A Summary of Recreational Scallop Fishing in the Maritimes Region: 1998 to 2015

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Removals of Sea Scallop (*Placopecten magellanicus*) in the Maritimes Region occur from commercial fisheries, Indigenous Food, Social and Ceremonial (FSC) purposes, and from recreational fisheries. Commercial and FSC removals by drag are accounted for in inshore scallop stock assessments; however, landed recreational and FSC catch by dip netting, diving, tongs, and hand are not accounted for in the science stock assessments since information on these removals have not been available to date. The objectives of this report were to review information from the inshore recreational scallop fishery in the Maritimes Region from 1998 and 2015, and assess if recreational fishery removals could be integrated in future Maritimes Region scallop stock assessments. The majority of recreational fishing was conducted using dive gear with most activity occurring in the summer. The majority of records reported recreational fishing in Scallop Fishing Area 29 East (67%), Scallop Production Area 3 (24%), and Scallop Production Area 6 (5%). From 1998 to 2015, the percentage of licenses associated with reported fishing records relative to the total licenses issued by year ranged from 1.4% to 6.2%. Given these low sample sizes, it is possible that the number of removals were higher than summarized in this report. The assumptions made to convert scallop numbers to biomass introduces additional uncertainty in the estimates of removals. Based on the review of data from 1998 to 2015, there remains substantial challenges to using data from recreational fishing in current inshore scallop stock assessments in the Maritimes Region.

RÉSUMÉ

Sameoto, J.A., Pearo Drew, T.K., Raper, J., and Reeves, A. 2022. A summary of recreational scallop fishing in the Maritimes Region: 1998 to 2015. Can. Tech. Rep. Fish. Aquat. Sci. 3451: v + 29 p.

Les prélèvements de pétoncles géants (*Placopecten magellanicus*) dans la région des Maritimes sont effectués dans la pêche commerciale, la pêche autochtone à des fins alimentaires, sociales et rituelles (ASR) et la pêche récréative. Les prélèvements effectués à la drague dans la pêche commerciale et la pêche à des fins ASR sont pris en compte dans les évaluations des stocks de pétoncles côtiers; toutefois, les prélèvements effectués à l'épuisette, en plongée, à la pince et à la main dans la pêche récréative et la pêche à des fins ASR ne sont pas pris en compte dans les évaluations scientifiques des stocks, car aucune information sur ces prélèvements n'est disponible à ce jour. Les objectifs du présent rapport étaient d'examiner l'information sur la pêche récréative côtière du pétoncle dans la région des Maritimes entre 1998 et 2015 et de déterminer s'il était possible d'intégrer les prélèvements de la pêche récréative dans les futures évaluations des stocks de pétoncle de la région des Maritimes. La majorité de la pêche récréative a été pratiquée à la plongée, et la plupart des activités ont eu lieu en été. La majorité des registres font état d'une pêche récréative dans la zone de pêche du pétoncle 29 est (67 %), la zone de production du pétoncle 3 (24 %) et la zone de production du pétoncle 6 (5 %). De 1998 à 2015, le pourcentage de permis associés aux registres de pêche déclarés par rapport au total des permis délivrés par année a varié de 1,4 % à 6,2 %. Compte tenu de la taille limitée de ces échantillons, il est possible que le nombre de prélèvements ait été plus élevé que celui résumé dans le présent rapport. Les hypothèses formulées pour convertir le nombre de pétoncles en biomasse introduisent une incertitude supplémentaire dans les estimations des prélèvements. D'après l'examen des données de 1998 à 2015, l'utilisation des données de la pêche récréative dans les évaluations actuelles des stocks côtiers de pétoncles dans la région des Maritimes continue de poser d'importants problèmes.

1. INTRODUCTION

Inshore scallop management areas in the Fisheries and Oceans Canada (DFO) Maritimes Region extend from the shoreline out to what is referred to as the twelve nautical mile line, from the northern tip of Cape Breton along the eastern coast of Nova Scotia and including the Bay of Fundy. Under the Atlantic Fisheries Regulations[1], the inshore Scallop Fishing Areas (SFAs) are 28A, 28B, 28C, 28D, and SFA 29 (Figure 1). SFA 28A-D is further divided into Scallop Production Areas (SPAs), which includes SPAs 1A, 1B, 2, 3, 4, 5, and 6. SPA 6 is divided into subareas 6A, 6B, 6C, and 6D (Figure 2). SFA 29 is divided into western and eastern zones (SFA 29 West (29W), SFA 29 East (29E); Figures 1,2). Science assessments on the status of Sea Scallop (*Placopecten magellanicus*) occur annually for SPAs 1A, 1B, 3, 4, 5, 6, and SFA 29W in order to inform sustainable harvesting of this resource (DFO 2019a,b).

Removals of Sea Scallop in the Maritimes Region occur from commercial fisheries, Indigenous Food, Social and Ceremonial (FSC) purposes, and from recreational fisheries. As part of DFO's Sustainable Fisheries Framework[2], mortality should be accounted for from all types of fishing. Commercial and FSC removals by drag are accounted for in inshore scallop stock assessments; however, landed recreational and FSC catch by dip netting, diving, tongs, and hand are not accounted for in the science stock assessments since information on these removals have not been available (DFO 2019a,b). The objectives of this report were to review information from the inshore recreational scallop fishery in the Maritimes Region between 1998 and 2015, and assess if recreational fishery removals could be integrated in future scallop stock assessments in the Maritimes Region. Information presented in this report describing the inshore scallop recreational fishery is current as of 2015.

1.1 Recreational Fishing

Removals of scallop through recreational fishing activity can occur in the Maritimes Region, where scallops can be harvested for recreational or personal use (DFO 2021). The main species harvested is the Sea Scallop. All recreational scallop fishing within the Maritimes Region requires a DFO licence[3] and this fishery is managed through the use of licences, gear restrictions, size limits, seasonal closures, and daily possession limits. Licence holders are permitted to fish within SFA 28A-D and SFA 29 unless they are subject to closure (as defined in a DFO Maritimes Variation Orders or (mainly) conditions of licence).

Recreational scallop licence holders are required to abide by the DFO Maritimes Region Recreational Scallop Conditions when they purchase a DFO recreational scallop

[1] https://laws-lois.justice.gc.ca/eng/regulations/sor-86-21/page-1.html
[2] https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precaution-eng.htm
[3] https://www.dfo-mpo.gc.ca/fisheries-peches/recreational-recreative/maritimes/invert-eng.html#scallop

licence (e.g. Appendix 1). Recreational fishers are not permitted to fish for scallops by means other than diving, by dip netting, or by tongs. No person shall have on board any vessel more than one gear type (dip net, diving gear, or tongs) at any time while engaged in recreational scallop fishing (Appendix 1).

As part of these conditions, license holders are required to complete and submit their recreational scallop reporting documents annually, even if they did not harvest any scallops. The DFO Maritimes Region Recreational Scallop reporting document requires licence holders to state their name, licence number, and year. In addition, the following information is required: the date, SFA, gear type used, and quantity of scallops harvested for each day fished. Any additional information can be recorded in the comments section (e.g. see Schedule I in Appendix 1). Dates should be recorded with both day and month, and location should include the latitude, longitude, and SFA. Licence holders are permitted to use one gear type for each day fished. The type of gear used should be identified as either diving gear, dip net, or tongs. The quantity of scallops should be recorded as the number of scallops harvested. If no scallops were harvested, a licence holder should record NIL or zero on the scallop reporting document. All completed scallop reporting documents are required to be sent to DFO no later than twenty days after the end of the fishing season (See Schedule II in Appendix 1).

2. MATERIALS AND METHODS

Data on recreational licences and from recreational scallop reporting documents were obtained from the Science and Resource and Aboriginal Fisheries Management Branches of DFO Maritimes Region. Recreational scallop fishing records from reporting documents were categorized into the number of records that had fishing removals (where fishing was identified as records with either number or pounds of scallops) and the number of records that did not have removals (i.e. NIL or zero catch); thus, a fishing record that had no catch was treated the same as a record that did not fish. Multiple recreational scallop fishing records can be associated with the same recreational scallop reporting document but a single document is only associated with single license holder; therefore, the number of unique licenses by year was determined from the reported records. The number of unique licenses by year from the reported fishing records was assumed to represent the number of licenses reporting to DFO by year.

For the records that had fishing removals, the proportion of gear type used for recreational scallop fishing by year was determined. Gear types reported in the reporting documents included dive, snorkel, dip net, tongs, and unknown; however, snorkel records were combined with dive records to create a single ‘dive’ class. Final gear classes consisted of dive (combined dive and snorkel), dip net, tongs, or unknown. The proportion of fishing within a season was examined, with Fall defined as September 1 to November

30, Winter from December 1 to the end of February, Spring from March 1 to May 31, and Summer from June 1 to August 31.

The proportion of fishing records for each year was grouped into their respective reported fishing area. Scallop reporting documents that either had no location recorded, or the location was too broad to narrow down to a specific SPA or SFA were classified as Unknown. Due to the overlap in reported fishing areas (i.e. areas reported were not mutually exclusive), records were grouped further to a level whereby the grouped fishing areas were mutually exclusive. This resulted in all SPAs and subareas within SFAs 28A, 28B, 28C, and 28D being combined into one group called SFA 28A-D. Other than records that overlapped with the area of SFA 28A-D, the only other area reported was SFA 29 East. No records were reported, or potentially overlapped, with SFA 29 West. The proportion of fishing records was subsequently compared between SFA 28A-D, SFA 29 East, and unknown areas.

Removals of scallop from recreational fishing are required to be reported in numbers; however, for science assessment purposes, removals in terms of biomass are required (e.g. adductor meat weight). Scallop removals therefore need to be converted to meat weight. Meat weights and shell heights are not required to be recorded on the scallop reporting documents so assumptions must be made. The minimum size limit (shell height) in the recreational fishing conditions in SFA 28A-D is 75 mm, in SFA 29 East is 90 mm, and in SFA 29W is 100 mm. Shell height is defined as the distance from the outer edge of the shell at the midpoint of the hinge to the farthest point on the outer edge of the shell opposite to the hinge, measured in a straight line (Appendix 2). The DFO Inshore Scallop Science Survey collects data on the meat weight and shell height of scallop (for further details see Glass 2017). From survey data from 1998 to 2015, the shell height to meat weight relationship was modelled for samples collected in June to August (Appendix 3). For the purpose of this report, the average meat weight for the reported scallop numbers caught in the recreational fishery across all years and areas was assumed to be 20 grams (g) which corresponds to approximately a 115 mm shell height scallop (Appendix 3). Removals in meat weight were then calculated as the reported number of scallops caught per fishing record assuming each scallop was 20 g. The proportion of removals was determined for the grouped SFAs (i.e. SFA 28A-D, SFA 29E, or unknown), and the total estimated removals in meat weight (biomass) was evaluated.

3. RESULTS

The number of recreational scallop licences issued by the DFO Maritimes Region from 1998 to 2015 was 42,675 (Table 1). The number of recreational scallop records that were submitted to the DFO Maritimes Region and accessible for analysis from this time range was 5,297 (Table 2). Of the 5,297 recreational scallop records, 92% were classified

as having fishing removals (either the number or pounds of scallops was recorded on the reporting documents) and 8% of records represented no fishing removals (fishing with no catch or no fishing; Table 2). Of records with fishing removals, three records reported both numbers and pounds, and one record only reported pounds. This one fishing record that only reported pounds was removed for the subsequent analysis on estimated removals. From the reported records, the number of associated licenses per year ranged from a minimum of 24 in 2015 to a maximum of 159 in 2003 (Table 3). The percentage of licenses associated with reported fishing records relative to the total licenses issued by year ranged from 1.4% (in 2008) to 6.2% (in 1998) (Tables 1,3).

From 1998 to 2015, the majority of fishing records were from dive gear (69%), followed by dip nets (30%). Although the dive category for this analysis consists of combined records of dive and snorkel, snorkel was less than 0.1% of all records. Tongs, and unknown gear types were each less than 1% of total gear types used. Dive represented > 50% of the reported records for all years except in 2000 (Figure 3).

Based on the reported recreational scallop records from 1998 to 2015 combined, 43% of recreational activity took place in the Summer, 21% of activity occurred in the Fall, 21% in the Spring, and 15% occurred in the Winter. Within year, for the majority of years, most records were reported as occurring in the Summer (Figure 4).

Records by reported area had unique entries of SFA 28, SFA 28A, SFA 28D, SFA 29 East, SPA 3, SPA 6, and Unknown. The majority of records reporting recreational fishing fell into three main areas: SFA 29 East (67%), SPA 3 (24%), and SPA 6 (5%); this relative order was fairly consistent over the time period of this study (Figure 5). It is important to note that SFA 29 East, SPA 3, and SPA 6 do not spatially overlap (Figures 1,2). However, some of the reported areas do overlap spatially (e.g. SPA 6 overlaps with SFA 28B, SPA 3 overlaps with SFA 28A, *etc* (Figures 1,2)). Since the reported areas are not mutually exclusive, records were reassigned based on their spatial position to areas that were mutually exclusive. At this grouping level, all areas within the Bay of Fundy were aggregated into a single area (i.e. all areas that overlapped with SFA 28A, 28B, 28C, and 28D were merged – this included areas SPA 3 and SPA 6 (Figure 2)) which is referred to here as “SFA 28AtoD” (Figure 6). From 1998 to 2015, with the exception of 2002 to 2004 inclusive, the majority of reported records were from fishing activity in SFA 29 East (Figure 6).

The patterns in the proportion of reported records by area (Figure 6) were similar to that of scallop removals in terms of scallop numbers (Figure 7). For most years, the majority of removals in terms of numbers from reported documents were from SFA 29 East (Figure 7). From the reported recreational scallop records, assuming an average meat weight of 20 g per scallop, the total estimated biomass removal from reported fishing records from 1998 to 2015 was 5,688 kilograms (kg): 2,996 kg from SFA 29 East, 2,677

in SFA 28A-D, and 15 kg from an Unknown area (Figure 8). These removals are not adjusted for potential unreported catch.

4. DISCUSSION

Submitting recreational scallop reporting documents is required. However, relative to the number of licences issued each year, there were few records accessible for analysis from 1998 to 2015. Of the recreational fishing records that were available, the majority reported fishing activity (versus NIL reports i.e. no fishing activity); and fishing activity primarily occurred in SFA 29 East. Within the Bay of Fundy (SFA 28A-D), the majority of recreational fishing records indicated that fishing activity occurred in SPA 3 followed by SPA 6, although there were reports for other locations in the Bay of Fundy. The primary gear type reported was dive and the majority of reported activity took place in the summer.

Although estimates of biomass removals were made in this report, these estimates may be unreliable. The percentage of licenses associated with reported fishing records relative to the total licenses issued by year ranged from 1.4% to 6.2%. Given these low sample sizes, it is possible that the removals were higher than summarized in this report. Further, assumptions must be made in order to convert scallop numbers to biomass (meat weight). For this analysis, based on DFO Science survey data, the assumption was that each scallop reported as caught in the recreational fishery weighed 20 g; however, meat weight will vary based on the shell height, depth, area, and time of year (Nasmith et al. 2016; Nasmith and Smith 2017). These assumptions are a further source of uncertainty for the biomass estimates.

Inconsistency in the reported fishing location necessitated grouping data at a fairly coarse spatial resolution. Although recreational scallop fishers are required to record the latitude, longitude, and SFA on the recreational scallop reporting document for each day fished, this was not done consistently. There is no explicit location on the document to record latitude and longitude, just for the SFA. Additional information such as average shell height retained, depth, bottom type, dive time, port, and SPA (if applicable) would be beneficial to include to inform future analyses on recreational scallop fishing data. Providing a spatial map of all of the SPAs and SFAs attached to the recreational scallop reporting document could also be used as a visual aid to assist fishers in identifying an area; however, of the location information, accurately reporting the latitude and longitude coordinates is of greatest value for these data to be used in the science assessment process. Given the sedentary nature of scallop, and the potential for localized exploitation, science assessments of Inshore Scallop in the Maritimes Region depends on accurately accounting for scallop removals and determining the spatial location of those removals (Sameoto et al. 2015, Nasmith et al. 2016). The spatial determination of these removals

for the science process is often required at spatial scales finer than a SPA or SFA (Sameoto et al. 2015, Nasmith et al. 2016).

Removals accounted for in the science assessments include both commercial fishery removals and FSC removals by drag; however, recreational fishery removals have not been incorporated due to a lack of available data (DFO 2019a,b). This report has reviewed the data available on inshore scallop fishery removals from 1998-2015. There is substantial uncertainty in quantifying inshore scallop recreational fishery removals both in terms of the magnitude and in their location. Enhanced reporting and monitoring of inshore scallop recreational fishing in the Maritimes Region may reduce uncertainty in future estimates of removals from the scallop populations; however, based on the review of data from 1998 to 2015, there remains substantial challenges to using data from recreational fishing in current inshore scallop stock assessments in the Maritimes Region.

5. ACKNOWLEDGEMENTS

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6. REFERENCES

DFO. 2019a. Stock status update of Scallop (*Placopecten magellanicus*) in Scallop Production Areas 1 to 6 in the Bay of Fundy. DFO Can. Sci. Advis. Sec. Sci. Resp. 2019/039.

DFO. 2019b. Stock status update for Scallop (*Placopecten magellanicus*) in Scallop Fishing Area 29 West of Longitude 65°30'. DFO Can. Sci. Advis. Sec. Sci. Resp. 2019/034.

DFO. 2021. Inshore Scallop Maritimes Region Integrated Fisheries Management Plan. https://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/scallop-petoncle/scallop-petoncle2015-sec1-eng.html

Glass, A. 2017. Maritimes Region Inshore Scallop Assessment Survey: Detailed technical description. Can. Tech. Rep. Fish. Aquat. Sci. 3231: v + 32 p.

Nasmith, L., Sameoto, J., and Glass, A. 2016. Scallop Production Areas in the Bay of Fundy: Stock status for 2015 and forecast for 2016. DFO Can. Sci. Advis. Sec. Res. Doc. 2016/021: vi + 140 p.

Nasmith, L., and Smith, S.J. 2017. Seasonal monitoring surveys of scallop (*Placopecten magellanicus*) in Scallop Production Areas 1 and 4 from 2000-2005. Can. Tech. Rep. Fish. Aquat. Sci. 3216: v + 38 p.

Sameoto, J.A., Smith, S.J., Nasmith, L.E., Glass, A. and Denton, C. 2015. Scallop Fishing Area 29: Stock status and update for 2015. DFO Can. Sci. Advis. Sec. Res. Doc. 2015/067: v + 69 p.

7. TABLES

Table 1. Number of recreational scallop fishing licences by year issued by DFO Maritimes Region from 1998 to 2015.

Year	Number of licences issued by DFO
1998	2159
1999	2476
2000	2302
2001	2523
2002	3029
2003	3067
2004	2818
2005	2714
2006	2629
2007	2472
2008	2488
2009	2313
2010	2240
2011	2170
2012	2105
2013	1979
2014	1642
2015	1549
Total	**42675**

Table 2. Total number of available recreational scallop fishing records, number of records where fishing was reported with removals (i.e. number or pounds of scallops recorded), and where no removals occurred (i.e. went fishing and had no removals reported or no fishing).

Year	Number of records with no fishing removals	Number of records with fishing removals	Total records
1998	33	538	571
1999	26	589	615
2000	23	328	351
2001	14	549	563
2002	21	169	190
2003	41	748	789
2004	27	427	454
2005	21	312	333
2006	19	305	324
2007	19	113	132
2008	10	99	109
2009	23	180	203
2010	14	117	131
2011	41	116	157
2012	35	116	151
2013	24	85	109
2014	21	55	76
2015	12	27	39
Total	**424**	**4873**	**5297**

Table 3. Number of licences associated with available recreational scallop fishing records by year.

Year	Number of unique licences associated with recreational scallop fishing records
1998	133
1999	124
2000	83
2001	102
2002	47
2003	159
2004	92
2005	87
2006	79
2007	51
2008	36
2009	61
2010	40
2011	66
2012	61
2013	41
2014	31
2015	24

8. FIGURES

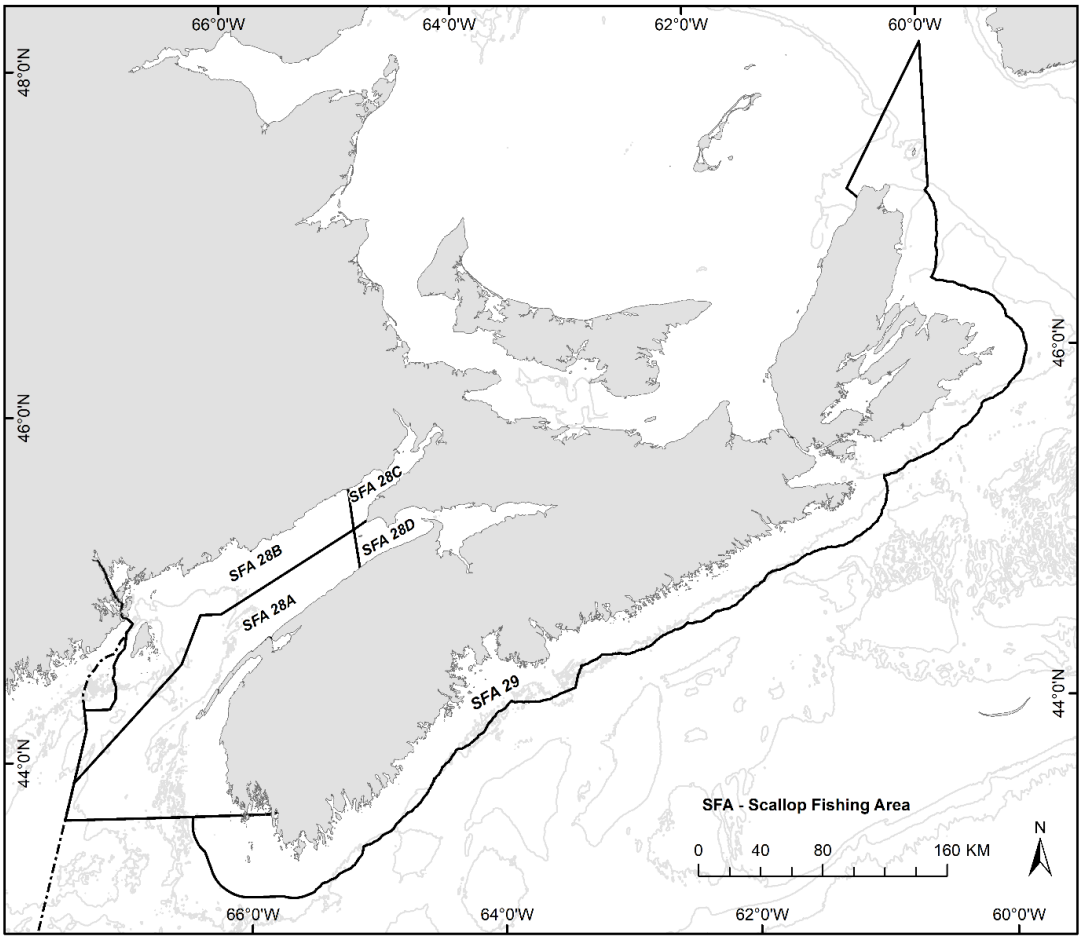

Figure 1. Map of the DFO Maritimes Region Inshore Scallop Fishing Areas (SFAs) 28A, 28B, 28C, 28D, and SFA 29.

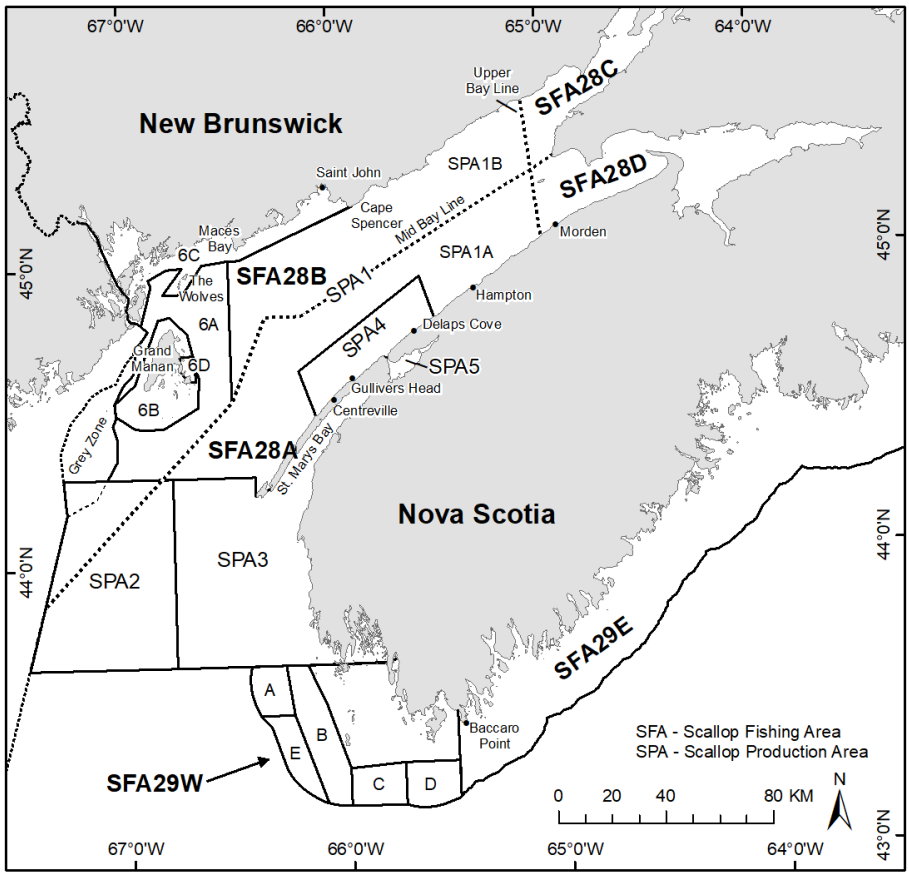

Figure 2. Map of the DFO Maritimes Region Inshore Scallop Fishing Areas (SFAs) 29W and 29E and Scallop Production Areas (SPAs). Note SFA 29E extends to the tip of Cape Breton as shown in Figure 1.

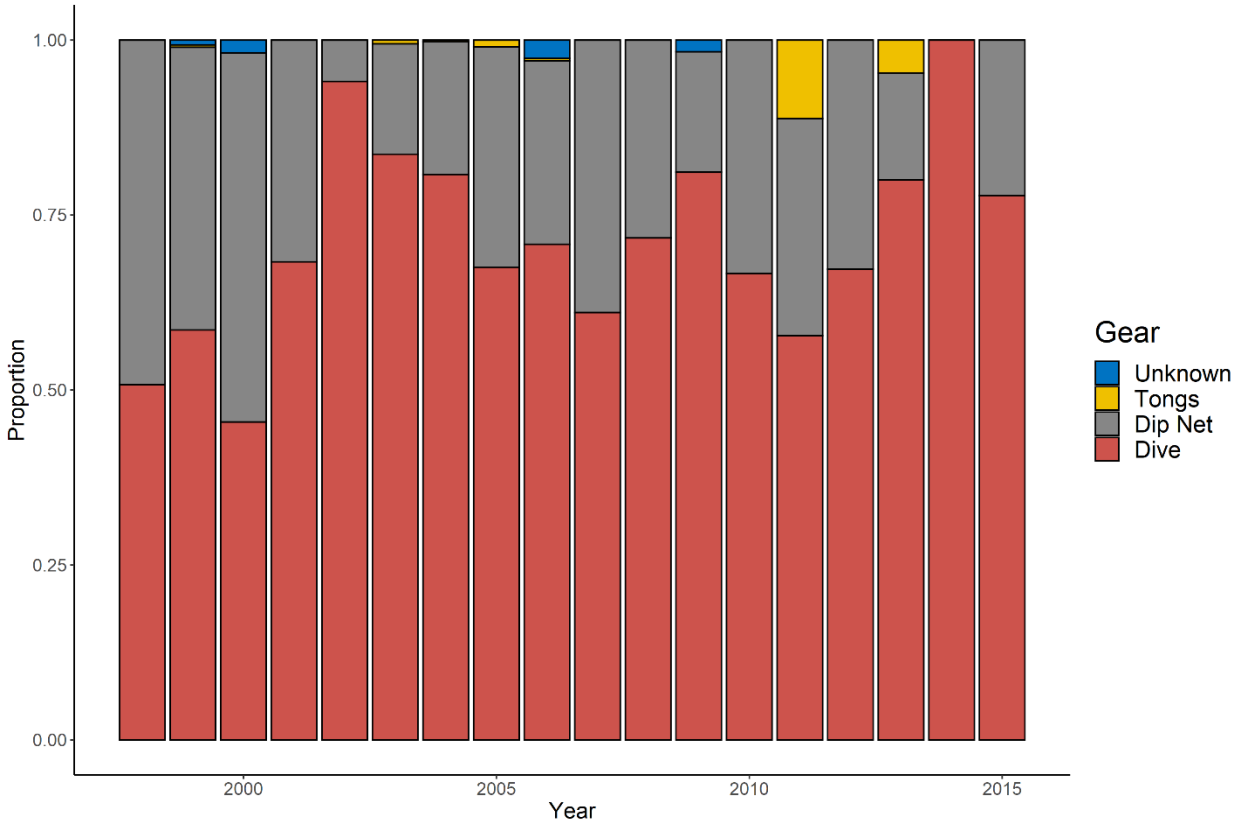

Figure 3. Annual proportion of each gear type associated with recreational scallop fishing records in the DFO Maritimes Region.

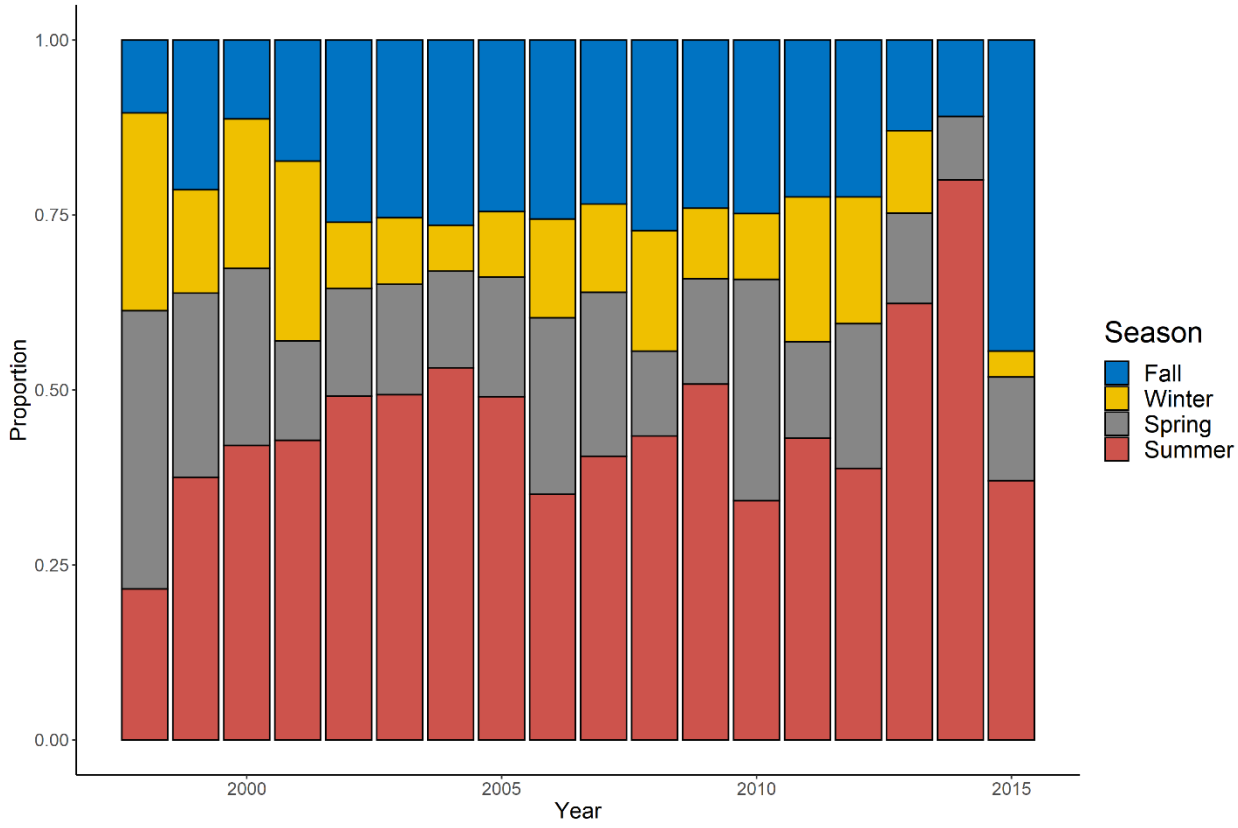

Figure 4. Annual seasonal proportion of recreational scallop fishing records in the DFO Maritimes Region. The seasons were defined as: Fall: September to November, Winter: December to February, Spring: March to May, and Summer: June to August.

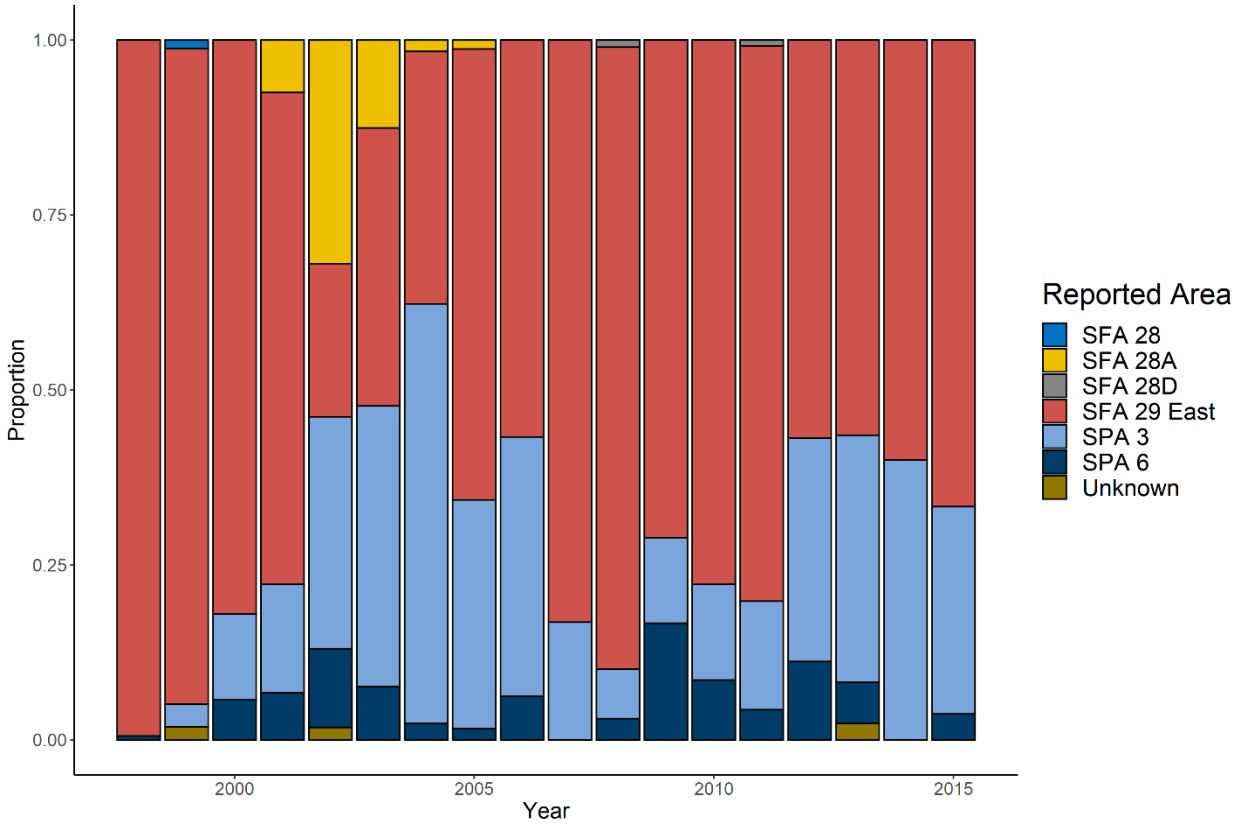

Figure 5. Annual proportion of recreational scallop fishing records by reported area in the DFO Maritimes Region. SFA is Scallop Fishing Area and SPA is Scallop Production Area. SFA 28 was a reported area; however, this corresponds to SFA 28A-D combined.

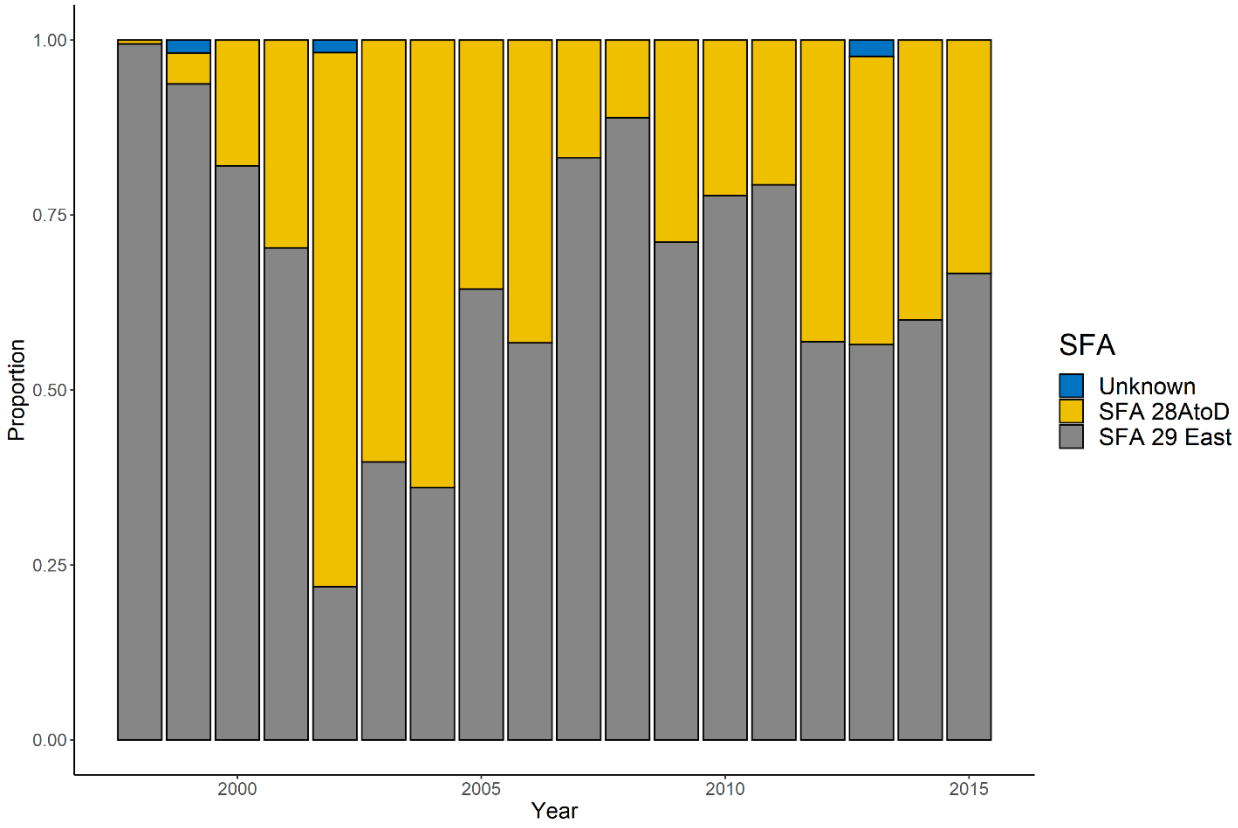

Figure 6. Annual proportion of recreational scallop fishing records in the DFO Maritimes Region by areas SFA 28A-D, SFA 29 East, and Unknown area.

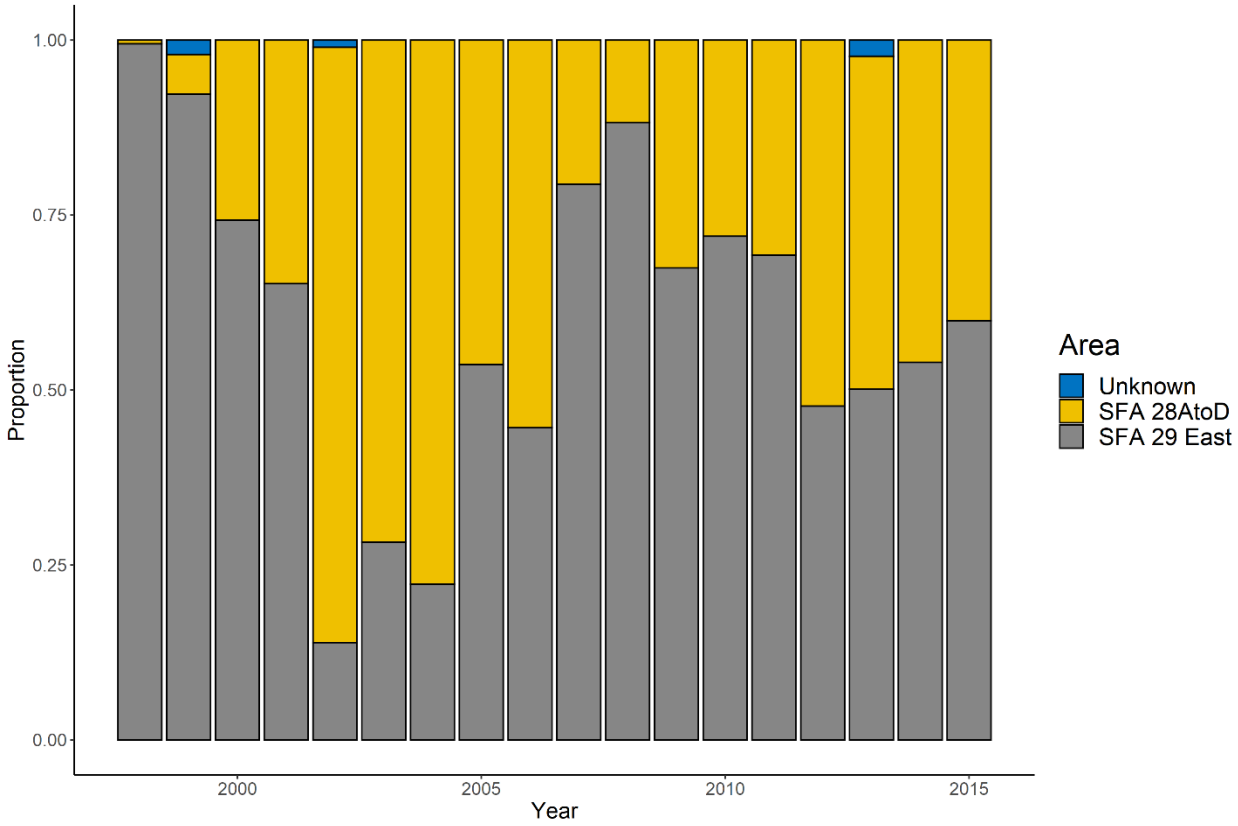

Figure 7. Annual proportion of estimated recreational scallop fishing removals (numbers of scallop) from recreational scallop fishing records in the DFO Maritimes Region. Proportional removals are from submitted reporting documents and are not adjusted for potential unreported catch.

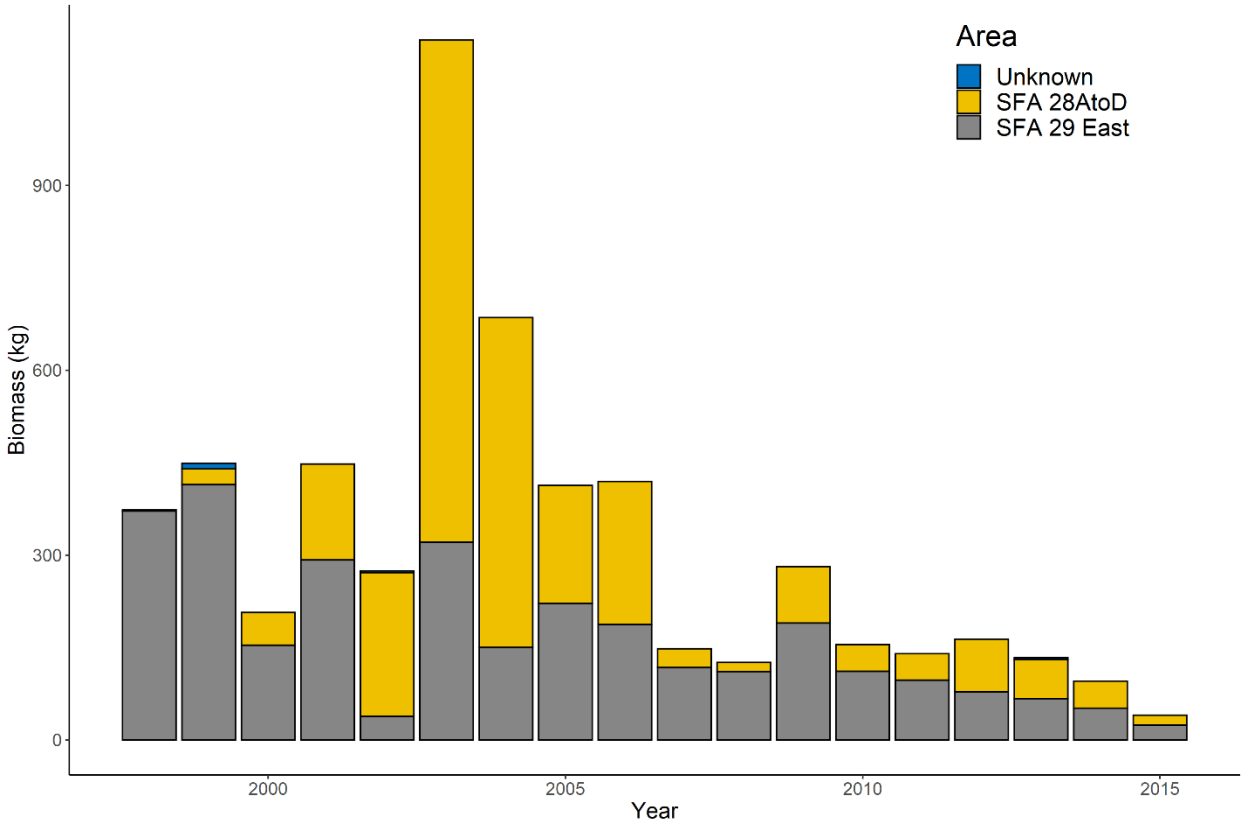

Figure 8. Overall estimated scallop biomass (meat) removals from recreational scallop fishing records in the DFO Maritimes Region. Estimated removals in meat weight were calculated as the reported number of scallops caught per reporting document assuming each scallop caught had a 20 gram meat weight. Estimated removals are not adjusted for potential unreported catch.

Appendix 1. Example of DFO Maritimes Region Recreational Scallop Conditions

DIVE, DIP, AND TONGS RECREATIONAL SCALLOP CONDITIONS

PURSUANT TO SUBSECTION 22.(1) OF THE FISHERY (GENERAL) REGULATIONS, THE FOLLOWING CONDITIONS ARE SPECIFIED FOR SCALLOP LICENCE NUMBER ^LICENCE WHILE RECREATIONALLY FISHING FOR SCALLOPS IN SCALLOP FISHING AREAS 28 A, B, C AND D (BAY OF FUNDY) AND SCALLOP FISHING AREA 29 (ATLANTIC COAST OF NOVA SCOTIA), (AS DEFINED IN SCHEDULE XV, PART IIA AND PART IIB OF THE ATLANTIC FISHERY REGULATIONS, 1985)

FISHING SEASONS AND GEAR TYPES

1. SUBJECT TO ANY VARIATION ORDERS OR SHELLFISH PROHIBITION (CONTAMINATION) ORDERS THAT ARE IN EFFECT, OR ANY NEW ONES THAT MAY BE ISSUED AND SUBJECT TO ITEMS 3 TO 17, RECREATIONAL FISHING FOR SCALLOPS IS AUTHORIZED DURING THE PERIOD BEGINNING JANUARY 01, 2016 AND ENDING DECEMBER 31, 2016.

CURRENT VARIATION AND PROHIBITION ORDERS ARE AVAILABLE ON THE FOLLOWING WEBSITE: HTTP://WWW.DFO-MPO.GC.CA/SHELLFISH-MOLLUSQUES/INDEX-ENG.HTM

SHELLFISH BIOTOXIN AND BACTERIOLOGICAL CLOSURES (PROHIBITION ORDERS) CAN ALSO BE OBTAINED FROM THE LOCAL FISHERIES AND OCEANS CANADA (DFO) OFFICE

PLEASE NOTE: IT IS UNSAFE TO CONSUME ANY PORTION OF A SEA SCALLOP EXCEPT THE ADUCTOR MUSCLE, IF THAT SCALLOP HAS BEEN CAUGHT AND RETAINED FROM AN AREA CLOSED BY A PROHIBITION ORDER.

PURSUANT TO THE FISHERIES ACT, RECREATIONAL FISHING MEANS UNDER THE AUTHORITY OF A LICENCE FOR PERSONAL USE OF THE FISH OR FOR SPORT. SUBJECT TO SUBSECTION 35 (2) OF THE FISHERY (GENERAL) REGULATIONS IT IS ILLEGAL TO SELL, BARTER OR TRADE ANY FISH CAUGHT UNDER THE AUTHORITY OF A RECREATIONAL LICENCE.

2. NO PERSON SHALL HAVE ON BOARD ANY VESSEL, MORE THAN ONE GEAR TYPE (DIPNET, DIVING GEAR, OR TONGS) AT ANY TIME WHILE ENGAGED IN RECREATIONAL SCALLOP FISHING.

SCALLOP FISHING AREA 28 A, B, C AND D (BAY OF FUNDY NORTH OF LATITUDE 43º40'NORTH)

DIVING, DIPNET AND TONGS

3 NO PERSON SHALL FISH FOR SCALLOPS BY ANY MEANS DURING THE TIMES SPECIFIED BELOW:

(A) IN THAT PORTION OF SCALLOP FISHING AREA 28A KNOWN AS THE ANNAPOLIS BASIN AND DESCRIBED IN SUBSECTION 63. (3) OF THE ATLANTIC FISHERY REGULATIONS, 1985, WHEN THIS AREA IS CLOSED TO SCALLOP FISHING (OPENS 0600 HOURS JANUARY 1, 2016 AND CLOSES WHEN A VARIATION ORDER IS ISSUED OR MARCH 31ST, 2016);

(B) IN THAT PORTION OF SCALLOP FISHING AREA 28B KNOWN AS THE NEW BRUNSWICK CONSERVATION ZONE FROM JANUARY 1, 2016 TO 0800 HOURS JANUARY 13, 2016 AND FROM APRIL 1, 2016 TO DECEMBER 31, 2016, BOUNDED BY A STRAIGHT LINE DRAWN BETWEEN THE FOLLOWING POINTS IN THE ORDER IN WHICH THEY ARE LISTED (OPEN FROM 0600 HOURS JANUARY 13, 2016 TO MARCH 31, 2016):

POINT	NORTH LATITUDE	WEST LONGITUDE
1	45° 11.755' N	65° 54.297' W
2	45° 11.736' N	65° 54.357' W
3	45° 11.734' N	65° 54.363' W
4	45° 11.713' N	65° 54.430' W
5	45° 10.944' N	65° 56.882' W
6	45° 8.372' N	66° 5.076' W
7	45° 5.771' N	66° 13.366' W
8	45° 1.505' N	66° 26.964' W
9	45° 1.505' N	66° 29.964' W
10	45° 0.738' N	66° 37.398' W
11	45° 0.321' N	66° 43.031' W
12	45° 0.005' N	66° 47.465' W
13	44° 58.005' N	66° 52.682' W
14	44° 56.945' N	66° 55.778' W
15	44° 56.131' N	66° 57.041' W
16	44° 54.623' N	66° 58.123' W
17	44° 55.702' N	66° 59.812' W
18	44° 56.685' N	67° 0.600' W
19	44° 57.235' N	67° 1.300' W
20	45° 4.310' N	67° 5.577' W
21	45° 4.470' N	67° 5.673' W
22	45° 4.555' N	67° 5.713' W
23	45° 6.755' N	67° 6.753' W
24	45° 7.937' N	67° 7.727' W
25	45° 8.753' N	67° 8.693' W
26	45° 8.994' N	67° 8.901' W
27	45° 9.039' N	67° 8.940' W
28	45° 9.057' N	67° 8.955' W
29	45° 9.280' N	67° 9.147' W
30	45° 9.377' N	67° 9.231' W

31	45° 9.553' N	67° 9.383' W
32	45° 9.601' N	67° 9.425' W
33	45° 9.655' N	67° 9.470' W
34	45° 9.700' N	67° 9.510' W
35	45° 9.716' N	67° 9.523' W
36	45° 9.719' N	67° 9.525' W
37	45° 9.720' N	67° 9.527' W
38	45° 9.880' N	67° 10.072' W
39	45° 9.923' N	67° 11.153' W
40	45° 9.935' N	67° 11.444' W
41	45° 9.972' N	67° 11.562' W
42	45° 10.282' N	67° 12.168' W
43	45° 10.285' N	67° 12.305' W
44	45° 10.160' N	67° 12.517' W
45	45° 10.078' N	67° 12.744' W
46	45° 12.672' N	67° 12.995' W
47	45° 14.471' N	67° 10.896' W
48	45° 11.465' N	66° 57.685' W
49	45° 8.645' N	66° 46.825' W
50	45° 12.425' N	66° 19.044' W
51	45° 16.325' N	66° 5.544' W
52	45° 18.005' N	65° 54.503' W
53	45° 11.755' N	65° 54.297' W

(C) IN THAT PORTION OF SCALLOP FISHING AREA 28B (CONSERVATION CLOSURE AROUND THE WOLVES), FROM JANUARY 1, 2016 TO 0800 HOURS JANUARY 13, 2016 AND FROM APRIL 1, 2016 TO DECEMBER 31, 2016, BOUNDED BY STRAIGHT LINES JOINING THE FOLLOWING POINTS IN THE ORDER IN WHICH THEY ARE LISTED(OPEN FROM 0600 HOURS JANUARY 13, 2016 TO MARCH 31, 2016):

POINT	NORTH LATITUDE	WEST LONGITUDE
1	45° 0.738' N	66° 37.398' W
2	44° 55.005' N	66° 42.964' W
3	44° 55.005' N	66° 48.631' W
4	45° 0.321' N	66° 43.031' W
5	45° 0.738' N	66° 37.398' W

(D) IN THAT PORTION OF SCALLOP FISHING AREA 28B (CONSERVATION CLOSURE AROUND CAMPOBELLO ISLAND) FROM JANUARY 1, 2016 TO 0600 HOURS JANUARY 13, 2016 AND FROM APRIL 1, 2016 TO DECEMBER 31, 2016, BOUNDED BY THE STRAIGHT LINES JOINING THE FOLLOWING POINTS IN THE ORDER IN WHICH THEY ARE LISTED:

POINT	NORTH LATITUDE	WEST LONGITUDE
1	44° 57' 23.68" N	66° 54' 12.80" W
2	44° 57' 30.28" N	66° 53' 57.90" W
3	44° 58' 00.28" N	66° 52' 40.89" W
4	44° 56' 35.28" N	66° 51' 57.89" W
5	44° 48' 51.55" N	66° 54' 56.65" W
6	44° 49' 31.80" N	66° 55' 57.30" W
7	44° 49' 43.90" N	66° 57' 55.10" W
8	44° 50' 30.02" N	66° 58' 29.50" W
9	44° 51' 03.50" N	66° 58' 29.20" W
10	44° 51' 33.00" N	66° 58' 48.00" W
11	44° 51' 35.50" N	66° 58' 42.00" W

WHEN THE GEOGRAPHIC BOUNDARY OF AN AREA IS EXPRESSED IN LATITUDE AND LONGITUDE (DDMM.MM), THOSE POINT REFERENCES ARE BASED ON THE GEODESIC SYSTEM NORTH AMERICAN DATUM 1983 (NAD83).

(E) IN THAT PORTION OF SCALLOP FISHING AREA 28B KNOWN AS BRANDY COVE, NEW BRUNSWICK FROM JANUARY 1, 2016 TO DECEMBER 31, 2016 BOUNDED BY THE COASTLINE OF NEW BRUNSWICK AND STRAIGHT LINES JOINING THE FOLLOWING POINTS IN THE ORDER THEY ARE LISTED (CLOSED ALL YEAR):

POINT	NORTH LATITUDE	WEST LONGITUDE
(1)	45 04'41.98"	67 04’59.29"
(2)	45 04'51.04"	67 05'24.25"
(3)	45 05'15.21"	67 05'06.78

SCALLOP FISHING AREA 29 (ATLANTIC COAST OF NOVA SCOTIA FROM YARMOUTH TO CAPE NORTH, CAPE BRETON)

FOR ITEMS 4 THROUGH TO 11 WHEN THE GEOGRAPHIC BOUNDARY OF AN AREA IS EXPRESSED IN LATITUDE AND LONGITUDE, THOSE POINT REFERENCES ARE BASED ON THE GEODESIC SYSTEM NORTH AMERICAN DATUM 1927 (NAD27).

DIVING

4. PENNANT POINT TO CAPE NORTH -

NO PERSON SHALL FISH FOR SCALLOPS BY MEANS OF DIVING DURING THE PERIOD FROM AUGUST 15, 2016 TO SEPTEMBER 15, 2016 IN THAT PORTION OF HALIFAX COUNTY EAST OF PENNANT POINT (LONGITUDE 63°39' W) TO CAPE NORTH, VICTORIA COUNTY (SEASON OPEN FROM JANUARY 1, 2016 TO AUGUST 14, 2016 AND FROM SEPTEMBER 16, 2016 TO DECEMBER 31, 2016).

5. HALIFAX COUNTY WEST OF PENNANT POINT AND LUNENBURG COUNTY -

(A) SUBJECT TO ITEMS 7 (B) AND 7 (C), NO PERSON SHALL FISH FOR SCALLOPS BY MEANS OF DIVING DURING THE PERIOD FROM MAY 1, 2016 TO OCTOBER 17, 2016 IN THAT PORTION OF HALIFAX COUNTY WEST OF PENNANT POINT (LONGITUDE 63°39' W) AND IN LUNENBURG COUNTY (SEASON OPEN FROM JANUARY 1, 2016 TO APRIL 30, 2016 AND THEN FROM OCTOBER 18, 2016 TO DECEMBER 31, 2016).

(B) NO PERSON SHALL FISH BY MEANS OF DIVING IN THAT PORTION OF LUNENBURG COUNTY INSIDE A LINE BEGINNING AT LATITUDE 44°20'27'' N, LONGITUDE 64°18'18'' W (MOSHER'S HEAD), THENCE RUNNING IN A STRAIGHT LINE TO LATITUDE 44°21'25'' N, LONGITUDE 64°19'14'' W (MASON'S POINT), (COMMONLY KNOWN AS BAYPORT) DURING THE PERIOD FROM JANUARY 1, 2016 TO DECEMBER 31, 2016 (CLOSED ALL YEAR).

(C) NO PERSON SHALL FISH BY MEANS OF DIVING IN THAT PORTION OF LUNENBURG COUNTY INSIDE A LINE BEGINNING AT LATITUDE 44°24'24'' N, LONGITUDE 64°15'11'' W (BLUFF HEAD), THENCE RUNNING IN A STRAIGHT LINE TO LATITUDE 44°23'39'' N, LONGITUDE 64°14'24'' W (KAULBACK'S HEAD), (COMMONLY KNOWN AS THE SECOND PENINSULA), DURING THE PERIOD FROM JANUARY 1, 2016 TO DECEMBER 31, 2016 (CLOSED ALL YEAR).

6. QUEENS COUNTY AND SHELBURNE COUNTY EAST OF BACARRO POINT -

NO PERSON SHALL FISH FOR SCALLOPS BY MEANS OF DIVING DURING THE PERIOD FROM JANUARY 1, 2016 TO MAY 31, 2016 AND DURING THE PERIOD NOVEMBER 1, 2016 TO DECEMBER 31, 2016 IN ALL OF QUEENS COUNTY AND IN THAT PORTION OF SHELBURNE COUNTY EAST OF BACARRO POINT (LONGITUDE 65°30' W) (SEASON OPEN FROM JUNE 1, 2016 TO OCTOBER 31, 2016).

7. BACARRO POINT, SHELBURNE COUNTY TO LATITUDE 43°40'NORTH, YARMOUTH COUNTY

FISHING FOR SCALLOPS BY MEANS OF DIVING IS PERMITTED IN THAT PORTION OF SHELBURNE COUNTY WEST OF BACARRO POINT (LONGITUDE 65°30' W) AND THAT PORTION OF YARMOUTH COUNTY SOUTH OF LATITUDE 43°40'NORTH DURING THE PERIOD JANUARY 1, 2016 TO DECEMBER 31, 2016 (SEASON OPEN ALL YEAR).

DIPNET

8. PENNANT POINT TO CAPE NORTH -

NO PERSON SHALL FISH FOR SCALLOPS BY MEANS OF DIPNET DURING THE PERIOD FROM AUGUST 15, 2016 TO SEPTEMBER 15, 2016 IN THAT PORTION OF HALIFAX COUNTY EAST OF PENNANT POINT (LONGITUDE 63°39' W) TO CAPE NORTH, VICTORIA COUNTY (SEASON OPEN FROM MAY 1, 2016 TO AUGUST 14, 2016 AND FROM SEPTEMBER 16, 2016 TO DECEMBER 31, 2016).

9. HALIFAX COUNTY WEST OF PENNANT POINT AND LUNENBURG COUNTY -

(A) SUBJECT TO ITEM 9 (B), NO PERSON SHALL FISH FOR SCALLOPS BY MEANS OF DIPNET DURING THE PERIOD FROM MAY 1, 2016 TO OCTOBER 17, 2016 IN THAT PORTION OF HALIFAX COUNTY WEST OF PENNANT POINT AND IN LUNENBURG COUNTY (LONGITUDE 63°39' W) (SEASON OPEN FROM JANUARY 1, 2016 TO APRIL 30, 2016 AND FROM OCTOBER 18, 2016 TO DECEMBER 31, 2016).

(B) NO PERSON SHALL FISH FOR SCALLOPS BY MEANS OF DIPNET DURING THE PERIOD FROM JANUARY 1, 2016 TO DECEMBER 31, 2016 IN THAT PORTION OF LUNENBURG COUNTY INSIDE A LINE BEGINNING AT LATITUDE 44°20'27'' N, LONGITUDE 64°18'18'' W (MOSHER'S HEAD), THENCE RUNNING IN A STRAIGHT LINE TO LATITUDE 44°21'25'' N, LONGITUDE 64°19'14'' W (MASON'S POINT), (COMMONLY KNOWN AS BAYPORT) (CLOSED ALL YEAR).

10. QUEENS COUNTY AND SHELBURNE COUNTY EAST OF BACARRO POINT -

NO PERSON SHALL FISH FOR SCALLOPS BY MEANS OF DIPNET DURING THE PERIOD FROM JANUARY 1, 2016 TO MAY 31, 2016 AND FROM NOVEMBER 1, 2016 TO DECEMBER 31, 2016 IN ALL OF QUEENS COUNTY AND THAT PORTION OF SHELBURNE COUNTY EAST OF BACARRO POINT (LONGITUDE 65°30' W) (SEASON OPEN FROM JUNE 1, 2016 TO OCTOBER 31, 2016).

11. BACARRO POINT, SHELBURNE COUNTY, TO LATITUDE 43°40'NORTH, YARMOUTH COUNTY -

FISHING FOR SCALLOPS BY MEANS OF DIPNET IS AUTHORIZED IN THAT PORTION OF SHELBURNE COUNTY WEST OF BACARRO POINT (LONGITUDE 65°30' W) AND THAT PORTION OF YARMOUTH COUNTY SOUTH OF LATITUDE 43°40' N, DURING THE PERIOD FROM JANUARY 1, 2016 TO DECEMBER 31, 2016 (SEASON OPEN ALL YEAR).

SIZE LIMIT

12. (A) IN SCALLOP FISHING AREA 28 A, B, C AND D (BAY OF FUNDY) NO PERSON SHALL CATCH AND

RETAIN, OR HAVE ON BOARD A VESSEL, ANY SCALLOP WITH THE SHELL HEIGHT LESS THAN 75 MM.

(B) IN THAT PORTION OF SCALLOP FISHING AREA 29 EAST OF PENNANT POINT (LONGITUDE 63°39' W)

TO CAPE NORTH, CAPE BRETON, NOVA SCOTIA, NO PERSON SHALL CATCH AND RETAIN, OR HAVE ON BOARD A VESSEL, ANY SCALLOP WITH THE SHELL HEIGHT LESS THAN 90MM.

(C) IN THAT PORTION OF SCALLOP FISHING AREA 29 WEST OF PENNANT POINT (LONGITUDE 63°39' W) NO PERSON SHALL CATCH AND RETAIN, OR HAVE ON BOARD A VESSEL, ANY SCALLOP WITH THE SHELL HEIGHT LESS THAN 100 MM.

FOR THE PURPOSES OF THIS LICENCE, SHELL HEIGHT MEANS THE DISTANCE FROM THE OUTER EDGE OF THE SHELL AT THE MIDPOINT OF THE HINGE TO THE FARTHEST POINT ON THE OUTER EDGE OF THE SHELL OPPOSITE TO THE HINGE, MEASURED IN A STRAIGHT LINE.

NOTE: (1) WHEN THE BOUNDARY OF AN AREA IS EXPRESSED IN GEOGRAPHIC COORDINATES, ALL GEOGRAPHICAL COORDINATES (LATITUDE AND LONGITUDE) ARE EXPRESSED IN THE NORTH AMERICAN DATUM 1927 (NAD 27) GEODETIC REFERENCE SYSTEM.

(2)WHEN THE BOUNDARY OF AN AREA IS EXPRESSED IN GRID REFERENCES, THOSE GRID REFERENCES ARE BASED ON THE UNIVERSAL TRANSVERSE MERCATOR GRID SYSTEM SET OUTON THE NATIONAL TOPOGRAPHIC SERIES MAPS, SCALE 1:50,000 PUBLISHED BY THE DEPARTMENT OF ENERGY, MINES AND RESOURCES. (NORTH AMERICAN DATUM 1927)

13. IN ALL SCALLOP FISHING AREAS (28 A, B, C, D AND 29), ALL SCALLOP MEATS (ADUCTOR MUSCLE) SHALL BE ATTACHED TO AT LEAST ONE HALF OF THE SHELL.

REPORTING REQUIREMENTS

14. PURSUANT TO SECTION 61 OF THE FISHERIES ACT, THE LICENCE HOLDER IS REQUIRED TO PROVIDE INFORMATION CONCERNING THE FISHING ACTIVITIES IN THE SCALLOP REPORTING DOCUMENT FOR RECREATIONAL SCALLOP FISHING ATTACHED AS SCHEDULE 1 (RECREATIONAL SCALLOP REPORTING DOCUMENT (2010-001)), ACCORDING TO THE INSTRUCTIONS ATTACHED IN SCHEDULE II (INSTRUCTIONS FOR COMPLETION OF THE RECREATIONAL SCALLOP REPORTING DOCUMENT (2010-001)). THE LICENCE HOLDER IS FURTHER REQUIRED TO SUPPLY DFO WITH A COPY OF ALL MONITORING DOCUMENT ENTRIES NO LATER THAN JANUARY 30, 2016.

15. THE LICENCE HOLDER IS REQUIRED TO PROVIDE ANY DOCUMENTS REQUESTED BY A FISHERY OFFICER IMMEDIATELY UPON DEMAND.

INCIDENTAL CATCH

16. ALL OTHER SPECIES OF FISH THAT ARE CAUGHT WHILE FISHING FOR SCALLOPS SHALL BE IMMEDIATELY RETURNED TO THE PLACE FROM WHICH IT WAS TAKEN; AND WHERE IT IS ALIVE, IN A MANNER THAT CAUSES IT THE LEAST HARM

GENERAL PROVISIONS

17. NO PERSON SHALL ENGAGE IN ANY COMMERCIAL FISHING OF ANY KIND WHILE ENGAGED IN RECREATIONAL SCALLOP FISHING.

18. THE LICENCE HOLDER REQUESTED AND RECEIVED THIS LICENCE CONDITION IN ENGLISH.

19. THE LICENCE HOLDER UNDERSTANDS AND ACKNOWLEDGES THESE CONDITIONS.

IMPORTANT

PLEASE NOTE: FOR INFORMATION REGARDING AREAS OPEN OR CLOSED TO FISHING, VARIATION ORDERS, AND FOR CLARIFICATION OF ANY PROVISIONS CONTAINED IN THIS LICENCE CONDITION, CONTACT THE LOCAL FISHERY OFFICER.

DAILY POSSESSION LIMITS DURING DIFFERENT TIMES OF THE YEAR ARE SUBJECT TO CHANGE BY VARIATION ORDER AND MAY NOT BE THE SAME LIMIT OR THE SAME FISHING SEASON IN ALL PORTIONS OF SFA 28 A, B, C AND D OR 29. THE POSSESSION LIMITS MAY ALSO BE DIFFERENT FOR DIFFERENT GEAR TYPES. ALL LICENCE HOLDERS ARE ADVISED TO CHECK WITH A FISHERY OFFICER IN THE AREA PRIOR TO FISHING.

SCHEDULE I

RECREATIONAL SCALLOP REPORTING DOCUMENT

SCALLOP FISHING AREA 28 A, B, C, D AND 29

YOU MUST COMPLETE THIS SCALLOP REPORTING DOCUMENT IF YOU ARE FISHING FOR SCALLOPS IN SCALLOP FISHING AREA (SFA) 28 A,B,C,D AND SFA 29 UNDER A RECREATIONAL SCALLOP FISHING LICENCE.

NAME: _____

LICENCE NUMBER: _____

YEAR: _____

DATE	SCALLOP FISHING AREA	GEAR	QUANTITY	COMMENTS
_____	_____	_____	_____	_____

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

SCHEDULE II RECREATIONAL SCALLOP REPORTING DOCUMENT INSTRUCTIONS

DATE: DATE, MONTH

SCALLOP FISHING AREA: LOCATION, WITH LATITUDE AND LONGITUDE

GEAR: FOR EACH DAY FISHED, INDICATE GEAR: DRAG, DIVING, DIP NET OR TONGS

QUANTITY: NUMBER OF SCALLOPS

COMMENTS

YOU MUST PROVIDE THIS COMPLETED REPORT TO **FISHERIES & OCEANS CANADA, P.O. BOX 1035, DARTMOUTH, NS, B2Y 4T3** NO LATER THAN TWENTY DAYS FROM THE CONCLUSION OF YOUR FISHING SEASON.

Appendix 2. Scallop Shell Height

Figure A1. Example of shell height measurement of scallop.

Appendix 3. Shell Height to Meat Weight Relationship

An understanding of the relationship between scallop shell height and meat weight is required to sustainably manage scallop populations. This relationship is required to convert between scallop numbers and biomass (meats). The science assessment frameworks for scallop in the DFO Maritimes Region account for scallop removals in terms of biomass (meat weight). To estimate removals from the recreational fishery in terms of biomass (meat weight), the shell height associated with the numbers removed by the recreational fishery must be assumed. Here we examine the relationship between shell height and meat weight for Sea Scallop (*Placopecten magellanicus*) collected in the Bay of Fundy from 1998 to 2015 from June to August.

In the Maritimes Region of DFO, detailed shell height and meat weight data for the Sea Scallop has been regularly collected from annual scallop surveys (Glass 2017). For the Bay of Fundy region, these data are modeled using a generalized linear mixed effect model using a Gamma family with a log link, tow as the grouping variable, and depth as a covariate (Nasmith et al. 2016). Here we used the same approach as in Nasmith et al. (2016) but the random effect was tow within year.

The modelled meat weight shell height relationship from the model fit to all years (1998 to 2015) for a depth of 20 m is plotted against each year of data in Figure A2.

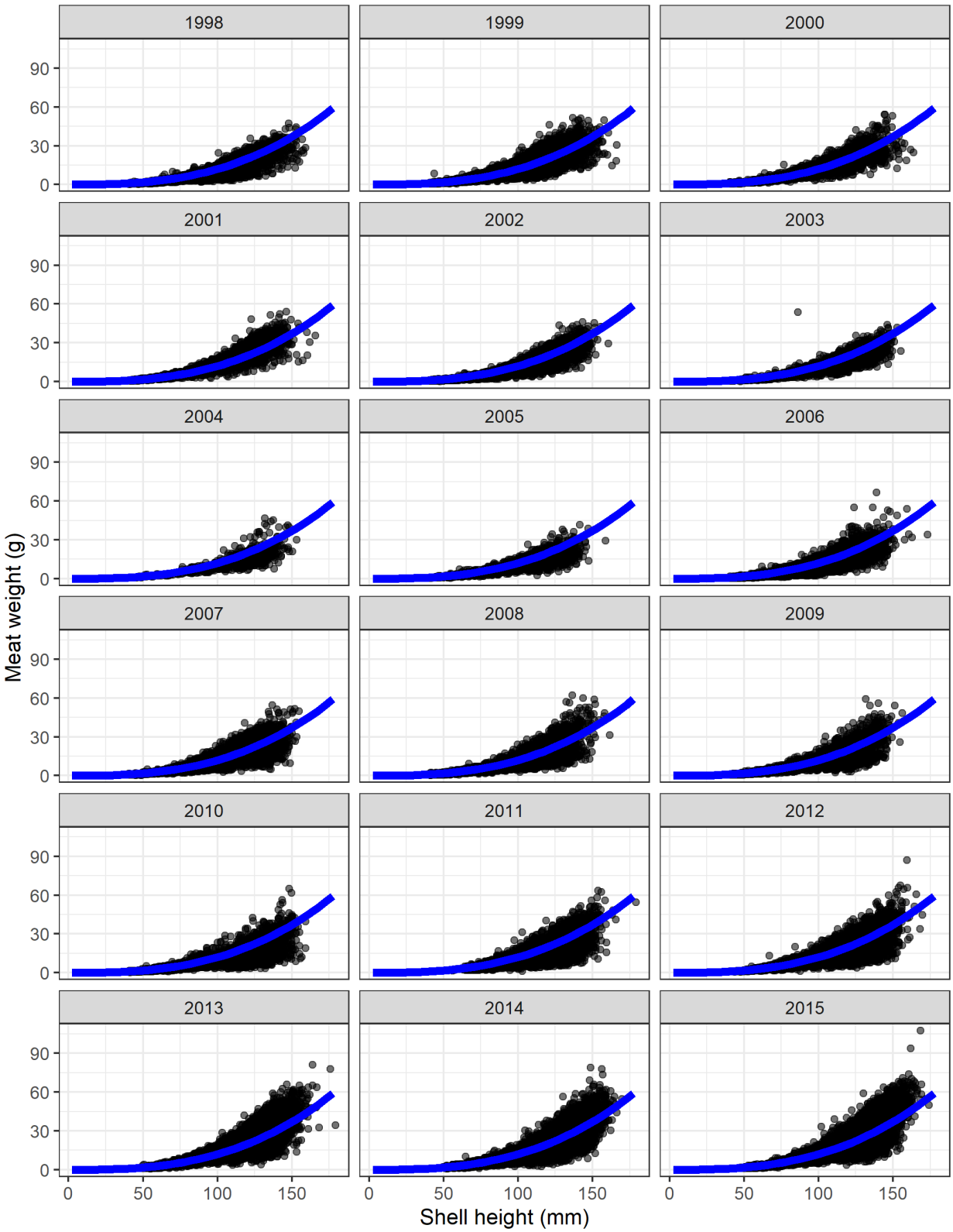

Figure A2. Modelled shell height to meat weight relationship from 1998 to 2015 from June to August at 20 m (blue line) relative to individual year samples.