



New England Fishery Management Council

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MEMORANDUM

DATE: September 11, 2017
TO: Groundfish PDT
FROM: Scallop PDT
SUBJECT: **Scallop Fishery Catch of Georges Bank Winter Flounder**

In response to a request from the Groundfish Plan Development Team, the Scallop PDT reviewed the 2017 calendar year catch estimate of Georges Bank winter flounder (GB WF) by the scallop fishery, prepared by GARFO staff.

This memo is intended to inform the Groundfish PDT's and Council's consideration of estimated scallop fishery bycatch of Georges Bank winter flounder. The PDT understands that this information may be used in the bridge year catch assumption for GB WF projections that are part of the 2017 groundfish updates. The scallop PDT also notes that the scallop fishery's projected catch of GB winter flounder directly impacts the groundfish sub-ACL, and subsequent sector allocations. The Scallop PDT has provided the following data to assist the groundfish PDT in its consideration of calendar year catch estimates and 'other' sub-component catch estimates.

2017 Calendar Year Catch Estimate:

1. GARFO staff estimated the 2017 calendar year catch estimate of Georges Bank winter flounder in the scallop fishery to be 119.5mt, which was based on the 2012 estimated catch of GB winter flounder by the scallop fishery. The calendar year estimate of catch does not stratify scallop fishery discards by open areas and access areas. The estimate is based on a discard ratio from observed trips in the GB winter flounder stock area, multiplied by the kept all round weight from the stock area. The d/K ratio used for the 2012 estimate was 0.0024, applied to ~ 110,000,000 lbs of Kall (13 million lbs of dressed meat weight).

Key points from scallop PDT discussion:

2. The scallop PDT recommends adjusting the 119.5mt catch estimate for 2017 for the following reasons:
 - a. The Scallop PDT estimated the scallop fishery's projected bycatch of GB winter flounder to be 63.27 mt in FY2017 (Table 1). This estimate was developed using projected scallop landings from GB open areas and Closed Area II as the Kall for FY2017. Landings from open and closed areas were stratified to account for differences in bycatch rates.
 - i. Closed Area II: The annual cumulative d/K ratio from FY2014 for Closed Area II was used. This value was the highest d/K in the time

- series considered, and 2014 was the last time this area was open (Table 3). A single point estimate (2014) was used because it represented the highest value in the time series, and is the most recent data available.
- ii. GB Open: An average of d/K ratios from 2014 – 2016 was used (0.007). A three-year average was used in favor of a single point estimate because the FY2016 d/K ratio was the lowest in the time series, and multiple years of data may be more representative of fishery interactions (Table 3).
- b. Spatial management on Georges Bank during CY 2017 does not reflect fishery access in 2012. For example, Closed Area I Access Area was closed in FY 2016 and FY 2017, thus there would be no fishing effort or removals from this area during this time period.
 - c. When discards are stratified by access areas and open areas within the GB winter flounder stock area (522, 525, 561, 562), the highest d/K ratios are associated with Closed Area I. The highest annual d/K from CA I, CA II, and GB open areas was CA I in 2012.
 - d. The 2012 estimate assumed ~ 13 million lbs of scallop meat weight removals from Georges Bank. The projected FY2017 scallop landings estimates (dressed wt) for Georges Bank open areas is ~4.9 million lbs, while CA II landings estimates are ~ 5.7 million lbs. Therefore, scallop fishery landings from Georges Bank (and subsequently K-all) are projected to be 2.3 million lbs less than they were in 2012. As noted above, Closed Area I will be closed for all of CY 2017. Closed Area II was closed in FY 2016, and reopened in March of 2017. Also, the Council has closed a portion of the southeast parts of eastern Georges Bank, known as Closed Area II extension, to the scallop fishery in FY 2016 and FY 2017. This area would have been considered open area in 2012.
 - e. VMS fishery data of scallop effort on Georges Bank for all of FY 2016 and part of FY 2017 is shown in Figure 1.

Table 1 - Estimated scallop fishery catch of Georges Bank winter flounder for FY2017.

	FY2017 Scallop Landings Estimate (live wt) from FW28 Final SAMS model run	d/K	WF Bycatch (lbs)	WF Bycatch (mt)
GB Open	41,099,765	0.0007	28,770	13.05
Closed Area II	48,133,371	0.0023	110,707	50.22
Total	89,233,137		139,477	63.27
Note: the d/K ratio used for GB open is a three year average from 2014 - 2016. The d/K ratio for CAII is from FY2014, the last time this area was open.				

Additional Considerations:

3. The spatial management component of the scallop FMP is dynamic, and may change annually. In addition to the opening and closing of what can be considered traditional access areas on Georges Bank (Closed Area I and Closed Area II), spatial management considers where fishing effort may occur, and human behavior can be difficult to predict.
4. The Scallop PDT notes the complexity of spatial management in the Scallop FMP, and how the FMP goal of optimizing yield through rotational management can create large swings in bycatch estimates.
5. The scallop fishery's catch of GB WF is broadly distributed across the fishery within the GB WF stock area (same footprint as GB YT), which includes statistical reporting areas 522, 525, 561, and 562 (Figure 3). From FY2007-2016, winter flounder were observed in 69% of observed CA I AA hauls, while 19% of CA II AA hauls and 28% of Georges Bank open-area hauls observed winter flounder. Observed catch rates of GB winter flounder (lbs per haul) by Limited Access vessels during this time also appear to be consistently higher in CA I AA than in other areas of Georges Bank.
6. A review of the observed catch of winter flounder and scallops, stratified by year and area (CA I, CA II, and open areas) in the GB WF stock area shows the highest d/K estimates were in CA I.
7. Closed Area I Outlook: Recent scallop surveys of the area have not detected strong recruitment in the current CA I access area. Surveys have detected a set of older scallops to the north of the CA I access area, inside an existing habitat closure. This area, known as "the sliver," may open as part of the ongoing OHA2 amendment process. NOAA Fisheries has not published a proposed rule on this action.
8. The management regime of GB yellowtail, GB winter flounder, and Northern windowpane are all different for the scallop fishery (Table 1).
9. The scallop fishery can retain and land Georges Bank winter flounder when on access area and open area trips. Current regulations allow for scallop vessels on declared access area trips with multispecies permits to land up to 1,000 lbs of regulated groundfish, with restrictions on GB yellowtail, cod, and haddock. Scallop vessels with a multispecies permit may possess up to 300 lbs of regulated groundfish stocks while fishing open areas. GB winter flounder landings by the scallop fishery are minimal (Table 4).
10. Scallop fishery catch of GB winter flounder has been $\leq 3\%$ of the overall ACL from FY2011 – FY2015.
11. Several fisheries interact with GB WF, including the Canadian scallop and groundfish fisheries, and the US small mesh fisheries on Georges Bank.
12. Georges Bank winter flounder catch projections could be developed for the scallop fishery for open and access areas, similar to annual projections for yellowtail and windowpane flounder. This may be appropriate in years when the fishery is expected to have access area trips on Georges Bank.

Table 2 - Flatfish management regimes for stocks occurring on Georges Bank

	Georges Bank Yellowtail		Georges Bank Winter Flounder		Northern Windowpane	
	Groundfish	Scallops	Groundfish	Scallops	Groundfish	Scallops
Allocated in sub-ACL?	Yes	Yes	Yes	No	Yes	Yes
Groundfish Sector level allocation?	Yes		Yes		No	
Possession Prohibited?	No	Yes	No	No	Yes	Yes
Canadian Catch accounted for in setting ACL?	Yes, negotiated (TRAC/TMGC)		Yes, accounted for before setting groundfish ACL		No	

Table 3 - Winter flounder d/K ratios by year for access areas and open area

	Observed Hauls	WF Catch (lb. discard and kept)	Scallops kept (round weight)	d/K	Winter Flounder Bycatch Rate (lb. per haul)
CAI	4,386	39,896	7,508,712	0.0053	9.1
2007	1,347	11,087	3,422,872	0.0032	8.2
2011	1,130	13,032	2,520,358	0.0052	11.5
2012	1,736	15,172	1,456,243	0.0104	8.7
2013	173	605	109,240	0.0055	3.5
CAII	7,295	9,156	10,649,019	0.0009	1.3
2009	1,007	828	2,195,338	0.0004	0.8
2011	985	1,111	1,711,433	0.0006	1.1
2012	2,254	2,417	3,435,874	0.0007	1.1
2013	956	480	1,397,812	0.0003	0.5
2014	1,900	3,985	1,749,733	0.0023	2.1
2015	193	335	158,828	0.0021	1.7
Open	11,159	23,360	13,439,620	0.0017	2.1
2007	785	5,493	663,756	0.0083	7.0
2008	752	4,585	577,758	0.0079	6.1
2009	454	2,668	780,161	0.0034	5.9
2010	259	1,190	639,671	0.0019	4.6
2011	446	935	878,956	0.0011	2.1
2012	894	2,251	2,023,736	0.0011	2.5
2013	1,702	2,705	2,541,663	0.0011	1.6
2014	1,191	1,458	1,093,787	0.0013	1.2
2015	2,837	1,711	2,645,775	0.0006	0.6
2016	1,839	365	1,594,358	0.0002	0.2

Table 4 - Percentage of observed hauls with GB winter flounder, stratified by area, from FY2007 - present.

Program Code	Hauls		
	w/o winter flounder	w/winter flounder	Total
All	21,029	8,251	29,280
	72%	28%	
Open	8,586	2,573	11,159
	77%	23%	
CAII AA	5,929	1,366	7,295
	81%	19%	
CAI AA	1,364	3,022	4,386
	31%	69%	

Table 5 - The observed percentage of discarded and kept GB winter flounder catch by the Limited Access scallop fishery in Closed Area I AA, Closed Area II AA, and on Georges Bank open-area trips.

	GB WF Discard	GB WF Kept	Total GB WF Catch (lb.)
CAI			
2007	98%	2%	11,087
2011	96%	4%	13,032
2012	95%	5%	15,172
2013	100%	0%	605
CAII			
2009	98%	2%	828
2011	90%	10%	1,111
2012	76%	24%	2,417
2013	100%	0%	480
2014	92%	8%	3,985
2015	34%	66%	335
Open			
2007	100%	0%	5,493
2008	92%	8%	4,585
2009	100%	0%	2,668
2010	99%	1%	1,190
2011	100%	0%	935
2012	92%	8%	2,251
2013	100%	0%	2,705
2014	100%	0%	1,458
2015	98%	2%	1,711
2016	89%	11%	365

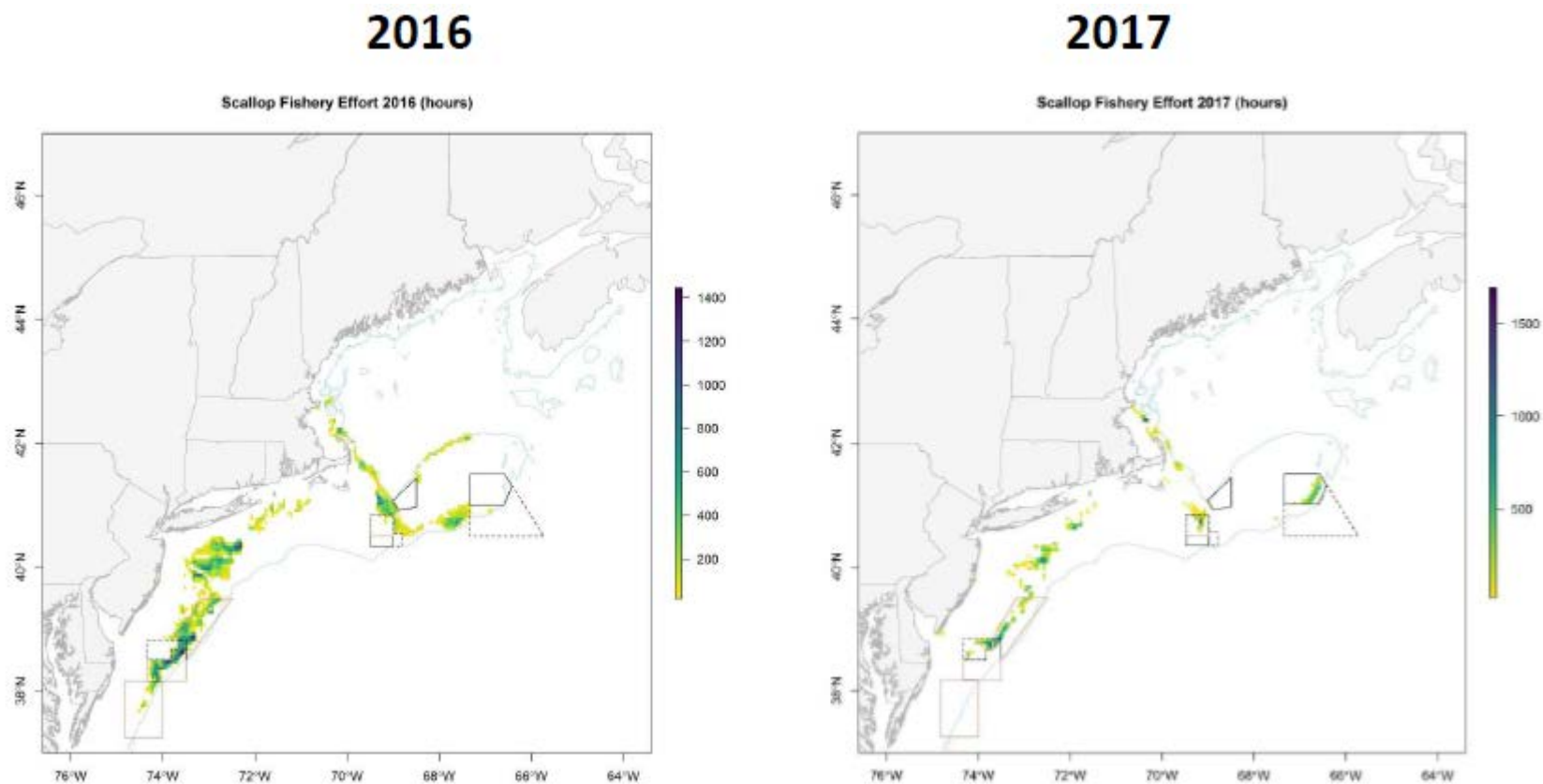
Table 6 - Summary of Scallop Fishery Management on Georges Bank, including estimates of GB winter flounder catch.

FY	Action	LA DAS (FT)	FT LA AA trips	CA I AA	CA II AA	Notes re: AA and other management	Scallop landing of WF (mt)	Scallop discard of WF (mt)	Total Scallop catch of WF (mt)
2011	FW22	32	4 (2 MA)	1.5 trips (all 313 vessels get 1 trip, 156 vessels get add. trip)	0.5 trips (157 vessels; 18K lbs/trip)		0.9	37.5	38.4
2012	FW22	34	4	1 trip after EA May 2012 (157 vessels get initial trip per FW22 and 156 get CA1 trip converted from initial DMV trip)	1 trip (313 vessels; 18K lbs/trip)		5.4	119.5	124.9
2013	FW24	33	2	118 trips (FW25 later allows unused trips to carryover to future year)	182 trips (13K lbs/trip)	Seasonal closure of CAII Aug 15 – Nov 15;	0.7	24.2	25
2014	FW25	31	2	Closed	197 trips (12K lbs/trip)	Seasonal closure of CAII Aug 15 – Nov 15;	0.3	37.2	37.5
2015	FW26	30.86	51K lbs to MAAA	Closed	Closed		0.6	16.3	16.9
2016	FW27	34.55	3 (51K lbs to MAAA)	Closed	Closed	‘CAII Ext.’ closure to protect small scallops			
2017	FW28	30.41	4 (18k each)	Closed	1 trip (313 vessels; 18k lbs trip)	‘CAII Ext.’ closure to protect small scallops, no RSA comp. fishing in CAII			

Table 7 - Summary of recent Georges Bank winter flounder ACLs and catch by scallop and groundfish fisheries.

FY	Total ACL	Total Catch	% of Total ACL caught	GF ACL	GF catch	% of Groundfish ACL Caught	Scallop landing (mt)	Scallop discard (mt)	Total Scallop catch (mt)	Scallop catch as % of Total ACL	Scallop Catch as % of Total Catch
2011	2,118	1,984.80	94%	2,007	1,925.40	96%	0.9	37.5	38.4	2%	2%
2012	3,575	2,057.60	58%	3,387	1,931.70	57%	5.4	119.5	124.9	3%	6%
2013	3,641	1,763.10	48%	3,528	1,722.00	49%	0.7	24.2	25	1%	1%
2014	3,493	1,193.20	34%	3,385	1,149.30	34%	0.3	37.2	37.5	1%	3%
2015	1,952	886.5	45%	1,891	868.8	46%	0.6	16.3	16.9	1%	2%
2016	650			590	422.6	72%					
2017	683			620	220.1	36%					
2018	683			620							

Figure 1 - Comparison of scallop fishery effort in FY 2016 and FY 2017 using VMS data from LA and LAGC component.



Note: The Sum of polls x time (~30 minutes/poll) equals total hours. A speed filter of ≤ 2 kts and ≤ 5 kts was applied to denote fishing activity. Maps are configured using 3-minute squares. Only square with ≥ 3 unique vessels/square are shown.

Figure 2 – Scallop landings from the Georges Bank winter flounder stock area by reporting area, open areas and access areas, and fishing year.

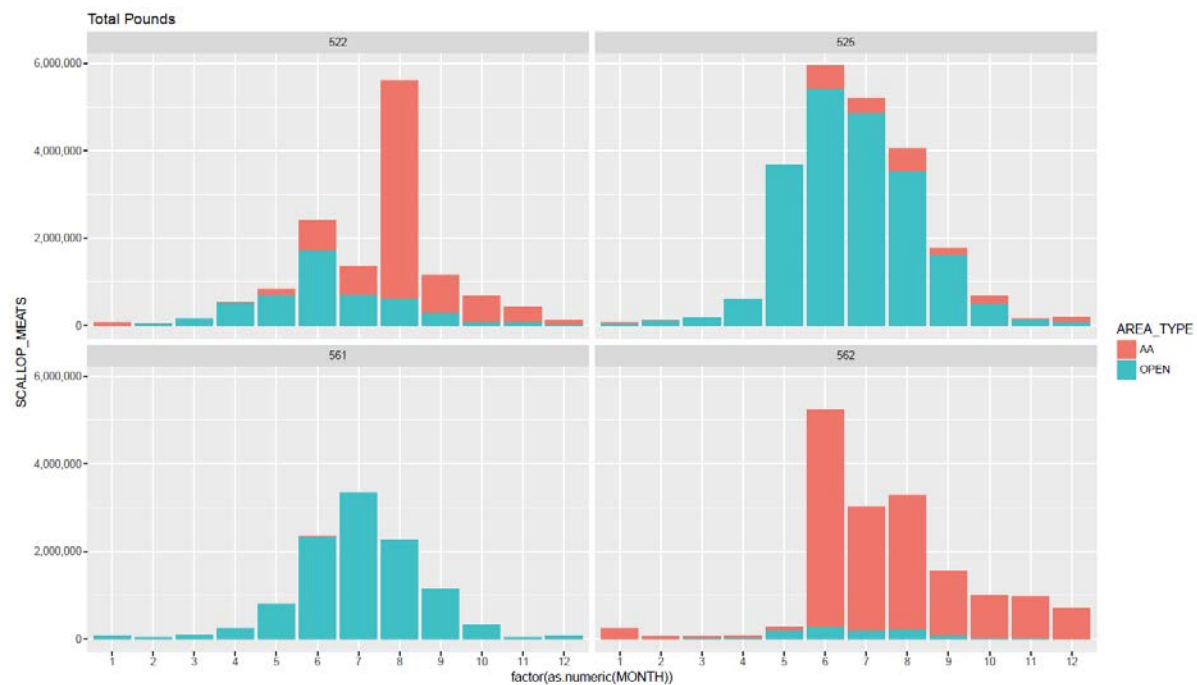


Figure 3 – Presence and absence of Georges Bank winter flounder in observed hauls by the Limited Access component of the scallop fishery, FY2007 - present.

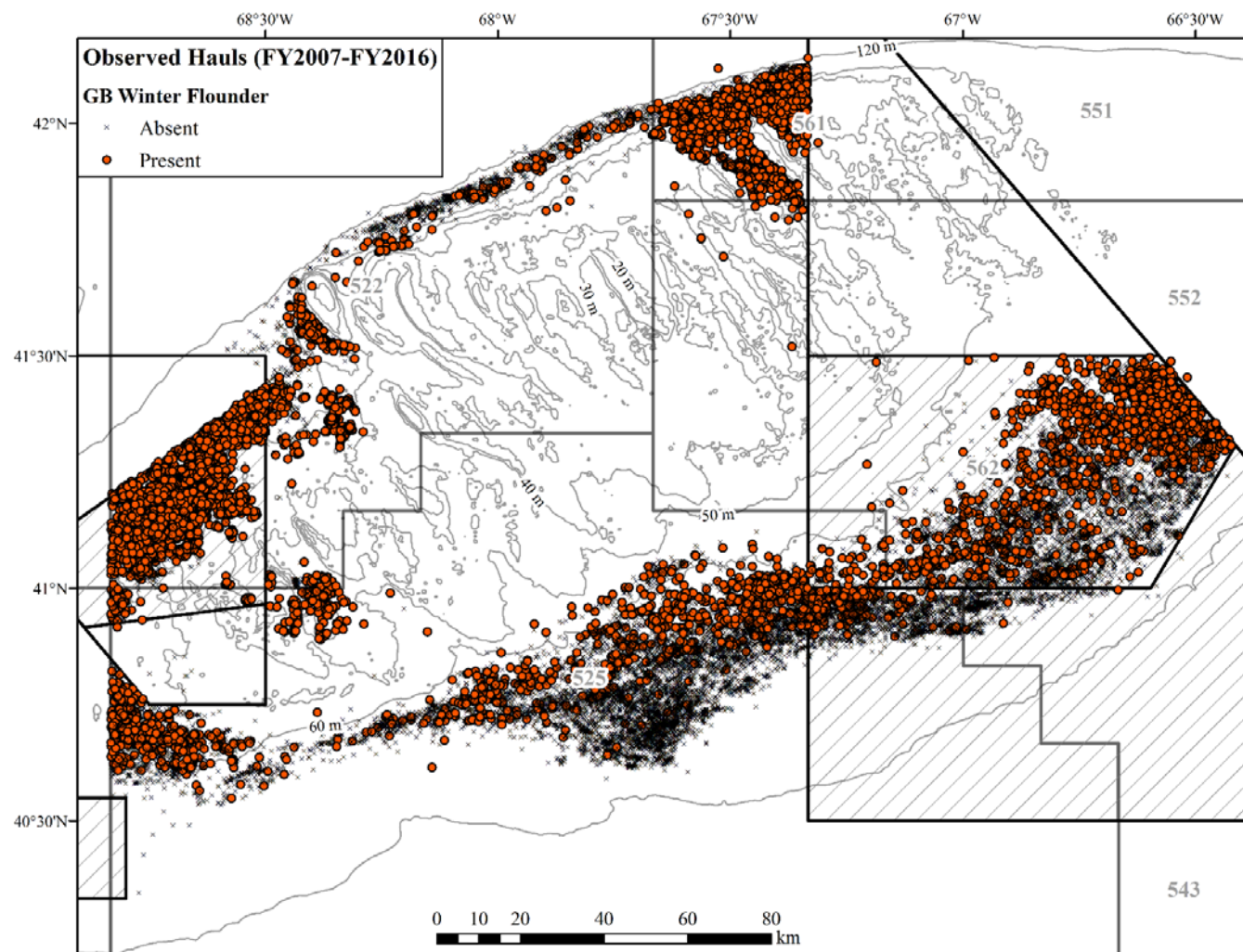


Figure 4 - The weight of GB winter flounder catches (discarded and kept lb.) in observed Limited Access hauls from FY2007-FY2016.

