 42 and 134, change code 813 to 815, *Triglops nybelini*.

Code 814 *Triglops murrayi* (Moustache Sculpin)

urn:lsid:marinespecies.org:taxname:127205

<https://inaturalist.ca/taxa/232945-Triglops-murrayi>

There were 682 cases recorded of this small and abundant sculpin that can vary in coloration. It was mistaken with *Myoxocephalus* in 2004, set 13. In 2006, set 30, a large capture of 184 individuals at 122 m was followed with five individuals in the next set at 338 m, which may be contamination. In 2007, set 42, an error in capture weight is evident from measurements, with 0.885 kg for 74, rather than 0.0143 kg (which would give a mean weight of 0.2 g per fish).

Recommendations: In 2004, set 13, ensure that the capture in code 817 is transferred to code 814. In 2006, set 31, review if it is a case of contamination. In 2007, set 42, update capture weight from 0.0143 kg to 0.885 kg.

Code 815 *Triglops nybelini* (Bigeye Sculpin)

urn:lsid:marinespecies.org:taxname:127206

<https://inaturalist.ca/taxa/232946-Triglops-nybelini>

There were nine cases recorded of this Arctic species from 2004, 2005, 2006, and 2014. Only the three cases in 2006 can be confirmed in photos. The species has a deep body, large eyes, and a black peritoneum. It may be mistaken for black morphotypes of *Triglops murrayi*. Comparisons of length and weight regressions may validate cases, but there may be too few records to be useful.

Recommendations: None to declare.

Code 817 *Myoxocephalus* sp. (Shorthorn Sculpins, Genus)

urn:lsid:marinespecies.org:taxname:126152

<https://inaturalist.ca/taxa/47646-Myoxocephalus>

There were six cases recorded, mostly with only one small individual, except for two sets in 2004: set 1 with 47 and set 13 with 80 small individuals. These were of *Arteidiellus* that are abundant in numbers, confirmed in measurements of a post-survey database. Another species, *Triglops murrayi*, is abundant but was already recorded at these sites.

Recommendations: In 2004, sets 1 and 13, change code 817 to code 810, *Arteidiellus* sp.

Code 818 *Myoxocephalus aeneus* (Grubby)

urn:lsid:marinespecies.org:taxname:159519

<https://inaturalist.ca/taxa/203490-Myoxocephalus-aeneus>

There was one case recorded in 2006, set 46 at 60 m. It consisted of six individuals for 1.5 kg, three of which were measured as 24, 27, and 28 cm, and thus likely

Myoxocephalus scorpius, code 819. Grubby is a small, inshore species that is often mistaken with small (<20 cm) specimens of *M. scorpius*. Inspection for a pore on the last gill arch (absent in *M. aeneus*) is necessary and rarely performed. There are no notes or photos to confirm any of the cases so far recorded on the survey.

Recommendations: In 2006, set 46, change code 818 to 819, *M. scorpius*. For future surveys, inspect all small (<20 cm) specimens for absence of gill pore and record results.

Code 819 *Myoxocephalus scorpius* (Shorthorn Sculpin)

[urn:lsid:marinespecies.org:taxname:127203](https://marinespecies.org/taxname/127203)

<https://inaturalist.ca/taxa/47639-Myoxocephalus-scorpius>

There were 396 cases recorded. A common species, sometimes misidentified with other sculpins in the same genus.

Recommendations: See errors to correct under codes 808 and 818. Inspect all small (<20 cm) specimens and record presence of gill pore to exclude possibility of *M. aeneus*.

Code 820 *Myoxocephalus octodecemspinosus* (Longhorn Sculpin)

[urn:lsid:marinespecies.org:taxname:159520](https://marinespecies.org/taxname/159520)

<https://inaturalist.ca/taxa/47637-Myoxocephalus-octodecemspinosus>

There were 11 cases recorded. A common species in the southern Gulf, but unusual in the region, especially in the Lower Estuary, and may be mistaken for *Myoxocephalus scorpius*. Specimens were confirmed by photo in 2005 and 2011. A case in 2010 could not be confirmed. The captures in 2011 were unusual in quantity, with 62 individuals in set 76 and 8 in set 77. These were from shallow water near southwest Newfoundland.

Recommendations: In future, ensure photos to validate records of this rare species.

Code 823 *Gymnocanthus tricuspis* (Arctic Staghorn Sculpin)

[urn:lsid:marinespecies.org:taxname:127198](https://marinespecies.org/taxname/127198)

<https://inaturalist.ca/taxa/220718-Gymnocanthus-tricuspis>

There were 374 cases recorded. Sometimes mistaken for Shorthorn Sculpin, *Myoxocephalus scorpius*, code 819, but only 14 sets had photos available for validation.

Recommendations: None to declare.

Code 829 *Cottunculus microps* (Polar Sculpin)

[urn:lsid:marinespecies.org:taxname:127235](https://marinespecies.org/taxname/127235)

<https://inaturalist.ca/taxa/217661-Cottunculus-microps>

There were 18 cases recorded of this deepwater fish.

Recommendations: None to declare.

Code 830 *Icelus* sp. (Sculpins, Genus)

[urn:lsid:marinespecies.org:taxname:126150](https://marinespecies.org/taxname/126150)

<https://inaturalist.ca/taxa/89054-Icelus>

There were 24 cases recorded, often of small specimens that were uncertain. Photos were available to validate a specimen from 2006, set 30, as *Icelus bicornis*, code 831.

Recommendations: In 2006, set 30, change code 830 to code 831, *Icelus bicornis*.

Code 831 *Icelus bicornis* (Twohorn Sculpin)

[urn:lsid:marinespecies.org:taxname:127199](https://marinespecies.org/taxname/127199)

<https://inaturalist.ca/taxa/222147-Icelus-bicornis>

There were 91 cases recorded, four with photos.

Recommendations: None to declare.

Code 832 *Icelus spatula* (Spatulate Sculpin)

[urn:lsid:marinespecies.org:taxname:127200](https://marinespecies.org/taxname/127200)

<https://inaturalist.ca/taxa/222150-Icelus-spatula>

There were 132 cases reported, two with photos.

Recommendations: None to declare.

Code 836 *Leptagonus decagonus* (Atlantic Poacher)

[urn:lsid:marinespecies.org:taxname:127191](https://marinespecies.org/taxname/127191)

<https://inaturalist.ca/taxa/223403-Leptagonus-decagonus>

There 356 cases reported. Very small specimens may be mistaken for the rare species, Arctic alligatorfish, code 837, but without photos, it is difficult to validate.

Recommendations: None to declare.

Code 837 *Aspidophoroides olrikii* (Arctic Alligatorfish)

[urn:lsid:marinespecies.org:taxname:309268](https://marinespecies.org/taxname/309268)

<https://inaturalist.ca/taxa/607872-Aspidophoroides-olrikii>

There were 45 cases reported, one with photos. While rare in the northern Gulf, it is a common capture in the southern Gulf survey due to extensive sandy bottoms with very cold temperatures (near or below 0°C), which is a rare habitat in the northern region.

Recommendations: None to declare.

Code 838 *Aspidophoroides monopterygius* (Alligatorfish)

<urn:lsid:marinespecies.org:taxname:159459>

<https://inaturalist.ca/taxa/214489-Aspidophoroides-monopterygius>

There were 570 cases recorded.

Recommendations: None to declare.

Code 844 *Eumicrotremus spinosus* (Atlantic Spiny Lump sucker)

<urn:lsid:marinespecies.org:taxname:127217>

<https://inaturalist.ca/taxa/219758-Eumicrotremus-spinosus>

There were 359 cases recorded, with three that have values to be corrected in 2005. This small, nearshore fish has long been misidentified in the northwest Atlantic (Mecklenburg et al. 2018) for the forgotten, endemic species of *Eumicrotremus terraenovae*, code 847 (<https://inaturalist.ca/taxa/459183-Eumicrotremus-terraenovae>) while *E. spinosus* occurs in the Arctic and NE Atlantic (Europe) (<https://inaturalist.ca/observations/61568223>).

Recommendations: In 2005, set 18, code 844, change weight of 0.0676 to 0.0038 kg; set 45, change weight of 0.1467 to 0.08 kg; set 77, change weight of 0.0831 to 0.817 kg and the number from 911 to 91. Change all cases of code 844 to code 847, *E. terraenovae*.

Code 845 *Eumicrotremus spinosus variabilis*

<urn:lsid:marinespecies.org:taxname:1552956>

There were 22 cases recorded of this very rare form of smooth and pale lump sucker, (<http://www.marinespecies.org/photogallery.php?album=759&pic=44493>). The name is a historical misidentification for Leatherfin Lump sucker, *Eumicrotremus derjugini* (<https://www.marinespecies.org/aphia.php?p=taxdetails&id=127215>), a species with no chin tubercles and a thick dorsal fin (unlike regional specimens) and that occurs in the Arctic (Mecklenburg and Sheiko 2003). In recent years, there has been controversy suggesting the smooth specimens may be the male morphotype of *E. spinosus*, rather than another species (Byrkjedal et al. 2007). Several species of *Eumicrotremus* appear to have plastic development of their tubercles with growth (Chernova et al. 2014), and possibly sexual dimorphism (Hatano et al. 2015). In the region, examination of several

dark and spiny individuals had both males and females present, as was seen elsewhere (Voskoboinikova and Chernova 2016), though the few pale ones examined thus far were all males. A review of the *Eumicrotremus* species group (including the similar *Cyclopteroopsis* types) in the Arctic/Atlantic is needed to clarify the situation (Mecklenburg et al. 2018).

Recommendations: Continue using the 'incorrect' synonym in code 845 pending genetic analysis of the 'smooth form' to confirm its species status in the *Eumicrotremus* group.

Code 849 *Cyclopterus lumpus* (Lumpfish)

[urn:lsid:marinespecies.org:taxname:127214](https://marinespecies.org/taxname/127214)

<https://inaturalist.ca/taxa/60603-Cyclopterus-lumpus>

There were 313 cases recorded. A benthopelagic fish harvested with gillnets, it is poorly sampled by bottom trawl, usually as a few individuals of small specimens over the deep channels or as adults near the rocky north shore of the St. Lawrence.

Recommendations: None to declare.

Code 853 Liparidae (Snailfishes, Family)

[urn:lsid:marinespecies.org:taxname:234519](https://marinespecies.org/taxname/234519)

<https://inaturalist.ca/taxa/49032-Liparidae>

There were seven cases recorded of small specimens. One is a duplicate (see *Paraliparis* below), while four are shallow water captures of *Liparis*, code 857, as opposed to *Paraliparis*. These were likely *Liparis bathyarcticus* but cannot be validated. A deeper (217 m) record from 2012, set 33, is uncertain.

Recommendations: In 2008, sets 39 and 40, and in 2009, sets 173 and 207, change code 853 to code 857, *Liparis* sp.

Code 854 *Paraliparis* sp.

[urn:lsid:marinespecies.org:taxname:126161](https://marinespecies.org/taxname/126161)

<https://inaturalist.ca/taxa/172629-Paraliparis>

There were four cases recorded, three in 2006 and 2007. A deepwater group, the capture in 2012, set 22 at 96 m depth is suspect. It had 1.6 g, but no length or photo. The preceding deepwater sets were deeper, so it is possible it was a case of contamination.

Recommendations: in 2012, set 22, change code 854 to 853, Liparidae.

Code 856 *Paraliparis copei* (Blacksnout Snailfish)

[urn:lsid:marinespecies.org:taxname:159530](https://inaturalist.ca/taxa/187997-Paraliparis-copei)
<https://inaturalist.ca/taxa/187997-Paraliparis-copei>

There were 51 cases recorded. In 2004, set 7, at 493 m, there were two specimens for 4 and 14 g, totaling 0.018 kg, and not 0.0097 kg as shown in the database.

Recommendations: In 2004, set 7, correct the capture weight from 0.0097 to 0.018 kg.

Code 857 *Liparis* sp. (Snailfishes, Genus)

[urn:lsid:marinespecies.org:taxname:126160](https://inaturalist.ca/taxa/157721-Liparis)
<https://inaturalist.ca/taxa/157721-Liparis>

There was one case recorded, of a small specimen in 2012, set 72, 139 m. Capture sheet notes 'Limace [snailfish] sp., *Liparis* sp.'

Recommendations: None to declare.

Code 859 *Liparis fabricii* (Gelatinous Snailfish)

[urn:lsid:marinespecies.org:taxname:127218](https://inaturalist.ca/taxa/223893-Liparis-fabricii)
<https://inaturalist.ca/taxa/223893-Liparis-fabricii>

There was one case recorded, in 2013, set 43, at 245 m depth, for 0.1 g. The very small size makes it difficult to confirm, so it is best to remain at the family level. A deepwater Arctic species, with only one confirmed capture in the region, collected during a snow crab survey in the Lower Estuary in 2003, at 108 m (Dutil et al. 2006) (<http://www.marinespecies.org/aphia.php?p=image&tid=127218&pic=39087>).

Recommendations: Change the single case of code 859 to 853 (family Liparidae).

Code 862 *Liparis gibbus* (Variegated Snailfish)

[urn:lsid:marinespecies.org:taxname:159526](https://inaturalist.ca/taxa/223895-Liparis-gibbus)
<https://inaturalist.ca/taxa/223895-Liparis-gibbus>

There were 185 cases recorded. The species is restricted to the western Arctic, while the regional one is a new species, *Liparis bathyarcticus*, code 868 (Mecklenburg et al. 2018).

Recommendations: Change all cases of code 862 to 868, *Liparis bathyarcticus*.

Code 865 *Careproctus reinhardti* (Sea Tadpole)

[urn:lsid:marinespecies.org:taxname:127212](https://inaturalist.ca/taxa/216119-Careproctus-reinhardti)
<https://inaturalist.ca/taxa/216119-Careproctus-reinhardti>

There were 119 cases recorded. The genus is complex, with several species continually being created or merged. It is presumed that *C. reinhardti* is the sole species in the region.

Recommendations: None to declare.

Code 867 *Liparis coheni*

<urn:lsid:marinespecies.org:taxname:159525>

<https://inaturalist.ca/taxa/223891-Liparis-coheni>

There was one case recorded in 2010, set 55, 87 m, 4.8 g, with no photos, but identified by a count of 37 dorsal fin rays. The status of this species is uncertain in the region.

Recommendations: In future, conserve specimens for confirmation.

Code 874 *Paraliparis calidus* (Lowfin Snailfish)

<urn:lsid:marinespecies.org:taxname:159529>

There were 67 cases recorded. A deepwater species.

Recommendations: None to declare.

Code 889 *Hippoglossoides platessoides* (American Plaice)

<urn:lsid:marinespecies.org:taxname:127137>

<https://inaturalist.ca/taxa/221382-Hippoglossoides-platessoides>

There were 1,766 cases recorded. Along with several other fish in the region (e.g., *Myxine*), the species differs genetically in NE and NW Atlantic

http://www.boldsystems.org/index.php/Public_BarcodeCluster?clusteruri=BOLD:AAA8851

http://www.boldsystems.org/index.php/Public_BarcodeCluster?clusteruri=BOLD:ACF3556

Recommendations: In future, confirm species status for NW Atlantic.

Code 890 *Glyptocephalus cynoglossus* (Witch Flounder)

<urn:lsid:marinespecies.org:taxname:127136>

<https://inaturalist.ca/taxa/220480-Glyptocephalus-cynoglossus>

There were 1,610 cases recorded. Abundant in deepwater, 75 catches were at <100 m, 23 with 1 kg or more, making it uncertain if real or contaminants, although the relatively low values were unlikely to affect biomass analyses (Ricard and Swain 2018).

Recommendations: To confirm ecology of species with shallow water captures.

Code 891 *Limanda ferruginea* (Yellowtail Flounder)

<urn:lsid:marinespecies.org:taxname:158879>

<https://inaturalist.ca/taxa/56045-Limanda-ferruginea>

There were 43 cases recorded of this nearshore flatfish. Sometimes mistaken for American Plaice, code 889, but there were few photos. It may be possible to validate from length-weight regressions.

Recommendations: None to declare.

Code 892 *Reinhardtius hippoglossoides* (Greenland Halibut)

<urn:lsid:marinespecies.org:taxname:127144>

<https://inaturalist.ca/taxa/229837-Reinhardtius-hippoglossoides>

There were 1,765 cases recorded of this deepwater flatfish.

Recommendations: None to declare.

Code 893 *Hippoglossus hippoglossus* (Atlantic Halibut)

<urn:lsid:marinespecies.org:taxname:127138>

<https://inaturalist.ca/taxa/82349-Hippoglossus-hippoglossus>

There were 474 cases recorded of this flatfish.

Recommendations: None to declare.

Code 895 *Pseudopleuronectes americanus* (Winter Flounder)

<urn:lsid:marinespecies.org:taxname:158885>

<https://inaturalist.ca/taxa/51371-Pseudopleuronectes-americanus>

There were two cases recorded of this common inshore flatfish. The specimen in 2004, set 38, at 128 m, measured 310 mm, 314 g; this was deep in location and light for its size, but fits with *Hippoglossoides platessoides*, of which there were 64 at this set. The other individual was in 2014, set 76, 41 m, confirmed in photo and specimen.

Recommendations: In 2004, set 38, merge the sole specimen in code 895 to the others in code 889, *Hippoglossoides platessoides*.

Code 966 *Lophius americanus* (American Monkfish)

<urn:lsid:marinespecies.org:taxname:159184>

<https://inaturalist.ca/taxa/194675-Lophius-americanus>

There were 82 cases recorded, mostly single individuals of this distinctive species.

Recommendations: None to declare.

Code 980 Ceratiidae (Deepsea Anglerfishes, Family)

<urn:lsid:marinespecies.org:taxname:125487>

<https://inaturalist.ca/taxa/64218-Ceratiidae>

There were two cases recorded in 2004, with several individuals each of small size. These were errors for lanternfish (family Myctophidae), as noted on the capture sheets.

Recommendations: In 2004, sets 7 and 53, change code 980 to 272 (Myctophidae).

Code 982 *Cryptopsaras couesii* (Triplewart Seadevil)

<urn:lsid:marinespecies.org:taxname:126538>

<https://inaturalist.ca/taxa/217839-Cryptopsaras-couesii>

There were four cases recorded, all confirmed by photos. The first capture, in 2005, set 226, was duplicated during post-survey examination.

Recommendations: Delete specimen no. 5001 (duplicate). Modify the capture and sample weight from 1.9749 to 1.132 kg.

Invertebrates

For invertebrates, many changes were made to capture records, most of which are summarized here, but without the details seen in the preceding section for fishes.

Code 1100 Invertebrata

There were 240 cases, most of which were possible to name to a taxon. Some were new, like the benthic siphonophore of family Rhodaliidae, code 1380 (from genetics, likely *Stephalia corona*, <https://inaturalist.ca/observations/42853412>), that were signaled for years on the survey as invertebrate debris.

Recommendations: Change records to taxa based on notes and photos.

Code 1101 Porifera (Phylum)

<urn:lsid:marinespecies.org:taxname:558>
<https://inaturalist.ca/taxa/48824-Porifera>

There were 1,138 cases recorded since 2006. At least 69 cases were possible to identify in photos and separate by weight from notes. Most seen in photo had no weights.

Recommendations: Based on photos, record presences of sponges that could not be associated with a weight and thus are not currently in the catch database.

Code 1107 *Polymastia hemispherica*

<urn:lsid:marinespecies.org:taxname:134200>
<https://inaturalist.ca/taxa/1154283-Polymastia-hemisphaerica>

There were two captures recorded in 2015. Other cases were seen in photos.

Recommendations: Record presences from photos in early years of the survey.

Code 1108 *Tentorium semisuberites*

<urn:lsid:marinespecies.org:taxname:134224>
<https://inaturalist.ca/taxa/459769-Tentorium-semisuberites>

There were six cases recorded since 2014. A small species, often seen in photos and previously recorded under code 1100 (Invertebrata) or code 1101 (Porifera).

Recommendations: Record presences from photos in early years of the survey.

Code 1109 *Polymastia* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:132046](https://inaturalist.ca/taxa/117721-Polymastia)
<https://inaturalist.ca/taxa/117721-Polymastia>

There were seven cases recorded since 2013. In 2013, set 55, there was a large *Polymastia grimaldii*, code 1123.

Recommendations: In 2013, set 55, change code 1109 to code 1123, *Polymastia grimaldii*. Review photos and update to species or change to family level.

Code 1112 *Stylocordyla borealis*

[urn:lsid:marinespecies.org:taxname:134240](https://inaturalist.ca/taxa/459844-Stylocordyla-borealis)
<https://inaturalist.ca/taxa/459844-Stylocordyla-borealis>

There were 76 cases recorded since 2012 of this small, stalked species. Earlier captures were seen in photos.

Recommendations: Record presences from photos in early years of the survey.

Code 1340 Cnidaria (Phylum)

[urn:lsid:marinespecies.org:taxname:1267](https://inaturalist.ca/taxa/47534-Cnidaria)
<https://inaturalist.ca/taxa/47534-Cnidaria>

There were six cases recorded from 2013 to 2015. In 2013, photos indicate it was *Epizoanthus* (cf. *erdmanni*). The remaining records were debris.

Recommendations: In 2013, change code 1340 for code 2157, *Epizoanthus*. Delete remaining five cases as debris.

Code 1341 Hydrozoa (Class)

[urn:lsid:marinespecies.org:taxname:1337](https://inaturalist.ca/taxa/48921-Hydrozoa)
<https://inaturalist.ca/taxa/48921-Hydrozoa>

There were 482 cases recorded, with 69 needing review, most of which were modifiable for hydromedusae, fixed hydroids, or other types (Bryozoa or Porifera).

Recommendations: Change records to taxa when noticed in photos.

Code 1352 *Staurostoma mertensii* (Whitecross Jelly)

[urn:lsid:marinespecies.org:taxname:594013](https://inaturalist.ca/taxa/255998-Staurostoma-mertensii)
<https://inaturalist.ca/taxa/255998-Staurostoma-mertensii>

There were 40 cases recorded. Several cases were modified for either the hydromedusa, *Ptychogena lactea*, or Scyphozoa.

Recommendations: Change records to taxa when noticed in photos.

Code 1353 *Ptychogena lactea* (Milkspot Jelly)

[urn:lsid:marinespecies.org:taxname:117728](https://marinespecies.org/taxname/117728)

<https://inaturalist.ca/taxa/702213-Ptychogena-lactea>

There were 189 cases recorded. A common hydromedusa, sometimes mistaken for the jelly, *Aurelia aurita*. Six cases were problematic, to place in debris or Scyphozoa.

Recommendations: Change records to debris or to code 2040, Scyphozoa, based on photos.

Code 1357 *Thuiaria thuja* (Bottlebrush hydroid)

[urn:lsid:marinespecies.org:taxname:117940](https://marinespecies.org/taxname/117940)

<https://inaturalist.ca/taxa/873882-Thuiaria-thuja>

There were 43 cases recorded since 2012. Most fixed hydroids cannot be readily identified, except for this species. In 2014, set 164, other species were included in the capture.

Recommendations: In 2014, set 164, change code 1357 for code 1341 (Hydrozoa).

2040 Scyphozoa (Class)

[urn:lsid:marinespecies.org:taxname:135220](https://marinespecies.org/taxname/135220)

<https://inaturalist.ca/taxa/48332-Scyphozoa>

There were 870 cases recorded, for four species of pelagic medusae: *Cyanea capillata*, *Aurelia aurita*, *Periphylla periphylla*, *Atolla wyvillei*. At least 105 could be moved to species level based on photos. In some cases, there were several species per record, and thus it was not possible to update the database based on capture weights. For three cases at shallow depths, the captures included fixed Stauromedusae, *Lucernaria quadricornis*, that were placed in sum with other scyphozoans.

Recommendations: Correct captures where possible based on photos. Separate the two captures of *Lucernaria quadricornis* in 2011, set 72, and in 2012, sets 44 and 68.

Code 2080 *Cyanea capillata* (Lion's Mane Jelly)

[urn:lsid:marinespecies.org:taxname:135301](https://marinespecies.org/taxname/135301)

<https://inaturalist.ca/taxa/69838-Cyanea-capillata>

There were 249 cases recorded since 2013. A large, common, epipelagic jelly, several records were in mixed catches as Scyphozoa, code 2080. Once considered a cosmopolitan species, this jelly is now known to be part of a species complex. Genetics indicate the Gulf of St. Lawrence species is likely *Cyanea capillata*, but other species may be present such as *Cyanea fulva*. Most specimens presented the usual orange-brown coloration, though some had a blue coloration, typically associated with *Cyanea lamarcki*. Another species, the Egg Yolk Jelly, *Phacellophora camtschatica*, is sometimes mistaken for *C. capillata*. In recent years, *P. camtschatica* was observed in Bay of Fundy (https://inaturalist.ca/observations?place_id=any&subview=map&taxon_id=52967), and a specimen at the Canadian Museum of Nature was collected in 1987 from Les Escoumins, in the St. Lawrence Estuary (<https://www.gbif.org/occurrence/1804621376>), and thus it may be necessary to monitor for its presence. While *P. camtschatica* is a common species in the NE Pacific, this rare Atlantic type may be of another species, such as the older synonym, *P. sicula*, although this is not currently recognized as a separate species (<https://www.marinespecies.org/aphia.php?p=taxdetails&id=135309>).

Recommendations: Update other cases where possible based on photos (by weight or presence). Confirm presence of *Cyanea* species through genetics and modify to genus if necessary. Monitor for presence of *Phacellophora camtschatica*.

Code 2085 *Aurelia aurita* (Moon Jelly)

<urn:lsid:marinespecies.org:taxname:135306>
<https://inaturalist.ca/taxa/48328-Aurelia-aurita>

There were 146 cases recorded of this small, epipelagic jelly, mostly for 2014 and 2015. This cosmopolitan species is now considered part of a complex. Genetics suggest the Gulf species may be *Aurelia aurita*. From photos, some cases were mistaken for the hydromedusa, *Ptychogena lactea*, while other records were of fragments or debris. In 2015, sets 50 and 57, there were two records with code 2085 while the catch sheet has code 1352, *Staurostoma mertensii*. Photos indicate it was debris.

Recommendations: In 2015, sets 50 and 57, delete or tag captures as debris. Consider recording to genus level as several species may occur in the northwest Atlantic.

Code 2095 *Atolla* sp. (Genus)

<urn:lsid:marinespecies.org:taxname:135248>
<https://inaturalist.ca/taxa/195391-Atolla>

There was one case recorded, in 2012, set 102, confirmed by photo, and with a diameter of 8 cm. Bathypelagic medusae, the presumed species is *Atolla wyvillei*, code 2097, as other species in NW Atlantic *Atolla parva* and *Atolla vanhoeffeni* are reported to be <3 cm in diameter (Russell 1976).

Recommendations: In 2012, set 102, change code 2095 to code 2097, *Atolla wyvillei*.

Code 2096 *Periphylla periphylla* (Helmet Jelly)

<urn:lsid:marinespecies.org:taxname:135294>

<https://inaturalist.ca/taxa/256088-Periphylla-periphylla>

There were 187 cases recorded since 2012 of this large, bathypelagic jelly. In 2013, set 33, 62 m, a capture was split in two, with three orange specimens in code 2080 and a purple specimen misidentified as *Periphylla periphylla*. In 2014, set 180, the catch sheet has '1.618', presumably of the weight in kg and not in g as recorded in the database.

Recommendations: In 2013, set 33, change code 2096 for code 2080, Scyphozoa. Modify the capture weight for 2014, set 180, from 0.001618 to 1.618 kg. Add presences based on photos.

Code 2097 *Atolla wyvillei* (Wyville's Jelly)

<urn:lsid:marinespecies.org:taxname:135282>

<https://inaturalist.ca/taxa/256087-Atolla-wyvillei>

There were 20 cases recorded since 2013 of this small, bathypelagic jelly. Several more cases were present in photos.

Recommendations: Add presences based on photos.

Code 2100 Anthozoa (Class)

<urn:lsid:marinespecies.org:taxname:1292>

<https://inaturalist.ca/taxa/47533-Anthozoa>

There were four cases recorded in 2012, all with photos. Set 13 was possibly an echiuran worm, while the capture sheet shows 'Holothuroidea' then crossed out for 'Anthozoa'. Those in sets 65, 66, 67 were of the zoanthid, *Epizoanthus* cf. *erdmanni*.

Recommendations: In 2012, set 13, change code 2100 for 1100 (Invertebrata), and in sets 65, 66, 67, change code 2100 for code 2157 (*Epizoanthus* sp.)

Code 2155 *Duva* sp. (Genus)

<urn:lsid:marinespecies.org:taxname:146942>

<https://inaturalist.ca/taxa/459916-Duva>

There were four cases were in 2008, confirmed with photos to be *Drifa glomerata* and not the deepwater species of *Duva florida*.

Recommendations: In 2008, sets 89, 91, 100, 101, change change code 2155 to code 2191, *Drifa glomerata*.

Code 2156 *Epizoanthus erdmanni* (Zoanthid)

[urn:lsid:marinespecies.org:taxname:101027](https://marinespecies.org/taxname/101027)

<https://inaturalist.ca/taxa/460081-Epizoanthus-erdmanni>

There was one case recorded in 2014. Presumed to be the species present, but in need of confirmation, either in morphology or genetics.

Recommendations: Seek confirmation of the species or record to genus, code 2157.

Code 2157 *Epizoanthus* sp. (Zoanthid, Genus)

[urn:lsid:marinespecies.org:taxname:100790](https://marinespecies.org/taxname/100790)

<https://inaturalist.ca/taxa/869537-Epizoanthus-papillosus>

There were 118 cases recorded at the genus level since 2013. The species may be *Epizoanthus erdmanni*, code 2156, but it has not had a voucher confirmation. In 2007, set 22, a specimen on a hermit crab (*Pagurus* sp.) was *Epizoanthus incrustans* (synonym = *Epizoanthus papillosa*, [urn:lsid:marinespecies.org:taxname:101037](https://marinespecies.org/taxname/101037)). As a deepwater organism, small amounts may be found in successive sets following a significant capture; those from less than 150 m depth are suspect as contamination.

Recommendations: In 2007, set 22, add presence *Epizoanthus papillosa*, code 2178, based on photo (<https://inaturalist.ca/observations/53407185>). To confirm if the common species in the region is *Epizoanthus erdmanni*, code 2156. Monitor shallow water captures as potential contamination.

Code 2158 *Bolocera tuediae* (Deeplet Anemone)

[urn:lsid:marinespecies.org:taxname:100817](https://marinespecies.org/taxname/100817)

<https://inaturalist.ca/taxa/459990-Bolocera-tuediae>

There were 295 cases recorded since 2012. A large and common anemone, most cases could be confirmed in photos. Like other cnidarians on the survey (e.g., anemones, soft corals, zoanthids), this deep-sea species is vulnerable to contaminating the catches of consecutive tows following a large catch, and therefore specimens from sets above 150 m are suspect. In some cases, contamination can be confirmed by their poor or degraded condition when seen in photos. In the past, the species was often mistaken for other large anemones, including *Actinauge cristata*, *Liponema multicornis*, *Ptychodactis patula*, *Stomphia coccinea*, and *Urticina crassicornis*. Of note, some records had very high capture weights (e.g., 1 or 11 kg) with only 1 specimen counted. The correct abundance values are unknown and thus were not changed but might be estimated by mean weights.

Recommendations:

In 2012, set 187, add a line for code 2207, *Liponema multicornis*, capture weight estimated as 0.1 kg for 2 individuals, and modify captures of code 2209 for 0.687 kg and 13

individuals (instead of 0.7874 and 15 individuals). For sets 197, 201, 209, change code 2158 for code 2207, *Liponema multicornis*.

In 2013, set 1, change the capture of 0.4394 kg for 6 to 0.4432 kg for 7, by adding the capture of code 2165, Actiniaria (0.0038 kg for 1). For sets 52 and 53, change the captures to code 2173, *Stomphia coccinea*. For set 55, change code 2158 for code 2182, *Actinauge cristata*.

In 2014, set 188, 0.499 kg for 11, change code 2158 for code 2176, *Urticina crassicornis*, and modify capture to record 2 specimens of *Ptychodactis patula*, code 2153.

Flag records of single specimens with very high capture weight (e.g., >1 kg) as incorrect abundance values and review for possible correction with estimated mean weight.

Code 2159 *Stephanauge nexilis* (Bonnet Anemone)

<urn:lsid:marinespecies.org:taxname:158258>

<https://inaturalist.ca/taxa/854529-Stephanauge-nexilis>

There were 57 cases recorded since 2012 (see below for earlier records at genus level). A small, deepwater anemone, it is found attached to Finmark's sea pen, *Halipteris finmarchica* (current genus: *Balticina*), code 2217. All cases were from deepwater, but some could be of debris captured on sets without *Halipteris* sea pens. In 2012, set 126, an *Actinauge* anemone attached to a worm tube was mistaken for *Stephanauge*. In set 149, there was a specimen on a broken piece of sea pen, and thus potentially of debris.

Recommendations:

In 2012, set 126, move and add the capture in code 2159 to the others in code 2182, *Actinauge cristata*, resulting in 2.263 kg for 248 specimens. Monitor for co-occurrence with *Halipteris* sea pens and deepwater sets to avoid records of contamination.

Code 2160 *Stephanauge* sp. (Genus)

<urn:lsid:marinespecies.org:taxname:100763>

<https://inaturalist.ca/taxa/459922-Stephanauge>

There were 62 cases recorded to genus level between 2007 and 2011. There is only one species present, code 2159, *Stephanauge nexilis*. In 2005, sets 143 and 200, at shallow depths, specimens appeared to be debris. In 2011, set 23, there was an unknown anemone like *Actinauge cristata* and two small anemones like *Stomphia coccinea*.

Recommendations:

In 2005, sets 143 and 200, delete as debris captures in code 2160.

In 2011, set 23, change code 2160 for code 2165 Actiniaria.

Change all other records in code 2160 for code 2159, *Stephanauge nexilis*.

Code 2161 *Actinostola* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:100709](https://marinespecies.org/taxname/100709)

<https://inaturalist.ca/taxa/459905-Actinostola>

There were 249 captures recorded between 2008 and 2011. There is only one species present, code 2162, *Actinostola callosa*. A large and abundant deepwater anemone, catches are vulnerable to contamination between sets and thus should be monitored when in shallow water. In 2008, set 124, there were juvenile anemones in code 2165 (Actiniaria) to be put together with the larger ones of *Actinostola callosa*. In 2010, sets 169 and 184, the small, shallow water anemones were of *Hormathia digitata*, code 2150. The similar deepwater anemone, *Actinauge cristata*, code 2182, is also sometimes mistaken for *Actinostola*, as in the case of a specimen in photo seen in 2011, set 105.

Recommendations:

In 2008, set 124, modify the capture in code 2161 of 4.4 kg for 17 to 4.9346 kg for 22.

In 2010, sets 169 and 185, change code 2161 for code 2150, *Hormathia digitata*.

In 2011, set 105, change code 2161 for code 2182, *Actinauge cristata*.

Change all other records of code 2161 for code 2162, *Actinostola callosa*.

Code 2162 *Actinostola callosa* (Callose Anemone)

[urn:lsid:marinespecies.org:taxname:100839](https://marinespecies.org/taxname/100839)

<https://inaturalist.ca/taxa/459904-Actinostola-callosa>

There were 245 captures recorded since 2012. An abundant deepwater species, it is prone to contamination as debris in subsequent sets following a large capture. In 2012, set 194, at 134 m, the single specimen appeared to be debris, following the preceding set at 251 m with a capture of 34 kg. The species is sometimes mistaken for another deepwater but smaller and knobby anemone, *Actinauge cristata*.

Recommendations:

In 2012, set 194, delete code 2162 as debris.

In 2014, change code 2162 for code 2165 *Actinauge cristata*.

Code 2165 Actiniaria (Sea Anemones, Order)

[urn:lsid:marinespecies.org:taxname:1360](https://marinespecies.org/taxname/1360)

<https://inaturalist.ca/taxa/47797-Actiniaria>

There were 306 cases recorded at the class level since 2006. When photos are present, it was possible to suggest the species (often *Actinauge cristata*, *Hormathia digitata*, or *Stomphia coccinea*), however, not all captures can have their weight divided and thus could only be added as presences. A special case was seen in 2007, set 60, at 174 m depth, with two colonies of very small orange anthozoans, recorded as Actiniaria. These deepwater polyps were also seen in photos in 2008, set 180 (recorded along with sponges as Invertebrata, code 1100), and more recently in 2018, set 195. These appeared

superficially as either the zoanthid *Epizonathus erdmanni* or the alcyonacean *Clavularia arctica*, neither of which seems likely, and thus should be recorded to class Anthozoa, code 2100, (<https://inaturalist.ca/observations/18676814>).

Note that another species, *Ptychodactis patula* (<https://inaturalist.ca/taxa/1039352-Ptychodactis-patula>) was previously mistaken for anemones in poor condition (debris) because of its beige colour and flabby column. It was only recognized in 2018. There were five cases seen in photos since 2008, but not yet recorded in sheets or database.

Recommendations: Modify the captures in class Actiniaria to species where possible based on photos. Example: in 2012, set 218, transfer specimen in code 2165 to code 2162, *Actinostola callosa*, modifying capture from 1.92 kg for 8 to 1.9315 kg for 9. Add presences of species based on photos.

Code 2167 *Hormathia nodosa* (Rugose Anemone)

[urn:lsid:marinespecies.org:taxname:100954](https://inaturalist.ca/taxa/460074-Hormathia-nodosa)

<https://inaturalist.ca/taxa/460074-Hormathia-nodosa>

There were 183 cases recorded since 2007 of this shallow water anemone of rocky shores. From photos, most before 2011 were mistaken for code 2182, *Actinauge cristata*, another knobby anemone in the family, but occurring in deep water and soft bottoms.

Recommendations: Change to correct species code based on photos, or change to class Actiniaria, code 2165, if no photo.

Code 2171 *Metridium senile* (Frilled Anemone)

[urn:lsid:marinespecies.org:taxname:100982](https://inaturalist.ca/taxa/49071-Metridium-senile)

<https://inaturalist.ca/taxa/49071-Metridium-senile>

There were 40 cases recorded, 38 of them in 2006. This anemone is a common, sublittoral species of rocky bottoms, and therefore not often captured in the survey. Three cases were confirmed as *Actinostola callosa*, a deepwater anemone. Two cases of *Metridium senile*, at shallow depths, were correctly identified in 2015.

Recommendations: In 2006, for sets 159, 181, 203, change code 2171 to code 2162 *Actinostola callosa*; at the other sets, change to code 2165, Actiniaria.

Code 2173 *Stomphia coccinea* (Swimming Anemone)

[urn:lsid:marinespecies.org:taxname:100854](https://inaturalist.ca/taxa/459981-Stomphia-coccinea)

<https://inaturalist.ca/taxa/459981-Stomphia-coccinea>

There were 257 cases recorded since 2008. A common species occurring in shallow and deep water, this anemone is often confused with other species. Ten cases are to have their values transferred to catches for other taxa, two others are to change taxon.

Recommendations: Change catch values in code 2173 to other taxa: in 2008, for sets 161, 162, 200, 209; in 2009, for sets 141, 177, 194; in 2012, for set 179; and in 2014, for sets 52 and 53.

In 2009, set 96, change code 2173 for code 2165, Actiniaria.

In 2012, set 56, change code 2173 for 2182, *Actinauge cristata*.

Code 2175 *Bolocera* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:100698](https://marinespecies.org/taxname/100698)

<https://inaturalist.ca/taxa/459989-Bolocera>

There were 340 cases recorded from 2007 to 2011. Most are to be upgraded to the species *Bolocera tuediae*, code 2158. When there were photos, some could be corrected to other species i.e., *Liponema multicornis*, *Actinauge cristata*, *Stomphia coccinea*, *Urticina crassicornis*.

Recommendations:

Correct cases for species and modify capture values where necessary.

Code 2176 *Urticina felina* (Dahlia Anemone)

[urn:lsid:marinespecies.org:taxname:100834](https://marinespecies.org/taxname/100834)

<https://inaturalist.ca/taxa/122035-Urticina-felina>

There were 81 cases recorded since 2006; most were either *Bolocera tuediae* or *Stomphia coccinea*. As a shallow water anemone of rocky bottoms, it is less likely to be encountered with the trawl. There have been five cases like *Urticina felina*. However, a recent review (Sanamyan et al. 2020) concluded that this species is European and not likely present in the NW Atlantic, having gone unnoticed for several decades. Instead, there are two similar species of family Actiniidae in the region: *Cribrinopsis similis* (white verrucae on column, <https://inaturalist.ca/taxa/558724-Cribrinopsis-similis>) and *Urticina crassicornis* (banded tentacles, <https://inaturalist.ca/taxa/127236-Urticina-crassicornis>).

Recommendations: Based on photos, modify records to species, or else to either family Actiniidae (code 2174) or class Actiniaria (code 2165).

Code 2180 Alcyonacea (Soft corals, Order)

[urn:lsid:marinespecies.org:taxname:1365](https://marinespecies.org/taxname/1365)

<https://inaturalist.ca/taxa/51015-Alcyonacea>

There were 25 cases in 2007, with photos showing Nephtheidae, and two cases in 2011 for sea pens.

Recommendations:

In 2007, change code 2180 for family Nephtheidae, code 2219, or place to species if evident in photos. In 2011, change code 2180 for code 2218, *Anthoptilum grandiflorum*.

Code 2181 Alcyoniidae (Soft corals, Family)

[urn:lsid:marinespecies.org:taxname:125269](https://inaturalist.ca/observations/96435466)

<https://inaturalist.ca/taxa/155097-Alcyoniidae>

There was one case recorded in 2006, set 167. Photo is suggestive of an *Alcyonidium* (see a large colony here: <https://inaturalist.ca/observations/96435466>). In checklists, the name for these soft corals (e.g., *Alcyonium* sp.) has been confounded with bryozoans as they had the same spelling in older synonyms, i.e., *Alcyonium*. In addition, the soft coral *Gersemia*, of family Nephtheidae, was also once named *Alcyonium*. A very difficult and problematic genus, some species such as *Gersemia rubiformis* may return to the family Alcyoniidae, especially in the NE Pacific (<https://inaturalist.ca/observations/73347184>). Currently, only one species occurs in the NW Atlantic, *Alcyonium siderum*; historically, it has been misidentified as the common NE Atlantic species, *Alcyonium digitatum* (<https://inaturalist.ca/observations/6711006>). While occurring in the Gulf of Maine and Bay of Fundy, *A. siderum* has not yet been confirmed present in the Gulf of St. Lawrence.

Recommendations: In 2006, set 167, change code 2181 for 2675, *Alcyonidium* sp.

Code 2182 *Actinauge cristata* (Crested Anemone)

[urn:lsid:marinespecies.org:taxname:158210](https://inaturalist.ca/observations/460076-Hormathia-digitata)

<https://inaturalist.ca/taxa/1068399-Actinauge-cristata>

There were 200 cases recorded. A common, deepwater anemone of soft bottoms, it was frequent in records since 2012, but was also often mistaken in that year for a shallow water species, *Hormathia digitata*, code 2150 (<https://inaturalist.ca/taxa/460076-Hormathia-digitata>).

Recommendations: In 2012, correct cases mistaken with *Hormathia digitata*, code 2150.

Code 2183 *Duva florida* (Sea Broccoli)

[urn:lsid:marinespecies.org:taxname:146943](https://inaturalist.ca/observations/459915-Duva-florida)

<https://inaturalist.ca/taxa/459915-Duva-florida>

There were 108 cases recorded since 2008. It is usually a dark coloured, deepwater soft coral. Three cases are to change to species *Drifa glomerata*, and 16 cases are to be moved to family Nephtheidae.

Recommendations: Change code 2183 for either code 2219 (Nephtheidae) or code 2191 (*Drifa glomerata*), according to photos.

Code 2184 *Gersemia rubiformis* (Sea Strawberry)

[urn:lsid:marinespecies.org:taxname:156103](https://marinespecies.org/taxname/156103)

<https://inaturalist.ca/taxa/459960-Gersemia-rubiformis>

There were 370 cases recorded since 2006. A shallow water, soft coral, usually pink to red in color. Several cases are to be moved to family Nephtheidae, *Drifa glomerata* or *Duva florida*. Note, the status of the genus *Gersemia* is problematic—see above for family Alcyoniidae, code 2181.

Recommendations: Change taxon where needed, based on photos.

Code 2190 *Paramuricea* sp. (Soft corals, Genus)

[urn:lsid:marinespecies.org:taxname:125311](https://marinespecies.org/taxname/125311)

<https://inaturalist.ca/taxa/338006-Paramuricea>

There were four cases recorded, seen in photos, that were misidentifications for other species. This coral species is absent from the Gulf of St. Lawrence.

Recommendations: In 2006, set 9, change code 2190 for code 8263, *Heliometra glacialis*; at set 10, for code 8448, *Novodinia americana*; at set 11, for code 2201, Pennatulacea (photos at least two *Halipterus finmarchica*, but not full the capture of 2.15 kg). In 2008, change code 2190 for code 8540, *Gorgonocephalus* sp.

Code 2191 *Drifa glomerata* (Sea Cauliflower)

[urn:lsid:marinespecies.org:taxname:146941](https://marinespecies.org/taxname/146941)

<https://inaturalist.ca/taxa/460065-Drifa-glomerata>

There were 65 cases recorded since 2013. It was sometimes mistaken for *Gersemia*.

Recommendations: In 2013, set 131, change code 2191 for code 2219, Nephtheidae; at set 146, change for code 2184, *Gersemia rubiformis*; at set 77, half the capture is of code 2184, *Gersemia rubiformis*, so change weight in code 2191 from 0.0154 to 0.0077 kg and add a capture of code 2184 for 0.0077 kg.

Code 2192 Isididae (Family)

[urn:lsid:marinespecies.org:taxname:125276](https://marinespecies.org/taxname/125276)

<https://inaturalist.ca/taxa/459873-Isididae>

There was one case in 2013, set 166, written on the sheet as *Gorgonocephalus* sp. and confirmed as such in photos.

Recommendations: Change code 2192 for code 8420, *Gorgonocephalus* sp.

Code 2201 Pennatulacea (Sea pens)

[urn:lsid:marinespecies.org:taxname:1367](https://marinespecies.org/taxname/1367)

<https://inaturalist.ca/taxa/52536-Pennatulacea>

There were 545 cases of these deepwater corals recorded from 2004 to 2010. Several records were possible to change to species level when seen in photos. Since 2011, all sea pens were recorded as one of the four species that were confirmed present in the region (see below). More recently, there were photos of a small beige sea pen, *Kophobelemnion stelliferum*, initially mistaken for debris of *Pennatula aculeata*. Specimens were observed from sets in 2018 and 2020 at the southern boundary of the Gulf of St. Lawrence near Cabot Strait. Contamination was frequent, with specimens in poor condition often seen in small amounts following a large capture, including on sets of <200 m depth for the larger species, and <150 m for *Pennatula aculeata*.

Recommendations: Change to species where possible when shown in photos. Monitor for debris, especially for shallow water sets. Seek to record presences from photos that do not have capture weight (mixed captures). Monitor for the presence of the lesser-known species *Kophobelemnion stelliferum* in Cabot Strait.

Code 2203 *Pennatula aculeata* (Spiny Sea Pen)

[urn:lsid:marinespecies.org:taxname:128515](https://marinespecies.org/taxname/128515)

<https://inaturalist.ca/taxa/460108-Pennatula-aculeata>

There were 426 cases recorded since 2007, 12 of which are to be changed, and several duplicates to be deleted.

Recommendations: In 2009, change code 2203 for code 2201, Pennatulacea, as there were three species in the capture. Correct records that were duplicates and debris.

Code 2205 *Actinauge* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:100750](https://marinespecies.org/taxname/100750)

<https://inaturalist.ca/taxa/460051-Actinauge>

There were 238 cases recorded between 2007 and 2010, all of which are to be modified. Some cases are also duplicates from modified records.

Recommendations: According to photos, change all cases of code 2205, to be placed either to the correct species or to the class Actiniaria, code 2165.

Code 2207 *Liponema multicornis* (Pompom Anemone)

[urn:lsid:marinespecies.org:taxname:593072](https://marinespecies.org/taxname/593072)

<https://inaturalist.ca/taxa/460120-Liponema-multicornis>

There were 27 cases recorded since 2013 of this occasional, deepwater species. In earlier years, some specimens were misidentified in catches of *Bolocera tuediae*. Because the capture weight could not be separated for the two species, these captures of *Bolocera tuediae* were changed to Actiniaria.

Recommendations: Record early presences in photos without need for capture weight.

Code 2210 *Ptillela grandis* (= *Pennatula grandis*) (Great Boreal Sea Pen)

[urn:lsid:marinespecies.org:taxname:1379630](https://marinespecies.org/taxname/1379630)

<https://inaturalist.ca/taxa/1066281-Ptillela-grandis>

There were 147 cases recorded since 2011, with five cases to be corrected. Several cases were present in photos under Pennatulacea, code 2201. Attention must be paid to ensure duplicates are not created when modifying records. Note that the genus was recently revised from *Pennatula* to *Ptillela* (García-Cárdenas et al. 2019).

Recommendations: Change name to *Ptillela grandis*. Record presences from photos.

In 2012, set 110, add values: pds_ech = 1.13, nb_ech = 25, nb_capt=1414. For sets 113 and 114, photos suggest debris: delete the captures.

In 2013, set 107, there was one *Anthoptilum grandiflorum* in view with two similar sized *P. grandis*. To modify capture of code 2210 for 0.1 kg for 2, and add a record for code 2218, *Anthoptilum grandiflorum*, with 0.046 kg for 1.

In 2014, set 25, there was a large *Pennatula aculeata*, to be placed with the capture in code 2203 and delete record of code 2203.

In 2015, set 147, delete the capture as debris.

Code 2217 *Balticina finmarchica* (= *Halipteris finmarchica*) (Finmark's Sea Pen)

[urn:lsid:marinespecies.org:taxname:584787](https://marinespecies.org/taxname/584787)

<https://inaturalist.ca/taxa/1283182-Balticina-finmarchica>

There were 92 cases recorded since 2011, with three cases to be corrected. A slender sea pen, it is less abundant and with a smaller distribution compared to the other species in the region. Note that the genus was recently revised from *Halipteris* to *Balticina*. (Pérez 2021).

Recommendations: In 2012, set 6, delete the capture as debris. At set 15, change code 2217 to code 2218, *Anthoptilum grandiflorum*. In 2014, set 209, the capture number is to be modified to 140 instead of 125 (pers. comm. Isabelle Lévesque).

Code 2218 *Anthoptilum grandiflorum* (Great Flowered Sea Pen)

<urn:lsid:marinespecies.org:taxname:128504>

<https://inaturalist.ca/taxa/355523-Anthoptilum-grandiflorum>

There were 259 cases recorded since 2011, with 14 cases to be modified, several of which appear to be of debris (from captures in preceding sets). A large and abundant sea pen, the species was re-discovered in 2011, having been misidentified for several decades in the region as either *Pennatula grandis* or *Virgularia mirabilis*.

Recommendations: Delete as debris: in 2011, sets 10, 16, 17, 90, 144, 161; in 2012, set 133; in 2013, sets 6, 7; in 2014, sets 100, 142; in 2015, set 130.

Code 2219 Nephtheidae (Soft corals, Family)

<urn:lsid:marinespecies.org:taxname:146762>

<https://inaturalist.ca/taxa/141945-Nephtheidae>

There were 72 records at the family level recorded since 2011. This is a problematic group with several confusing species. From photos, 12 cases appear to be *Drifa glomerata*, code 2191, two were *Gersemia rubiformis*, and one was of debris.

Recommendations: Change code 2219 for code 2191, *Drifa glomerata*, for 12 cases in photos. In 2011, set 49, move the capture in 2219 to that in code 2184. For set 51, change code 2219 for code 2184. In 2012, set 146, delete the capture in code 2219 as debris.

Code 2220 Scleractinia (Stony corals, Order)

<urn:lsid:marinespecies.org:taxname:1363>

<https://inaturalist.ca/taxa/47532-Scleractinia>

There were 21 cases of stony corals recorded between 2006 and 2010. According to photos, most were of debris, notably for calcareous bryozoans from shallow depths. Two cases were the cup coral, *Flabellum alabastrum*, code 2224.

Recommendations: In 2009, at set 19, and 2010 at set 11, change code 2220 for code 2224, *Flabellum alabastrum*. For all other cases of code 2220, delete as debris or change to code 2670, Bryozoa.

Code 2223 *Flabellum* sp. (Cup corals, Genus)

<urn:lsid:marinespecies.org:taxname:135114>

<https://inaturalist.ca/taxa/88384-Flabellum>

There were 22 cases recorded between 2008 and 2013. Only one species has been confirmed in the region: *Flabellum alabastrum*, code 2224.

Recommendations: Change code 2223 for code 2224, *Flabellum alabastrum*.

Code 2224 *Flabellum alabastrum* (Alabaster Cup Coral)

<urn:lsid:marinespecies.org:taxname:135194>

<https://inaturalist.ca/taxa/459957-Flabellum-alabastrum>

There were 25 cases recorded since 2011. It is a a hard coral found on soft bottoms (not fixed), with captures concentrated in the Laurentian Channel off the southwest corner of Newfoundland, near Cabot Strait. While common in the deeper water of the open Atlantic Ocean, it may be at its distributional depth limit in the Gulf of St. Lawrence (up to 500 m). Of note, surveys in recent years have had increasingly larger captures, possibly associated with range extension into the Gulf as the deep water has increased in temperature. The case in 2014, set 38, is without photo but is certainly calcareous debris (Bryozoa) as it was collected at 73 m near the Strait of Belle Isle, far from the Laurentian Channel location of all other captures.

Recommendations: In 2014, set 38, delete the case in code 2224 as debris.

Code 2250 Ctenophora (Phylum)

<urn:lsid:marinespecies.org:taxname:1248>

<https://inaturalist.ca/taxa/51508-Ctenophora>

There were 65 cases recorded since 2009, 45 of which were of *Pleurobrachia pileus*, code 2255. From photos and catch weights, 14 cases were shown to be the hydromedusa *Ptychogena lactea*, code 1343. Some cases were recorded as Hydrozoa, which was changed to Ctenophora. Three cases appeared to be of debris. In 2009, set 188, there was no photo while on the entry sheet is written 'not recorded', for a small capture of 0.8 g for 1; to be deleted as unknown.

Recommendations: Where verifiable, change code 2250 for code 2255, *Pleurobrachia pileus* or code 1343, *Ptychogena lactea*. In 2009, set 98, and in 2010, sets 52 and 129, delete code 2250 as debris. In 2009, set 188, delete as unknown.

Code 2255 *Pleurobrachia pileus* (Sea Gooseberry)

<urn:lsid:marinespecies.org:taxname:106386>

<https://inaturalist.ca/taxa/191599-Pleurobrachia-pileus>

There were 94 captures since 2013. No other ctenophore species has been noticed in trawl captures.

Recommendations: None to declare.

Code 2290 Turbellaria (Flatworms, Class; name no longer in use)

urn:lsid:marinespecies.org:taxname:794

There was one case in 2013, shown in photo as Fecampid egg capsules, code 2296.

Recommendations: In 2013, set 70, change code 2290 to code 2296, Fecampiidae.

Code 2295 Fecampiidae (Flatworms, Family)

urn:lsid:marinespecies.org:taxname:142082

<https://inaturalist.ca/taxa/940096-Fecampiidae>

There were six cases recorded since 2014. These are egg capsules of a shrimp parasite, probably of genus *Kronborgia* (e.g., <https://inaturalist.ca/observations/80073350>), having a spiral shape and tough, gray covering, making it easy to confuse them with plastic debris (<http://www.marinespecies.org/photogallery.php?album=773&pic=122431>). Only the egg capsules have been recorded, which belong to code 2296.

Recommendations: Change code 2295, for the organism, to 2296, for the egg capsule.

Code 2573 Priapulus caudatus

urn:lsid:marinespecies.org:taxname:101160

<https://inaturalist.ca/taxa/566491-Priapulus-caudatus>

One case was recorded in 2015, set 161. Only one species occurs in the group.

Recommendations: None to declare.

Code 2585 Nematoda (Roundworms, Phylum)

urn:lsid:marinespecies.org:taxname:799

<https://inaturalist.ca/taxa/54960-Nematoda>

There were five cases recorded. A diverse group, most are either small or are parasites. Two cases were nemertean ribbon worms, code 3000, while the others are uncertain. In 2006, set 67, the catch shows 2.5 g, but it is not on the entry sheet, and this weight seems heavy. Another in 2009, set 103, has a weight of "0", probably a small parasitic worm. A last case has unknown, large roundworms, 0.8 g for 2 in 2012, set 72 at 139 m depth.

Recommendations: In 2006, sets 27 and 141, change code 2585 for 3000, Nemertea.

Code 2670 Bryozoa (Moss animals, Phylum)

urn:lsid:marinespecies.org:taxname:146142

<https://inaturalist.ca/taxa/68104-Bryozoa>

There have been 169 cases recorded since 2006. A diverse group of encrusting or erect colonial organisms, 25 cases were *Securiflustra securifrons*, code 2679, along with several that were misidentified on the entry sheet as *Caberea ellisi*. In a few cases, they appear to be of debris.

Recommendations: Review and delete as debris suspect cases. Change code to species if validated by photos.

Code 2675 *Alcyonidium* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:110993](https://marinespecies.org/taxname/110993)
<https://inaturalist.ca/taxa/130183-Alcyonidium>

There were 11 cases recorded since 2010. The genus comprises a diverse and complex group of mostly rubbery mats or branches. Four in photos were debris of large, brown *Alcyonidium pachydermatum*, code 2677, (<https://inaturalist.ca/observations/104602894>) while three others were small, pale colonies, perhaps *Alcyonidium diaphanum* or *gelatinosum* (example from a later survey: <https://inaturalist.ca/observations/96435466>).

Recommendations: Review if valid or flag or delete as debris.

Code 2677 *Alcyonidium pachydermatum*

[urn:lsid:marinespecies.org:taxname:470640](https://marinespecies.org/taxname/470640)
<https://inaturalist.ca/taxa/337055-Alcyonidium-pachydermatum>

There were three cases recorded in 2015. Captures of this large and abundant intertidal species are problematic as they consist of drift debris originating from the seashore. The long, brown tubes can sometimes be mistaken for stalks of kelp (seaweed).

Recommendations: Review and flag or delete as debris.

Code 2678 *Caberea ellisii*

[urn:lsid:marinespecies.org:taxname:111230](https://marinespecies.org/taxname/111230)
<https://inaturalist.ca/taxa/568693-Caberea-ellisii>

There were 23 misidentified cases since 2008. An erect, but non-calcareous bryozoan, most cases were *Securiflustra securifrons*, code 2679, and some were calcareous debris. In one case, it was an error in name for the nudibranch, *Colga villosa*, seen in photos. The species *C. ellisii* has not been confirmed on the survey.

Recommendations: In 2012, set 153, change code 2678, *Caberea ellisii*, for code 3908, *Colga villosa*. Based on photos, change remaining cases for *Securiflustra securifrons*, code 2679 and Bryozoa, code 2670, or delete as debris.

Code 2679 *Securiflustra securifrons*

[urn:lsid:marinespecies.org:taxname:111374](https://marinespecies.org/taxname/111374)

<https://inaturalist.ca/taxa/542092-Securiflustra-securifrons>

There were 37 cases recorded since 2013. Five cases were debris of other bryozoans.

Recommendations: In 2013, sets 146 and 164, and 2014, sets 142 and 191, delete cases of code 2679 as debris.

Code 2681 *Reteporella grimaldii*

[urn:lsid:marinespecies.org:taxname:111453](https://marinespecies.org/taxname:111453)

<https://inaturalist.ca/taxa/359118-Reteporella-grimaldii>

There was one case recorded in 2015, set 30, along with debris of other calcareous bryozoans. This species only occurs in the NE Atlantic. The local species is *Phidolopora elongata*, seen in this example from 2005 (<https://inaturalist.ca/observations/103089748>).

Recommendation: Change code 2681, *Reteporella grimaldii*, to code 2670 and flag as debris for deletion. In future, verify if collected colonies are living or dead debris.

Code 3000 Nemertea (Ribbon worms, Phylum)

[urn:lsid:marinespecies.org:taxname:152391](https://marinespecies.org/taxname:152391)

<https://inaturalist.ca/taxa/51280-Nemertea>

There were five cases recorded since 2009 of these fragile, flattened worms. They are difficult to identify unless examined carefully.

Recommendation: In future, conserve all specimens for species confirmation.

Code 3080 Brachiopoda (Lamp shells, Phylum)

[urn:lsid:marinespecies.org:taxname:1803](https://marinespecies.org/taxname:1803)

<https://inaturalist.ca/taxa/122158-Brachiopoda>

There were four cases recorded in 2006, at sets 71, 72, 78, and 79. These were of the shallow water species (average depth 75 m), *Hemithiris psittacea*, code 3090, confirmed by photos for sets 71 and 78, and presumed likely for sets 72 and 79.

Recommendation: In 2006, change code 3080 for 3090, *Hemithiris psittacea*.

Code 3090 *Hemithiris psittacea* (Parrot-beak Lamp Shell)

[urn:lsid:marinespecies.org:taxname:104054](https://marinespecies.org/taxname:104054)

<https://inaturalist.ca/taxa/536723-Hemithiris-psittacea>

There were 45 cases recorded since 2008, with most being confirmed with photos. The species is a black brachiopod, common in shallower rocky bottoms.

Recommendation: None to declare.

Code 3100 *Terebratulina* sp. (Lamp shells, Genus)

urn:lsid:marinespecies.org:taxname:104040

<https://inaturalist.ca/taxa/192685-Terebratulina>

There were 45 cases recorded from 2008 to 2010, most being confirmed with photos. There is only one species present, *Terebratulina septentrionalis*, code 3101.

Recommendation: In 2008, change code 3100 for code 3101, *Terebratulina septentrionalis*.

Code 3101 *Terebratulina septentrionalis* (Northern Lamp Shell)

urn:lsid:marinespecies.org:taxname:104056

<https://inaturalist.ca/taxa/192682-Terebratulina-septentrionalis>

There were 60 cases recorded since 2011. The species is a deepwater, pale brachiopod with a small stalk. Earlier records were at genus level, or mistakenly recorded for bivalves. In one instance with a blurry photo, the specimen seemed more like an egg or tissue, and weighed heavier relative to others, at 2.8 g instead of 1.5 g. In recent reviews of images of similar 'eggs', similar specimens were confirmed by genetic analysis to be remnants of benthic siphonophores of family Rhodaliidae, possibly of the species *Stephalia corona*. (http://www.boldsystems.org/index.php/Public_BarcodeCluster?clusteruri=BOLD:ACM3552).

Recommendation: In 2012, set 172, change code 3101 for code 1380, Rhodaliidae.

Code 3125 Polyplacophora (Chitons, Class)

urn:lsid:marinespecies.org:taxname:55

<https://inaturalist.ca/taxa/47429-Polyplacophora>

There were 13 cases of small chitons recorded since 2006. From photos, three were Tonicellidae and four were *Amicula vestita*. The others may be *Stenosemus albus*.

Recommendations: In 2009, sets 39,120,142, change code 3125 for code 3133, Tonicellidae. In 2011, sets 41, 46, 47, and 2013, set 65, change for code 3164, *Amicula vestita*.

Code 3134 *Tonicella* sp. (Chitons, Genus)

urn:lsid:marinespecies.org:taxname:138090

<https://inaturalist.ca/taxa/47426-Tonicella>

There were four cases recorded; all could be moved to the species level. In 2009, set 40, photos indicated *Stenosemus albus*, code 3145 (<https://inaturalist.ca/taxa/482200-Stenosemus-albus>). In 2014, they were identified in post-survey examination at set 60 as *Tonicella marmorea*, code 3135 (<https://inaturalist.ca/taxa/482195-Tonicella-marmorea>), and at sets 75 and 77 as *Boreochiton ruber* (previously *Tonicella rubra*), code 3154.

Recommendations: In 2009, set 40, change code 3134 to code 3145, *Stenosemus albus*. In 2014, set 60, change code 3135 to code 3135, *Tonicella marmorea*, and at sets 75 and 77, to code 3154, *Boreochiton ruber*.

Code 3154 *Boreochiton ruber* (= *Tonicella rubra*) (Northern Red Chiton)

<urn:lsid:marinespecies.org:taxname:386411>
<https://inaturalist.ca/taxa/552300-Boreochiton-ruber>

There were four cases recorded since 2006. This chiton is difficult to distinguish from *Tonicella marmorea* and should be recorded at the family level unless examined carefully.

Recommendations: In 2006, sets 70 and 84 and in 2011, sets 64 and 70, review photos again or change code 3154 to code 3133, family Tonicellidae.

Code 3164 *Amicula vestita*

<urn:lsid:marinespecies.org:taxname:159928>
<https://inaturalist.ca/taxa/984444-Amicula-vestita>

There were three cases recorded since 2011 of this distinctive chiton.

Recommendation: None to declare.

Code 3175 Gastropoda (Snails, Class)

<urn:lsid:marinespecies.org:taxname:101>
<https://inaturalist.ca/taxa/47114-Gastropoda>

There were 147 cases recorded since 2006. Photos resolved several cases to family, genus, or species level. Some had two or more taxa, and thus the catch weights are to be divided between them, while others were of debris to be deleted.

Recommendations: Place to the taxon as seen in photos and flag cases when debris. Where possible, divide the catch weight proportionally by taxon.

Code 3212 *Margarites* sp. (Top shells, genus)

<urn:lsid:marinespecies.org:taxname:138592>
<https://inaturalist.ca/taxa/129934-Margarites>

There were 59 cases recorded since 2008. Small gastropods, 45 cases were identifiable in photos as one of two species, *Margarites costalis* and *Margarites groenlandicus*. In two cases, these were confused with bubble shells, and in four cases with moon snails. In four other cases, both species occurred but were weighed for the genus.

Recommendations: Change to the species of *Margarites* seen in photos. In 2008, change code 3212 for code 3715, *Scaphander punctostriatus*. In 2010, set 133, change for code 3437, *Euspira pallida*. In 2010, set 74, and in 2013, sets 125 and 149, change for code 3420, Naticidae.

Code 3216 *Margarites groenlandicus* (Greenland Margarite)

[urn:lsid:marinespecies.org:taxname:141820](https://marinespecies.org/taxname/141820)

<https://inaturalist.ca/taxa/482215-Margarites-groenlandicus>

There were eight cases recorded since 2012 of this small gastropod.

Recommendation: None to declare.

Code 3219 *Margarites costalis* (Boreal Rosy Margarite)

[urn:lsid:marinespecies.org:taxname:141819](https://marinespecies.org/taxname/141819)

<https://inaturalist.ca/taxa/854907-Margarites-costalis>

There were 43 cases recorded since 2009 of this small gastropod.

Recommendation: None to declare.

Code 3248 *Littorina* sp. (Periwinkle, Genus)

[urn:lsid:marinespecies.org:taxname:138135](https://marinespecies.org/taxname/138135)

<https://inaturalist.ca/taxa/48919-Littorina>

There were three cases recorded of this intertidal gastropod, two of which were debris and probably the third case as well, collected from 190 to 387 m depth.

Recommendations: Change code 3248 for code 3249, *Littorina littorea*, and flag or delete as debris.

Code 3310 *Tachyrhynchus erosus* (Eroded Turretsnail)

[urn:lsid:marinespecies.org:taxname:196391](https://marinespecies.org/taxname/196391)

<https://inaturalist.ca/taxa/1100835-Tachyrhynchus-erosus>

There were two cases recorded in 2012. A small nearshore gastropod, it was not possible to verify if were live or dead shells.

Recommendations: None to declare

Code 3405 *Crepidula* sp. (Slipper snail, Genus)

<urn:lsid:marinespecies.org:taxname:137722>

<https://inaturalist.ca/taxa/81644-Crepidula>

There was one case recorded in 2008, but not on the catch sheet or in photos, as it was an error with the preceding line for Naticidae.

Recommendations: In 2008, delete the case of code 3404 (error in database).

Code 3417 *Aporrhais* sp. (Pelican's foot snails, Genus)

<urn:lsid:marinespecies.org:taxname:137656>

<https://inaturalist.ca/taxa/59409-Aporrhais>

There were 55 cases recorded between 2007 to 2011. There is only one species present, *Arrhoges occidentalis* (= *Aporrhais occidentalis*), code 3418.

Recommendations: Change code 3417 for code 3418, *Arrhoges occidentalis*.

Code 3418 *Arrhoges occidentalis* (American Pelicanfoot)

<urn:lsid:marinespecies.org:taxname:531617>

<https://inaturalist.ca/taxa/854910-Arrhoges-occidentalis>

There were 109 cases recorded since 2006. Two were juvenile *Buccinum undatum*. In another case, the photo and entry sheet had a *Cuspidaria*, not in the database.

Recommendations: In 2014, sets 22 and 24, change code 3418 to code 356, sets 22 and 24, change code 3418 for code 3516, *Buccinum* sp. In 2008, set 148, add a record for code 4526, *Cuspidaria glacialis*, 0.3 g for 1.

Code 3420 Naticidae (Moonsnails, Family)

<urn:lsid:marinespecies.org:taxname:145>

<https://inaturalist.ca/taxa/48923-Naticidae>

There were 48 cases recorded since 2008. These could be identified as either *Cryptonatica affinis*, code 3422, or *Euspira pallida*, code 3437, when photos showed the umbilicus and operculum.

Recommendations: Change code 3420 for the actual species based on photos.

Code 3422 *Cryptonatica affinis* (Arctic Moonsnail)

[urn:lsid:marinespecies.org:taxname:140525](https://marinespecies.org/taxname/140525)

<https://inaturalist.ca/taxa/448169-Cryptonatica-affinis>

There were 14 cases recorded since 2006. In three cases, the photos were of *Euspira pallida*, code 3437.

Recommendations: In 2012, set 149, and 2013, set 124, change code 3422 for code 3437, *Euspira pallida*. Also in 2013, set 115, move capture code 3422 in sum with code 3437.

Code 3430 *Euspira* sp. (Moonsnails, Genus)

[urn:lsid:marinespecies.org:taxname:138239](https://marinespecies.org/taxname:138239)

<https://inaturalist.ca/taxa/116660-Euspira>

There were six cases recorded in 2006. Four cases were uncertain and are to be changed to family level. In one case, there was a dead shell containing a sipunculid, *Phascolion strombus*. In 2009, the case was clearly identifiable as *Cryptonatica affinis*, code 3411.

Recommendations: In 2006, set 39, 2008 sets 92 and 221, and 2011, set 50, change code 3430 for 3420 Naticidae. In 2008, set 155, change code 3430 for code 5907, *Phascolion strombus*. In 2009, set 41, change code 3430 for 3422, *Cryptonatica affinis*.

Code 3437 *Euspira pallida* (Pale Moon Snail)

[urn:lsid:marinespecies.org:taxname:140536](https://marinespecies.org/taxname:140536)

<https://inaturalist.ca/taxa/873876-Euspira-pallida>

There were 19 cases recorded since 2012. In 2014, set 22, the photo showed it to be *Margarites groenlandicus*.

Recommendations: As mentioned above for code 3433, in 2013, set 115, modify capture to a total of 0.0118 kg for 2 in code 3437. In 2014, set 22, change code 3437 for code 3216, *Margarites groenlandicus*.

Code 3438 *Euspira heros* (Northern Moon Snail)

[urn:lsid:marinespecies.org:taxname:160315](https://marinespecies.org/taxname:160315)

<https://inaturalist.ca/taxa/424402-Euspira-heros>

There were five cases recorded in 2008. A large moonsnail that is common nearshore, though not yet confirmed on the survey. The specimen on set 112 is identifiable in photo as *Euspira pallida*, code 3427. The other cases were not clear and are to be moved to the family Naticidae, code 3420.

Recommendations: In 2008, set 189, change code 3438 for code 3437, *Euspira pallida*. For the other cases (sets 199, 200, 206 and 209), change code 3438 for code 3420, Naticidae.

Code 3453 Velutinidae (Family)

[urn:lsid:marinespecies.org:taxname:143](https://marinespecies.org/taxname/143)

<https://inaturalist.ca/taxa/245592-Velutinidae>

There was one case recorded from 2012, set 55, at 88 m, with photos showing an *Onchidiopsis corys*, code 3456, and confirming the large size, at 0.2439 kg (244 g).

Recommendations: In 2012, set 55, change code 3453 for code 3456, *Onchidiopsis corys*, and modify capture weight 0.2439 kg to 0.02439 kg.

Code 3458 *Velutina* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:138631](https://marinespecies.org/taxname/138631)

<https://inaturalist.ca/taxa/473060-Velutina>

There was one case recorded in 2009, set 41, with the photo showing *Limneria undata*, code 3459.

Recommendations: In 2009, set 41, change code 3458 for code 3459, *Limneria undata*.

Code 3459 *Limneria undata* (= *Velutina undata*)

[urn:lsid:marinespecies.org:taxname:159903](https://marinespecies.org/taxname/159903)

<https://inaturalist.ca/taxa/940441-Limneria-undata>

There were five cases recorded in 2014; in set 202, it appears to be *Velutina velutina*, code 3460.

Recommendations: In 2014, set 202, change code 3459 for code 3460, *Velutina velutina*.

Code 3460 *Velutina velutina* (Velvet Shell)

[urn:lsid:marinespecies.org:taxname:141905](https://marinespecies.org/taxname/141905)

<https://inaturalist.ca/taxa/482347-Velutina-velutina>

There were two cases recorded and seen in photos. Note: in 2014, set 24, 2 of 4 specimens recorded in code 3175, Gastropoda, were of *Velutina velutina*.

Recommendations: In 2014, set 24, confirm the splitting the record of four specimens in Gastropoda, code 3175, for two *Velutina velutina*, code 3460. In future, it may be necessary to record specimens at subfamily level (Velutinae) when uncertain.

Code 3483 *Nucella lapillus* (Atlantic Dogwinkle)

[urn:lsid:marinespecies.org:taxname:140403](https://marinespecies.org/taxname/140403)

<https://inaturalist.ca/taxa/203761-Nucella-lapillus>

There was one case recorded in 2014, set 189. On the entry sheet was noted *Boreotrophon truncatus*, code 3483. The photo shows *Scabrotrophon fabricii*, code 3491.

Recommendations: Change code 3483 for code 3491, *Scabrotrophon fabricii*.

Code 3487 *Boreotrophon clathratus* (Clathrate Trophon)

[urn:lsid:marinespecies.org:taxname:146732](https://marinespecies.org/taxname/146732)

<https://inaturalist.ca/taxa/638334-Boreotrophon-clathratus>

There were 14 cases recorded since 2009, of which there are eight in photos where it is *Scabrotrophon fabricii*, code 3491. The one in set 144 did not have a photo, but the captures of the sets before and after were all of *S. fabricii*. In 2014, there were three cases, two without a photo, and the third with a *Boreotrophon clathratus* and a *Scabrotrophon fabricii* in view.

Recommendations: In 2009, set 40, and 2013, sets 52, 141, 143, 144, 146, 153 and 165, change code 3483 for code 3491, *Scabrotrophon fabricii*.

Code 3488 *Boreotrophon* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:146731](https://marinespecies.org/taxname/146731)

<https://inaturalist.ca/taxa/482354-Boreotrophon>

There were 60 cases recorded since 2007, mostly *Scabrotrophon fabricii*, along with whelks (*Buccinum* sp., *Neptunea* sp., *Plicifusus kroyeri*), and pelicanfoot, *Arrhoges occidentalis*. On the survey, the usual species seen is *Scabrotrophon fabricii* (previously *Boreotrophon fabricii*). The species *Boreotrophon clathratus* is very rare, while *Boreotrophon truncatus* may not be present (occurs in Europe).

Recommendations: Correct for species code based on photos and update capture values where necessary. Confirm absence in region of species *Boreotrophon truncatus*.

Code 3491 *Scabrotrophon fabricii*

[urn:lsid:marinespecies.org:taxname:147146](https://marinespecies.org/taxname/147146)

<https://inaturalist.ca/taxa/985659-Scabrotrophon-fabricii>

There were 10 cases recorded since 2014. Has often been mistaken for other species.

Recommendations: Review mistaken records in other codes and adjust capture values.

Code 3515 Buccinidae (Whelks, Family)

[urn:lsid:marinespecies.org:taxname:149](https://marinespecies.org/taxname/149)

<https://inaturalist.ca/taxa/83329-Buccinidae>

There were 121 cases recorded since 2006. The taxa seen in photos were *Aulacofusus brevicauda*, *Buccinum* sp. (along with *B. cyaneum*, *B. scalariforme*, *B. terraenovae* [=*B. polare*], and *B. undatum*), and *Colus* sp. (*C. islandicus* or *C. pubescens*).

Recommendations: Set to taxon based on photos.

Code 3516 *Buccinum* sp. (whelks, genus)

[urn:lsid:marinespecies.org:taxname:137701](https://marinespecies.org/taxname/137701)

<https://inaturalist.ca/taxa/130214-Buccinum>

There were 154 cases recorded since 2006. Several are possible to modify to species based on photos, although mixed catches will not likely be adjusted in the database. This genus is one of the most difficult taxonomically, with morphological and genetic diversity that are not yet fully uncovered and not easily resolved. The common species *Buccinum undatum* is accompanied by at least three others: *B. cyaneum* in deep water (>200 m), along with *B. terraenovae* and *B. scalariforme* in shallower water (usually <100 m).

Recommendations: Change to species based on photos. Modify capture values as necessary, and flag as debris when evident (dead shells). Review uncertain cases or those without photos to see if they can be identified based on location or depth.

Code 3517 *Buccinum undatum* (Waved Whelk)

[urn:lsid:marinespecies.org:taxname:138878](https://marinespecies.org/taxname/138878)

<https://inaturalist.ca/taxa/130213-Buccinum-undatum>

There were 80 cases recorded since 2006. This common, commercial species, displays high diversity in shell forms, resulting in frequent hesitation when identifying specimens. Some cases may be necessary to change species or to genus or family level. Several cases were *Buccinum cyaneum*, a deepwater species, common in the estuary.

Recommendations: In 2006, set 173, change code 3517 for code 3576, *Plicifusus kroeyeri*. In 2008, set 162, change code 3517 for code 3565, *Neptunea* sp. In 2009, set 175, change code 3517 for code 3523, *Buccinum scalariforme*. Review some cases that may be *Buccinum cyaneum*, code 3520.

Code 3519 *Beringius turtoni*

[urn:lsid:marinespecies.org:taxname:138855](https://marinespecies.org/taxname/138855)

<https://inaturalist.ca/taxa/482456-Beringius-turtoni>

There were two cases recorded, in 2013, set 157, and 2015, set 181, for this rare, large buccinid gastropod. For the one in 2013, post-survey examination had 48.2 g, while the database shows 0.00482 kg. According to the photos, four other catches were recorded under *Buccinum* sp. (2008, set 175), *Colus* sp. (2011, set 152, and 2012, set 137) and

Gastropoda (2011, set 69). For this last case, the entry sheet has written Gastropoda, 24.28, and *Margarites*, 0.3519 while the capture is entered as 0.0246 for 2.

Recommendations: In 2013, set 157, correct the capture weight of 0.00482 kg to 0.0482 kg. Confirm that the four other specimens of *Beringius turtoni* seen in *Buccinum*, *Colus* and Gastropoda are recoded into code 3519 and that the captures values are adjusted. For example, in 2011, set 69, change code 3175, Gastropoda, for code 3519, *Beringius turtoni*, with a capture of 0.0243 kg for one and a second record for *Margarites costalis*, code 3219, for 0.0003 kg for one.

Code 3523 *Buccinum scalariforme* (Silky Buccinum)

urn:lsid:marinespecies.org:taxname:138875

<https://inaturalist.ca/taxa/215493-Buccinum-scalariforme>

There were 16 cases recorded since 2009, with 11 that seemed doubtful or incorrect in 2013-2015. In 2009, set 122, it was a dead shell of pelicanfoot, code 3418. In 2013, set 106, it looks like a small *Buccinum undatum*, code 3517.

Recommendations: In 2009, set 122, delete the specimen as debris of a pelicanfoot shell. Change to genus or species the doubtful cases of code 3523.

Code 3565 *Neptunea* sp. (Whelks, Genus)

urn:lsid:marinespecies.org:taxname:137710

<https://inaturalist.ca/taxa/197016-Neptunea>

There were 49 cases recorded since 2008. In two cases, the photos were of *Scabrotrophon fabricii*, code 3491. In two other cases, the capture needs to be divided between other gastropods. As with *Buccinum*, *Neptunea* exhibits a wide variety of shell forms and thus it is common to record them to genus. It seems likely that the regional species may be *Neptunea despecta*, while a second one, *Neptunea decemcostata*, may be present in the southern Gulf, but further work is necessary to confirm.

Recommendations: In 2010, set 164 and 2014, set 34, change code 3565 for code 3491, *Scabrotrophon fabricii*. In 2008, set 163, divide the capture in code 3565 with 0.0959 kg for two, to 0.04975 kg for one, and add record for code 3519, *Beringius turtoni*, 0.04975 kg for one. In 2015, set 186, divide the capture in code 3565 with 0.0665 kg for two, to 0.0565 kg for one and add a record for code 3583 *Aulacofusus brevicauda*, 0.010 kg (estimated weight) for one. To review if all cases of *Neptunea* sp. in northern survey region are of *Neptunea despecta*.

Code 3566 *Neptunea decemcostata* (= *Neptunea lyrata decemcostata*)

urn:lsid:marinespecies.org:taxname:491164

<https://inaturalist.ca/taxa/193927-Neptunea-decemcostata>

There were seven cases recorded, with four in 2006, only one that had a photo. While present in the southern Gulf, it is not certain if this species occurs in the northern Gulf, and it may have been confused with *Neptunea despecta*, code 3566.

Recommendations: In 2006, set 194, change code 3566 for code 3567, *Neptunea despecta*. To confirm if species *N. decemcostata* is absent in region.

Code 3567 *Neptunea despecta*

[urn:lsid:marinespecies.org:taxname:138923](https://marinespecies.org/taxname/138923)

<https://inaturalist.ca/taxa/861609-Neptunea-despecta>

There were six cases recorded since 2012, all with photos. Shells may vary in forms and thus be confused with other species, such as *N. decemcostata*, that need confirmation.

Recommendations: Review if other species may be present.

Code 3575 *Colus* sp. (Spindle whelks, Genus)

[urn:lsid:marinespecies.org:taxname:137704](https://marinespecies.org/taxname/137704)

<https://inaturalist.ca/taxa/482461-Colus>

There were 84 cases recorded since 2008, of which 42 need to be modified. Two species are believed present, the large *Colus stimpsoni* and the hairy *Colus pubescens*. Other species, including *Colus islandicus* and *Colus terraenovae* have not been confirmed. Photos indicated 20 cases as the species *Colus pubescens*, code 3577. This code was not available on the ship data entry form before 2017, which is why the species name was not used earlier. In four cases, the specimens turned out to be *Aulacofus brevicauda*, code 3483, which was previously referred to as *Colus spitzbergensis* or *Neptunea brevicauda*. In several cases, juvenile specimens of pelican's foot, *Arrhoges occidentalis*, code 3417, were confused with *Colus*. Other identifications seen in photos were *Ariadnaria borealis* (code 3305), *Beringius turtoni* (code 3519), *Buccinum cyaneum* (code 3520), *Neptunea* sp. (code 3565), and *Propebela scalaris* (code 3630). In some cases, it is necessary to divide the catches into other records, or to put them back at the family level. In 2009, set 59, the entry sheet has written “*Colus* sp. (*stimpsoni*); Mollusc *Teredo navalis*, 4498, 11, 0.0046”. A record is needed for code 4291, *Xylophaga atlantica*, 11 for 0.0046 kg, that was not entered into the database. This case was misidentified as *Teredo navalis* in the photo in Nozères et al. (2014).

Recommendations: Correct the identifications from photos and adjust captures accordingly. In 2009, set 59, add a record for code 4291, *Xylophaga atlantica*, 0.0046 kg for 11.

Code 3576 *Colus stimpsoni* (Stimpson's Colus)

[urn:lsid:marinespecies.org:taxname:160215](https://marinespecies.org/taxname/160215)

<https://inaturalist.ca/taxa/633724-Colus-stimpsoni>

There were 19 cases recorded since 2006. An infrequent species, it is distinguished by its large size from the more common *Colus pubescens*. In four cases of small specimens, the identification to species was uncertain in photos. In 2013, set 98, the photo showed *Buccinum cyaneum*, code 3520.

Recommendations: Review small specimens and change to genus if uncertain. In 2013, set 98, change code 3576 for code 3520, *Buccinum cyaneum*.

Code 3577 *Colus pubescens* (Hairy Colus)

[urn:lsid:marinespecies.org:taxname:160212](https://marinespecies.org/taxname/160212)

<https://inaturalist.ca/taxa/1286774-Colus-pubescens>

There were 13 cases recorded since 2013. In 2013, set 157, the capture of *Colus* sp., code 3575, 0.0639 kg for 4, was revised during the post-survey examination as a *Beringius turtoni*, 48.2 g, and a *Colus pubescens*, 3.98 g, confirmed by photos. The record for *Beringius turtoni* is to be added, and the capture corrected for 0.0157 kg for 3 *Colus pubescens*.

Recommendations: In 2013, set 157, modify the capture in code 3577 from 0.00398 kg for 1 to 0.0157 kg for 3 and verify that no record remains for code 3575, *Colus* sp. (have been moved to records for codes 3519 and 3577).

Code 3578 *Plicifusus kroeyeri* (= *Colus kroeyeri*)

[urn:lsid:marinespecies.org:taxname:491269](https://marinespecies.org/taxname/491269)

<https://inaturalist.ca/taxa/852118-Plicifusus-kroeyeri>

There were six cases recorded since 2012. The species is often mistaken for *Buccinum undatum* due to its wavy shell, however, the operculum of *P. kroeyeri* is not comprised of concentric ovals like *Buccinum*, but rather it has the typical shape seen with *Colus* sp.

Recommendations: Review cases found among the other gastropod records.

Code 3583 *Aulacofusus brevicauda* (= *Colus spitzbergensis*)

[urn:lsid:marinespecies.org:taxname:490735](https://marinespecies.org/taxname/490735)

<https://inaturalist.ca/taxa/978416-Aulacofusus-brevicauda>

There was one case recorded in 2013, set 143. A distinctive species, with fine spiral sculpture. From photos, at least seven other cases were seen among the buccinids.

Recommendations: Review cases found among the other gastropod records.

Code 3690 Cephalaspidea (Bubble shells, Order)

urn:lsid:marinespecies.org:taxname:154

<https://inaturalist.ca/taxa/49784-Cephalaspidea>

One case was recorded in 2011, set 6. From the photo, it was code 3715, *Scaphander punctostriatus*, the only bubble shell thus far seen on the survey.

Recommendations: Change code 3690 for 3715, *Scaphander punctostriatus*.

Code 3708 Haminoea sp. (Genus)

urn:lsid:marinespecies.org:taxname:138054

<https://inaturalist.ca/taxa/49814-Haminoea>

There were 25 cases recorded in 2009 and 2010. From photos, these were code 3715, *Scaphander punctostriatus*, the only bubble shell thus far seen on the survey.

Recommendations: Change code 3708 for 3715, *Scaphander punctostriatus*.

Code 3715 Scaphander punctostriatus (Giant Canoe-Bubblesnail)

urn:lsid:marinespecies.org:taxname:139490

<https://inaturalist.ca/taxa/482655-Scaphander-punctostriatus>

There were 104 cases recorded since 2011. It is the only bubble shell seen on the survey.

Recommendations: None to declare.

Code 3850 Nudibranchia (Order)

urn:lsid:marinespecies.org:taxname:1762

<https://inaturalist.ca/taxa/47113-Nudibranchia>

There were 82 cases recorded since 2006, several of which were initially misidentified as the littoral species *Cadlina laevis* or *Palio dubia*. According to the photos, these are the circumlittoral species *Colga villosa*, code 3908, and *Aldisa zetlandica*, code 3891. The latter was misidentified as *Doridoxa ingolfiana*, code 3965, for several years (Nozères et al. 2014) until seen in Valdès et al. (2017). There were a few large, unknown specimens that remain to be confirmed as possible *Doridoxa ingolfiana*. Other species seen were *Dendronotus frondosus* and *Dendronotus elegans*, sometimes recorded to genus or Nudibranchia. *C. villosa* and *D. ingolfiana* were sometimes captured at the same sets and therefore there is a need to divide the catches with estimated weights if they are to be entered at the species level. In 2008, set 52, the nudibranch was a velutinid, code 3459, *Limneria undata*. In two cases, the capture of the nudibranchs seemed to include a colony of *Botrylloides aureus*, code 8796, and therefore the capture needs to be divided with estimated weights.

Recommendations: In 2008, set 52, change code 3850 for code 3459, *Limneria undata*. For the other cases, move to finest taxonomic level where possible based on photos and adjust capture values. In 2006, set 84, and in 2010, set 50, create a record for code 8796 *Botrylloides aureus*, with an estimated weight.

Code 3893 *Dendronotus* sp. (Bushy-backed nudibranchs, Genus)

[urn:lsid:marinespecies.org:taxname:137885](https://marinespecies.org/taxname/137885)

<https://inaturalist.ca/taxa/47707-Dendronotus>

There were 19 cases recorded since 2013. The code served mostly to indicate cases of *Dendronotus frondosus*, code 3894, when the photo was unclear or it resembled the orange nudibranch, *Dendronotus elegans*, code 3895.

Recommendations: To review cases to place to species, in either code 3894, *Dendronotus frondosus*, or code 3895, *Dendronotus elegans*.

Code 3894 *Dendronotus frondosus* (Bushy-backed Nudibranch)

[urn:lsid:marinespecies.org:taxname:139523](https://marinespecies.org/taxname/139523)

<https://inaturalist.ca/taxa/423919-Dendronotus-frondosus>

There were five records, with four in 2006. The one photographed in 2011, set 51, is blurry and uncertain, but orange in colour and thus it may be *Dendronotus elegans*, code 3895.

Recommendations: In 2011, set 51, change code 3894 for code 3893, *Dendronotus* sp.

Code 3908 *Colga villosa*

[urn:lsid:marinespecies.org:taxname:146851](https://marinespecies.org/taxname/146851)

<https://inaturalist.ca/taxa/1203084-Colga-villosa>

There were 37 cases recorded since 2008. In 2014, set 80, the photo is blurry but one of the specimens is the holothurid *Psolus fabricii*, code 8295. Because this capture was a sorted subsample, the values for the total catch are multiplied by 3, giving an estimated capture of 0.0018 kg for 3 for *Psolus fabricii*, and 0.0009 kg for 3 for *Colga villosa*

Recommendations: In 2014, set 80, for code 3908, modify the capture of 0.0027 kg for 6 to 0.0009 kg for 3 and add a record for code 8295, *Psolus fabricii*, 0.0018 kg for 3.

Code 3910 *Palio dubia*

[urn:lsid:marinespecies.org:taxname:182807](https://marinespecies.org/taxname/182807)

<https://inaturalist.ca/taxa/50061-Palio-dubia>

There was one case recorded in 2011, set 72. The photo confirms it was of code 3908, *Colga villosa*, a less well-known, deeper water species.

Recommendations: Change code 3910 for code 3908, *Colga villosa*.

Code 3965 *Doridoxa walteri* (= *Doridoxa ingolfiana*)

[urn:lsid:marinespecies.org:taxname:370549](https://marinespecies.org/taxname/370549)

<https://inaturalist.ca/taxa/854650-Doridoxa-ingolfiana>

There were 10 cases recorded since 2013. A large, deepwater, and poorly known species, it was confused until 2018 with the species *Aldisa zetlandica*, code 3891. Some unknown nudibranchs, code 3850, may be valid specimen, as seen in 2012, set 99 (https://inaturalist.ca/observations?place_id=any&taxon_id=1202521) and in later years.

Recommendations: In the 10 cases from 2013 to 2015, change code 3965 for code 3891, *Aldisa zetlandica*. In 2012, set 99, confirm change of code 3850, Nudibranch for code 3965, *Doridoxa walteri*.

Code 3970 *Cadlina laevis*

[urn:lsid:marinespecies.org:taxname:139134](https://marinespecies.org/taxname/139134)

<https://inaturalist.ca/taxa/492412-Cadlina-laevis>

There were six cases recorded in 2011 and 2012; all are to be corrected according to the photos. In 2012, sets 79 and 92, it was *Colga villosa*, code 3908. In 2011, set 72 and 2012, sets 56 and 90, it was code 3891. One case in 2012, set 25, is blurry in photo, but appears to show debris with an egg of *Rossia* sp. to be returned to Invertebrata, or to be removed as debris.

Recommendations: In 2011, set 72, and in 2012, sets 56 and 90, change code 3970 to code 3891, *Aldisa zetlandica*. In 2012, sets 79 and 92, change code 3970 to code 3908, *Colga villosa*. In 2012, set 25, change code 3970 to 1100, Invertebrata, or delete as debris.

Code 3975 Scaphopoda (Tusk shells, Order)

[urn:lsid:marinespecies.org:taxname:104](https://marinespecies.org/taxname/104)

<https://inaturalist.ca/taxa/67990-Scaphopoda>

There was one case recorded, in 2014, set 100. Photos showed ribbed shells *Antalis occidentalis*. It was not confirmed if the shells were alive or debris.

Recommendations: In 2014, set 100, change code 3975 for code 3978, *Antalis occidentalis* and flag capture as possible debris.

Code 3976 Dentaliidae (Tuskshells, Family)

<urn:lsid:marinespecies.org:taxname:202>

<https://inaturalist.ca/taxa/70102-Dentaliidae>

There was one case recorded, in 2015, set 163, at 253 m depth, for 4 g. The capture sheet has code 8515, *Stephanasterias albula*, 1, 4 g. The photo shows a small *Leptasterias* with 6 arms which usually refers to *Leptasterias polaris* in the region, however, it appears to have a skeleton looking more like *Leptasterias groenlandica*.

Recommendations: Change code 3976 for code 8510, *Leptasterias* sp.

Code 3977 *Antalis* sp. (Tuskshells, Genus)

<urn:lsid:marinespecies.org:taxname:150531>

<https://inaturalist.ca/taxa/172125-Antalis>

There were two cases recorded of these tuskshells. The one in 2009, set 23, was of a dead shell containing the sipunculid, *Phascolion strombus*. In 2012, set 34, there were several specimens, but possibly again of dead shells. As with the record in code 3975 noted above, these appeared to be the ribbed species, *Antalis occidentalis*, code 3978.

Recommendations: In 2009, set 23, change code 3977 for code 5907, *Phascolion strombus*. In 2012, set 34, change code 3977 for code 3978, *Antalis occidentalis*.

Code 3995 Bivalva (Class)

<urn:lsid:marinespecies.org:taxname:105>

<https://inaturalist.ca/taxa/47584-Bivalvia>

There were 172 cases recorded since 2006. Several species were identifiable in photos, including *Megayoldia thraciaeformis* and brachiopods (not bivalve molluscs). Some appear to be dead shells, to be flagged as debris or deleted.

Recommendations: Place to species when confirmed in photos. Flag or delete instances of debris.

Code 4019 *Nuculana* sp. (Nutclams, Genus)

<urn:lsid:marinespecies.org:taxname:138259>

<https://inaturalist.ca/taxa/193938-Nuculana>

There were 21 cases recorded. This is a small bivalve of nearshore environments, but sometimes collected at depth in the trawl, though they may have been dead shells. In 2008, set 192, the photo shows the common and large, deepwater species, *Megayoldia thraciaeformis*, code 4025. Without photos, but considering the high numbers and capture weight, it was probably *Megayoldia* again in 2014, set 163. In 2011, set 72, the capture

sheet has *Nuculana*, 2, 3.84, *Serripes groenlandicus*, 4, 60.25, which was entered in the database as *Nuculana*, 0.0637, 6.

Recommendations: In 2008, set 192 and 2014, set 163, change code 4019 for code 4025, *Megayoldia thraciaeformis*. In 2011, set 72, change the capture in code 4019 to 0.0038 kg for 2 and add a capture for code 4352, *Serripes groenlandicus*, 0.0603 for 4. In future, confirm if shells are alive (nearshore) or debris at deep sites.

Code 4022 *Nuculana tenuisulcata* (Thin Nut Clam)

[urn:lsid:marinespecies.org:taxname:156923](https://marinespecies.org/taxname/156923)

<https://inaturalist.ca/taxa/193935-Nuculana-tenuisulcata>

There was one case recorded, in 2013, set 155, of this small bivalve. A similar species is *Nuculana pernula*. While the identification as *N. tenuisulcata* from the photo seems likely, the depth of the set (281 m) suggests the specimen was debris.

Recommendations: In 2013, set 155, flag or delete as potential debris. In future, open shells to confirm if alive or debris.

Code 4025 *Megayoldia thraciaeformis* (Broad Yoldia)

[urn:lsid:marinespecies.org:taxname:141983](https://marinespecies.org/taxname/141983)

<https://inaturalist.ca/taxa/957355-Megayoldia-thraciaeformis>

There were 124 cases recorded since 2009. In some cases, the photos showed debris, to be flagged and deleted. In 2014, set 75, there appeared to be nine large *Hiatella arctica* (red siphon tips, shallow water) and not four *Megayoldia* as noted on the capture sheet. In set 100, there were five others in code 3995 Bivalvia to add to capture in code 4025, and in set 163, there was a capture in 4019 to add to code 4025.

Recommendations: In 2014, set 75, change code 4015 to code 4437 *Hiatella arctica*. In set 100, add capture in code 3995 Bivalvia to code 4025, giving 0.3121 kg for 23. In set 163, add capture in code 4019 *Nuculana* sp. to code 4025, giving 0.2798 kg for 117. Delete as debris in 2010 for sets 182 and 191; in 2012, set 34; and 2014, sets 76 and 140.

Code 4074 *Yoldia* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:138672](https://marinespecies.org/taxname/138672)

<https://inaturalist.ca/taxa/193936-Yoldia>

There were six cases recorded, including one in 2006, set 200 at 245 m. In photos, there is only *Terebratulina septentrionalis*. On the sheet is recorded bivalve, 0.0078 for 6. It was probably *Megayoldia thraciaeformis*, a deepwater species that was not noticed before 2009, and before photos were taken systematically of all captures.

Recommendations: In 2006, set 200, change code 4074 for code 4025 *Megayoldia thraciaeformis*.

Code 4102 *Bathyarca* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:137673](https://marinespecies.org/taxname/137673)

<https://inaturalist.ca/taxa/246251-Bathyarca>

There was one case recorded from 2013, validated in photo as *Bathyarca glacialis*, code 4105.

Recommendations: Change code 4102 for code 4105, *Bathyarca glacialis*.

Code 4121 *Mytilus* sp. (Mussels, Genus)

[urn:lsid:marinespecies.org:taxname:138228](https://marinespecies.org/taxname/138228)

<https://inaturalist.ca/taxa/62807-Mytilus>

There were 61 records since 2007, most from 100 to 500 m depth. As with several other common bivalves that live in nearshore environments, the captures of shells at depth are suspect as debris. The records are currently at genus level as they form part of a species complex including *Mytilus edulis* and *M. trossulus*.

Recommendations: To flag as potential debris if sampled from deepwater.

Code 4122 *Mytilus edulis* (Blue Mussel)

[urn:lsid:marinespecies.org:taxname:140480](https://marinespecies.org/taxname/140480)

<https://inaturalist.ca/taxa/1108240-Mytilus-edulis> (species complex)

There were 31 cases recorded since 2009. These are to be recorded to genus level because the species is difficult to confirm without genetic analysis. In 2008, set 202 and 216, photos showed shell debris (*Elliptio complanata* in set 202).

Recommendations: In 2008, sets 202 and 216, delete records in code 4122 as debris. To flag species as correct identifications, but inappropriate habitat (most commonly occurs in rocky intertidal). To change species to genus level, *Mytilus* sp., code 4121.

Code 4124 *Arvella faba* (= *Crenella faba*) (Little Bean Mussel)

[urn:lsid:marinespecies.org:taxname:156763](https://marinespecies.org/taxname/156763)

<https://inaturalist.ca/taxa/1211639-Crenella-faba>

There were three cases recorded since 2014; two others were recorded in Bivalvia, code 3995, and *Musculus discors*, code 4128.

Recommendations: Ensure the transfer to code 4124 of two other cases in code 3995 Bivalvia and code 4128 *Musculus discors*.

Code 4126 *Musculus* sp. (Black Mussels, Genus)

[urn:lsid:marinespecies.org:taxname:138225](https://marinespecies.org/taxname/138225)

<https://inaturalist.ca/taxa/171917-Musculus>

There were six cases recorded in 2014 and 2015. In 2014, post-survey confirmed *Musculus discors*, code 4218 for sets 48 and 75. In 2015, photos confirmed *M. discors* for sets 28, 29, and 182; on set 151 at 109 m, a very small specimen (0.3 g) looks like *Similipecten greenlandicus*, a deepwater scallop. None were recorded in nearby sets, although set 149 was at 298 m depth.

Recommendations: In 2014, sets 48 and 75, change code 4126 to code 4218. In 2015, sets 28, 29, 182, change code 4126 to 4128, *Musculus discors*; for set 151, change code 4126 for code 3995 Bivalvia as it is uncertain.

Code 4127 *Musculus niger* (Black Mussel)

[urn:lsid:marinespecies.org:taxname:140474](https://marinespecies.org/taxname/140474)

<https://inaturalist.ca/taxa/483000-Musculus-niger>

There were four cases recorded, with three in 2010, and one in 2014.

Recommendations: None to declare.

Code 4128 *Musculus discors* (Discord Mussel)

[urn:lsid:marinespecies.org:taxname:140472](https://marinespecies.org/taxname/140472)

<https://inaturalist.ca/taxa/482998-Musculus-discors>

There was one case recorded in 2009. The photo showed *Arvella faba*, code 4124.

Recommendations: In 2009, set 42, change code 4128 for code 4124, *Arvella faba*.

Code 4167 *Chlamys islandica* (Icelandic Scallop)

[urn:lsid:marinespecies.org:taxname:140692](https://marinespecies.org/taxname/140692)

<https://inaturalist.ca/taxa/458935-Chlamys-islandica>

There were 159 cases recorded since 2006. In four cases with very small specimens from great depths, the species was *Similipecten greenlandicus*, code 4191, confirmed by photos. In 2006, set 45, the two small specimens were likely the white brachiopod, *Terebratulina septentrionalis*, which was unrecognized in early survey years. For a few cases, specimens appear to be dead shells that should be deleted or flagged as debris.

In 2006, set 151, There was a large catch at shallow water, followed by small catches at two deepwater sets that would be unlikely as habitat for Icelandic scallops.

Recommendations: In 2006, to move the captures in sets 152 and 153 to set 151 (consecutive contamination from set 151). In 2006, set 45, change code 4167 for code 3101, *Terebratulina septentrionalis*. In 2008, set 96; 2009, set 92; and 2010, sets 11 and 13, change code 4167 for code 4191, *Similipecten greenlandicus*. In 2009, sets 69 and 182, to evaluate if the cases in code 4167 are to be deleted or flagged as debris.

Code 4179 *Placopecten magellanicus* (Atlantic Deep-sea Scallop)

[urn:lsid:marinespecies.org:taxname:156972](https://marinespecies.org/taxname/156972)

<https://inaturalist.ca/taxa/371711-Placopecten-magellanicus>

There were eight cases recorded, seven between 2006-2009 that were of *Similipecten greenlandicus*, a small, deepwater species. The last specimen was from 2011, set 24, at 87 m depth for 0.0129 kg. On the capture sheet is written 'P. magellan, 0.0129, 1, doubtful, absent from photos', with the name encircled in red.

Recommendations: In 2011, set 24, change code 4179 for code 3995 Bivalvia. Change the other seven cases in code 4179 to code 4191, *Similipecten greenlandicus*.

Code 4191 *Similipecten greenlandicus*

[urn:lsid:marinespecies.org:taxname:181299](https://marinespecies.org/taxname/181299)

<https://inaturalist.ca/taxa/1210686-Similipecten-greenlandicus>

There were 29 cases recorded since 2011. A very small (<1 cm) and translucent bivalve, collected from >250 m depth, except for two captures from < 100 m in 2015, sets 8 and 59. Other cases were misidentified as *Placopecten magellanicus*, a species not yet confirmed on the survey. Other scallop species are not translucent, even when small.

Recommendations: In 2015, sets 8 and 59, flag records as suspected contamination.

Code 4219 *Anomia* sp. (Jingle Shells, Genus)

[urn:lsid:marinespecies.org:taxname:137650](https://marinespecies.org/taxname/137650)

<https://inaturalist.ca/taxa/55025>

There were seven cases recorded since 2012, including one in 2013 that was a velutinid, *Limneria undata*, noted on sheet and seen in photos. The flattened shells need to be pried off debris rocks and weighed to create a record in the database, which was not always done. The group is also difficult as they require close examination of the inner valve to confirm species. In the few cases that were examined, they appear to be *Heteranomia squamula*, but *Anomia simplex* is possible, and thus recording to the family level, Anomiidae, may be necessary.

Recommendations: In 2013, set 108, change code 4219 for code 3459, *Limneria undata*. Flag genus to be used at family level, Anomiidae.

Code 4227 *Astarte* sp. (Astartes, Genus)

urn:lsid:marinespecies.org:taxname:137683

<https://inaturalist.ca/taxa/183030-Astarte>

There were 244 cases recorded since 2006, 10 of which had an elevated individual weight of 5 g or more, which may be suspect as the genus consists of very small bivalves, except for *Astarte borealis*. In 2007, set 143, the photo showed a *Cyclocardia borealis*, code 4268. In 2008, set 87, the photo showed a *Astarte borealis*, code 4231.

Recommendations: In 2007, set 143, change code 4227 for code 4268 *Cyclocardia borealis*. In 2008, set 87, change code 4227 for code 4231 *Astarte borealis*.

Code 4229 *Astarte undata* (Waved Astarte)

urn:lsid:marinespecies.org:taxname:156747

<https://inaturalist.ca/taxa/702900-Astarte-undata>

There were 10 cases recorded in 2006, eight with photos. The genus *Astarte* is a complex of small, similar species, except perhaps for the large species, *Astarte borealis*.

Recommendations: Decide if cases at species level are verifiable or change to genus *Astarte*, code 4227.

Code 4231 *Astarte borealis* (Boreal Astarte)

urn:lsid:marinespecies.org:taxname:138818

<https://inaturalist.ca/taxa/203792-Astarte-borealis>

There was one case recorded in 2013, set 120, and seen in photo. The species is distinctive for its fine sculpturing on the lower shell margin and large size.

Recommendations: None to declare.

Code 4233 *Astarte crenata subaequilatera* (as *Astarte subaequilatera*)

urn:lsid:marinespecies.org:taxname:156746

<https://inaturalist.ca/taxa/253432-Astarte-crenata> (as *Astarte crenata*)

There was one case recorded in 2011, set 2, with a photo, but uncertain. This subspecies is currently accepted as *Astarte subaequilatera*, though it may be *Astarte crenata*. Species of *Astarte* are difficult to identify and should be recorded at the genus level.

Recommendations: Change records in code 4233 to genus level, *Astarte*, code 4227. To investigate if either *Astarte crenata* or *A. subaequilatera* is the intended species for a code in the region, and then to create a code for *A. crenata* if needed.

Code 4268 *Cyclocardia borealis* (Northern Cardita)

[urn:lsid:marinespecies.org:taxname:156832](https://marinespecies.org/taxname/156832)

<https://inaturalist.ca/taxa/474253-Cyclocardia-borealis>

There were eight cases since 2009. A distinctive, small bivalve. Four other records were seen in photos and were transferred from other records among bivalves.

Recommendations: None to declare.

Code 4272 *Arctica islandica* (Ocean Quahog)

[urn:lsid:marinespecies.org:taxname:138802](https://marinespecies.org/taxname/138802)

<https://inaturalist.ca/taxa/203762-Arctica-islandica>

There were eight cases recorded in 2009 and 2010, shown in photos to be *Serripes groenlandicus*, code 5352.

Recommendations: Change code 4272 for code 5352, *Serripes groenlandicus*.

Code 4336 Cardiidae (Cockles, Family)

[urn:lsid:marinespecies.org:taxname:229](https://marinespecies.org/taxname/229)

<https://inaturalist.ca/taxa/50597-Cardiidae>

There was one case recorded in 2006, set 67, 118 m depth. From photos, it was a brachiopod, *Terebratulina septentrionalis*, code 3101.

Recommendations: In 2006, set 67, change code 4336 for code 3101, *Terebratulina septentrionalis*.

4338 *Parvicardium pinnulatum* (= *Cerastoderma pinnulatum*)

[urn:lsid:marinespecies.org:taxname:156756](https://marinespecies.org/taxname/156756)

<https://inaturalist.ca/taxa/567291-Parvicardium-pinnulatum>

There was one case recorded in 2013, set 50, seen in photos.

Recommendations: None to declare.

Code 4350 *Clinocardium* sp. (Cockle, Genus)

[urn:lsid:marinespecies.org:taxname:137736](https://marinespecies.org/taxname/137736) (as *Ciliatocardium*)

<https://inaturalist.ca/taxa/940595-Ciliatocardium> (as *Ciliatocardium*)

There were 37 cases recorded between 2007 and 2011. Photos showed some errors for a different ribbed bivalve, *Cyclocardia borealis*, code 4268. In 2007, set 143, there were four *Ciliatocardium ciliatum* and two *Cyclocardia borealis* for a capture record of seven *Clinocardium* sp. In 2008, set 80, there were four *Cyclocardia borealis* and one *Ciliatocardium ciliatum* for a capture of five *Clinocardium* sp.; these were weighed on the capture sheet as four *Clinocardium borealis* and one *Clinocardium islandicum*.

Recommendations: In 2007, set 143, adjust the capture in code 4350 to add two *Cyclocardia borealis*, code 4268, and one *Ciliatocardium ciliatum*. In 2008, set 80, adjust the capture in code 4350 for the two species as recorded on the sheet, with *Cyclocardia* as *C. borealis* for four, and *Ciliatocardium ciliatum* for one. For cases at genus level, change code 4350 to code 4351, *Ciliatocardium ciliatum*. Do not use genus level in future.

Code 4351 *Ciliatocardium ciliatum* (Iceland Cockle)

[urn:lsid:marinespecies.org:taxname:139000](https://marinespecies.org/taxname/139000)

<https://inaturalist.ca/taxa/940646-Ciliatocardium-ciliatum>

There were 35 cases recorded since 2006. It is possible some shells were mistaken with other small bivalves or brachiopods, especially in 2006 when there were few photos. In 2006, the sheets indicate that there are cases which were entered as code 4350 (genus) then 4213, but that code is not in use. In set 191, the sheet reads Gastropoda, code 3175, 146 m, 1 for 0.0011 kg.

Recommendations: In 2006, set 191, change code 4351 for code 3175, Gastropoda.

Code 4352 *Serripes groenlandicus* (Greenland Cockle)

[urn:lsid:marinespecies.org:taxname:582749](https://marinespecies.org/taxname/582749)

<https://inaturalist.ca/taxa/230856-Serripes-groenlandicus>

There were nine cases recorded since 2010, confirmed in photos.

Recommendations: None to declare.

Code 4383 *Mesodesma* sp.

[urn:lsid:marinespecies.org:taxname:156804](https://marinespecies.org/taxname/156804)

<https://inaturalist.ca/taxa/370919-Mesodesma>

There were five cases recorded of single specimens, none of which could be confirmed. Occurring mainly in intertidal to shallow water, this abundant bivalve of sandy beaches

was mistaken for *Macoma calcarea* in 2009, sets 119 and 120, at about 50 m depth. Having robust valves, they may persist as deepwater debris, as was likely with two specimens recorded in 2006, sets 90 (209 m) and 118 (354 m) that had no shallow water preceding station. There was one case in 2011, set 130, 58 m, with a blurry photo of a small specimen of 0.4 g, possibly of *Bathyarca glacialis* or another bivalve. Other single specimens were seen in photos, likely again of debris.

There are two species in the genus, with confusing information on their types and distribution (see for example Signorelli 2019). Presently, is presumed that the regional species is *Mesodesma arctatum*, code 4384 although historical records name *Mesodesma deauratum*, restricted to the St. Lawrence Estuary (Davis 1963), but possibly present as relict populations in the Atlantic (Hutcheson and Stewart 1994). As with buccinid whelks, the differences in forms seen may be environmental and not taxonomic.

Recommendations: In 2006, sets 90 and 118, to flag or change code 4382 for debris, for code 9995. In 2009, sets 119 and 120, change code 4383 for code 4395 *Macoma calcarea*. In 2011, set 130, change code 4383 for code 3995 Bivalvia. In future, to confirm the species of *Mesodesma* present in the region.

Code 4393 *Macoma* sp. (Macomas, Genus)

[urn:lsid:marinespecies.org:taxname:138531](https://marinespecies.org/taxname/138531)

<https://inaturalist.ca/taxa/71252-Macoma>

There were 10 cases recorded since 2006. The genus level was initially used because there were two species of the genus present in the region, *Macoma calcarea* and *Macoma balthica* (current synonym: *Limecola balthica*). The larger species, *M. calcarea*, is likely to be the one encountered on the survey, as seen in photos of specimens since 2008. Some photos also showed other species mistaken for *Macoma*.

Recommendations: In 2006, set 84 (82 m depth) and 113 (418 m depth), change code 4393 to code 3995 Bivalvia because there was no photo to confirm. In 2008, set 162, change code 4393 for code 4128 *Musculus discors*; in set 163, for code 4437 *Hiatella arctica*; in set 186, for code 4227, *Astarte* sp. For other cases of code 4393, from 2009 to 2011, change to species level, code 4395, *Macoma calcarea*.

Code 4394 *Macoma balthica* (current synonym: *Limecola balthica*) (Baltic Macoma)

[urn:lsid:marinespecies.org:taxname:141579](https://marinespecies.org/taxname/141579)

<https://inaturalist.ca/taxa/702105-Limecola-balthica> (as *Limecola balthica*)

There was a case recorded in 2006, set 206, at 282 m depth, 0.0162 kg for 19. On the entry sheet was written 'Macoma balthica?'. Coded 4393, then changed to code 4394. The photo shows large specimens that look like *Macoma calcarea*, code 4395.

Recommendations: In 2006, set 206, change code 4394 for code 4395 *Macoma calcarea*.

Code 4395 *Macoma calcaria* (Chalky Macoma)

<urn:lsid:marinespecies.org:taxname:141580>

<https://inaturalist.ca/taxa/861604-Macoma-calcaria>

There were 16 cases recorded since 2011. In two cases in 2014, sets 131 and 150, it was *Mesodesma arctatum*, code 4384. Also in 2014, set 100, there was a small *Astarte*, code 4227, and in set 188, there was a *Mya truncata* with 11 *Macoma calcaria*.

Recommendations: In 2014, sets 131 and 150, change code 4395 for 4384, *Mesodesma arctatum*, and flag as debris; for set 100, change for 4227, *Astarte* sp.; for set 188, add a record for *Mya truncata*, code 4428, for an estimated weight of 5 g, and adjust the values in code 4384 (11 for 0.0376 kg).

Code 4427 *Mya arenaria* (Softshell Clam)

<urn:lsid:marinespecies.org:taxname:140430>

<https://inaturalist.ca/taxa/81634-Mya-arenaria>

There were six cases recorded in 2010; all were misidentifications for either *Macoma calcaria* or *Mesodesma arctatum*, likely of shell debris.

Recommendations: In 2010, sets 139 and 140, change code 4427 for 4395, *Macoma calcaria*; for sets 121, 128, 131, 146, change code for 4384, *Mesodesma arctatum* and flag as debris.

Code 4428 *Mya truncata* (Truncate Softshell Clam)

<urn:lsid:marinespecies.org:taxname:140431>

<https://inaturalist.ca/taxa/447416-Mya-truncata>

There were 10 cases recorded since 2006, with only one from 2014, set 188, confirmed by photos. The others were of *Hiatella arctica* or *Panomya norvegica*, except in 2009, sets 119 and 141, where there were two cases of small, uncertain bivalves from 168 m.

Recommendations: In 2006, set 173, and 2010, set 171, change code 4428 for code 4438, *Panomya norvegica*; in 2009, sets 119 and 141, change for code 3995, Bivalvia; for the five other cases, in 2007 and 2008, change for code 4437, *Hiatella arctica*.

Code 4436 *Hiatella* sp. (Rock-borers, Genus)

<urn:lsid:marinespecies.org:taxname:138068>

<https://inaturalist.ca/taxa/117628-Hiatella>

There were two cases recorded at the genus level. Currently there is only one species, *Hiatella arctica*, code 4437, although it is known to be a species complex (see note in WoRMS link above). For the time being, the use of the species name is recommended.

Recommendations: In 2008, set 175 and 2009, set 64, change code 4436 to code 4437 *Hiatella arctica*.

Code 4437 *Hiatella arctica* (Arctic Hiatella)

[urn:lsid:marinespecies.org:taxname:140103](https://marinespecies.org/taxname/140103)

<https://inaturalist.ca/taxa/117617-Hiatella-arctica>

There were 14 cases recorded since 2008. This cosmopolitan species is part of a diverse species complex that has yet to be resolved (see taxonomic note in WoRMS entry above).

Recommendations: May be necessary in future to revise names as the current species forms part of a species complex.

Code 4438 *Panomya norvegica* (Arctic Roughmya)

[urn:lsid:marinespecies.org:taxname:140105](https://marinespecies.org/taxname/140105)

<https://inaturalist.ca/taxa/483140-Panomya-norvegica>

There were 14 cases recorded since 2010. Often specimens were incomplete, with only their massive siphons observed in the capture.

Recommendations: None to declare

Code 4441 *Cyrtodaria siliqua* (Propellerclam)

[urn:lsid:marinespecies.org:taxname:140102](https://marinespecies.org/taxname/140102)

<https://inaturalist.ca/taxa/871348-Cyrtodaria-siliqua>

There were two cases recorded. The one in 2009, set 10, 514 m depth, was shell debris of the freshwater mussel, *Elliptio complanata*. The other case, in 2011, was confirmed.

Recommendations: In 2009, set 10, delete code 4441 as debris of a freshwater species.

Code 4451 *Xylophaga atlantica* (Atlantic Woodeater)

[urn:lsid:marinespecies.org:taxname:156497](https://marinespecies.org/taxname/156497)

<https://inaturalist.ca/taxa/1206287-Xylophaga-atlantica>

There were three cases recorded in 2015 for this deepwater bivalve that burrows in wood debris. Earlier records were mistaken for *Teredo navalis*, a species that makes calcareous tubes in floating debris.

Recommendations: None to declare, but to note that it may be underreported (in debris).

Code 4498 *Teredo navalis*

[urn:lsid:marinespecies.org:taxname:141607](https://marinespecies.org/taxname/141607)

<https://inaturalist.ca/taxa/209057-Teredo-navalis>

There were four cases recorded of this wood-burrowing bivalve found in floating debris. The first one, in 2009, was not reported on the entry sheet. Two other cases were of *Xylophaga atlantica*, code 4451, a deepwater species found in submerged wood debris. It is distinguished from *Teredo navalis* by the absence of calcareous tubes in the wood. One case in 2015 had calcareous tubes in wood and is presumed correct.

Recommendations: In 2014, sets 149 and 163, change code 4498 for code 4451, *Xylophaga atlantica*.

Code 4525 *Cuspidaria* sp. (Dipperclams, Genus)

[urn:lsid:marinespecies.org:taxname:137858](https://marinespecies.org/taxname/137858)

<https://inaturalist.ca/taxa/246263-Cuspidaria>

There were 113 cases recorded. From photos, it is presumed that the only species present is *Cuspidaria glacialis*, code 4526, as other species are smaller and rounder.

Recommendations: Change code 4525 to code 4526, *Cuspidaria glacialis*. In future, confirm the absence on the survey of other regional species of *Cuspidaria*.

Code 4526 *Cuspidaria glacialis*

[urn:lsid:marinespecies.org:taxname:139445](https://marinespecies.org/taxname/139445)

<https://inaturalist.ca/taxa/1207065-Cuspidaria-glacialis>

There were 157 cases recorded. It is presumed to be the sole regional species.

Recommendations: To confirm the absence on the survey of other species of *Cuspidaria*.

Code 4545 Cephalopoda (order)

[urn:lsid:marinespecies.org:taxname:11707](https://marinespecies.org/taxname/11707)

<https://inaturalist.ca/taxa/47459-Cephalopoda>

There were six cases recorded since 2010. In 2001, set 41, the specimen was a juvenile boreal squid, *Gonatus fabricii*, code 4770. In 2012, set 112, 340 m, was written 'Pieuvre' (octopus), 2 for 0.86, but no photo. There was already *Bathypolypus* written on the sheet; the large size and great depth suggest these were *Stauroteuthis syrtensis*. Also in 2012,

set 117, there was an octopus *Bathypolypus bairdii*, code 4904. In 2013, set 74, there were hatching eggs of *Rossia* (sepiolid).

Recommendations: In 2011, set 41, change code 4545 for code 4770, *Gonatus fabricii*. In 2012, set 112, change code 4545 for 4853, *Stauroteuthis syrtensis*, and for set 117, change code 4545 for code 4904, *Bathypolypus bairdii*. In 2013, set 74, change code 4545 to code 4557, *Rossia*, and flag as eggs.

Code 4554 Sepiolidae (family, bobtail squids)

[urn:lsid:marinespecies.org:taxname:11725](https://marinespecies.org/taxname/11725)

<https://inaturalist.ca/taxa/143626-Sepiolidae>

There were five cases recorded in 2004. These were likely the local sepiolids of genus *Rossia*, code 4557, but mistaken in the past for the US species, *Semirossia tenera*. Occasionally, a warmwater pelagic species, *Stoloteuthis leucoptera*, is encountered: in 1989 (IML museum collection, <https://obis.org/dataset/1febfcdd-3e1b-46db-b73d-1bbe81ce22a6>) and recently in 2019 (<https://inaturalist.ca/observations/53394145>).

Recommendations: Change code 4554 for code 4557.

Code 4557 *Rossia* sp. (genus, bobtail squids)

[urn:lsid:marinespecies.org:taxname:138481](https://marinespecies.org/taxname/138481)

<https://inaturalist.ca/taxa/149978-Rossia>

There were 259 cases recorded since 2008. Two species are present, *Rossia megaptera* and *Rossia palpebrosa*, that are difficult to distinguish apart. In four cases, the specimens were mistaken for the octopus *Bathypolypus bairdii*.

Recommendations: Change code 4557 for 4904, *Bathypolypus bairdii* in 2008, set 110; in 2011, set 123; in 2012, set 167; and in 2014, set 4.

Code 4562 *Rossia megaptera* (Big-fin Bobtail)

[urn:lsid:marinespecies.org:taxname:157032](https://marinespecies.org/taxname/157032)

<https://inaturalist.ca/taxa/151355-Rossia-megaptera>

There were 58 cases recorded, but this species is difficult to distinguish from the other regional species, *Rossia palpebrosa*, so they should be recorded to genus only. In 2009, set 97, the capture was the octopus *Bathypolypus bairdii*.

Recommendations: In 2009, set 97, add the capture in code 4562 to others in code 4904, *Bathypolypus bairdii*. Change other records from code 4562 to code 4557, *Rossia* sp.

Code 4569 *Semirossia tenera* (Lesser Shining Bobtail)

<urn:lsid:marinespecies.org:taxname:157036>

<https://inaturalist.ca/taxa/151363-Semirossia-tenera>

There were eight cases, recorded between 2004 and 2007, of this southern (US) species that was historically misreported and confused for the regional sepiolids of genus *Rossia*. It may also be mistaken for *Bathypolypus bairdii*, but only a few cases had photos, none of which showed octopus. Other sepiolid species, such as the pelagic visitor, *Stoloteuthis leucoptera*, are distinctive in form and coloration and not likely to be mistaken for *Rossia* sp.

Recommendations: Change code 4569 for code 4557, *Rossia* sp.

Code 4591 Teuthida (Squids; revised: now in Order Myopsida or Oegopsida)

There were two cases recorded. In 2005, set 203, is written 'calmar (squid), 0.56', and in 2007, set 14 there is 'encornet (French for shortfin squid), 0.165, 1'. The species in the region during the summer survey is the northern shortfin squid, *Illex illecebrosus*. The name Teuthida is now divided into inshore (Myopsida, <https://inaturalist.ca/taxa/246133-Myopsida>) and pelagic squids (Oegopsida, <https://inaturalist.ca/taxa/246134-Oegopsida>). The northern region has two oegopsids: *Illex illecebrosus* in the summer and *Gonatus fabricii* in the winter (as seen in the Saguenay ice fishery, e.g., https://inaturalist.ca/observations?taxon_id=432427). A myopsid, *Doryteuthis pealeii*, (<https://inaturalist.ca/taxa/201533-Doryteuthis-pealeii>) is common in the south (e.g, Bay of Fundy), but no photo or specimen confirmation has been found yet for the Gulf.

Recommendations: Change code 4591 for code 4753, *Illex illecebrosus*.

Code 4673 Onychoteuthidae

<urn:lsid:marinespecies.org:taxname:11742>

<https://inaturalist.ca/taxa/245362-Onychoteuthidae>

One case was recorded in 2015, set 173. On the entry sheet is written: *Ophioscolex glacialis*, 1, 0.2 g. (a brittlestar, not squid).

Recommendations: Change code 4673 for code 8585, *Ophioscolex glacialis*.

Code 4695 Lepidoteuthidae

<urn:lsid:marinespecies.org:taxname:11763>

<https://inaturalist.ca/taxa/245359-Lepidoteuthidae>

One case in 2011, set 39. On the entry sheet is written 'patate (French for potato), 13.36 kg, 212'. The photo shows a capture of sea potato, *Boltenia ovifera*, code 8792.

Recommendations: Change code 4695 for code 8792, *Boltenia ovifera*.

Code 4753 *Illex illecebrosus* (Northern Shortfin Squid)

[urn:lsid:marinespecies.org:taxname:153087](https://marinespecies.org/taxname/153087)

<https://inaturalist.ca/taxa/146887-Illex-illecebrosus>

There were 640 cases recorded, with eight that did not have a count in capture.

Recommendations: Change the count in the captures to that of those measured.

Code 4770 *Gonatus fabricii* (Boreoatlantic Gonate Squid)

[urn:lsid:marinespecies.org:taxname:153097](https://marinespecies.org/taxname/153097)

<https://inaturalist.ca/taxa/432427-Gonatus-fabricii>

There was one case recorded in 2012, set 49, confirmed with photos. Of note, there was an addition from code 4545, changing the capture from 0.0016 kg for 1 to 0.0058 kg for 3.

Recommendations: In 2012, set 49, confirm capture in code 4770 from 0.0016 kg for 1 to 0.0058 kg for 3.

Code 4846 Octopoda (order, octopods)

[urn:lsid:marinespecies.org:taxname:11718](https://marinespecies.org/taxname/11718)

<https://inaturalist.ca/taxa/47458-Octopoda>

There were four cases recorded, three for the mesopelagic *Stauroteuthis syrtensis*, code 4853, and one for a boreal octopus, *Bathypolypus bairdii*, code 4904.

Recommendations: In 2005, set 23; 2006, set 17; 2007, set 21, change code 4846 for code 4853, *Stauroteuthis syrtensis*. In 2005, set 6, change code 4846 for code 4904, *Bathypolypus bairdii*.

Code 4853 *Stauroteuthis syrtensis* (Glowing Sucker Octopus)

[urn:lsid:marinespecies.org:taxname:153122](https://marinespecies.org/taxname/153122)

<https://inaturalist.ca/taxa/432536-Stauroteuthis-syrtensis>

There were two cases recorded in 2013. A large, mesopelagic octopod with gelatinous tissue, it is usually in poor condition when seen in a trawl capture. The examination of a specimen for the internal shell confirmed the species was not *Cirroteuthis muelleri*, also encountered on Atlantic-Arctic surveys.

Recommendations: None to declare.

Code 4878 *Bathypolypus* sp. (genus)

[urn:lsid:marinespecies.org:taxname:138265](https://marinespecies.org/taxname/138265)

<https://inaturalist.ca/taxa/54511-Bathypolypus>

There were 137 cases recorded, all presumed to be the regional species, *Bathypolypus bairdii*, code 4904, apart from five cases seen of the sepiolid *Rossia*, code 4557: in 2009 sets 96, 103, 118, and in 2010, set 109. Also in 2010, set 118, there was a *Rossia* with a *Bathypolypus bairdii*. Historically, the local species was named *Bathypolypus arcticus*, but a review (Muus 2002) showed that the Northwest Atlantic had *B. bairdi*, while *B. arcticus* was in the Arctic. Examination of Gulf and Arctic specimens (MLI collection) has confirmed the distinction between the two species in their respective regions.

Recommendations: In 2009, sets 96, 103, 118 and in 2010, set 109, change code 4878 for code 4557, *Rossia* sp. In 2010, set 118, adjust the capture of 0.0144 kg for 2 to 0.0072 kg for 1, and add record for code 4557, *Rossia* sp., 0.0072 kg for 1. For all other cases, change code 4878 for code 4904, *Bathypolypus bairdii*. In future, conserve and analyze voucher specimens to confirm absence of *B. arcticus*.

Code 4894 *Octopus* sp. (*Octopus*, Genus)

<urn:lsid:marinespecies.org:taxname:138268>

<https://inaturalist.ca/taxa/47456-Octopus>

There were 58 cases recorded in 2004 and 2 in 2005. There are no members of the genus *Octopus* present in the region. The common species is *Bathypolypus bairdii*, code 4904, but it has been frequently mistaken in appearance with sepiolids of the genus *Rossia*, and sometimes in name with the large pelagic octopod, *Stauroteuthis syrtensis*. To date, the only cephalopod that has been captured in the Estuary is *Bathypolypus bairdii* and is therefore by default the species when no photos are available for confirmation. Other benthic kinds (e.g., *Muusoctopus*) occur in much deeper water and are not expected in the region.

Recommendations: Change code 4894 for code 4545, Cephalopoda, except for captures in the Estuary (west of longitude -67) that may be reliably changed for code 4904, *Bathypolypus bairdii*.

Code 4904 *Bathypolypus bairdii* (Baird's Spoonarm Octopus)

<urn:lsid:marinespecies.org:taxname:157011>

<https://inaturalist.ca/taxa/699436-Bathypolypus-bairdii>

There were 323 cases recorded; in some instances, they were sepiolids of *Rossia* sp. Previously, this species was misidentified as *Bathypolypus arcticus*, which is not present.

Recommendations: In 2006, set 102, change code 4904 for 4557, *Rossia* sp. In 2007, set 19, add record for code 4557, *Rossia* sp., 0.0948 kg for 1, as is written on the sheet but missing from database. In 2012, set 15, change the capture of 0.0032 kg for 2 to 0.0004 kg for 1 and add a record for code 4557, *Rossia* sp., 0.0028 kg for 1. In 2015, set 4, change the capture of 0.0518 kg for 2 to 0.0589 kg for 3 by adding capture of code 4557, *Rossia* sp.

Code 4949 Annelida (Phylum)

<urn:lsid:marinespecies.org:taxname:882>
<https://inaturalist.ca/taxa/47491-Annelida>

There were three cases recorded in 2006, all of Class Polychaeta, code 4950: at set 129, *Arabella iricolor* (*Arabella* sp, code 5509); set 149, *Polyphysia crassa* (code 5264), set 150, no. 1 = *Amphitrite cirrata* (code 5675), no. 2 = Polynoidae (code 5007). For set 150, the sheet indicated three specimens for 15.6 g, possibly including a tube as the third kind.

Recommendations: In 2006, set 129, change code 4949 for code 5509, *Arabella* sp.; set 149, change code 4949 for code 5264, *Polyphysia crassa*; set 150, change code 4949 for code 4950, Polychaeta. To estimate the weight of the two polychaetes seen in set 150, or else record as presence only, based on the photos.

Code 4950 Polychaeta (Class)

<urn:lsid:marinespecies.org:taxname:883>
<https://inaturalist.ca/taxa/47490-Polychaeta>

There were 765 cases recorded, many of them possible to move to the family, genus, or species level. In some cases, they were sipunculids and nemerteans.

Recommendations: Change code 4950 for the lowest taxon code possible as indicated from photos and entry sheets.

Code 4955 *Phyllodoce groenlandica*

<urn:lsid:marinespecies.org:taxname:334506>
<https://inaturalist.ca/taxa/1023059-Phyllodoce-groenlandica>

There was one case recorded in 2009, confirmed in photo.

Recommendations: None to declare.

Code 5002 *Aphrodita hastata* (Sea Mouse)

<urn:lsid:marinespecies.org:taxname:157181>
<https://inaturalist.ca/taxa/1145778-Aphrodita-hastata>

There were 116 cases recorded, most confirmable in photos. A large, distinctive species, however, smaller ones were mistaken in 28 cases for *Laetmonice filicornis*, code 5003, and one was Polynoidae, code 5007.

Recommendations: Change code 5002 for the taxon as seen in photos.

Code 5003 *Laetmonice filicornis*

[urn:lsid:marinespecies.org:taxname:129844](https://marinespecies.org/taxname/129844)

<https://inaturalist.ca/taxa/391308-Laetmonice-filicornis>

There were 14 cases recorded since 2013, confirmed in photos. Prior to 2013, this small scaleworm was mistaken for juveniles of *Aphrodita hastata*.

Recommendations: None to declare.

Code 5007 Polynoidae (Scaleworms, Family)

[urn:lsid:marinespecies.org:taxname:939](https://marinespecies.org/taxname/939)

<https://inaturalist.ca/taxa/53607-Polynoidae>

There were 11 cases recorded since 2015. Other cases were seen on sheets and photos but recorded as Polychaeta. The family level is suggested as they are difficult to identify.

Recommendations: Due to frequent changes in names and fragile specimens, to continue recording specimens to the family level.

Code 5045 *Eunoe nodosa*

[urn:lsid:marinespecies.org:taxname:130745](https://marinespecies.org/taxname/130745)

<https://inaturalist.ca/taxa/1043374-Eunoe-nodosa>

There were two cases recorded: in 2013, set 57, and 2015, set 131. The latter is not a *Eunoe nodosa* and is to be placed into family Polynoidae

Recommendations: In 2015, set 131, change code 5045 for code 5007, Polynoidae.

Code 5046 *Harmothoe* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:129491](https://marinespecies.org/taxname/129491)

<https://inaturalist.ca/taxa/64707-Harmothoe>

There were 61 cases recorded since 2006. These scaleworms can occur in several genera with name revisions, and thus it is recommended they be coded 5007, family Polynoidae. In some cases, specimens were of *Aphrodita hastata* and *Laetmonice filicornis*.

Recommendations: In 2011, set 6, change code 5046 for code 5002, *Aphrodita hastata*. In 2012, sets 76 and 88, change code 5046 for code 5003, *Laetmonice filicornis*. For other cases, to change code 5046 for code 5007, Polynoidae.

Code 5113 *Nephtys* sp. (Catworms, Genus)

[urn:lsid:marinespecies.org:taxname:129370](https://marinespecies.org/taxname/129370)

<https://inaturalist.ca/taxa/117607-Nephtys>

There were five cases recorded, with three that were Polynoidae or other worms, in 2011, sets 8 and 140, and in 2014, set 191.

Recommendations: In 2011, set 8, and 2014, set 191, change code 5113 for code 5007, Polynoidae. In 2011, set 140, change code 5113 for code 4950, Polychaeta.

Code 5236 *Nereis pelagica*

<urn:lsid:marinespecies.org:taxname:130404>

<https://inaturalist.ca/taxa/417654-Nereis-pelagica>

There was one case recorded in 2014. The identification is tentative, as many polychaetes need a review for the species present in the Northwest Atlantic.

Recommendations: In future, conserve specimens for taxonomic review.

Code 5264 *Polyphysia crassa*

<urn:lsid:marinespecies.org:taxname:130977>

<https://inaturalist.ca/taxa/684729-Polyphysia-crassa>

There were five cases recorded since 2014.

Recommendations: None to declare.

Code 5277 Maldanidae (Bamboo worms, Family)

<urn:lsid:marinespecies.org:taxname:923>

<https://inaturalist.ca/taxa/194016-Maldanidae>

There were two cases recorded in 2012. Others were seen in photos.

Recommendations: None to declare.

Code 5461 *Euphrosine borealis*

<urn:lsid:marinespecies.org:taxname:130081>

<https://inaturalist.ca/taxa/871996-Euphrosine-borealis>

There were five cases recorded since 2014. Others were seen in photos.

Recommendations: None to declare.

Code 5646 *Melinna cristata*

<urn:lsid:marinespecies.org:taxname:129804>
<https://inaturalist.ca/taxa/674786-Melinna-cristata>

There was one case recorded, in 2014. Others were seen in photos.

Recommendations: None to declare.

Code 5673 Terebellidae (Spaghetti worms, Family)

<urn:lsid:marinespecies.org:taxname:982>
<https://inaturalist.ca/taxa/47492-Terebellidae>

There were two cases recorded in 2009; it is another worm in set 25.

Recommendations: In 2009, set 25, change code 5673 for code 4950, Polychaeta.

Code 5746 Flabelligeridae (Family)

<urn:lsid:marinespecies.org:taxname:976>
<https://inaturalist.ca/taxa/122156-Flabelligeridae>

There was one case recorded in 2011, set 140, that was a *Brada inhabilis*, code 5755.

Recommendations: In 2011, set 140, change code 5746 for code 5755, *Brada inhabilis*.

Code 5755 *Brada inhabilis*

<urn:lsid:marinespecies.org:taxname:130097>
<https://inaturalist.ca/taxa/1277777-Brada-inhabilis>

There were five cases recorded since 2014. Others were seen in photos.

Recommendations: None to declare.

Code 5900 Sipuncula (Peanut worms, Phylum)

<urn:lsid:marinespecies.org:taxname:1268>
<https://inaturalist.ca/taxa/48665-Sipuncula>

There were 123 cases recorded, with seven likely of *Phascolion strombus* and three of *Golfingia margaritacea*, although the taxonomy of this group is complex, and identification may require careful dissection of specimens. In three other cases, there was a zoanthid cnidarian, *Epizoanthus erdmanni*, a polychaete, *Brada villosa*, and a parasitic turbellid egg case, Fecampiidae.

Recommendations: In 2008, set 112, 2009, set 33, and 2011, set 4, change code 5900 for code 2157, *Epizoanthus* sp. In 2010, set 166, change code 5900 for code 5755, *Brada villosa*. In 2009, set 23, change code 5900 for code 2296, Fecampiidae (eggs). For other cases in code 5900, change to species when confirmed.

Code 5902 *Golfingia margaritacea*

[urn:lsid:marinespecies.org:taxname:175027](https://inaturalist.ca/taxa/796540-Golfingia-margaritacea)

<https://inaturalist.ca/taxa/796540-Golfingia-margaritacea>

There were two cases recorded in 2015. This is presumed to be a common species, although dissection may be necessary for confirmation. Several were seen in photos.

Recommendations: Confirm species with dissection of future specimens. Seek to add records of presences from photo catalogue.

Code 5907 *Phascolion strombus* (= *Phascolion (Phascolion) strombus strombus*)

[urn:lsid:marinespecies.org:taxname:266489](https://inaturalist.ca/taxa/423566-Phascolion-strombus)

<https://inaturalist.ca/taxa/423566-Phascolion-strombus>

There were nine cases recorded since 2014. The species occupies dead gastropod shells filled with mud, and thus it may go unnoticed. There were 33 cases in the photo catalogue.

Recommendations: Seek to add records of presences from photo catalogue.

Code 5930 *Echiura* (Spoon worms, Subclass)

[urn:lsid:marinespecies.org:taxname:1269](https://inaturalist.ca/taxa/117589-Echiura)

<https://inaturalist.ca/taxa/117589-Echiura>

There were two cases recorded in 2014; both were *Hamingia arctica*, code 5934.

Recommendations: In 2014, change code 5930 for code 5934, *Hamingia arctica*.

Code 5934 *Hamingia arctica*

[urn:lsid:marinespecies.org:taxname:110364](https://inaturalist.ca/taxa/1294053-Hamingia-arctica)

<https://inaturalist.ca/taxa/1294053-Hamingia-arctica>

There were two cases recorded in 2015. Often found contracted and thus mistaken for debris or unknown invertebrates. Nine more cases were seen in photos.

Recommendations: Seek to add records of presences from photo catalogue.

Code 5951 Pycnogonida (Sea spiders, Class)

<urn:lsid:marinespecies.org:taxname:1302>

<https://inaturalist.ca/taxa/47825-Pycnogonida>

There were 153 cases recorded. In one case, it was an isopod, *Syscenus infelix*. In 2006, there was a unique specimen of the inshore species, *Pycnogonum litorale*; others were from deeper water and appeared to be of the genus *Nymphon*, code 5961.

Recommendations: In 2006, set 184, change code 5951 for code 5975, *Pycnogonum litorale*. In 2014, set 100, change code 5951 for code 6791, *Syscenus infelix*. For other cases of code 5951, change to genus *Nymphon*, code 5961, when confirmed by photos.

Code 5961 *Nymphon* sp. (genus, sea spiders)

<urn:lsid:marinespecies.org:taxname:134591>

<https://inaturalist.ca/taxa/252726-Nymphon>

There were 49 cases recorded since 2012. Apart from one case of *Pycnogonum litorale* in 2006, this is the only genus of sea spiders that has been noticed on the survey.

Recommendations: None to declare.

Code 5964 *Nymphon hirtipes*

<urn:lsid:marinespecies.org:taxname:134690>

<https://inaturalist.ca/taxa/813364-Nymphon-hirtipes>

There was one case in 2011, set 76, present in photos.

Recommendations: In 2011, set 76, confirm species in photos or change code 5964 to genus *Nymphon*, code 5961.

Code 6000 Crustacea

<urn:lsid:marinespecies.org:taxname:1066>

<https://inaturalist.ca/taxa/85493-Crustacea>

There was one case recorded in 2012. The photo has an unknown organism, possibly an egg capsule, to be deleted as debris.

Recommendations: In 2012, code 6000, flag or delete record as debris.

Code 6084 *Calanus finmarchicus*

<urn:lsid:marinespecies.org:taxname:104464>

<https://inaturalist.ca/taxa/372502-Calanus-finmarchicus>

There was one case recorded in 2006, set 133. The sheet has written: 'unknown #1, invertebrates (1100), 1, 0.0027'. Photos show a chiton that was initially identified as *Stenosemus exaratus*, it was corrected in 2021 by Bruno Anseeuw for *Hanleya hanleyi*, which is a new species for the region (<https://inaturalist.ca/observations/98982533>).

Recommendations: In 2006, set 133, change code 6084 to code 3141, *Hanleya hanleyi*.

Code 6580 Cirripedia (Barnacles, Subclass)

<urn:lsid:marinespecies.org:taxname:1082>
<https://inaturalist.ca/taxa/210289-Cirripedia>

There were 16 cases recorded since 2008. Photos revealed no stalked barnacles, only those of family Balanidae. Some were the giant barnacle, *Chirona hameri* while most were likely *Balanus balanus*, although *Balanus crenatus* is possible, and thus the use of genus may be preferred. Barnacles, like most of the organisms in captures that cannot be separately weighed (e.g., dense mats, epiphytes, colonial species), were more commonly recorded in photos and were not in the survey database.

Recommendations: Change code 6580 for code 6592 *Balanus* sp. or code 6593, *Chirona hameri* from photos. In future, confirm if *Balanus* is *B. balanus* or *B. crenatus*. In future, define utility of documenting captures of barnacles, as weights or even presence.

Code 6588 Lepas sp. (Gooseneck barnacles, Genus)

<urn:lsid:marinespecies.org:taxname:106087>
<https://inaturalist.ca/taxa/48780-Lepas>

There was one case recorded in 2007, set 201. Photos showed it was the deepwater stalked barnacle, *Arcoscalpellum michelottianum*, code 6594.

Recommendations: In 2007, set 201, change code 6588 for code 6594, *Arcoscalpellum michelottianum*.

Code 6590 Lepas hillii

<urn:lsid:marinespecies.org:taxname:106151>
<https://inaturalist.ca/taxa/546703-Lepas-hillii>

There was one case recorded in 2007, set 19. Photos showed it was the deepwater stalked barnacle, *Arcoscalpellum michelottianum*, code 6594.

Recommendations: In 2007, set 19, change code 6590 for code 6594, *Arcoscalpellum michelottianum*.

Code 6593 *Chirona hameri*

[urn:lsid:marinespecies.org:taxname:106207](https://marinespecies.org/taxname/106207)

<https://inaturalist.ca/taxa/1043254-Chirona-hameri>

There were 15 cases recorded since 2011. In one case in 2014, it was *Balanus* sp. (likely *Balanus balanus*). While very large barnacles may be assumed to be *Chirona hameri*, it may be necessary to examine the base and plates to confirm they are not *Balanus* sp.

Recommendations: In 2014, set 189, change code 6593 for code 5962, *Balanus* sp. In future, review photos again to confirm specimens as either *Balanus* or *Chirona*.

Code 6594 *Arcoscalpellum michelottianum*

[urn:lsid:marinespecies.org:taxname:106182](https://marinespecies.org/taxname:106182)

<https://inaturalist.ca/taxa/651182-Arcoscalpellum-michelottianum>

There were 19 cases recorded since 2010 of this deepwater, stalked barnacle collected on submerged debris. The species is presumed to be the only one in the region.

Recommendations: Confirm species as sole present in the region.

Code 6595 Balanidae (Barnacles, Family)

[urn:lsid:marinespecies.org:taxname:106057](https://marinespecies.org/taxname:106057)

<https://inaturalist.ca/taxa/49128-Balanidae>

There were 47 cases recorded since 2006. In nine cases, it was *Chirona hameri*, and one was *Arcoscalpellum michelottianum*. In some cases, it appeared to be debris.

Recommendations: In 2006, set 216, change code 6595 for code 6594, *Arcoscalpellum michelottianum*. Where indicated from photos, change code 6595 for code 6593, *Chirona hameri*. Flag or delete records as debris when evident in photos.

Code 6596 *Arcoscalpellum* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:106103](https://marinespecies.org/taxname:106103)

<https://inaturalist.ca/taxa/248862-Arcoscalpellum>

There were 11 cases recorded in 2008 and 2009. There is one species recorded in the region, *Arcoscalpellum michelottianum*.

Recommendations: Change code 6596 for code 6594, *Arcoscalpellum michelottianum*.

Code 6597 *Balanus balanus*

[urn:lsid:marinespecies.org:taxname:106213](https://marinespecies.org/taxname:106213)

<https://inaturalist.ca/taxa/507992-Balanus-balanus>

There were two cases recorded. In 2006, photos showed *Chirona hameri*. In 2012, it followed a large capture of *Chirona hameri* and thus was possibly contamination or debris.

Recommendations: In 2006, set 170, change code 6597 for code 6593, *Chirona hameri*. In 2012, set 48, change code 6597 for code 6595, Balanidae, and flag as debris.

Code 6598 *Balanus crenatus*

<urn:lsid:marinespecies.org:taxname:106215>

<https://inaturalist.ca/taxa/117672-Balanus-crenatus>

There was one case was recorded in 2006; it was *Chirona hameri*, code 6593.

Recommendations: Change code 6598 for code 6593, *Chirona hameri*.

Code 6620 Cumacea (Hooded Shrimp, Order)

<urn:lsid:marinespecies.org:taxname:1137>

<https://inaturalist.ca/taxa/144115-Cumacea>

There was one case recorded, in 2013, set 57. Another case was seen in photos from a subsample of amphipods in 2014, set 80, and later identified in the lab as *Diastylis rathkei*, but was not recorded in the database.

Recommendations: Review photo records to add to catch database.

Code 6760 Isopoda (Isopods, Order)

<urn:lsid:marinespecies.org:taxname:1131>

<https://inaturalist.ca/taxa/48147-Isopoda>

There were 13 cases recorded in 2006 and 2007. In nine cases, it was the large ectoparasite, *Aega psora*, code 6771. In other cases, they were amphipods (*Anonyx* sp., *Eusirus cuspidatus*, *Stegocephalus inflatus*), sometimes with two species written on the entry sheets. In 2007, set 39, the capture weight was 0.95 g and not 0.95 kg.

Recommendations: In 2006, set 46, change code 6760 for 7389, *Anonyx* sp. In 2007, set 39, modify capture weight of 0.95 kg to 0.00095 and split record: *Anonyx* sp., code 7389, *Eusirus cuspidatus*, code 7195. In set 42, change code 6760 for code 7750, *Stegocephalus inflatus*. In set 77, modify capture into two records: *Anonyx* sp., code 7389, 0.00195 kg for 2 and *Stegocephalus inflatus*, code 7750, 0.00155 kg for 2. In sets 11, 34, 46, 79, 81, 87, 112, 198, 204, change code 6760 for code 6771, *Aega psora*.

Code 6771 *Aega psora*

<urn:lsid:marinespecies.org:taxname:118827>

<https://inaturalist.ca/taxa/796470-Aega-psora>

There were 70 cases recorded of this large ectoparasite associated with cod and halibut.

Recommendations: None to declare

Code 6791 *Syscenus infelix*

<urn:lsid:marinespecies.org:taxname:156446>

<https://inaturalist.ca/taxa/692137-Syscenus-infelix>

There were 513 cases recorded. As an ectoparasite of a deepwater grenadier, *Nezumia bairdii*, two cases are suspect as contamination from preceding sets: in 2006, set 29, 51 m, and set 161, 137 m. In 2008, set 109, there was one *Aega psora* with three *Syscenus infelix*. In 2010, there was one case of *Aega psora*.

Recommendations: In 2006, sets 129 and 137, flag as debris from preceding sets. In 2008, modify capture of 0.0095 kg for 4 to 0.0070 kg for 3 and add record for code 6771, *Aega psora*, 0.0025 for 1. In 2010, set 53, change code 6791 for code 6771 *Aega psora*.

Code 6930 Amphipoda (Order)

<urn:lsid:marinespecies.org:taxname:1135>

<https://inaturalist.ca/taxa/47628-Amphipoda>

There were 100 cases recorded, with 91 possible to place into different taxa, and often split based on the weights written on the sheets. In 2012, set 26, the capture in Amphipoda was inversed with the record for *Eusirus cuspidatus*, code 7195 (see below).

Recommendations: In 2012, set 26, modify the capture of 0.0095 kg for 24 to 0.0026 kg for 2. Move other cases to taxa as indicated on the sheets and in photos.

Code 6960 Hyperiididae (Family)

<urn:lsid:marinespecies.org:taxname:101417>

<https://inaturalist.ca/taxa/195355-Hyperiididae>

There was one case recorded in 2009, set 35, with a blurry photo of *Themisto* sp.

Recommendations: In 2009, set 35, change code 6960 for code 6967, *Themisto* sp.

Code 6968 *Themisto abyssorum*

<urn:lsid:marinespecies.org:taxname:103259>

<https://inaturalist.ca/taxa/558731-Themisto-abyssorum>

There was one case recorded in 2009, set 159, that looks like *Themisto libellula* in photo; usually only this large species is seen in trawl captures.

Recommendations: In 2009, set 159, change code 6968 for code 6972, *Themisto libellula*.

Code 6970 *Themisto compressa*

<urn:lsid:marinespecies.org:taxname:156451>

<https://inaturalist.ca/taxa/865956-Themisto-compressa>

There were three cases recorded, confirmed with photos (dorsal spine in view).

Recommendations: None to declare.

Code 6972 *Themisto libellula*

<urn:lsid:marinespecies.org:taxname:156452>

<https://inaturalist.ca/taxa/706438-Themisto-libellula>

There were 126 cases recorded. In one case, the photo showed *Themisto compressa*, and in six other cases, they were too blurry to confirm species.

Recommendations: In 2013, set 166, change code 6792 for 6970, *Themisto compressa*. In 2013, set 169 and in 2014, sets 17, 20, 22, 80, change code 6970 for 6967, *Themisto*.

Code 6977 *Hyperia galba*

<urn:lsid:marinespecies.org:taxname:103251>

<https://inaturalist.ca/taxa/260828-Hyperia-galba>

There were 30 cases recorded since 2011. This pelagic amphipod is a commensal species associated scyphozoans, in particular the moon jellyfish, *Aurelia aurita*.

Recommendations: None to declare

Code 6980 Gammaridea (Suborder, name no longer accepted)

<urn:lsid:marinespecies.org:taxname:1207>

There were eight cases recorded. In 2009, it was a *Eusirus cuspidatus*. In 2012, there was a *Pardalisca abyssj*, three each of *Melita* sp. and *Neohela monstrosa*. The suborder Gammaridea is now considered paraphyletic, with the name no longer in use.

Recommendations: In 2009, set 39, change code 6980 for code 7195, *Eusirus cuspidatus*. In 2012, set 33, change for code 7594, *Pardalisca abyssi*; in sets 41, 48, 51 change for code 7267, *Melita* sp.; in sets 72, 146, 162, change for code 7483, *Neohela monstrosa*. In future, use level of order Amphipoda, code 6930.

Code 6996 *Ampelisca* sp. (Genus)

<urn:lsid:marinespecies.org:taxname:101445>

<https://inaturalist.ca/taxa/64627-Ampelisca>

There was one case recorded in 2015. Distinguishing between species of *Ampelisca* can be difficult, and thus using the genus level is suggested unless certain.

Recommendations: None to declare.

Code 6999 *Ampelisca eschrichti*

<urn:lsid:marinespecies.org:taxname:101897>

<https://inaturalist.ca/taxa/1039997-Ampelisca-eschrichti>

There were two cases recorded in 2012, confirmed in photos.

Recommendations: In future, record to genus level unless species is confirmed.

Code 7193 Eusiridae (Family)

<urn:lsid:marinespecies.org:taxname:101380>

<https://inaturalist.ca/taxa/171687-Eusiridae>

There was one case recorded in 2006, set 79. On that year's survey, the species *Rhachotropis aculeata* was known but not yet *Eusirus cuspidatus*, and thus the reason to make use of the family level. However, the photos show *Anonyx* sp., code 7389.

Recommendations: In 2006, set 79, change code 7193 for code 7389, *Anonyx*.

Code 7195 *Eusirus cuspidatus*

<urn:lsid:marinespecies.org:taxname:102199>

<https://inaturalist.ca/taxa/985629-Eusirus-cuspidatus>

There were 40 cases recorded. In 2014, four were *Rhachotropis aculeata*, code 7211, and another was *Ampelisca* sp., code 6996. In one case in 2012, the capture record was inverted with that for Amphipoda code 6930 (= *Melita* sp., from photos).

Recommendations: In 2012, set 26, for code 7195, modify capture of 0.0026 kg for two to 0.0095 kg for 24. In 2014, sets 53, 61, 90, 91, change code 7195 for code 7211, *Rhachotropis aculeata*; in set 204, change for code 6996, *Ampelisca* sp.

Code 7211 *Rhachotropis aculeata*

<urn:lsid:marinespecies.org:taxname:102224>

<https://inaturalist.ca/taxa/854908-Rhachotropis-aculeata>

There were 174 cases recorded, two needing changes to *Eusirus cuspidatus*.

Recommendations: In 2006, set 46, change code 7211 for code 7195, *Eusirus cuspidatus*. In 2014, set 19, modify the capture with code 6930, from 0.0061 kg for 18 to 0.0063 kg for 19.

Code 7234 *Halice abyssi*

<urn:lsid:marinespecies.org:taxname:102939>

There was one case recorded in 2005, set 150, with 1.0189 kg for 52. The capture sheet has written Lycodes [eelpout], family, 1.45 kg for 52. These fishes are already in four lines in the database, under codes of 700 series, so this is likely an error with codes. While this amphipod species is present in the region, it has not yet been noticed on the survey.

Recommendations: In 2005, set 150, delete the capture in code 7234.

Code 7268 *Melita dentata* (current synonym: *Megamoera dentata*)

<urn:lsid:marinespecies.org:taxname:102837>

<https://inaturalist.ca/taxa/339114-Melita-dentata>

There were two cases, recorded in 2014 and 2015, and confirmed in photos.

Recommendations: None to declare.

Code 7279 *Maera loveni*

<urn:lsid:marinespecies.org:taxname:102820>

<https://inaturalist.ca/taxa/1104412-Maera-loveni>

There were two cases recorded, in 2011 and 2014; the second one was another species of large amphipod, *Neohela monstrosa*, code 7483.

Recommendations: In 2014, set 59, change code 7279 for code 7483, *Neohela monstrosa*.

Code 7383 *Epimeria loricata*

[urn:lsid:marinespecies.org:taxname:102146](https://inaturalist.ca/taxa/850650-Epimeria-loricata)
<https://inaturalist.ca/taxa/850650-Epimeria-loricata>

There were 44 cases recorded, with seven of them being *Paramphithoe hystrix*, code 7356, as the two species were confused in some years of the survey.

Recommendations: Change code 7383 for code 7356, *Paramphithoe hystrix*, in 2011, sets 64, 65, 135, 136; 2013, set 157; in 2014, sets 61, 187.

Code 7389 *Anonyx* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:101592](https://inaturalist.ca/taxa/248434-Anonyx)
<https://inaturalist.ca/taxa/248434-Anonyx>

There were 85 cases recorded since 2008. Species identification is difficult, thus the genus.

Recommendations: None to declare.

Code 7394 *Anonyx sarsi*

[urn:lsid:marinespecies.org:taxname:102516](https://inaturalist.ca/taxa/1023121-Anonyx-sarsi)
<https://inaturalist.ca/taxa/1023121-Anonyx-sarsi>

There were 10 cases recorded in 2006, but it was not possible to confirm species.

Recommendations: In 2006, change code 7394 to code 7389, genus *Anonyx*.

Code 7396 *Anonyx nugax*

[urn:lsid:marinespecies.org:taxname:102514](https://inaturalist.ca/taxa/702949-Anonyx-nugax)
<https://inaturalist.ca/taxa/702949-Anonyx-nugax>

There were two cases recorded in 2006, but it was not possible to confirm species.

Recommendations: In 2006, change code 7396 to code 7389, genus *Anonyx*.

Code 7483 *Neohela monstrosa*

[urn:lsid:marinespecies.org:taxname:102108](https://inaturalist.ca/taxa/850646-Neohela-monstrosa)
<https://inaturalist.ca/taxa/850646-Neohela-monstrosa>

There were 26 cases recorded since 2009, with two for correction: in 2010, set 159, a duplicate record after the addition of *Wimvadocus torelli*, code 7691; in 2014, set 61, a case of *Wimvadocus torelli*. This large, burrowing amphipod is distinctive with the body being dorso-ventrally flattened and not laterally flattened like most amphipods, including *Wimvadocus*, at least in the rear (<https://inaturalist.ca/observations/21041915>).

Recommendations: In 2010, set 159, delete the record for code 7483 (duplicate). In 2014, set 61, change code 7483 for code 7691, *Wimvadocus torelli*.

Code 7555 *Oediceros saginatus*

[urn:lsid:marinespecies.org:taxname:102908](https://marinespecies.org/taxname/102908)

<https://inaturalist.ca/taxa/1039993-Oediceros-saginata>

There was one case recorded in 2011, confirmed in photos.

Recommendations: None to declare.

Code 7586 *Paramphithoe hystrix*

[urn:lsid:marinespecies.org:taxname:102152](https://marinespecies.org/taxname/102152)

<https://inaturalist.ca/taxa/848990-Paramphithoe-hystrix>

There were 49 cases recorded, with one duplicate to delete (confused with a record of *Rhachotropis aculeata*), and three cases to change for *Epimeria loricata*.

Recommendations: In 2006, set 47, delete record in code 7586 (duplicate). In 2010, set 119, 2011, sets 90 and 140, change code 7586 for code 7383, *Epimeria loricata*.

Code 7750 *Stegocephalus inflatus*

[urn:lsid:marinespecies.org:taxname:103105](https://marinespecies.org/taxname/103105)

<https://inaturalist.ca/taxa/868454-Stegocephalus-inflatus>

There were 181 cases recorded, with two to be changed for *Hyperia galba*, code 6977.

Recommendations: In 2008, set 114, and 2013, set 32, change code 7750 for code 6977, *Hyperia galba*.

Code 7880 Caprellidea (Suborder, accepted as superfamily Caprelloidea)

[urn:lsid:marinespecies.org:taxname:196121](https://marinespecies.org/taxname/196121) (superfamily Caprelloidea)

<https://inaturalist.ca/taxa/47627-Caprelloidea>

There were two cases recorded since 2009, both of *Aeginina longicornis*, code 7890.

Recommendations: Change code 7880 for code 7890, *Aeginina longicornis*.

Code 7925 Mysida (older synonym: Mysidacea)

[urn:lsid:marinespecies.org:taxname:149668](https://marinespecies.org/taxname/149668)

<https://inaturalist.ca/taxa/85532-Mysida>

There was one case recorded in 2011, set 74, at 49 m depth of a *Mysis* sp., code 7967. Deepwater species of the red-eyed *Boreomysis* are commonly seen, but zooplankton records are rarely recorded from the trawl captures.

Recommendations: In 2011, set 74, change code 7925 for code 7967, *Mysis* sp.

Code 7991 Euphausiacea (Krill, Order)

urn:lsid:marinespecies.org:taxname:1128

<https://inaturalist.ca/taxa/153112-Euphausiacea>

There were 10 cases recorded, with nine in 2011, between sets 35 to 97, and one in 2013. In photos, there were seven cases of *Meganyctiphanes norvegica*, code 7994, and three others likely of the same species. In 2011, set 51, at 133 m depth, the entry sheet has 'krill, 4.34 kg', seen in a large capture of capelan, plaice and cod. While occasionally visible in photos, krill were rarely recorded in the database because they could not be collected to give a total catch weight. Another krill, *Thysanoessa* spp., is also present but is smaller; it was seen in photos in 2012, set 210, along with *M. norvegica*.

Recommendations: In 2011 and 2013, change code 7991 for code 7994, *Meganyctiphanes norvegica*. To add presences as seen in photos.

Code 7994 *Meganyctiphanes norvegica* (Northern Krill)

urn:lsid:marinespecies.org:taxname:110690

<https://inaturalist.ca/taxa/639178-Meganyctiphanes-norvegica>

There were 11 cases recorded: one in 2006 and 10 in 2013. Other cases were also seen in photos (not recorded). Note, in several instances, the catch weight was of some specimens, to enable entry as a record in the database, but not of the total trawl catch.

Recommendations: Add presences seen in photos. Add a flag regarding catch weights.

Code 8024 *Aristaeopsis edwardsiana* (Scarlet Gamba Prawn)

urn:lsid:marinespecies.org:taxname:240796

<https://inaturalist.ca/taxa/260237-Aristaeopsis-edwardsiana>

There were two cases reported, in 2013 and 2014, both as juveniles seen in photos. This is a very large, mesopelagic species common in southern oceans. The captures list two individuals each because shrimp are subsampled on the survey, and then extrapolated to the total capture, in this case from one to two individuals.

Recommendations: For the present captures, the total capture should be the same as sample capture: 1, not 2 individuals each in code 8024 in 2013 and 2014.

Code 8028 *Hymenopenaeus debilis*

<urn:lsid:marinespecies.org:taxname:107117>

<https://inaturalist.ca/taxa/295528-Hymenopenaeus-debilis>

There were four cases recorded since 2011, all in photos with one individual of this small mesopelagic shrimp. The case in 2011, set 91, lists a capture of 2 because it was extrapolated from the sample of 1, which was not done on the other three captures. This southern, oceanic species was a new record for Canada (Savard and Nozères 2012).

Recommendations: In 2011, set 91, change capture values to sample values, from 0.0046 kg for 2 to 0.0023 kg for 1.

Code 8033 *Eusergestes arcticus*

<urn:lsid:marinespecies.org:taxname:515738>

<https://inaturalist.ca/taxa/459579-Eusergestes-arcticus>

There were 82 cases reported. A mesopelagic shrimp, usually captured in the deepest sets, near Cabot Strait. Only two cases were above 250 m depth, and both followed a deeper preceding set. In 2007, set 14, 208 m, 1 measured specimen for 2.4 g, 20.8 mm was extrapolated to 10 for 24 g. The preceding set had similar lengths for 2 specimens, for a weight of 2.9 g. All specimens appeared to weigh about 1 g, except for set 14.

Recommendations: In 2007, set 14, in code 8033, flag capture as suspect, for review.

Code 8035 *Robustosergia robusta*

<urn:lsid:marinespecies.org:taxname:1056517>

<https://inaturalist.ca/taxa/1226833-Robustosergia-robusta>

There were eight cases recorded since 2011. A deepwater, scarlet shrimp, seen as individuals in photos, except in 2013, set 67, that had 2 specimens. The case in 2011, set 91, lists a capture of 2 because it was extrapolated from the sample of 1.

Recommendations: In 2011, set 91, change capture values to sample values, from 0.0034 kg for 2 to 0.0017 kg for 1.

Code 8039 *Acanthephyra* sp. (Genus)

<urn:lsid:marinespecies.org:taxname:107018>

<https://inaturalist.ca/taxa/459461-Acanthephyra>

There was one case recorded in 2015, set 87. The sheet shows code 8040, *Acanthephyra pelagica*, that was changed to code 8039, *Acanthephyra* sp. To date, only *A. pelagica* has been noticed on the survey.

Recommendations: In 2015, set 87, change code 8039 for code 8040, *Acantheephyra pelagica*.

Code 8040 *Acantheephyra pelagica*

[urn:lsid:marinespecies.org:taxname:107581](https://marinespecies.org/taxname/107581)

<https://inaturalist.ca/taxa/459492-Acantheephyra-pelagica>

There were eight cases recorded. In 2015, set 100, there were no photos, but the capture has 4 for 0.049 kg (49 g), or 1 shrimp for 12.6 g, which is heavy for a small shrimp (usually <25 mm cephalothorax). The measurement lists one shrimp of 34 mm, which is more in line with *Aristaeopsis edwardsiana* (code 8024). Of 22 measured shrimp, the sizes ranged from 12.6 to 23.8 mm. Captures of *Acantheephyra* usually consist of several individuals, while *Aristaeopsis edwardsiana* has always been solitary. The capture lists four individuals because measured shrimps are subsampled on the survey, and then extrapolated to the total capture, in this case from one to four individuals.

Recommendations: In 2015, set 100, change code 8040 for code 8024, *Aristaeopsis edwardsiana*. Change the capture from 0.049 kg for 4 to 0.012 kg for 1.

Code 8056 *Pasiphaea tarda* (Crimson Pasiphaeid)

[urn:lsid:marinespecies.org:taxname:107678](https://marinespecies.org/taxname/107678)

<https://inaturalist.ca/taxa/459654-Pasiphaea-tarda>

There were six cases recorded. While the ones from 2006 and 2007 had no photos, their individual size (8 to 11 g) suggests they may be correct. A large, mesopelagic species, it may be mistaken for the common, smaller species, *Pasiphaea multidentata*, code 8057. Samples consisted of one individual, except in 2013, set 64, with two individuals measured although only one was in photos. The seven other samples had their capture values extrapolated from the shrimp subsample, which may be incorrect.

Recommendations: Re-evaluate the practice of extrapolating captures from samples with individuals of rare, deepwater shrimp species.

Code 8057 *Pasiphaea multidentata* (Pink Glass Shrimp)

[urn:lsid:marinespecies.org:taxname:107676](https://marinespecies.org/taxname/107676)

<https://inaturalist.ca/taxa/459652-Pasiphaea-multidentata>

There were 1,130 cases recorded. As a mesopelagic (deepwater) species, captures above 100 m depth appear suspect and may be contamination from preceding sets with larger captures. Certain stages may be more prone to bottom trawl capture, such as adults that occur near the bottom along the continental slopes.

Recommendations: Flag cases sampled above 100 m depth as potential contamination from preceding sets.

Codes 8074 *Eualus* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:106986](https://marinespecies.org/taxname/106986)

<https://inaturalist.ca/taxa/248322-Eualus>

There were six cases recorded in 2015, between sets 30 to 70, recorded as debris of shrimp among measured samples of *Eualus fabricii*, *Eualus gaimardii*, and *Eualus macilentus*, except at set 34 that had seven measured for 3 g.

Recommendations: Review if valid or flag as debris.

Code 8075 *Eualus fabricii* (Arctic Eualid)

[urn:lsid:marinespecies.org:taxname:158357](https://marinespecies.org/taxname/158357)

<https://inaturalist.ca/taxa/459509-Eualus-fabricii>

There were 148 cases recorded. In 2015, set 26, the capture shows 0.000083 kg for 0 while the sample has 0.0008 kg for 3, and the entry sheet has 0.81 g.

Recommendations:

In 2015, set 26, modify the capture in code 8075 from 0.000083 kg for 0 to 0.00081 kg for 3.

Code 8079 *Eualus gaimardii* (Circumpolar Eualid)

[urn:lsid:marinespecies.org:taxname:107504](https://marinespecies.org/taxname/107504)

<https://inaturalist.ca/taxa/459511-Eualus-gaimardii>

There were two cases recorded in 2004, likely of *Eualus gaimardii gaimardii*, code 8080, as the other shrimp, *Eualus gaimardii belcheri*, is distinctive (striped) and very rare. The two subspecies were recently promoted to full species, as *Eualus gaimardi* and *Eualus belcheri*. The records in former subspecies of *Eualus gaimardii gaimardii*, code 8080, are now to be moved to *Eualus gaimardii*, code 8079.

Recommendations: Ensure the transfer of records from subspecies *Eualus gaimardii gaimardii* in code 8080 to species *Eualus gaimardii* in code 8079.

Code 8080 *Eualus gaimardii gaimardii* (status now as *Eualus gaimardii*)

[urn:lsid:marinespecies.org:taxname:107504](https://marinespecies.org/taxname/107504)

<https://inaturalist.ca/taxa/459511-Eualus-gaimardii>

There were 86 cases recorded. In 2007, set 203, these were of four small *Spirontocaris liljeborgi*, code 8087. The subspecies is now a full species, and thus the records are to be transferred to previously underused *Eualus gaimardii*, code 8079.

Recommendations: In 2007, set 203, move records in code 8080 to code 8087, *Spirontocaris liljeborgi*. For all others in code 8080, change to code 8079, *Eualus gaimardii*.

Code 8081 *Eualus gaimardii belcheri* (status now as *Eualus belcheri*)

[urn:lsid:marinespecies.org:taxname:107502](https://inaturalist.ca/taxa/881356-Eualus-belcheri)

<https://inaturalist.ca/taxa/881356-Eualus-belcheri>

There were 19 cases recorded. Previously a distinctive (red banding and dorsal hook) and rare (Arctic) subspecies of *Eualus gaimardii*, it is now considered a full species.

Recommendations: Confirm use of changed name to *Eualus belcheri*.

Code 8084 *Spirontocaris* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:106994](https://inaturalist.ca/taxa/424250-Spirontocaris)

<https://inaturalist.ca/taxa/424250-Spirontocaris>

There were 13 cases recorded, with one in 2004 (set 139, 354 m) and 12 others occurring between 2012 and 2015. None had measurements, suggesting they could be debris.

Recommendations: Review if valid or flag as debris.

Code 8085 *Spirontocaris spinus* (Parrot Blade Shrimp)

[urn:lsid:marinespecies.org:taxname:107533](https://inaturalist.ca/taxa/459679-Spirontocaris-spinus)

<https://inaturalist.ca/taxa/459679-Spirontocaris-spinus>

There were 302 cases recorded. In 2006, sets 78 and 153, two lines are shown for code 8085, each with different capture values. In 2015, set 26, the capture values are smaller than the sample: 0.000114 kg for 0 vs 0.0011 kg for 2.

Recommendations: Validate values in 2006, sets 78 and 153, and in 2015, set 26.

Code 8086 *Spirontocaris phippisii* (Punctuate Blade Shrimp)

[urn:lsid:marinespecies.org:taxname:107532](https://inaturalist.ca/taxa/459676-Spirontocaris-phippisii)

<https://inaturalist.ca/taxa/459676-Spirontocaris-phippisii>

There were 26 cases recorded since 2006, with one in 2009, set 39, that weighed 0.1 g.

Recommendations: Validate values of weight in 2009, set 19.

Code 8087 *Spirontocaris liljeborgii* (Friendly Blade Shrimp)

[urn:lsid:marinespecies.org:taxname:107531](https://marinespecies.org/taxname/107531)

<https://inaturalist.ca/taxa/459674-Spirontocaris-liljeborgii>

There were 274 cases recorded, with the one in 2005, set 60 showing a capture of 0.000099 kg (0.099 g), which appears remarkably small.

Recommendations: Validate values of weight in 2005, set 60.

Code 8091 *Lebbeus* sp.

[urn:lsid:marinespecies.org:taxname:106989](https://marinespecies.org/taxname:106989)

<https://inaturalist.ca/taxa/124497-Lebbeus>

There was one case recorded in 2015, set 47, 90 m, one for 0.38 g. The three species of lebbeids are distinctive, although if damaged or small, *Lebbeus polaris* is difficult to distinguish from species of *Eualus*, and thus should be moved to family Thoridae.

Recommendations: In 2015, set 47, review code 8091 to change taxon or flag as debris.

Code 8092 *Lebbeus groenlandicus* (Spiny Lebbeid)

[urn:lsid:marinespecies.org:taxname:107520](https://marinespecies.org/taxname:107520)

<https://inaturalist.ca/taxa/459599-Lebbeus-groenlandicus>

There were 126 cases recorded. A robust, nearshore shrimp, several captured at depth are suspect as contamination. A clear example seems to be in 2014, set 191, 203 m, with one for 8.5 g (19.3 mm), while there were over a dozen in the preceding set 190 at 78 m. In 2015, set 3, 364 m in Cabot Strait, there was one specimen for 2.348 g (13.1 mm), but no preceding capture; this may need review of the original shrimp entry sheet.

In 2014, set 191, 203 m (78 m preceding), 1 for 8.5 g, 19.3 mm

In 2015, set 3, 364 m in Cabot Strait (no preceding capture), 1 for 2.348 g, 13.1 mm,

Recommendations: In 2014, set 191, flag capture in code 8092 as contaminating debris. In 2015, set 3, flag capture in code 8092 as suspect and in need of further review.

Code 8093 *Lebbeus polaris* (Polar Lebbeid)

[urn:lsid:marinespecies.org:taxname:107521](https://marinespecies.org/taxname:107521)

<https://inaturalist.ca/taxa/222760-Lebbeus-polaris>

There were 562 cases recorded. In 2007, set 137, photos showed a *Lebbeus microceros*, code 8095, along with a *Lebbeus groenlandicus* and two *Eualus fabricii*. A circumlittoral species, there were 14 cases >400 m depth, usually of single individuals, but it was

difficult to judge if these were contaminating as rarely were there preceding captures, and at lesser depth.

Recommendations: In 2007, set 137, change code 8093 for code 8095, *Lebbeus microceros*. Review captures at depth (>400 m) as possible contaminating debris from preceding sets.

Code 8095 *Lebbeus microceros*

[urn:lsid:marinespecies.org:taxname:158362](https://inaturalist.ca/taxa/459600-Lebbeus-microceros)
<https://inaturalist.ca/taxa/459600-Lebbeus-microceros>

There were 22 cases recorded.

Recommendations: None to declare.

Code 8111 *Pandalus borealis* (Northern Shrimp)

[urn:lsid:marinespecies.org:taxname:107649](https://inaturalist.ca/taxa/437504-Pandalus-borealis)
<https://inaturalist.ca/taxa/437504-Pandalus-borealis>

There were 5,857 cases recorded. In 2009, set 139, the capture and sample show 0.

Recommendations: in 2009, set 139, validate values in code 8111.

Code 8112 *Pandalus montagui* (Striped Shrimp)

[urn:lsid:marinespecies.org:taxname:107651](https://inaturalist.ca/taxa/424300-Pandalus-montagui)
<https://inaturalist.ca/taxa/424300-Pandalus-montagui>

There were 991 cases recorded. A similarly striped species, *Dichelopandalus leptocerus* (<https://inaturalist.ca/observations/8441006>), had gone unnoticed on surveys for decades (Murillo et al. 2018). The latter species is associated with warmer waters in the southern Gulf and Scotian Shelf. While it has not yet been noticed in the northern Gulf, it may appear in future surveys, possibly on the west coast of Newfoundland.

Recommendations: In future, pay attention for presence of *Dichelopandalus leptocerus*.

Code 8113 *Atlantopandalus propinquus*

<https://inaturalist.ca/taxa/459518-Atlantopandalus-propinquus>
[urn:lsid:marinespecies.org:taxname:158351](https://inaturalist.ca/taxa/459518-Atlantopandalus-propinquus)

There were 73 cases recorded. All were collected from depths greater than 200 m.

Recommendations: None to declare.

Code 8114 *Plesionika martia*

[urn:lsid:marinespecies.org:taxname:107661](https://marinespecies.org/taxname/107661)

<https://inaturalist.ca/taxa/260307-Plesionika-martia>

There were three cases recorded since 2011 for this new species in the region (Savard and Nozères 2012). Only single individuals were noticed and recorded in captures, with no extrapolation conducted from the subsamples.

Recommendations: None to declare.

Code 8119 *Sclerocrangon boreas* (Sculptured Shrimp)

[urn:lsid:marinespecies.org:taxname:107568](https://marinespecies.org/taxname/107568)

<https://inaturalist.ca/taxa/459669-Sclerocrangon-boreas>

There were 150 cases recorded, with the deepest being at 161 m. A rocky-bottom, nearshore species, only 18 cases here were from >100 m, several of which were preceded by larger captures at shallower depths, and thus were possibly of debris contamination.

Recommendations: To validate cases of potential contamination in sets >100 m.

Code 8127 *Sabinea* sp.

[urn:lsid:marinespecies.org:taxname:107012](https://marinespecies.org/taxname/107012)

<https://inaturalist.ca/taxa/459666-Sabinea>

There were two cases recorded: in 2014, set 203, 96 m, 0.5 g, and in 2015, set 73, 146 m, 1.3 g. The regional species, *Sabinea sarsii* and *Sabinea septemcarinata*, were both present in the captures, and thus these were likely of small, uncertain specimens.

Recommendations: None to declare.

Code 8128 *Sabinea septemcarinata* (Sevenline Shrimp)

[urn:lsid:marinespecies.org:taxname:107567](https://marinespecies.org/taxname/107567)

<https://inaturalist.ca/taxa/459668-Sabinea-septemcarinata>

There were 348 cases recorded, including 10 from sets greater than 300 m depth (six in 2004), and 18 from more than 200 m (four in 2007). The species is often mistaken for a deepwater brown shrimp, *Pontophilus norvegicus*, code 8135. In some instances, small captures of *Sabinea* shrimps followed a large capture at shallower depths, and thus these could be cases of contamination and not misidentifications. These patterns of contamination may explain some or all apparent bimodal depth distributions reported for several shrimp in Tamdrari et al. (2018, Fig. 9), and seen in outlier records in the atlas of shrimps by Savard and Nozères (2012).

Recommendations: In 2004, sets 2, 4, 5, 6, 10, 11, and in 2005, set 184, change code 8128 for code 8135 *Pontophilus norvegicus*. Flag as debris (contamination from preceding set) in 2009, set 38; 2011, set 84; 2013, set 40; 2015, set 61.

Code 8129 *Sabinea sarsii* (Sars's Shrimp)

urn:lsid:marinespecies.org:taxname:107566

<https://inaturalist.ca/taxa/459667-Sabinea-sarsii>

There were 125 cases recorded, with seven from depths greater than 250 m that may have been either misidentifications with the deepwater shrimp, *Pontophilus norvegicus*, or traces of contamination from preceding shallower sets.

Recommendations: In 2007, set 107 and 2015, set 18, change code 8129 for code 8135 *Pontophilus norvegicus*. Flag as debris (contamination from preceding set) in 2006, set 10; 2012, set 96; 2014, set 93; 2015, sets 77 and 78.

Code 8135 *Pontophilus norvegicus* (Norwegian Shrimp)

urn:lsid:marinespecies.org:taxname:107563

<https://inaturalist.ca/taxa/459473-Pontophilus-norvegicus>

There were 623 cases recorded of this deepwater shrimp, with 14 from depths of less than 100 m. Unlike with cases of *Sabinea sarsii* and *Sabinea septemcarinata*, it was not as evident that preceding sets at depth with captures may have resulted in contamination in shallower sets. It should be possible to confirm if contamination or misidentification by reviewing measurements as this species is slimmer than shrimp like *Sabinea* spp.

Recommendations: Review with measurements for specimens from <100 m.

Code 8138 *Argis dentata* (Arctic Argid)

urn:lsid:marinespecies.org:taxname:107550

<https://inaturalist.ca/taxa/459495-Argis-dentata>

There were 463 cases recorded, with nine from depths greater than 200 m. This shrimp is usually found in shallower water. In one case (in 2004, set 103, 265 m, 9.3 g, no measurements) it may have been confused with the deepwater shrimp, *Pontophilus norvegicus*, especially as this was the first year of the survey. The eight other cases may have been contamination from preceding sets.

Recommendations: In 2004, change code 8138 for code 8135 *Pontophilus norvegicus*. Flag as debris (contamination) in 2008, sets 214, 220; 2009, set 185; 2010, set 133; 2011, sets 73, 211; 2013, set 121; 2015, set 13.

Code 8158 Galatheidae (Squat lobsters, Family)

<urn:lsid:marinespecies.org:taxname:106733>

<https://inaturalist.ca/taxa/117667-Galatheidae>

There were 35 cases recorded in 2007. The sole regional species is the deepwater squat lobster, *Munidopsis curvirostra*, code 8164. In five cases, captures were from depths of less than 220 m, which are contaminants from deeper, preceding sets.

Recommendations: In 2004, sets 22, 23, 24, 31, 106, flag as debris (contamination) records in code 8158; change all records in code 8158 for code 8164, *Munidopsis curvirostra*.

Code 8163 *Munidopsis* sp. (Squat lobster, Genus)

<urn:lsid:marinespecies.org:taxname:106836>

<https://inaturalist.ca/taxa/248534-Munidopsis>

There was one case recorded in 2004, set 2. The species is *Munidopsis curvirostra*.

Recommendations: Change code 8163 for code 8164, *Munidopsis curvirostra*.

Code 8164 *Munidopsis curvirostra* (Bent-nosed Squat Lobster)

<urn:lsid:marinespecies.org:taxname:107175>

<https://inaturalist.ca/taxa/459616-Munidopsis-curvirostra>

There were 206 cases recorded since 2006, with four being contamination from preceding sets at greater than 200 m depth. One case was of a crab (*Hyas*).

Recommendations: In 2008, set 159, change code 8164 for code 8216, *Hyas* sp. Flag as debris (contamination) records in 2006, set 142; 2009, set 194; 2014, set 97; 2015, set 162.

Code 8173 *Calocaris templemani* (Templeman's Lobster Shrimp)

<urn:lsid:marinespecies.org:taxname:158383>

<https://inaturalist.ca/taxa/459550-Calocaris-templemani>

There were 17 cases recorded since 2011. A burrowing species, it is very abundant in the Laurentian Channel, but rarely found in the bottom trawl. A second species, *Axius serratus*, burrows in the shallows of Northumberland Strait in the southern Gulf region.

Recommendations: None to declare.

Code 8178 *Pagurus* sp (Hermit crabs, Genus)

<urn:lsid:marinespecies.org:taxname:106854>

<https://inaturalist.ca/taxa/48173-Pagurus>

There were 174 cases recorded. The two local species, *Pagurus arcuatus* and *Pagurus pubescens*, are hairy and difficult to distinguish and thus most records are at the genus level. A third and non-hairy species, *Pagurus acadianus*, occurs in the region (<https://inaturalist.ca/taxa/48167-Pagurus-acadianus>), but is more common nearshore in the south and has not been seen on the survey. Two specimens have been observed carrying on the back of their gastropod shell the encrusting zoanthid, *Epizoanthus papillosus* (<https://inaturalist.ca/observations/53407185>) in 2007, set 22, and 2015, set 75. Some captures included the weight of shells, and thus it is difficult to analyse for biomass. The sheets in 2014 had two corrections to apply.

Recommendations: In 2014, set 38, change the weight in code 8178 from 1 kg to 1 g (0.001 kg); at set 40, change the weight from 0.0078 kg to 0.0011 kg, to exclude the shell. Suggest new fields for recording hermit crabs on future surveys, such as weight when including shell, or to enable recording without weight. In 2007, set 22, and 2015, set 75, add records for the distinctive zoanthid, *Epizoanthus papillosus*, code 2178.

Code 8180 *Pagurus pubescens* (Downy Hermit Crab)

<urn:lsid:marinespecies.org:taxname:107240>
<https://inaturalist.ca/taxa/459638-Pagurus-pubescens>

There were four cases recorded, three times in 2006 (first two in photos) and one case in 2013 (in photo). It is uncertain if correct at species or if need to change to genus level.

Recommendations: None to declare.

Code 8182 *Pagurus arcuatus* (Bowed Hermit Crab)

<urn:lsid:marinespecies.org:taxname:158402>
<https://inaturalist.ca/taxa/459542-Pagurus-arcuatus>

There were 16 cases recorded, all in 2006, with six in photos. It is uncertain if correct at species or if need to change to genus level.

Recommendations: None to declare.

Code 8195 *Lithodes* sp. (Spiny crabs, Genus)

<urn:lsid:marinespecies.org:taxname:106845>
<https://inaturalist.ca/taxa/371347-Lithodes>

There was one case recorded in 2012, set 82, with the species *Lithodes maja* in photos.

Recommendations: In 2012, set 82, change code 8195 for code 8196, *Lithodes maja*.

Code 8196 *Lithodes maja* (Northern Stone Crab)

[urn:lsid:marinespecies.org:taxname:107205](https://inaturalist.ca/taxa/447323-Lithodes-maja)

<https://inaturalist.ca/taxa/447323-Lithodes-maja>

There were 649 cases recorded.

Recommendations: None to declare.

Code 8206 *Cancer irroratus* (Atlantic Rock Crab)

<https://inaturalist.ca/taxa/53739-Cancer-irroratus>

[urn:lsid:marinespecies.org:taxname:158057](https://inaturalist.ca/taxa/53739-Cancer-irroratus)

There was a single individual, in 2006, set 70, 65 m depth, confirmed in photo. A common, coastal species, not expected to be seen on the survey. The preceding set 69 was conducted at greater depth (151 m), so this case is not suspected to be of contamination.

Recommendations: None to declare

Code 8213 *Chionoecetes opilio* (Snow Crab)

[urn:lsid:marinespecies.org:taxname:107315](https://inaturalist.ca/taxa/361770-Chionoecetes-opilio)

<https://inaturalist.ca/taxa/361770-Chionoecetes-opilio>

There were 1,236 cases recorded. In six cases, individuals were measured but not counted, and in five more cases, they were neither counted nor measured. Some cases of deepwater captures may be contamination from shallower sets (has also been noticed on other surveys) and may need review for confirmation.

Recommendations: Validate numbers (counts) in captures. Review deepwater captures for possible contamination from preceding, shallower sets.

Code 8216 *Hyas* sp. (Lyre crabs, Genus)

[urn:lsid:marinespecies.org:taxname:106903](https://inaturalist.ca/taxa/459589-Hyas)

<https://inaturalist.ca/taxa/459589-Hyas>

There were 48 cases recorded in 2004 and 2005. Two species are present: *Hyas araneus* and the new species, *Hyas alutaceus*, formerly of *Hyas coarctatus alutaceus*.

Recommendations: None to declare.

Code 8217 *Hyas araneus* (Atlantic Lyre Crab)

[urn:lsid:marinespecies.org:taxname:107322](https://inaturalist.ca/taxa/459588-Hyas-araneus)

<https://inaturalist.ca/taxa/459588-Hyas-araneus>

There were 216 cases recorded.

Recommendations: None to declare.

Code 8218 *Hyas coarctatus* (Arctic Lyre Crab)

urn:lsid:marinespecies.org:taxname:107323

<https://inaturalist.ca/taxa/459590-Hyas-coarctatus>

There were 455 cases recorded. Initially there were two subspecies of *Hyas coarctatus* (Pohle 1990), that are now accepted as full species: *Hyas coarctatus* in Bay of Fundy/Scotian Shelf and NE Atlantic (<https://inaturalist.ca/taxa/459590-Hyas-coarctatus>), and *Hyas alutaceus* in the Gulf of St. Lawrence, Newfoundland and Labrador, to Alaska (<https://inaturalist.ca/taxa/1049055-Hyas-alutaceus>). A new code (8219) was created for *Hyas alutaceus*, <http://www.marinespecies.org/aphia.php?p=taxdetails&id=442166>.

Recommendations: Change all records in code 8218 to code 8219, *Hyas alutaceus*.

Code 8261 Crinoidea (Sea lilies, Order)

urn:lsid:marinespecies.org:taxname:123081

<https://inaturalist.ca/taxa/51245-Crinoidea>

There were seven cases recorded from 2009 to 2013. In photo, in 2009, set 34, the specimen was the ascidian *Eudistoma vitreum*, code 8778. In set 35 and other captures, photos confirmed the crinoid species *Heliometra glacialis*, code 8263.

Recommendations: In 2009, set 34, change code 8261 for code 8778, *Eudistoma vitreum*. Change other records in code 8261 for code 8263, *Heliometra glacialis*.

Code 8263 *Heliometra glacialis*

urn:lsid:marinespecies.org:taxname:124223

<https://inaturalist.ca/taxa/865977-Heliometra-glacialis>

There were two cases recorded, in 2014 and 2015.

Recommendations: None to declare.

Code 8290 Holothuroidea (Sea cucumbers, Order)

urn:lsid:marinespecies.org:taxname:123083

<https://inaturalist.ca/taxa/47720-Holothuroidea>

There were 25 cases recorded, with 21 confirmed as *Psolus phantapus*, *Molpadia oolitica* and polychaete worms such as *Hamingia arctica*, *Polyphysia crassa*, and *Brada villosa*.

Recommendations: Update records with available information.

Code 8292 Psolidae (Family)

<urn:lsid:marinespecies.org:taxname:123189>

<https://inaturalist.ca/taxa/49483-Psolidae>

There was one case recorded in 2006, set 153. On the sheet is written '*Psolus* sp.'

Recommendations: In 2006, set 153, change code 8292 for code 8293, *Psolus* sp.

Code 8293 *Psolus* sp. (Genus)

<urn:lsid:marinespecies.org:taxname:146121>

<https://inaturalist.ca/taxa/49481-Psolus>

There were two cases recorded in 2008, that were of the ascidian, *Eudistoma vitreum*, code 8778.

Recommendations: In 2008, sets 163 and 164, change code 8293 for code 8778, *Eudistoma vitreum*.

Code 8294 *Psolus phantapus*

<urn:lsid:marinespecies.org:taxname:124710>

<https://inaturalist.ca/taxa/447325-Psolus-phantapus>

There were 36 cases recorded since 2006, with one being the polychaete, *Brada villosa*.

Recommendations: In 2006, set 142, change code 8294 for code 5755, *Brada villosa*.

Code 8295 *Psolus fabricii* (Scarlet Sea Cucumber)

<urn:lsid:marinespecies.org:taxname:124703>

<https://inaturalist.ca/taxa/549101-Psolus-fabricii>

There were seven cases recorded of this inshore species from rocky habitats, with two cases being of the burrowing *Psolus phantapus*, code 8294.

Recommendations: In 2009, set 64, and 2010, set 154, change code 8295 for code 8294, *Psolus phantapus*.

Code 8312 *Cucumaria frondosa* (Orange-footed Sea Cucumber)

<urn:lsid:marinespecies.org:taxname:124612>

<https://inaturalist.ca/taxa/192693-Cucumaria-frondosa>

There were 54 cases recorded since 2006 of this inshore species.

Recommendations: None to declare.

Code 8321 *Molpadia* sp. (Genus)

urn:lsid:marinespecies.org:taxname:123540

<https://inaturalist.ca/taxa/152887-Molpadida>

There were nine cases recorded since 2009. In NE Atlantic, the species is *Molpadia borealis*, while *Molpadia musculus* may be found in NW Atlantic, and in the Arctic there may be *Molpadia arctica*. Regionally, it is expected to be *Molpadia oolitica* (Brunel et al. 1998). These species are all in need of taxonomic review. In 2012, set 21, the holothurid was mistaken for the polychaete *Hamingia arctica*.

These burrowing holothurids are common in the muddy bottoms of the deep channels in the St. Lawrence but are very rare in trawl captures. Reviewing notes of capture sheets, two large catches were recorded following a preceding set that was not recorded because of net damage (too heavy with sediment). The successive captures were in shallower depths with hard bottoms. In addition, the photos showed individuals covered in the clay-silt from the previous failed set. These are to be associated with the preceding failed sets or removed as contaminants.

In 2009, set 188, 151 m depth, 20 individuals recorded in the catch. These were from the preceding failed set 187.

In 2012, 26 individuals were collected on successive sets at shallow depths following the set 203 in the channel that was abandoned due to sediment in the trawl. The set 204 had 18 individuals while set 205 had seven in poor condition. The set 206 was at similar depth to set 203 (269 vs 260 m), but only had one specimen, in poor condition, suggesting again it was contamination from set 203.

Recommendations: In 2012, set 21, change code 8321 for code 5934, *Hamingia arctica*.

Move recorded captures to the preceding failed sets (fishing code = 3): in 2009, set 188 change to set 187, 0.5863 kg for 20; in 2012, sets 204, 205 and 206 change to set 203, 1.455 kg for 26. Change all records in code 8321 to code 8322, *Molpadia oolitica*.

Code 8322 *Molpadia oolitica* (Sea Eggplant)

urn:lsid:marinespecies.org:taxname:124802

<https://inaturalist.ca/taxa/255902-Molpadia-oolitica>

There was one case recorded in 2013, set 121, that was of the worm, *Hamingia arctica*.

Recommendations: In 2013, set 121, change code 8321 for code 5934, *Hamingia arctica*.

Code 8363 *Strongylocentrotus* sp. (Sea Urchins, Genus)

[urn:lsid:marinespecies.org:taxname:123390](https://marinespecies.org/taxname/123390)

<https://inaturalist.ca/taxa/48036-Strongylocentrotus>

There were 560 cases recorded since 2006. There are two species that are difficult to distinguish morphologically: the green sea urchin, *Strongylocentrotus droebachiensis* found inshore, and the pale sea urchin, *Strongylocentrotus pallidus*, found offshore. While *S. pallidus* is to be expected on the offshore trawl, the distributions of the two species overlap and no effort was made to confirm species. One case in 2014, set 81, 291 m depth, seems to be debris or contamination with two small specimens, following a large capture in set 80, 82 m depth.

Recommendations: In 2014, set 81, change code 8363 for debris or flag as contamination from preceding set 80.

Code 8364 *Strongylocentrotus droebachiensis* (Green Sea Urchin)

[urn:lsid:marinespecies.org:taxname:124321](https://marinespecies.org/taxname/124321)

<https://inaturalist.ca/taxa/120070-Strongylocentrotus-droebachiensis>

There were seven cases recorded in 2005, 2010 and 2011. This species is found nearshore but may overlap in distribution with the offshore pale sea urchin, *S. pallidus*, that is more likely to be found on the survey.

Recommendations: Confirm species or change species code 8364 for code 8363, genus *Strongylocentrotus*.

Code 8365 *Strongylocentrotus pallidus* (Pale Sea Urchin)

[urn:lsid:marinespecies.org:taxname:124324](https://marinespecies.org/taxname/124324)

<https://inaturalist.ca/taxa/129221-Strongylocentrotus-pallidus>

There was one case recorded in 2006, set 92. These are usually recorded at genus level.

Recommendations: Confirm species or change species code 8365 for code 8363, genus *Strongylocentrotus*.

Code 8373 *Echinarachnius parma* (Sand Dollar)

[urn:lsid:marinespecies.org:taxname:158062](https://marinespecies.org/taxname/158062)

<https://inaturalist.ca/taxa/192690-Echinarachnius-parma>

There were 33 cases recorded since 2006. Sand dollars are common nearshore on sandy bottoms, a habitat type rarely encountered on the survey. In 2009, set 25, 490 m, there was a small dead specimen. In 2014, set 180, 274 m, the sheet has written *Brisaster fragilis* but with the wrong code: 8373 instead of 8378.

Recommendations: In 2009, set 25, delete the record in code 8373 (debris). In 2014, set 180, change code 8373 for code 8378, *Brisaster fragilis*.

Code 8378 *Brisaster fragilis* (Heart Urchin)

<urn:lsid:marinespecies.org:taxname:124404>

<https://inaturalist.ca/taxa/791532-Brisaster-fragilis>

There were 832 cases recorded. A deepwater species, very abundant in captures, but difficult to quantify as they are very fragile. In 2007, set 117, 231 m, there was debris of *Strongylocentrotus* from the preceding set that was mistaken for *Brisaster fragilis*. In 2011, set 17, the record shows a capture weight of 0 while the sheet shows 18.22 g.

Recommendations: In 2007, set 117, flag as debris or delete the capture in code 8378. In 2011, set 17, change the capture in code 8378 from 0 kg to 0.01822 kg.

Code 8390 Asteroidea (Sea stars, Class)

<urn:lsid:marinespecies.org:taxname:123080>

<https://inaturalist.ca/taxa/47668-Asteroidea>

There were 163 cases recorded, with 136 that could be changed to a lower taxon. Some cases were split for multiple species if they were weighed apart on the sheets.

Recommendations: Update records from class level to other taxons based on sheets and photos. In future, enable records for presence or numbers without needing weight.

Code 8395 *Asterias* sp. (Sea star, Genus)

<urn:lsid:marinespecies.org:taxname:123219>

<https://inaturalist.ca/taxa/48903-Asterias>

There were 49 cases recorded, all to be changed, most to *Leptasterias groenlandica*, and others to *Lophaster furcifer* or *Pteraster militaris*.

Recommendations: In 2006, set 153 and 2010, set 24, change code 8395 for code 8410, *Pteraster militaris*. In 2007, sets 20 and 24 and 2005, set 51, change code 8395 for code 8390, Asteroidea. In 2009, set 8, change code 8395 for code 8444, *Lophaster furcifer*. For all other cases of code 8395, to change for code 8513, *Leptasterias groenlandica*.

Code 8396 *Asterias rubens* (Common Starfish)

<urn:lsid:marinespecies.org:taxname:123776>

<https://inaturalist.ca/taxa/120138-Asterias-rubens>

There were eight cases recorded in 2006. As a nearshore species, it is unlikely to be found on the survey. In one case, the photo shows *Urasterias lincki*. The other records are probably confounded with the five-armed sea star, *Leptasterias groenlandica*, but cannot be proven without photos, and thus must be changed to class Asteroidea. Since 2016, the species has finally been confirmed on the survey, as *Asterias rubens* appears to expand its distribution offshore along with warming water.

Recommendations: In 2006, set 68, change code 8396 for code 8516, *Urasterias lincki*. In the other sets (37, 69, 78, 79, 80, 81, 92), change code 8396 for code 8390, Asteroidea.

Code 8397 *Asterias forbesi* (Forbes's Sea Star)

[urn:lsid:marinespecies.org:taxname:158489](https://marinespecies.org/taxname/158489)

<https://inaturalist.ca/taxa/48902-Asterias-forbesi>

There was one case recorded in 2005, set 143, 7.6 g, not in photos. Only *Asterias rubens* is found in the region. However, it is often mistaken for *Leptasterias* or others.

Recommendations: Change code 8397 for code 8390, Asteroidea.

Code 8407 *Ctenodiscus crispatus* (Common Mud Star)

[urn:lsid:marinespecies.org:taxname:123915](https://marinespecies.org/taxname/123915)

<https://inaturalist.ca/taxa/255738-Ctenodiscus-crispatus>

There were 1100 cases recorded. The species is abundant in soft sediment, usually at depth. In 2008, set 115, the capture was mixed with *Pseudarchaster parelii*, code 8433.

Recommendations: In 2008, set 115, change the capture in code 8407 of 0.0078 kg for three to 0.0052 kg for two, and add a record for code 8433, *Pseudarchaster parelii*, 0.0026 kg for one.

Code 8408 *Diplopteraster multipes* (Pincushion Star)

[urn:lsid:marinespecies.org:taxname:124128](https://marinespecies.org/taxname/124128)

<https://inaturalist.ca/taxa/662506-Diplopteraster-multipes>

There were 14 cases recorded since 2009, all confirmed in photos. Other cases were seen in other captures that were corrected.

Recommendations: None to declare.

Code 8409 *Pteraster* sp. (Slime star, Genus)

[urn:lsid:marinespecies.org:taxname:123335](https://marinespecies.org/taxname/123335)

<https://inaturalist.ca/taxa/194705-Pteraster>

There were three cases recorded, two in 2009 that were *Pteraster militaris* and one in 2012 that was *Diplopteraster multipes*.

Recommendations: In 2009, sets 119 and 143, change code 8409 for code 8410, *Pteraster militaris*. In 2012, set 75, change code 8409 for code 8408, *Diplopteraster multipes*.

Code 8410 *Pteraster militaris* (Wrinkled Sea Star)

urn:lsid:marinespecies.org:taxname:124147

<https://inaturalist.ca/taxa/255713-Pteraster-militaris>

There were 148 cases recorded, with 11 that could be corrected. The species may be confounded with *Pteraster pulvillus*, *Pteraster obscurus*, *Leptasterias groenlandica*, and *Henricia* sp.

Recommendations: In 2004, set 24, change code 8410 for code 8483, *Henricia* sp. Correct others when indicated from photos.

Code 8411 *Pteraster pulvillus*

urn:lsid:marinespecies.org:taxname:124151

<https://inaturalist.ca/taxa/1047429-Pteraster-pulvillus>

There were 113 cases recorded since 2008, with 19 that could be changed, most often for *Pteraster militaris*. Other corrections made were for *Pteraster obscurus* and *Diplopteraster multipes*.

Recommendations:

In 2008, set 143, change code 8411 for 8412, *Pteraster obscurus*. In 2010, set 183, and 2012, set 32, change code 8411 for 8408, *Diplopteraster multipes*. Change code 8411 for 8410, *Pteraster militaris* in: 2010, sets 155 and 167; 2011, sets 41, 48, 134 and 136; 2012, sets 46, 55 and 60; 2013, sets 90 and 107. Move captures in code 8411 with those in 8410, *Pteraster militaris*, for 2008, sets 55 and 86, and 2013, set 156. In 2012, set 55, modify the capture weight from 0.005 to 0.050 kg.

Code 8412 *Pteraster obscurus*

<https://inaturalist.ca/taxa/1165326-Pteraster-obscurus>

urn:lsid:marinespecies.org:taxname:124149

There were three cases recorded in 2013 and 2014. Three more cases from 2007-2011 were obtained from corrections in other sea star records.

Recommendations: None to declare.

Code 8429 *Ceramaster granularis*

[urn:lsid:marinespecies.org:taxname:124020](https://marinespecies.org/taxname/124020)

<https://inaturalist.ca/taxa/171330-Ceramaster-granularis>

There were 148 cases recorded with three corrections to be applied.

Recommendations: In 2009, set 28, change code 8429 for code 8433, *Pseudarchaster parelii*. In 2011, set 9, change for code 8435, *Poraniomorpha* sp. In 2012, set 133, change for code 8431, *Hippasteria phrygiana*.

Code 8431 *Hippasteria phrygiana*

[urn:lsid:marinespecies.org:taxname:124043](https://marinespecies.org/taxname/124043)

<https://inaturalist.ca/taxa/464048-Hippasteria-phrygiana>

There were 386 cases recorded. In 2006, set 86, the record shows the sample weight of *Illex illecebrosus*, code 4753. There should not be a sample weight for one star.

Recommendations: In 2006, set 86, for code 8431, delete sample weight of 0.155 kg.

Code 8433 *Pseudarchaster parelii*

[urn:lsid:marinespecies.org:taxname:124085](https://marinespecies.org/taxname/124085)

<https://inaturalist.ca/taxa/255875-Pseudarchaster-parelii>

There were 87 cases recorded, with 22 confounded for *Leptychaster arcticus*.

Recommendations: Change 22 captures of code 8433 for code 8521, *Leptychaster arcticus*.

Code 8433 *Poraniomorpha borealis* (current name: *Poraniomorpha hispida*)

[urn:lsid:marinespecies.org:taxname:382021](https://marinespecies.org/taxname/382021)

<https://inaturalist.ca/taxa/797959-Poraniomorpha-hispida> (as *Poraniomorpha hispida*)

There were five cases recorded, in 2009 only. At least one other similar species is present, and thus it is suggested to record all to genus level, code 8435.

Recommendations: Change code 8433 for code 8435, *Poraniomorpha* sp.

Code 8435 *Poraniomorpha* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:123321](https://marinespecies.org/taxname/123321)

<https://inaturalist.ca/taxa/797947-Poraniomorpha>

There were nine cases recorded since 2013. Earlier ones were noted under Asteroidea, code 8390. The species in genus *Poranimorpha* (*bidens*, *borealis/hispida*, *tumida*) are

difficult to distinguish and thus it is suggested to record to genus level. In 2009, set 87, there was a case on the sheet and in photos, but not in records, and thus it is to be added.

Recommendations: In 2009, set 87, add a record code 8435, *Poraniomorpha* sp., 0.0024 kg for 2.

Code 8436 *Poraniomorpha hispida*

urn:lsid:marinespecies.org:taxname:125170

<https://inaturalist.ca/taxa/797959-Poraniomorpha-hispida>

There were 22 cases recorded between 2009 and 2013, nearly all seen in photos. This species is the current name of *Poraniomorpha borealis*, code 8433. A similar species but with different spines, *Poraniomorpha tumida*, (see Mah and Foltz 2014) is also present, (<https://www.marinespecies.org/aphia.php?p=image&tid=125171&pic=33782>), and thus it is suggested to record the species to genus level, *Poraniomorpha* sp., code 8435.

Recommendations: To change code 8436 to code 8435, *Poraniomorpha* sp.

Code 8437 *Porania pulvillus insignis*

urn:lsid:marinespecies.org:taxname:158498

<https://inaturalist.ca/taxa/312003-Porania-pulvillus-insignis>

There was one case recorded in 2010, set 144. The photo shows a *Poraniomorpha*.

Recommendations: Change code 8437 for code 8435, *Poraniomorpha* sp.

Code 8445 *Solaster endeca* (Purple Sun Star)

urn:lsid:marinespecies.org:taxname:124160

<https://inaturalist.ca/taxa/371725-Solaster-endeca>

There were 74 cases recorded. On the first sets in 2006, small specimens may have been confounded with *Henricia* sp., confirmed in a photo at set 9. While *Solaster endeca* is a common nearshore species, with nearly all captures from <150 m depth, *Solaster earlii*, (<http://www.marinespecies.org/aphia.php?p=image&tid=124158&pic=39286>), has been collected in deep water (420 m) off the SW coast of Newfoundland. A third species, *Solaster syrtensis*, is also present in the NW Atlantic and Eastern Canadian Arctic (<https://www.marinespecies.org/CaRMS/aphia.php?p=taxdetails&id=124167#images>).

Recommendations: In 2006, set 9, change code 8445 for code 8483, *Henricia* sp. At set 28, change to code 8390 Asteroidea because it could not be confirmed. In future, especially in deeper water, monitor captures for possibly other species of *Solaster*.

Code 8446 *Tremaster mirabilis*

[urn:lsid:marinespecies.org:taxname:124002](https://marinespecies.org/taxname/124002)

<https://inaturalist.ca/taxa/1136241-Tremaster-mirabilis>

There was one case recorded in 2013, set 172. Others, seen in photos in 2007 and 2010, are recorded in mixed captures of Asteroidea, code 8390.

Recommendations: Confirm that mixed captures in Asteroidea, code 8390, have been separated and recorded.

Code 8447 *Crossaster papposus* (Common Sun Star)

[urn:lsid:marinespecies.org:taxname:124154](https://marinespecies.org/taxname:124154)

<https://inaturalist.ca/taxa/192687-Crossaster-papposus>

There were 305 cases recorded.

Recommendations: None to declare.

Code 8448 *Novodinia americana*

[urn:lsid:marinespecies.org:taxname:178261](https://marinespecies.org/taxname:178261)

<https://inaturalist.ca/taxa/1136220-Novodinia-americana>

There was one case recorded in 2013, set 166. A fragile, little known deepwater species, there were five others seen in captures between 2007 and 2013, recorded under other taxa.

Recommendations: Confirm that captures seen in photos have been recorded.

Code 8483 *Henricia* sp. (Genus)

[urn:lsid:marinespecies.org:taxname:123276](https://marinespecies.org/taxname:123276)

<https://inaturalist.ca/taxa/47665-Henricia>

There were 554 cases recorded, with three needing corrections: two with *Leptasterias groenlandica*, code 8513 and one very large one, 0.352 kg at 347 m depth, that was likely *Hippasteria phrygiana*, code 8431.

Recommendations: In 2006, set 220, change code 8483 for code 8390, Asteroidea. In 2011, set 131, and 2014, set 165, change code 8483 for code 8513, *Leptasterias groenlandica*.

Code 8484 *Henricia sanguinolenta* (Blood Star)

[urn:lsid:marinespecies.org:taxname:123974](https://marinespecies.org/taxname:123974)

<https://inaturalist.ca/taxa/62364-Henricia-sanguinolenta>

There were 72 cases recorded since 2008. The species are difficult to distinguish, and thus it is suggested to record to the genus level.

Recommendations: Change all in code 8484 to code 8483, *Henricia* sp.

Code 8495 Asteroiidae (Sea stars, Family)

[urn:lsid:marinespecies.org:taxname:123121](https://marinespecies.org/taxname/123121)

<https://inaturalist.ca/taxa/47671-Asteriidae>

There were five cases recorded, in 2013 and 2014; all could be moved to species.

Recommendations: In 2012, set 42, change code 8495 to code 8410, *Pteraster militaris*. In 2012, sets 143 and 202, and 2013, set 165, change code 8495 to code 8513, *Leptasterias groenlandica*. In 2013, set 171, change code 8495 to code 8515, *Stephanasterias albula*.

Code 8510 Leptasterias sp. (Genus)

[urn:lsid:marinespecies.org:taxname:123222](https://marinespecies.org/taxname/123222)

<https://inaturalist.ca/taxa/117697-Leptasterias>

There were 199 cases recorded. Apart from four cases with blurry photos all could be moved to other taxa. In 2006, set 11, photos showed a *Lophaster furcifer*, code 8444. In 13 cases, there were corrections for *Stephanasterias albula*, code 8515. Most cases were either the six-armed *Leptasterias polaris* or the small, five-armed, yellow species *Leptasterias groenlandica* (<https://inaturalist.ca/observations/64052706>). Another five-armed species, *Leptasterias littoralis* (<https://inaturalist.ca/taxa/255869-Leptasterias-littoralis>) has not been seen.

Recommendations: Change all in code 8510 to other taxa when confirmed in photos.

Code 8511 Leptasterias polaris (Polar Six-rayed Star)

[urn:lsid:marinespecies.org:taxname:125154](https://marinespecies.org/taxname/125154)

<https://inaturalist.ca/taxa/564345-Leptasterias-polaris>

There were 66 cases recorded, six to be moved to *Leptasterias groenlandica*, two to *Stephanasterias albula*, one to *Pteraster militaris*, and one to *Urasterias linckii*.

Recommendations: Change those in code 8511 to other taxa as indicated by photos.

Code 8515 Stephanasterias albula

[urn:lsid:marinespecies.org:taxname:123808](https://marinespecies.org/taxname/123808)

<https://inaturalist.ca/taxa/596488-Stephanasterias-albula>

There were 14 cases recorded. One in 2011, set 153, seemed to be debris, while another in 2015, set 47, showed in photo a *Leptasterias groenlandica*, code 8513.

Recommendations: In 2011, set 153, delete record in code 8515 as debris. In 2015, set 47, change code 8515 to code 8513, *Leptasterias groenlandica*.

Code 8516 *Urasterias lincki*

<urn:lsid:marinespecies.org:taxname:123815>
<https://inaturalist.ca/taxa/864601-Urasterias-lincki>

There was one case, recorded in 2015, set 37, and confirmed by photo. Three other cases were discovered in photos that had been misidentified with other stars.

Recommendations: None to declare.

Code 8520 *Psilaster andromeda*

<urn:lsid:marinespecies.org:taxname:123908>
<https://inaturalist.ca/taxa/255910-Psilaster-andromeda>

There were 114 cases recorded, with 13 records to be corrected, eight for *Leptychaster arcticus* (code 8521) and five for *Pseudarchaster parelii* (code 8433).

Recommendations: Change those in code 8520 to other taxa as indicated by photos.

Code 8521 *Leptychaster arcticus*

<urn:lsid:marinespecies.org:taxname:123896>
<https://inaturalist.ca/taxa/1068847-Leptychaster-arcticus>

There were nine cases recorded from 2014 and 2015. In previous years, it was mistaken for small specimens of *Pseudarchaster parelii* (code 8433); 32 other cases were reclaimed based on photos.

Recommendations: None to declare

Code 8530 Ophiuroidea (Brittle Stars, Class)

<urn:lsid:marinespecies.org:taxname:123084>
<https://inaturalist.ca/taxa/48836-Ophiuroidea>

There were 248 cases recorded, with 154 cases to be corrected to lower taxa.

Recommendations: Change those in code 8530 to other taxa as indicated by photos.

Code 8540 *Gorgonocephalus* sp. (Basket Star, Genus)

<urn:lsid:marinespecies.org:taxname:123586>

<https://inaturalist.ca/taxa/465154-Gorgonocephalus>

There were 228 cases recorded since 2008, most with photos, and at least 14 of which seemed to be old debris from preceding sets. Previously, two or more species were suspected, but it now seems likely that only *Gorgonocephalus arcticus* is present.

Recommendations: Re-evaluate captures in poor condition to flag or delete as debris. Confirm status of *Gorgonocephalus arcticus*, code 8541, as sole species in the region.

Code 8541 *Gorgonocephalus arcticus* (Northern Basket Star)

<urn:lsid:marinespecies.org:taxname:124966>

<https://inaturalist.ca/taxa/851432-Gorgonocephalus-arcticus>

There were 94 cases recorded in 2006, 2007, 2011, and 2014. In 2007, set 145, a large capture at 71 m was followed by traces on the four subsequent, deeper set (175 m).

Recommendations: In 2007, sets 146, 147, 148, for code 8541, flag or delete as debris.

Code 8550 Ophiuridae (Brittle Stars, Family)

<urn:lsid:marinespecies.org:taxname:123200>

<https://inaturalist.ca/taxa/195681-Ophiuridae>

There were two cases recorded. In 2006, set 47, it is uncertain, and is to be moved to Ophiuroidea, code 8530. At set 161, photos show *Ophiacantha bidentata*, code 8575.

Recommendations: In 2006, set 47, change code 8550 to code 8530, Ophiuroidea. At set 161, change code 8550 to code 8575, *Ophiacantha bidentata*.

Code 8551 *Ophiura* sp. (Genus)

<urn:lsid:marinespecies.org:taxname:123574>

<https://inaturalist.ca/taxa/195682-Ophiura>

There were 176 cases recorded, with 162 to be moved to other taxa.

Recommendations: Change those in code 8551 to other taxa as indicated by photos.

Code 8552 *Ophiura robusta*

<urn:lsid:marinespecies.org:taxname:124933>

<https://inaturalist.ca/taxa/293201-Ophiura-robusta>

There were 21 cases recorded, with nine to be moved to other taxa.

Recommendations: Change those in code 8552 to other taxa as indicated by photos.

Code 8553 *Ophiura sarsii*

[urn:lsid:marinespecies.org:taxname:124934](https://marinespecies.org/taxname/124934)

<https://inaturalist.ca/taxa/202051-Ophiura-sarsii>

There were 285 cases recorded, with seven to be moved to other taxa.

Recommendations: Change those in code 8553 to other taxa as indicated by photos.

Code 8574 *Ophiacantha* sp.

[urn:lsid:marinespecies.org:taxname:123587](https://marinespecies.org/taxname/123587)

<https://inaturalist.ca/taxa/195639-Ophiacantha>

There were five records, to be moved to species, *Ophiacantha bidentata*.

Recommendations: Change those in code 8574 to code 8575, *Ophiacantha bidentata*.

Code 8575 *Ophiacantha bidentata*

[urn:lsid:marinespecies.org:taxname:124978](https://marinespecies.org/taxname/124978)

<https://inaturalist.ca/taxa/795102-Ophiacantha-bidentata>

There were 123 cases recorded, with six cases to be moved to other taxa.

Recommendations: Change those in code 8575 to other taxa as indicated by photos.

Code 8583 *Ophiopholis aculeata*

[urn:lsid:marinespecies.org:taxname:125125](https://marinespecies.org/taxname/125125)

<https://inaturalist.ca/taxa/56685-Ophiopholis-aculeata>

There were 348 cases recorded, with 16 to be moved to other taxa.

Recommendations: Change those in code 8583 to other taxa as indicated by photos.

Code 8585 *Ophioscolex glacialis*

[urn:lsid:marinespecies.org:taxname:125147](https://marinespecies.org/taxname/125147)

<https://inaturalist.ca/taxa/947209-Ophioscolex-glacialis>

There were 18 cases recorded. A fragile, orange species.

Recommendations: None to declare.

Code 8593 *Amphiura* sp.

<urn:lsid:marinespecies.org:taxname:123613>

<https://inaturalist.ca/taxa/55180-Amphiura>

There were 19 cases recorded. The presumed regional species is *Amphiura sundevalli*, though this has not been validated with survey specimens.

Recommendations: In future, confirm species present in captures.

Code 8680 Ascidiacea (Tunicates, Class)

<urn:lsid:marinespecies.org:taxname:1839>

<https://inaturalist.ca/taxa/47811-Ascidiacea>

There were 654 cases recorded, with 185 suggested to be moved to another taxon, most often to *Ascidia* sp., code 8742. In 2006, set 81, the capture had one *Ascidia* and a rare specimen of *Pelonaia corrugata*, code 8781. Note, several species are present and not yet confirmed in records as they require close morphological or genetic analyses.

Recommendations: Change those in code 8680 to other taxa as indicated by photos, for example, in 2006, set 81, ensure the record of Ascidiacea, code 8680, is changed to one *Ascidia* sp., code 8742, and one *Pelonaia corrugata*, code 8781.

Code 8742 *Ascidia* sp. (Tunicates, Genus)

<urn:lsid:marinespecies.org:taxname:103483>

<https://inaturalist.ca/taxa/81619-Ascidia>

There was one case recorded, in 2015, set 148. A common type (see Ascidiacea above), but only seen as damaged specimens, with no morphological confirmation.

Recommendations: In future, confirm identification with genetic analysis.

Code 8750 *Ciona* sp. (Vase tunicates, Genus)

<urn:lsid:marinespecies.org:taxname:103488>

<https://inaturalist.ca/taxa/48273-Ciona>

There was one case, in 2006, set 58, without photos and only a note for 5 'Ascidies' for 38.5 g; likely *Ascidia* sp., but could not be confirmed. In the NW Atlantic, genus *Ciona* is represented by *Ciona intestinalis*, an invasive species in the south, not yet detected by the survey in the northern Gulf region.

Recommendations: In 2006, set 58 change code 8750 to code 8680, Ascidiacea.

Code 8757 *Cnemidocarpa finmarkiensis*

[urn:lsid:marinespecies.org:taxname:103870](https://marinespecies.org/taxname/103870)

<https://inaturalist.ca/taxa/47807-Cnemidocarpa-finmarkiensis>

There was one case recorded in 2015, set 186. Two other cases were found from photos. In 2011, set 41, there was one specimen along with *Boltenia echinata* (code 8792), recorded under Ascidiacea (code 8680). In 2012, set 95, it was misidentified on the sheet as *Halocynthia pyriformis* (code 8797).

Recommendations: Confirm records from photos are corrected from other taxa.

Code 8776 *Synoicum pulmonaria*

[urn:lsid:marinespecies.org:taxname:103692](https://marinespecies.org/taxname/103692)

<https://inaturalist.ca/taxa/473061-Synoicum-pulmonaria>

There was one case recorded in 2015. Others were seen among other records and in nearshore surveys (Nozères and Roy 2020). This is the largest colonial ascidian in the region, occurring in shallow water and rocky bottoms as globes several centimeters in diameter.

Recommendations: In future, confirm this regional special type with genetics.

Code 8778 *Eudistoma vitreum*

[urn:lsid:marinespecies.org:taxname:103624](https://marinespecies.org/taxname/103624)

<https://inaturalist.ca/taxa/799128-Eudistoma-vitreum>

There were 35 cases recorded since 2013. A common but poorly known species, usually reported here under Invertebrates or Ascidiacea.

Recommendations: None to declare.

Code 8781 *Pelonaia corrugata*

[urn:lsid:marinespecies.org:taxname:103894](https://marinespecies.org/taxname/103894)

<https://inaturalist.ca/taxa/800539-Pelonaia-corrugata>

There were two cases recorded. In 2015, set 147, 59 m, the specimen is uncertain in photos, possibly of *Dendrodoa* or *Molgula*, and is best moved to class Ascidiacea. In 2008 set 151, a specimen was seen among Sipuncula.

Recommendations: In 2015, set 147, change the code 8781 to code 8680, Ascidiacea. In 2008, set 151, ensure the record of Sipuncula, code 5900, is split to include a *Pelonaia corrugata*, code 8781.

Code 8783 *Polycarpa fibrosa*

urn:lsid:marinespecies.org:taxname:103902

<https://inaturalist.ca/taxa/800599-Polycarpa-fibrosa>

There were two cases recorded in 2015, presumed to be this small, solitary ascidian.

Recommendations: In future, to confirm species with genetics.

Code 8791 *Boltenia* sp. (Genus)

urn:lsid:marinespecies.org:taxname:103514

<https://inaturalist.ca/taxa/194570-Boltenia>

There were 105 cases recorded. In 2011, sets 14 and 15, they were confounded with the small, stalked sponge, *Stylocordyla borealis*, code 1112. All other cases are to be moved to the species *Boltenia ovifera*, code 8792.

Recommendations: In 2011, sets 14 and 15, change code 8791 to code 1112, *Stylocordyla borealis*. Change all other cases of code 8791 to code 8792, *Boltenia ovifera*.

Code 8792 *Boltenia ovifera* (Sea Potato)

urn:lsid:marinespecies.org:taxname:103815

<https://inaturalist.ca/taxa/549533-Boltenia-ovifera>

There were 91 cases recorded since 2008. A distinctive, stalked (peduncle) ascidian. Ten small captures occurred at depths greater than 200 m, that may have been contaminating debris from preceding sets, a problem noted in Murillo et al. 2016 (pp. 70-71).

Recommendations: Review small captures at deepwater sets as potential contaminating debris from preceding sets with larger captures.

Code 8792 *Boltenia echinata* (Sea Cactus)

urn:lsid:marinespecies.org:taxname:103814

<https://inaturalist.ca/taxa/355526-Boltenia-echinata>

There were two cases recorded, in 2011 and 2015. A small and prickly species, without a peduncle like *Boltenia ovifera* (code 8792). Several more cases were seen in photos.

Recommendations: To add presences based on photos.

Code 8797 *Halocynthia pyriformis* (Sea Peach)

[urn:lsid:marinespecies.org:taxname:103828](https://marinespecies.org/taxname/103828)

<https://inaturalist.ca/taxa/321902-Halocynthia-pyriformis>

There were 17 cases recorded of this shallow water, solitary ascidian, common on rocky shores. The smallest captures happened to be from >100 m depth. In 2012, set 95, this was an error for a small (0.9 g) orange ascidian, *Cnemidocarpa finmarkiensis*, code 8757. The other cases were also very small, but no photo was available for validation: in 2013, set 57, 142 m, 0.4 g; and in 2015, set 29, 138 m, 0.1 g. In 2012, set 55, 88 m, photos showed *Dendrodoa pulchellus*, code 8761 (<https://inaturalist.ca/taxa/800484-Dendrodoa-pulchella>), a species that had not been recorded at the time, but has since had two other cases added from other taxa. Based on the photos, the capture weight of 0.0103 kg (10.3 g) for seems more likely to be 0.00103 kg (1.03 g), considering similar, small specimens in view had very low weights (*Botrylloides*, 0.3 g; *Boltenia echinata*, 0.3 g). The unusually high weight was signaled on the sheet and was perhaps due to large barnacle debris seen attached to a *Dendrodoa* specimen.

Recommendations: In 2012, set 55, change code 8787 to code 8761, *Dendrodoa pulchellus*, and correct capture weight from 0.0103 kg to 0.00103 kg. In set 95, change code 8787 to code 8757, *Cnemidocarpa finmarkiensis*.

Code 8798 *Botrylloides* sp. (Chain Tunicate, Genus)

[urn:lsid:marinespecies.org:taxname:103528](https://marinespecies.org/taxname/103528)

<https://inaturalist.ca/taxa/68097-Botrylloides>

There were three cases recorded, one in 2014, and two in 2015. From photos, 17 other cases were confirmed as occurring since 2006, recorded under Ascidiacea (code 8680). In the south, this colonial tunicate is well known as the noxious, invasive species, *Botrylloides violaceus* (code 8799). The presumed species on the survey is the coldwater endemic, *Botrylloides aureus* (code 8796) (Brunel et al. 1998), although further confirmation may be necessary.

Recommendations: Change all cases of code 8798 to code 8796, *Botrylloides aureus*. Continue genetic monitoring for the warmwater species, *Botrylloides violaceus* (code 8799). Add other presences based on photos.

Code 9988 Vieux coquillage (old shell)

There was one case recorded in 2004, set 55, 263 m, with a note for 'déchet, 11 kg'.

Recommendations: Confirm deletion.

Code 9995 Invertebrés digérés (unknown material weighed but not identified)

There were 2077 cases recorded, with 65 that had photos or notes that could lead to new records. In some cases, only presences in photos could be added.

Recommendations: Confirm that corrections were applied.

Code 9999 Invertebrata (unknown species weighed but not identified)

There were 33 cases recorded, with most moved to a taxon or else flagged as debris.

Recommendations: Confirm that corrections were applied.

DISCUSSION

While this review was initiated to validate identifications from photos in survey catches, occasionally it uncovered other kinds of errors and inconsistencies in records. Some corrections are simple to apply (modify names and values). Other changes were not strict errors, such as suggesting a higher or lower taxonomic level, but will improve the survey database. A third type of change was flagging cases of contamination between sets; it is not yet clear how this information will be organized, and if it is to be systematic or only for special cases (see further discussion below).

The evaluation of the catches has brought about many changes, thus showing the value of the systematic validation of each record in the database using capture sheets and photos. Archived paper entry sheets were sometimes useful for flagging uncertain cases or for detecting information not entered in the catch database. Sheets also helped with capture weights of different taxa that were written down, but only entered as a sum. However, the handwritten sheets were also a source of error, with transcription mistakes in identifications and values, usually made obvious through the review of photos. When replacing sheets in the future, a digital entry tool should aim to enable notes and photos that are currently not possible to record in the system while at sea.

The usefulness of photos to confirm identifications and state of captures (i.e., if contaminating debris) has been demonstrated here and on other Quebec Region surveys (Nozères et al. 2020), as well as in Maritimes Region since 2017 (J. Murillo, 2021, pers. comm.), and in Arctic Region for sponges and corals for several years now (Nozères et al. 2019). Photographing the capture on surveys is perceived as an extra burden during catch processing, though it can be mitigated by efficient workflows. Despite their usefulness, photos also remain difficult to access. Currently, they are only available on external storage due to lack of space on corporate networks. Solutions for sharing photos and doing collaborative work on annotating and reviewing the files (e.g., <https://biigle.de/>) are being explored in 2021 by national working groups.

Following this systematic review of the database, some cases will still take time to correct, especially for fish for which the modifications of taxonomic codes in the database are more complex because of the biometric measurements associated with the records. Corrections to be made which account for factors such as depth or size measurements could be assisted by graphical analysis or statistical tools. The database modification approach used here is currently very cautious and should continue to be so.

The requirement to have a catch weight for each record was sometimes difficult to apply to colony- or mat-forming taxa such as hydrozoans, bryozoans, sea squirts, sponges, and barnacles. For these cases, it may be that recording presence only (supported by photos) is preferable rather than seeking to separate and weigh each fragment. These could be published as occurrence datasets on portals such as OBIS or SLGO which will inform monitoring programs for taxa of interest such as sponge species which are usually only available at the general level (e.g., Phylum Porifera) in the catch database (Nozères et al. 2020).

Another issue raised with this review was the presence of debris in the trawl from a previous set that contaminated subsequent sets. Catches of some taxa were particularly troublesome: elongated fishes, sea pens, basket stars, sponges, and stalked tunicates (Guijarro et al. 2016) that get entangled in the net mesh. Even small organisms like shrimp seemed to be present as contaminants on some sets. This contamination between sets is only problematic for analyses with numbers/biomass if the amount is significant relative to the source capture, which should be infrequent. On the other hand, for presence-only analyses, if the contamination in a set comes from a distinct habitat, for example, a very different depth, it could have important effects on the analyses (Murillo et al. 2016). These cases are not issues related to the identification of the specimens, but rather to their provenance. To avoid skewing analyses with these cases, it would be useful to have a variable in the catch database that would flag suspected cases and perhaps include a qualifier (e.g., indicating if it appears freshly caught or old). This flag would exclude cases in analyses of normal captures and associate them with previous sets, as was suggested during this review, for example, with cases of the burrowing holothurid *Molpadia oolitica*.

CONCLUSIONS

The review of catch data has provided useful corrections that will help future ecosystem analyses. The review was made possible using the capture sheets and the many photos of the captures that were taken, especially for non-commercial invertebrates. The identifications of several taxa were thus validated and sometimes substantial corrections for the quantities (weight and number) were or will be made. Several cases also needed flags or warnings to signal biases linked to catches with a bottom trawl. In addition, some occurrences of taxa were documented in photos only (no weight) and thus cannot be present in the catch database. The large number of modifications presented here is the result of an accumulation of cases that were insufficiently validated over the years. Having revealed the issues with this systematic review, future record validations for this annual survey should be less of a burden. While the historical review and report were done by DFO employees, the work was largely volunteer or in addition to regular tasks as no resources are currently dedicated for biodiversity or ecosystem data quality review. Future work will hopefully be directly supported to enable more timely processing and thus provide accurate species catch data for in-house analyses and public diffusion.

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REFERENCES

- Bourdages, H., L. Savard, D. Archambault and S. Valois. 2007. Results from the August 2004 and 2005 comparative fishing experiments in the northern Gulf of St. Lawrence between the CCGS Alfred Needler and the CCGS Teleost. Can. Tech. Rep. Fish. Aquat. Sci. 2750: ix + 57 p.
- Bourdages, H., and Ouellet, J.-F. 2011. Geographic distribution and abundance indices of marine fish in the northern Gulf of St. Lawrence (1990–2009). Can. Tech. Rep. Fish. Aquat. Sci. 2963: vi + 171 p.
- Bourdages, H., Brassard, C., Desgagnés, M., Galbraith, P., Gauthier, J., Légaré, B., Nozères, C. and Parent, E. 2017. Preliminary results from the groundfish and shrimp multidisciplinary survey in August 2016 in the Estuary and northern Gulf of St. Lawrence. DFO Can. Sci. Advis. Sec. Res. Doc. 2017/002. v + 87 p.
- Cavanagh, M. F., and Damon-Randall, K. 2009. Status of the barndoor skate (*Dipturus laevis*). National Marine Fisheries Service Report, Northeast Regional Office. 77 p.
- Chabot, D., Rondeau A., Sainte-Marie B., Savard L., Surette T. and Archambault P. 2007. Distribution des invertébrés benthiques dans l'estuaire et le golfe du Saint-Laurent. DFO Can. Sci. Advis. Sec. Res. Doc. 2007/018. iii + 118 p.
- Chernova, N. V., Friedlander, A. M., Turchik, A., and Sala, E. 2014. Franz Josef Land: extreme northern outpost for Arctic fishes. PeerJ, 2, e692.
- Davis, J. D. 1963. A study of the Arctic Wedge Clams, *Mesodesma deauratum* (Turton) and *Mesodesma arctatum* (Conrad) of the Northwestern Atlantic. PhD Thesis, U. of New Hampshire.
- Dutil, J.-D., Miller, R., Nozères, C., Bernier, B., Bernier, D., and Gascon, D. 2006. Révision des identifications de poissons faites lors des relevés scientifiques annuels d'évaluation de l'abondance des poissons de fond et de la crevette nordique dans l'estuaire and le nord du golfe du Saint-Laurent. Rapp. manus. can. sci. halieut. aquat. 2760 : x + 87 p.
- Falardeau, M., Bouchard, C., Robert, D., and Fortier, L. 2017. First records of Pacific sand lance (*Ammodytes hexapterus*) in the Canadian Arctic Archipelago. Polar Biol. 40: 2291-2296.
- Fernholm, B., Norén, M., Kullander, S. O., Quattrini, A. M., Zintzen, V., Roberts, C. D., Mok, H.-K., and Kuo, C.-H. 2013. Hagfish phylogeny and taxonomy, with description of the new genus *Rubicundus* (Craniata, Myxinidae). J. Zoolog. Syst. Evol. 51: 296–307. <http://dx.doi.org/10.1111/jzs.12035>.

- García-Cárdenas, F. J., Drewery, J., López-González, P. J. 2019. Resurrection of the sea pen genus *Ptilella* Gray, 1870 and description of *Ptilella grayi* n. sp. from the NE Atlantic (Octocorallia: Pennatulacea). *Scientia Marina* 83: 261.
- Gauthier, J., and Nozères, C. 2016. Review of Winter Skate (*Leucoraja ocellata*) in the Northern Gulf of St. Lawrence in Support of a Recovery Potential Assessment. DFO Can. Sci. Advis. Sec. Res. Doc. 2016/075. v + 22 p.
- Guelpen, L. V. 1986. Hookear sculpins (genus *Arteidiellus*) of the North American Atlantic: taxonomy, morphological variability, distribution, and aspects of life history. *Can. J. Zool.* 64:677-690.
- Guijarro, J., Beazley, L., Lirette, C., Kenchington, E., Wareham, V., Gilkinson, K., Koen-Alonso, M., and Murillo, F. J. 2016. Species Distribution Modelling of Corals and Sponges from Research Vessel Survey Data in the Newfoundland and Labrador Region for Use in the Identification of Significant Benthic Areas. *Can. Tech. Rep. Fish. Aquat. Sci.* 3171: vi + 126 p.
- Hatano, M., Abe, T., Wada, T., & Munehara, H. 2015. Ontogenetic metamorphosis and extreme sexual dimorphism in lump suckers: *Eumicrotremus asperrimus*, *Cyclopteropsis bergi* and *Cyclopteropsis lindbergi*, may be synonymous. *J. Fish Biol.* 86: 1121-1128.
- Hutcheson, M. S., and Stewart, P. L. 1994. A possible relict population of *Mesodesma deauratum* (Turton): Bivalvia (Mesodesmatidae) from the Southeast shoal, Grand Banks of Newfoundland. *Can. J. Fish. Aquat. Sci.* 51:1162-1168.
- Lévesque, M. 2009. Caractérisation de la macrofaune épibenthique de l'estuaire et du nord du Golfe du Saint-Laurent (Québec, Canada) en relation avec les paramètres environnementaux : analyses multivariées et approche géostatistique. Mémoire. Rimouski, Québec, Université du Québec to Rimouski, Institut des sciences de la mer de Rimouski, 117 p.
- Mah, C. L., and Foltz, D. W. 2014. New taxa and taxonomic revisions to the Poraniidae (Valvatacea; Asteroidea) with comments on feeding biology. *Zootaxa*, 3795: 327-372.
- Mecklenburg, C. W., and B. A. Sheiko. 2003. Family Cyclopteridae Bonaparte 1831 — lump suckers. *Calif. Acad. Sci. Annotated Checklists of Fishes.* No. 6. 17 p.
- Mecklenburg, C. W., Lynghammar, A., Johannesen, E., Byrkjedal, I., Christiansen, J. S., Dolgov, A. V., Karamushko, O. V., Mecklenburg, T. A., Møller, P. R., Steinke, D., and Wienerroither, R. M. 2018. Marine Fishes of the Arctic Region. Volume 1. Conservation of Arctic Flora and Fauna, Akureyri, Iceland. 454 p.
- Miller, R. and Chabot, D. 2014. Code List of Marine Plants, Invertebrates and Vertebrates Used by the Quebec Region of DFO. *Can. Data Rep. Fish. Aquat. Sci.* 1254: iv + 115 p.

- Murillo, F. J., Kenchington, E., Beazley, L., Lirette, C., Knudby, A., Guijarro, J., Benoît, H., Bourdages, H., Sainte-Marie, B. 2016. Distribution Modelling of Sea Pens, Sponges, Stalked Tunicates and Soft Corals from Research Vessel Survey Data in the Gulf of St. Lawrence for Use in the Identification of Significant Benthic Areas. *Can. Tech. Rep. Fish. Aquat. Sci.* 3170: vi + 132 p.
- Murillo, F. J., Kenchington, E., Clark, D., Emberley, J., Regnier-McKellar, C., Guijarro, J., Beazley, L., and Wong, M.C. 2018. Cruise Report for the CCGS *Alfred Needler* Maritimes Region Research Vessel Summer Multispecies Survey, June 28 to August 14, 2017: Benthic Invertebrates. *Can. Tech. Rep. Fish. Aquat. Sci.* 3262: v + 41 p.
- Muus, B. J. 2002. The *Bathypolypus-Benthoctopus* problem of the North Atlantic (Octopodidae, Cephalopoda). *Malacologia* 44: 175–222.
- Nozères, C., and Bérubé, M. 2003. Marine species identification guide of the St. Lawrence. Maurice Lamontagne Institute, Fisheries and Oceans Canada. 172 p.
- Nozères C., Archambault D., Chouinard P.-M., Gauthier J., Miller R., Parent E., Schwab P., Savard L., and Dutil J.-D. 2010. Identification guide for marine fishes of the estuary and northern Gulf of St. Lawrence and sampling protocols used during trawl surveys between 2004 and 2008. *Can. Tech. Rep. Fish. Aquat. Sci.* 2866: xi + 243 p.
- Nozères, C., Archambault, D., and Miller, R. 2014. Photo-catalogue d'invertébrés de l'estuaire et du nord du golfe du Saint-Laurent des relevés au chalut (2005-2013). *Rapp. manus. can. sci. halieut. aquat.* 3035: iv + 222 p.
- Nozères, C., Bourassa, M.-N., Gendron, M.-H., Plourde, S., Savenkoff, C., Bourdages, H., Benoît, H., and Bolduc, F. 2015. Using annual ecosystemic surveys to assess biodiversity in the Gulf of St. Lawrence. *Can. Tech. Rep. Fish. Aquat. Sci.* 3149: vii + 126 p.
- Nozères, C., Roy, V., Treau de Coeli, L., Treble, M., Hedges, K. and Walkusz, W. 2019. A photo catalogue of fishes and invertebrates from the 2017 Central and Arctic Region trawl survey in Baffin Bay. *Can. Tech. Rep. Fish. Aquat. Sci.* 3324: iv + 94 p.
- Nozères C., Faille, G., Côté, G., and Proudfoot, S. 2020. Atlas of Sponges from the Estuary and Northern Gulf of St. Lawrence Multidisciplinary Trawl Survey in 2006-2017. *Can. Tech. Rep. Fish. Aquat. Sci.* 3364: iv + 53 p.
- Nozères, C., and Roy, V. 2020. Photo Catalogue of Coastal Marine Fauna on the Icelandic Scallop (*Chlamys islandica*) Survey in the Northern Gulf of St. Lawrence. *Can. Manuscr. Rep. Fish. Aquat. Sci.* 3207: iv + 165 p.
- Orr, J. W., Drumm, D. T., Laman, E. A., Stevenson, D. E., and Hoff, G. R. 2014. Species identification confidence in the Gulf of Alaska and Aleutian Islands surveys (1980-2011). AFSC Processed Report. 2014-01, 258 p. NOAA, NMFS, Seattle, Wash.
- Ouellet, P., Savenkoff, C., Benoît, H. P., Galbraith, P. S. 2016. A comparison of recent

- trends in demersal fish biomass and their potential drivers for three ecoregions of the Gulf of St Lawrence, Canada. *ICES J. Mar. Sci.* 73: 329-344.
- Pérez, C. D. 2021. Revised nomenclature of the sea pen genus *Balticina* Gray, 1870 (= *Halipterus* Kölliker, 1870) (Anthozoa: Octocorallia). *Zootaxa*. 4966: 237-244.
- Pohle, G.W. 1990. A guide to decapod Crustacea from the Canadian Atlantic: Anomura and Brachyura. *Can. Tech. Rep. Fish. Aquat. Sci.* 1771: iv + 29 p.
- Ricard, D., and Swain, D. P. 2018. Assessment of Witch Flounder (*Glyptocephalus cynoglossus*) in the Gulf of St. Lawrence (NAFO Divisions 4RST), February 2017. DFO Can. Sci. Advis. Sec. Res. Doc. 2018/023. xi + 78 p.
- Russell, F. S. 1976. Scyphomedusae of the North Atlantic, *Fich. Ident. Zooplanct.* 152, 4 p.
- Sanamyan, N. P., Sanamyan, K. E., Mercier, A., Hamel, J.-F., and Bocharova, E. S. 2020. Morphological and molecular assessment of large sea anemones (Actiniaria: Actiniidae) in Newfoundland (eastern Canada). *Polar Biol.* 43:495-509.
- Savard, L., and Nozères, C. 2012. Atlas of shrimp species of the Estuary and northern Gulf of St. Lawrence. *Can. Tech. Rep. Fish. Aquat. Sci.* 3007: vi + 67 p.
- Signorelli, J. H., 2019, The Superfamily Mactroidea (Mollusca: Bivalvia) in American waters, an illustrated catalogue of Recent species. Springer International Publishing, Switzerland, xii + 151 p.
- Staudinger, M. D., Goyert, H., Suca, J. J., Coleman, K., Welch, L., Llopiz, J. K., Wiley, D., Altman, I., Applegate, A., Auster, P., Baumann, H. 2020. The role of sand lances (*Ammodytes* sp.) in the Northwest Atlantic Ecosystem: A synthesis of current knowledge with implications for conservation and management. *Fish and Fisheries.* 21:522-556.
- Tamdrari, H., Benoît, H., Hanson, J. M., Bourdages, H., and Brêthes, J. C. 2018. Environmental associations and assemblage structure of shrimp species in the Gulf of St. Lawrence (Canada) following dramatic increases in abundance. *Mar. Ecol. Progr. Ser.* 596: 95-112.
- Valdés, Á., Murillo, F. J., McCarthy, J. B., and Yedinak, N. 2017. New deep-water records and species of North Atlantic nudibranchs (Mollusca, Gastropoda: Heterobranchia) with the description of a new species. *J. Mar. Biol. Assoc. UK*: 97: 303–319. <https://doi.org/10.1017/S0025315416000394>
- Voskoboinikova, O. S., & Chernova, N. V. (2016). Revalidation of the Eggvin lump sucker *Eumicrotremus eggvinii* (Cyclopteridae) and its new finding near Franz Josef Land (Barents Sea). *J. Ichthyol.* 56: 31-36.

APPENDIX 1 – Workplan

Work plan for the 2004-2015 catch data review

I. Context

- 1) Annual bottom trawl surveys, the non-commercial catches of which have become increasingly important to document over the years.
- 2) Previous reviews of catches need to be updated (Dutil et al. 2006, Chabot et al. 2007, Dutil et al. 2009, Bourdages and Ouellet 2011, Nozères et al. 2010, Nozères et al. 2015).
- 3) Better knowledge of biodiversity now, better equipped to validate.
- 4) Better tools now in place to assess marine biodiversity: WoRMS, OBIS.
- 5) Gradually, non-commercial invertebrate catches are photo-documented.
- 6) Gradually, non-commercial catches are identified with the species: fish since 2005, sea pens since 2011, anemones since 2012, sponges since 2016.
- 7) The sampling limitations of the survey are better known (Nozères et al. 2015, Ouellet and Savenkoff 2015); that is, the survey samples the demersal and supra-benthic megafauna of the circalittoral and channels, with incidental catches of coastal, endobenthic, epibenthic, pelagic and planktonic megafaunal species.

II. Methodology

The review was done considering:

- entry paper sheets (scanned in PDF)
- data entered in the fishing survey database
- photocatalogues (invertebrates are done regularly since 2008)
- distribution publications (OBIS)
- decisions by the peers of the corrections to be applied

Types of reported corrections:

- Catches (identification, biomass, abundance)
- Measures (specimens with individual length and weight)
- Contamination (following a large catch, residual specimens are carried over to next stations; correctly identified but seem to be in poor condition, or from a different depth or substrate compared to the initial station).

The review is made on the basis of catches (identification, biomass and abundance) and measurements (individual weight and length) in the case of sampled fish. During the

review, absences from depths to sets were also reported to database administrators but not documented for the species revision report.

Catches

Taxon identification

- Too specific — put more general when the information is not sufficient for conclusive identification to lower taxonomic levels;
- Too general — put more specific when the information allows conclusive identification to lower taxonomic levels;
- Synonyms — standardize to names valid in 2017 (without changing the codes);
- Corrections: bad identifications or values to correct the identification according to the information (sheet or photo);
- Note: sometimes a capture could be divided into several taxa according to sheets or photos, so other lines and other values of weight and number in database will be affected; corrections to be documented and confirmed when applied, especially if a record deletion becomes necessary (requires administrator intervention).

Biomass and Abundance

Value corrections

- Weight and number of catches, weight and number of samples;
- Sometimes the catches were modified, but not the samples, giving higher values to the sample than the catch;
- Sometimes a capture was placed in a new record of other taxa, while failing to delete the original record, resulting in a duplicate and increased total catch weight.

Fish measurements

Length-weight regression curves reveal outliers as erroneous cases to correct.

- Sometimes this was a data entry error (wrong numeral, data field, or decimal place);
- Some measurement errors may be systematic, for example, incorrectly calibrated scale at a set or worktable, or wrong taxon code selected for measuring (misidentified fish). This evaluation is important for correcting eelpout, sculpin, prickleback, and skate captures that are often misidentified and have distinctive regression curve. In some cases, min-max values may be indicators. For example, smooth skate begin at < 100 mm, but appear thorny when small and thus are frequently confused with thorny skate that begin at >100 mm total length (Gauthier et Nozères 2016).

Use of measurements could provide more specific information on the identity of lanternfish of the Myctophidae family. Two sub-families are evident according to the curves: Myctophinae (e.g., *Benthosema glaciale*, *Myctophum punctatum*) are shorter and stouter while Lampanyctinae (eg., *Lampadena speculigera*, *Notoscopelus kroyeri*) are generally longer (>100 mm) and proportionally lighter.

While measurements that could explain errors with some captures were corrected here, validation of all measurements was not done for this identification review because it would be a larger exercise that should include participation of the survey fish biologists.

Depth

The data extractions from the capture database display the depth as the average between the start and the end of the set. When one or both values was not entered on the entry sheet, the result is a value of zero (null) for the calculated mean depth. In these cases, the values should be consulted in the oceanographic team database. In the future, data about the set will be directly communicated from the ship bridge instead of on sheets.

Contamination

The fishing net is designed for sampling bottom fish and shrimp. Several other taxa are vulnerable to entanglement in the mesh and may be recorded as present in the catch on consecutive sets. When the sequential sets diverge significantly in depth or any other environmental feature, these capture records will be misleading for spatial environmental analyses. Thus, the deep fauna are misattributed to the sets of the circalittoral, and vice-versa. Sometimes it is possible to report cases of contaminants with photos that show the poor condition of specimens in the capture. In other cases, a record may be flagged as suspicious and set with a threshold (minimum biomass of capture to be used in analysis).

Overall recommendations:

- 1) Ensure that for everything captured that at least 10 measurements (when possible) are made per set (which will help to point out systematic misidentifications);
- 2) Develop routines in R for evaluating individual specimen measurements against the taxa-specific regressions in length and weight, to indicate cases of severe deviance (± 2 standard deviations, functions in discriminant analysis);
- 3) Take a photograph of any unusual specimen/species and freeze it;
- 4) Develop routines in R to report unusual catches at unexpected depths for taxa vulnerable to net contamination from one set to the next;
- 5) Establish a protocol for contaminating taxa - 3 options (prefer c):
 - a. Delete capture;
 - b. Add to appropriate previous set;
 - c. Flag with warning that it is potentially a remnant of a relatively large capture of one or more previous sets so is not to be used in presence analyses and to be treated with caution in density analyses

Next Stages:

- Verify capture list of corrections of fish and invertebrates

- Review individual measurements to reveal misidentified specimens
- Review photos to add records of taxa present but not weighed
- Review records of algae and other types in captures
- Publish and link occurrences to capture photos and genetic data
- Develop taxon- and survey-specific advice for data analyses

APPENDIX 2 – Name Code List and Changes

Survey codes and original name in the review spreadsheet (dated 2016-04-05), with notes and changes to the database records: **U** = unmodified, **I** = identification, **C** = catch values, **T** = Taxonomic level, **D** = Debris or contaminating.

Code	Original name	U	I	C	T	D	note
1	Vertebrata		x				fish only
12	Myxine glutinosa		x			x	
15	Petromyzon marinus	x					
24	Squalus acanthias	x					
27	Centroscyllium fabricii	x					
55	Scyliorhinidae		x				data entry error
80	Rajiformes				x		
90	Amblyraja radiata		x	x			
91	Malacoraja senta			x			
94	Rajella fyllae		x	x			
97	Dipturus laevis		x				absent
100	Leucoraja ocellata		x	x			
102	Bathyraja spinicauda		x	x		x	
150	Clupea harengus			x			
152	Alosa sapidissima	x					
168	Xenodermichthys copei	x					
187	Mallotus villosus	x					
188	Osmerus mordax	x					
192	Argentinidae				x		
193	Argentina silus			x			
202	Bathylagus euryops	x					
205	Gonostomatidae		x		x		
206	Cyclothone sp.				x		
208	Cyclothone microdon	x					
214	Maurolicus muelleri	x					very rare
220	Sternoptychidae				x		
221	Argyrolepecus aculeatus		x				
222	Polyipnus clarus	x					
225	Argyrolepecus gigas	x					very rare
227	Chauliodus sloani			x			
230	Stomias boa				x		
234	Borostomias antarcticus	x					very rare
271	Myctophiformes				x		
272	Myctophidae		x	x	x		
273	Notoscopelus sp.		x	x	x		
275	Notoscopelus kroyeri	x					
278	Neoscopelus macrolepidotus		x	x			
285	Lampadena speculigera		x	x			
290	Benthoosema glaciale	x					
320	Arctozenus risso					x	
368	Nemichthys scolopaceus		x				
369	Serrivomer beanii		x				
373	Synaphobranchus kaupii					x	
398	Scomberesox saurus						
422	Gasterosteidae				x		
426	Gasterosteus aculeatus						

Code	Original name	U	I	C	T	D	note
430	Gadiformes	x					
436	Gadidae				x		
437	Gadus sp.				x		
438	Gadus morhua	x					presumed ok
439	Gadus ogac	x					invalid but in use
440	Micromesistius poutassou	x					very rare
441	Melanogrammus aeglefinus	x					
442	Microgadus tomcod	x					very rare
443	Pollachius virens	x					
444	Phycis chesteri	x					presumed ok
447	Urophycis tenuis	x					presumed ok
449	Merluccius bilinearis	x					presumed ok
451	Boreogadus saida			x			
453	Gaidropsarus sp.		x				error
454	Gaidropsarus ensis		x				very rare
455	Gaidropsarus argentatus		x				error
461	Enchelyopus cimbrius					x	
471	Macrouridae			x	x		
478	Nezumia bairdii					x	
484	Malacocephalus occidentalis	x					very rare
572	Scomber scombrus	x					
616	Howella sherborni		x				absent
694	Ammodytes dubius		x				2 or 3 species
695	Ammodytes americanus		x				2 or 3 species
696	Ammodytes sp.	x					2 or 3 species
699	Anarhichas denticulatus	x					very rare
700	Anarhichas lupus	x					
701	Anarhichas minor	x					
702	Anarhichas sp.				x		
705	Pholis gunnellus		x				doubtful
709	Stichaeidae			x	x		
710	Stichaeus punctatus	x					
711	Eumesogrammus praecisus	x					
715	Lumpenus fabricii	x					
716	Lumpenus lampretaeformis	x					more from measurements
717	Leptoclinus maculatus	x					more from measurements
718	Anisarchus medius	x					presumed ok
721	Cryptacanthodes maculatus	x					
725	Zoarcidae			x	x		
726	Lycodes sp.				x		
727	Lycodes esmarkii	x					presumed ok
728	Lycodes lavalaei	x					presumed ok
729	Lycodes reticulatus		x				absent
730	Lycodes vahlii	x					presumed ok
733	Lycodes polaris	x					presumed ok
734	Lycodes terraenovae	x					presumed ok
740	Lycodes pallidus		x				absent
745	Melanostigma atlanticum					x	
746	Gymnelus viridis		x				2 species
747	Lycenchelys sp.				x		
750	Lycenchelys paxillus	x					
752	Lycenchelys verrillii			x			presumed ok
783	Peprilus triacanthus	x					more in photos

Code	Original name	U	I	C	T	D	note
792	Sebastes sp.			x			2 or 3 species
793	Sebastes norvegicus			x			
797	Helicolenus dactylopterus	x					more in photos
808	Cottidae				x		
809	Hemitripterus americanus	x					
810	Artediellus sp.	x					
811	Artediellus atlanticus	x					presumed ok
812	Artediellus uncinatus	x					presumed ok
813	Triglops sp.				x		
814	Triglops murrayi			x		x	
815	Triglops nybelini	x					presumed ok
817	Myoxocephalus sp.		x				
818	Myoxocephalus aeneus		x				
819	Myoxocephalus scorpius	x					presumed ok
820	Myoxocephalus octodecemspinosus	x					presumed ok
823	Gymnocanthus tricuspis	x					presumed ok
829	Cottunculus microps	x					
830	Icelus sp.				x		
831	Icelus bicornis	x					presumed ok
832	Icelus spatula	x					presumed ok
836	Leptagonus decagonus	x					presumed ok
837	Aspidophoroides olrikii	x					presumed ok
838	Aspidophoroides monopterygius	x					
844	Eumicrotremus spinosus		x	x			absent
845	Eumicrotremus spinosus variabilis	x					invalid but in use
849	Cyclopterus lumpus	x					
853	Liparidae				x		
854	Paraliparis sp.		x				
856	Paraliparis copei			x			
857	Liparis sp.	x					
859	Liparis fabricii		x				
862	Liparis gibbus		x				absent
865	Careproctus reinhardti	x					
867	Liparis coheni				x		doubtful
874	Paraliparis calidus	x					
889	Hippoglossoides platessoides	x					presumed ok
890	Glyptocephalus cynoglossus					x	
891	Limanda ferruginea	x					presumed ok
892	Reinhardtius hippoglossoides	x					
893	Hippoglossus hippoglossus	x					
895	Pseudopleuronectes americanus		x				
966	Lophius americanus	x					
980	Ceratiidae		x				
982	Cryptopsaras couesii			x			very rare
1100	Invertebrata				x		
1101	Porifera				x		
1107	Radiella hemisphaerica	x					more in photos
1108	Tentorium semisuberites	x					more in photos
1109	Polymastia sp.	x			x		more in photos
1112	Stylocordyla borealis	x					more in photos
1340	Cnidaria				x	x	
1341	Hydrozoa		x		x		excludes medusae
1352	Staurostoma mertensii		x				

Code	Original name	U	I	C	T	D	note
1353	Ptychogena lactea		x			x	
1357	Thuiaria thuja				x		
2040	Scyphozoa				x		
2080	Cyanea capillata	x					more in photos
2085	Aurelia aurita					x	
2095	Atolla sp.				x		
2096	Periphylla periphylla	x		x	x		more in photos
2097	Atolla wyvillei	x					more in photos
2100	Anthozoa		x		x		
2155	Duva sp.		x				
2156	Epizoanthus erdmanni				x		to confirm species
2157	Epizoanthus sp.		x				more in photos
2158	Bolocera tuediae		x	x		x	
2159	Stephanauge nexilis		x				
2160	Stephanauge sp.		x			x	
2161	Actinostola sp.		x	x	x		
2162	Actinostola callosa		x			x	
2165	Actiniaria				x		
2167	Hormathia nodosa		x				
2171	Metridium senile		x				
2173	Stomphia coccinea		x				
2175	Bolocera sp.		x				
2176	Urticina felina		x				absent
2180	Alcyonacea		x				
2181	Alcyoniidae				x		
2182	Actinauge cristata		x				
2183	Duva florida		x				
2184	Gersemia rubiformis		x				
2190	Paramuricea sp.		x				data entry error
2191	Drifa glomerata		x				
2192	Isididae						data entry error
2201	Pennatulacea				x		
2203	Pennatula aculeata				x	x	
2205	Actinauge sp.		x		x		
2207	Liponema multicornis	x					more in photos
2210	Pennatula grandis		x			x	more in photos
2217	Halipterus finmarchica		x	x		x	more in photos
2218	Anthoptilum grandiflorum					x	more in photos
2219	Nephtheidae				x	x	
2220	Scleractinia		x			x	
2223	Flabellum sp.				x		
2224	Flabellum alabastrum					x	
2250	Ctenophora		x		x	x	
2255	Pleurobrachia pileus	x					
2290	Turbellaria				x		
2295	Fecampiidae				x		
2573	Priapulid caudatus	x					
2585	Nematoda		x				
2670	Bryozoa		x		x	x	
2675	Alcyonidium sp.				x	x	
2677	Alcyonidium pachydermatum					x	
2678	Caberea ellisii		x			x	
2679	Securiflustra securifrons					x	

Code	Original name	U	I	C	T	D	note
2681	Reteporella grimaldii		x				
3000	Nemertea	x					
3080	Brachiopoda				x		
3090	Hemithiris psittacea	x					
3100	Terebratulina sp.				x		
3101	Terebratulina septentrionalis		x				
3125	Polyplacophora				x		
3134	Tonicella sp.		x		x		
3154	Tonicella rubra				x		
3164	Amicula vestita	x					
3175	Gastropoda				x	x	
3212	Margarites sp.		x		x		
3216	Margarites groenlandicus	x					
3219	Margarites costalis	x					
3248	Littorina sp.					x	probably all debris
3310	Tachyrhynchus erosus	x					probably all debris
3405	Crepidula sp.		x				data entry error
3417	Aporrhais sp.		x		x		
3418	Arrhoges occidentalis		x				
3420	Naticidae				x		
3422	Cryptonatica affinis		x				
3430	Euspira sp.		x				
3437	Euspira pallida		x				
3438	Euspira heros		x				
3452	Velutinidae				x		
3458	Velutina sp.				x		
3459	Limneria undata		x				
3460	Velutina velutina	x					
3483	Nucella lapillus		x				
3487	Boreotrophon clathratus		x				
3488	Boreotrophon sp.		x				
3491	Scabrotrophon fabricii	x					
3515	Buccinidae				x		
3516	Buccinum sp.				x		
3517	Buccinum undatum		x				
3519	Beringius turtoni		x				
3523	Buccinum scalariforme		x		x		
3565	Neptunea sp.		x				
3566	Neptunea decemcostata		x				
3567	Neptunea despecta				x		
3575	Colus sp.		x				
3576	Colus stimpsoni		x				
3577	Colus pubescens		x				
3578	Plicifusus kroeyeri	x	x				more in photos
3583	Aulacofusus brevicauda		x				more in photos
3690	Cephalaspidea				x		
3708	Haminoea sp.		x				
3715	Scaphander punctostriatus	x					
3850	Nudibranchia		x		x		
3893	Dendronotus sp.				x		
3894	Dendronotus frondosus				x		
3908	Colga villosa		x	x			
3910	Palio dubia		x				

Code	Original name	U	I	C	T	D	note
3965	Doridoxa ingolfiana		x				
3970	Cadlina laevis		x			x	
3975	Scaphopoda				x	x	
3976	Dentaliidae		x				
3977	Antalis sp.		x		x	x	
3995	Bivalvia		x		x	x	
4019	Nuculana sp.		x			x	probably all debris
4022	Nuculana tenuisulcata					x	probably all debris
4025	Megayoldia thraciaeformis		x			x	
4074	Yoldia sp.		x				
4102	Bathyarca sp.				x		
4121	Mytilus sp.					x	
4122	Mytilus edulis				x	x	
4124	Crenella faba	x					
4126	Musculus sp.		x		x		
4127	Musculus niger	x					
4128	Musculus discors		x				
4167	Chlamys islandica		x			x	
4179	Placopecten magellanicus		x				
4191	Similipecten greenlandicus					x	
4219	Anomia sp.		x		x		
4227	Astarte sp.		x		x		
4229	Astarte undata				x		
4231	Astarte borealis	x					
4233	Astarte crenata subequilatera				x		
4268	Cyclocardia borealis	x					
4272	Arctica islandica		x				
4336	Cardiidae		x				
4338	Cerastoderma pinnulatum	x					
4350	Clinocardium sp.				x		
4351	Ciliatocardium ciliatum ciliatum		x				
4352	Serripes groenlandicus	x					
4383	Mesodesma sp.		x		x	x	
4393	Macoma sp.		x				
4394	Macoma balthica		x				
4395	Macoma calcarea		x			x	
4427	Mya arenaria		x			x	
4428	Mya truncata		x				
4436	Hiatella sp.				x		
4437	Hiatella arctica	x					
4438	Panomya norvegica	x					
4441	Cyrtodaria siliqua					x	
4451	Xylophaga atlantica	x					
4498	Teredo navalis		x				
4525	Cuspidaria sp.				x		
4526	Cuspidaria glacialis	x					
4545	Cephalopoda				x		
4554	Sepiolidae				x		
4557	Rossia sp.		x				
4562	Rossia megaptera		x		x		
4569	Semirossia tenera		x				absent
4591	Teuthida				x		
4673	Onychoteuthidae		x				error

Code	Original name	U	I	C	T	D	note
4695	Lepidoteuthidae		x				error
4753	Illex illecebrosus			x			
4770	Gonatus fabricii			x			
4846	Octopoda				x		
4853	Stauroteuthis syrtensis	x					
4878	Bathypolypus sp.		x		x		
4894	Octopus sp.		x		x		
4904	Bathypolypus bairdii		x				
4949	Annelida				x		
4950	Polychaeta		x		x		
4955	Phyllodoce groenlandica	x					more in photos
5002	Aphroditella hastata		x				
5003	Laetmonice filicornis	x					
5007	Polynoidae	x					more in photos
5045	Eunoe nodosa				x		
5046	Harmothoe sp.		x		x		
5113	Nephtys sp.		x				
5236	Nereis pelagica	x					presumed ok
5264	Polyphysia crassa	x					more in photos
5277	Maldanidae	x					more in photos
5461	Euphrosine borealis	x					more in photos
5646	Melinna cristata	x					more in photos
5673	Terebellidae	x					more in photos
5746	Flabelligeridae				x		more in photos
5755	Brada inhabilis	x					more in photos
5900	Sipuncula		x				
5902	Golfingia margaritacea	x					more in photos
5907	Phascolion strombus strombus	x					more in photos
5930	Echiura				x		
5934	Hamingia arctica	x					more in photos
5951	Pycnogonida				x		
5961	Nymphon sp.	x					
5964	Nymphon hirtipes	x					presumed ok
6000	Crustacea					x	
6084	Calanus finmarchicus		x				
6580	Cirripedia				x		more in photos
6588	Lepas sp.		x				error
6590	Lepas hillii		x				error
6593	Chirona hameri		x				
6594	Arcoscalpellum michelottianum	x					
6595	Balanidae		x		x		
6596	Arcoscalpellum sp.				x		
6597	Balanus balanus		x		x	x	
6598	Balanus crenatus		x				
6620	Cumacea	x					more in photos
6760	Isopoda		x	x			
6771	Aega psora	x					
6791	Syscenus infelix		x			x	
6930	Amphipoda			x	x		
6960	Hyperiididae				x		
6968	Themisto abyssorum				x		
6970	Themisto compressa	x					
6972	Themisto libellula		x		x		

Code	Original name	U	I	C	T	D	note
6977	Hyperia galba	x					presumed ok
6980	Gammaridea				x		invalid but in use
6996	Ampelisca sp.	x					more in photos
6999	Ampelisca eschrichti	x					more in photos
7193	Eusiridae		x				
7195	Eusirus cuspidatus		x				
7211	Rhachotropis aculeata		x				
7234	Halice abyssii					x	error
7268	Melita dentata	x					
7279	Maera loveni		x				
7383	Epimeria loricata		x				
7389	Anonyx sp.	x					
7394	Anonyx sarsi				x		
7396	Anonyx nugax				x		
7483	Neohela monstrosa		x			x	
7555	Oedicerus saginatus	x					presumed ok
7586	Paramphithoe hystrix		x				
7691	Wimvadocus torelli		x				
7750	Stegocephalus inflatus		x				
7880	Caprellidea				x		invalid but in use
7925	Mysida				x		more in photos
7991	Euphausiacea				x		more in photos
7994	Meganyctiphanes norvegica			x			more in photos
8024	Aristaeopsis edwardsiana			x			
8028	Hymenopenaeus debilis			x			
8033	Sergestes arcticus					x	
8035	Sergia robusta			x			
8039	Acanthephyra sp.				x		
8040	Acanthephyra pelagica		x	x			
8056	Pasiphaea tarda	x					presumed ok
8057	Pasiphaea multidentata					x	
8074	Eualus sp.					x	
8075	Eualus fabricii			x			
8077	Eualus macilentus	x					
8079	Eualus gaimardii		x				
8080	Eualus gaimardii gaimardii		x				updated name
8081	Eualus gaimardii belcheri	x					updated name
8084	Spirontocaris sp.					x	
8085	Spirontocaris spinus			x			
8086	Spirontocaris phippsii			x			
8087	Spirontocaris lilljeborgii			x			
8091	Lebbeus sp.					x	
8092	Lebbeus groenlandicus					x	
8093	Lebbeus polaris		x				
8095	Lebbeus microceros	x					
8111	Pandalus borealis			x			
8112	Pandalus montagui	x					
8113	Atlantopandalus propinquus	x					
8114	Plesionika martia	x					
8119	Sclerocrangon boreas	x					to confirm if contaminating
8127	Sabinea sp.	x					
8128	Sabinea septemcarinata			x		x	
8129	Sabinea sarsii			x		x	

Code	Original name	U	I	C	T	D	note
8135	Pontophilus norvegicus	x					to confirm if contaminating
8138	Argis dentata		x			x	
8158	Galatheidae				x	x	
8163	Munidopsis sp.				x		
8164	Munidopsis curvirostra		x			x	
8173	Calocaris templemani	x					
8178	Pagurus sp.			x			
8180	Pagurus pubescens	x					presumed ok
8182	Pagurus arcuatus	x					presumed ok
8195	Lithodes sp.				x		
8196	Lithodes maja	x					
8206	Cancer irroratus	x					
8213	Chionoecetes opilio	x					to confirm if contaminating
8216	Hyas sp.	x					
8217	Hyas araneus	x					
8218	Hyas coarctatus				x		
8261	Crinoidea		x		x		
8263	Heliometra glacialis	x					
8290	Holothuroidea		x		x		
8292	Psolidae				x		
8293	Psolus sp.		x				
8294	Psolus phantapus		x				
8295	Psolus fabricii		x				
8312	Cucumaria frondosa	x					
8321	Molpadia sp.		x		x	x	
8322	Molpadia oolitica		x				
8363	Strongylocentrotus sp.					x	
8364	Strongylocentrotus droebachiensis				x		
8365	Strongylocentrotus pallidus				x		
8373	Echinarachnius parma		x			x	
8378	Brisaster fragilis			x		x	
8390	Asteroidea				x		
8395	Asterias sp.		x				
8396	Asterias rubens		x				
8397	Asterias forbesi				x		
8407	Ctenodiscus crispatus		x				
8408	Diplopteraster multipes	x					
8409	Pteraster sp.		x				
8410	Pteraster militaris		x				
8411	Pteraster pulvillus		x	x			
8412	Pteraster obscurus	x					
8429	Ceramaster granularis		x				
8431	Hippasteria phrygiana			x			
8433	Pseudarchaster parelii	x					
8434	Poraniomorpha borealis				x		
8435	Poraniomorpha sp.			x			
8436	Poraniomorpha hispida				x		
8437	Porania pulvillus insignis		x				absent
8445	Solaster endeca		x		x		
8446	Tremaster mirabilis	x					more in photos
8447	Crossaster papposus	x					
8448	Novodinia americana	x					more in photos
8483	Henricia sp.		x				

Code	Original name	U	I	C	T	D	note
8484	Henricia sanguinolenta				x		
8495	Asteriidae		x		x		
8510	Leptasterias sp.		x		x		
8511	Leptasterias polaris		x				
8515	Stephanasterias albula		x			x	
8516	Urasterias lincki	x					more in photos
8520	Psilaster andromeda		x				
8521	Leptychaster arcticus	x					more in photos
8530	Ophiuroidea				x		
8540	Gorgonocephalus sp.				x	x	
8541	Gorgonocephalus arcticus					x	
8550	Ophiuridae		x		x		
8551	Ophiura sp.		x				
8552	Ophiura robusta		x				
8553	Ophiura sarsii		x				
8574	Ophiacantha sp.				x		
8575	Ophiacantha bidentata		x				
8583	Ophiopholis aculeata		x				
8585	Ophioscolex glacialis	x					
8593	Amphiura sp.	x					to confirm species
8680	Ascidacea				x		
8742	Ascidia sp.	x					to confirm species
8755	Ciona sp.		x				
8757	Cnemidocarpa finmarkiensis	x					more in photos
8776	Synoicum pulmonaria	x					to confirm species
8778	Eudistoma vitreum	x					
8781	Pelonaia corrugata		x		x		
8783	Polycarpa fibrosa	x					to confirm species
8791	Boltenia sp.		x		x		
8792	Boltenia ovifera					x	
8793	Boltenia echinata	x					more in photos
8797	Halocynthia pyriformis		x				
8798	Botrylloides sp.				x		to confirm species
9100	Rhodophyta	x					plant debris - not reviewed
9200	Phaeophyta	x					plant debris - not reviewed
9202	Agarum sp.	x					plant debris - not reviewed
9203	Agarum cribrosum	x					plant debris - not reviewed
9206	Chondrus crispus	x					plant debris - not reviewed
9215	Fucales	x					plant debris - not reviewed
9220	Laminaria sp.	x					plant debris - not reviewed
9970	Capsule de raie	x					skate eggs – not reviewed
9988	vieux coquillage					x	old shell debris
9995	invertébrés digérés		x	x		x	other debris
9999	pesé mais non examiné		x	x		x	debris weighed, not examined