

DRAFT

White Paper on Inshore Scallop Fishing

Fishing patterns of Limited Access and
Limited Access General Category
Vessels and Potential Measures to
Stabilize Inshore Catches

March 25, 2015 – For Scallop AP and Committee Meetings

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1.0 BACKGROUND

At a handful of Scallop Advisory Panel meetings several members have raised concerns about inshore areas being fished more heavily when catch rates are higher. Scallop populations naturally vary from year to year, especially inshore. Recruitment success is dependent on numerous factors including fishing mortality, concentration of larvae, availability of food, predators, and other environmental conditions. Some fluctuation in annual catch is expected, but concerns have been raised that this variability potentially impacts segments of the scallop fishery differently. Overall, limited access general category (LAGC) vessels are smaller and tend to fish closer to shore. Therefore, these vessels are generally more limited in terms of their ability to fish in high catch rate areas compared to the limited access (LA) fleet that is typically larger and more mobile. Furthermore, the LAGC fishery is quite diverse in terms of fishing behavior including gear types, daily catches, and seasonal activity; therefore, there may be additional constraints and variation that should be considered.

Limited access general category vessels are also managed differently than the limited access fishery. LAGC vessels have an individual transferrable quota (ITQ) with a possession limit, which was 400 pounds for many years, and was increased more recently to 600 pounds in Amendment 15 (July 2011). The limited access fishery is not an ITQ fishery; instead, these vessels have a specific number of days to fish in open areas, and poundage in designated access areas. There is no possession limit for these vessels when fishing in open areas, but there is a possession limit when fishing in access areas, but it is set much higher (ranging from 12,000 to 18,000 pounds). Therefore, fishing trips on limited access vessels are typically 5-10 days, while trips on LAGC vessels are closer to one day.

Many factors are considered when a fishing captain decides where to fish and for how long. However, due to vessel constraints and possession limits, LAGC vessels may not be able to fish in higher catch rate areas if they are farther offshore. Historically, the general category fishery was an open access fishery and activity levels varied greatly depending on availability of resource closer to shore and the price of scallops. However, now the fishery is limited to a much smaller number of participants and fishing effort is constrained by the ITQ system. Therefore, the Council decided to have a workshop in 2015 to enable users of the resource to articulate concerns and discuss if there are potential solutions to better stabilize inshore catches. Following the workshop, the Council will then discuss next steps, potentially at the June or September 2015 Council meeting.

2.0 PROBLEM STATEMENT AND POTENTIAL GOALS AND OBJECTIVES

To be completed after Scallop AP and Committee Meeting in late March/early April.

Can the AP summarize the main issues?

If a future action is developed what would the goals and objectives be?

3.0 SUMMARY OF SCALLOP FISHERIES MANAGEMENT AND EVOLUTION OF THE GENERAL CATEGORY FISHERY

3.1 SUMMARY OF MANAGEMENT HISTORY

The Council established the Scallop FMP in 1982. A number of Amendments and Framework Adjustments have been implemented since that time to adjust the original plan. Amendment 4 was implemented in 1994 and introduced major changes in scallop management, including a limited access program to stop the influx of new vessels and a day-at-sea (DAS) reduction plan to reduce mortality and prevent recruitment overfishing. Amendment 4 also created the general category scallop permit for vessels that did not qualify for a limited access permit. Although originally created for an incidental catch of scallops in other fisheries, and for small-scale directed fisheries, the general category fishery and fleet has evolved since its creation in 1994.

Starting in 1999 there was considerable growth in fishing effort and landings by vessels with general category permits, primarily as a result of resource recovery and higher scallop prices. Therefore, the Council initiated Amendment 11 in 2005 to consider a range of measures to control fishing mortality by this component of the fishery, improving the ability of this plan to prevent overfishing of the scallop resource overall. Ultimately an ITQ program was adopted for vessels that qualified for a limited access general category permit. The overall intent of Amendment 11 was to stabilize capacity and prevent overfishing from the general category fishery. The vision for the general category fishery post Amendment 11 is a fleet of relatively small vessels, with possession limits to maintain the historical character of this fleet and provide opportunities to various participants including vessels from smaller coastal communities.

Amendment 11 was implemented before the start of the 2008 fishing year, but the full ITQ program was not effective until fishing year 2010. Since Amendment 11 there have been a handful of adjustments made to the IFQ program including partial leasing and sub-leasing during the fishing year, increasing the possession limit, allowing ITQ rollover, several adjustments to permit provisions, and several changes to the VMS and industry funded observer programs for general category vessels.

3.2 SUMMARY OF LIMITED ACCESS AND GENERAL CATEGORY FISHERIES

3.2.1 Permit Information

Table 1 shows the number of limited access vessels by permit category from 2003 to 2014. The fishery is primarily full-time, with a small number of part-time permits. There are no occasional permits left in the fishery since 2009 because these were converted to part-time small dredge. Of these permits, the majority is dredge gear, with a small number of full-time small dredge and full-time trawl permit holders. The permit numbers shown in Table 1 include duplicate entries because replacement vessels receive new permit numbers and when a vessel is sold, the new owner would get a new permit number. The unique vessels with right-id numbers are shown in Table 3 for 2008-2012. For example, only 347 out of 356 permits in 2008 belonged to unique vessels. The number of LAGC permits held by limited access vessels are shown in Table 2.

Table 1. Number of limited access vessels by permit category and gear

Permit category	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Full-time	238	242	248	255	256	254	259	252	253	257	254	251
Full-time small dredge	39	48	57	59	63	56	55	54	53	53	52	52
Full-time net permit	16	15	19	14	12	11	11	11	11	11	12	12
Total full-time	293	305	324	328	331	321	326	317	316	321	318	315
Part-time	10	4	3	3	2	2	2	2	2	2	2	2
Part-time small dredge	19	26	30	34	35	32	34	34	32	33	32	33
Part-time trawl	8	3	-	-	-	-	-	-	-	-	-	-
Total part-time	37	33	33	37	37	34	37	38	34	35	34	35
Occasional	3	3	1	2	1	1	-	-	-	-	-	-
Occasional trawl	8	5	5	-	-	-	-	-	-	-	-	-
Total occasional	11	8	6	2	1	1	0	0	0	0	0	0
Total Limited access	342	346	363	367	369	356	361	353	351	356	352	350

Note: The permit numbers above include duplicate entries because replacement vessels receive new permit numbers and when a vessel is sold, the new owner would get a new permit number.

Table 2. LAGC permits held by limited access vessels by permit category

AP-YEAR	IFQ	NGOM	Incidental
2008	41	19	87
2009	43	28	116
2010	40	28	114
2011	42	28	114
2012	41	27	119
2013	41	27	118
2014	40	27	115

Note: The permit numbers above include duplicate entries because replacement vessels receive new permit numbers and when a vessel is sold, the new owner would get a new permit number. 2014 numbers are preliminary.

Table 3. Scallop Permits by unique right-id and category by application year

Permit category	2008	2009-2014
Full-time	250	250
Full-time small dredge	52	52
Full-time net boat	11	11
Total full-time	313	313
Part-time	2	2
Part-time small dredge	31	32
Part-time trawl	0	0
Total part-time	33	34
Occasional	1	0
Total Limited access	347	347

Table 4 shows that the number of general category permits, including permits held by LA vessels, declined considerably after 2007 as a result of the Amendment 11 provisions. Although not all vessels with general category permits were active in the years preceding 2008, there is no question that the number of vessels (and owners) that hold a limited access general category permit under the Amendment 11 regulations are less than the number of general category vessels that were active prior to 2008 (Table 4). The numbers of LAGC permits by category, excluding the LA vessels that also have an LAGC permit, are shown in Table 5. The number of permits includes the permits of the replacement vessels within a given year.

Table 4. General category permit before and after Amendment 11 implementation (including the LAGC permits by Limited access vessels)

AP_YEAR	General category permit (up to 2008)	Number of permits qualify under Amendment 11 program			Grand Total
		Limited access general category (A)	Limited access NGOM permit (B)	Incidental catch permit (C)	
2000	2263				2263
2001	2378				2378
2002	2512				2512
2003	2574				2574
2004	2827				2827
2005	2950				2950
2006	2712				2712
2007	2493				2493
2008		342	99	277	718
2009		344	127	301	772
2010		333	122	285	740
2011		288	103	279	670
2012		290	110	280	680
2013		278	97	282	657
2014		263	104	267	634

Table 5. LAGC permits after Amendment 11 implementation (excluding the LAGC permits held by limited access vessels)

AP-YEAR	IFQ	NGOM	Incidental
2008	280	79	173
2009	304	100	190
2010	293	94	172
2011	248	82	166
2012	237	70	163
2013	222	77	149
2014	204	68	136

Note: 2014 is preliminary.

The trends in the estimated number of active limited access vessels are shown in Table 6 by permit plan. Table 7 shows the number of active LAGC vessels by permit category excluding those LA vessels which have both LA and LAGC permits and indicates that there quota has been fished by fewer vessels in 2013 compared to the earlier years.

Table 6. Active vessels by fishyear and permit category (Vessels that landed any amount of scallops, Dealer Data)

Fishyear	FT	PT	FTSD	PTSD	FTTRW	PTTRW	OCTRW	Grand Total
1994	188	9	3	4	24	17	13	258
1995	185	9	2	2	24	12	8	242
1996	183	11	2	5	22	17	6	246
1997	176	8		4	18	16	3	225
1998	182	5	1	2	19	16	2	227
1999	196	8	1	3	14	16	6	244
2000	206	10	1	3	16	16	6	258
2001	212	12	11	6	16	17	6	280
2002	217	12	24	7	16	9	5	290
2003	225	10	30	12	15	6	3	301
2004	230	4	42	18	13	3	3	313
2005	234	3	50	23	12		2	324
2006	243	2	49	28	12			334
2007	248	2	53	30	11			344
2008	243	2	52	28	11			336
2009	244	2	53	31	11			341
2010	249	2	52	32	11			346
2011	250	2	53	32	11			348
2012	252	2	52	30	11			347
2013	250	2	52	30	11			345
2014	241	2	50	28	10			331

Table 7. Number of active vessels with LAGC permits by permit category (VTR data, excludes LA vessels with LAGC permits)

Fishyear	IFQ	INCIDENTAL	NGOM	Grand Total
2009	199	92	14	305
2010	139	76	13	228
2011	138	76	12	226
2012	126	82	19	227
2013	118	70	26	214
2014	111	39	20	170

*Note: The numbers for 2014 is up to September.

3.2.2 Landings and Revenue

For the first time since 2001, the landings from the northeast sea scallop fishery fell to 40 million pounds in 2013 fishing year (Figure 1 and Table 10). In the previous 9 years, the scallop landings exceeded 50 million pounds each year peaking over 60 million lb. in 2004 fishing year. The recovery of the scallop resource and consequent increase in landings and revenues was striking given that average scallop landings per year were below 16 million pounds during the 1994-1998 fishing years, less than one-third of the average landings during 2004-2012 and only about 40% of the landings in the 2013 fishing year.

The increase in the abundance of scallops coupled with higher scallop prices increased the profitability of fishing for scallops by the general category vessels. As a result, general category landings increased from less than 0.4 million pounds during the 1994-1998 fishing years to more than 4 million pounds during the fishing years 2005-2009, peaking at 7 million pounds in 2005 or 13.5% of the total scallop landings (Table 11). The landings by the general category vessels declined after 2009 as a result of the Amendment 11 implementation that restricts TAC for the limited access general category fishery to 5.5% of the total ACL. The landings by limited access general category fishery including by IFQ, NGOM and incidental permits, declined to about 2.7 million lb. in 2013 from about 3.3 million lb. in the 2012 fishing year (Figure 1).

Figure 1. Scallop landings by permit category and fishing year (in lb., dealer data)

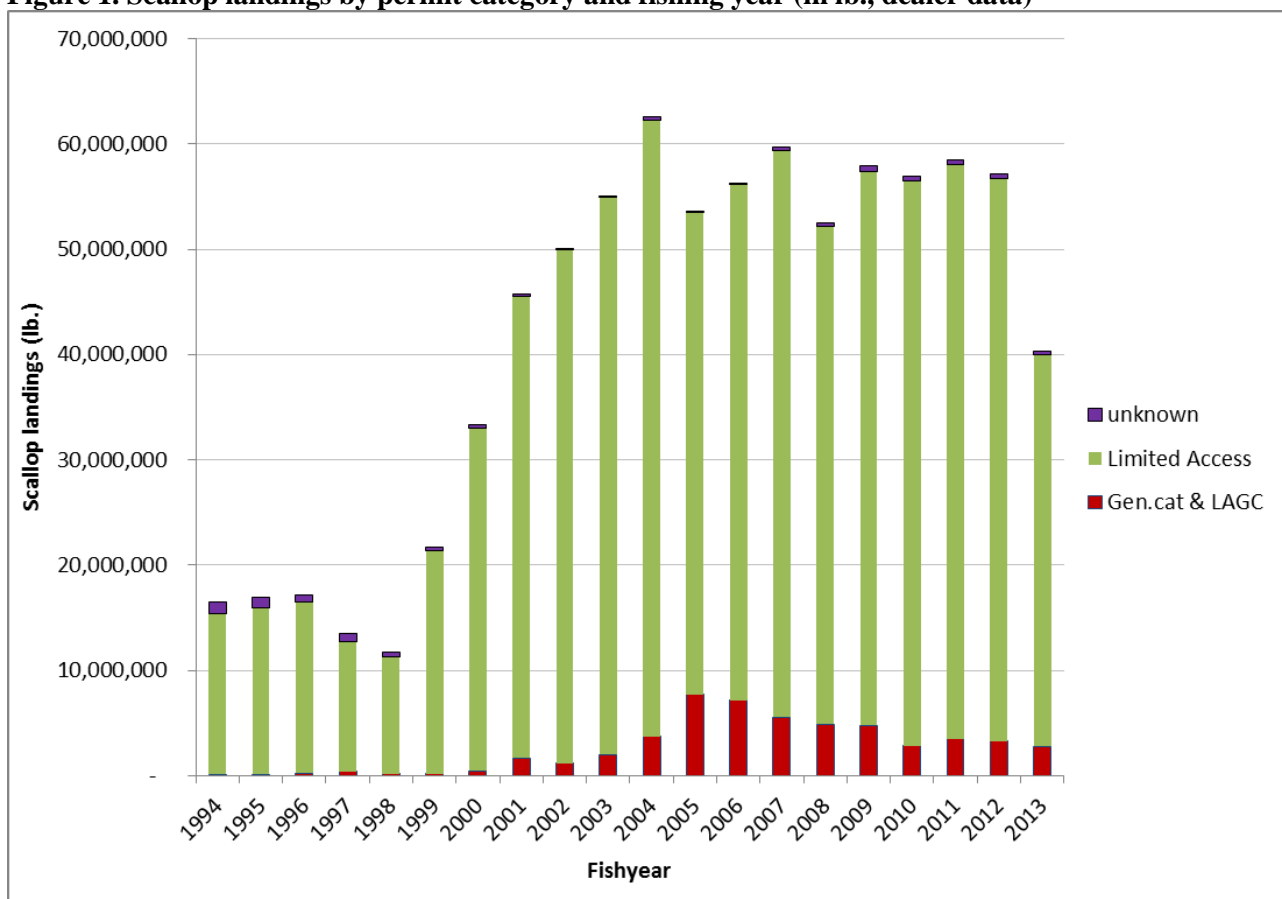
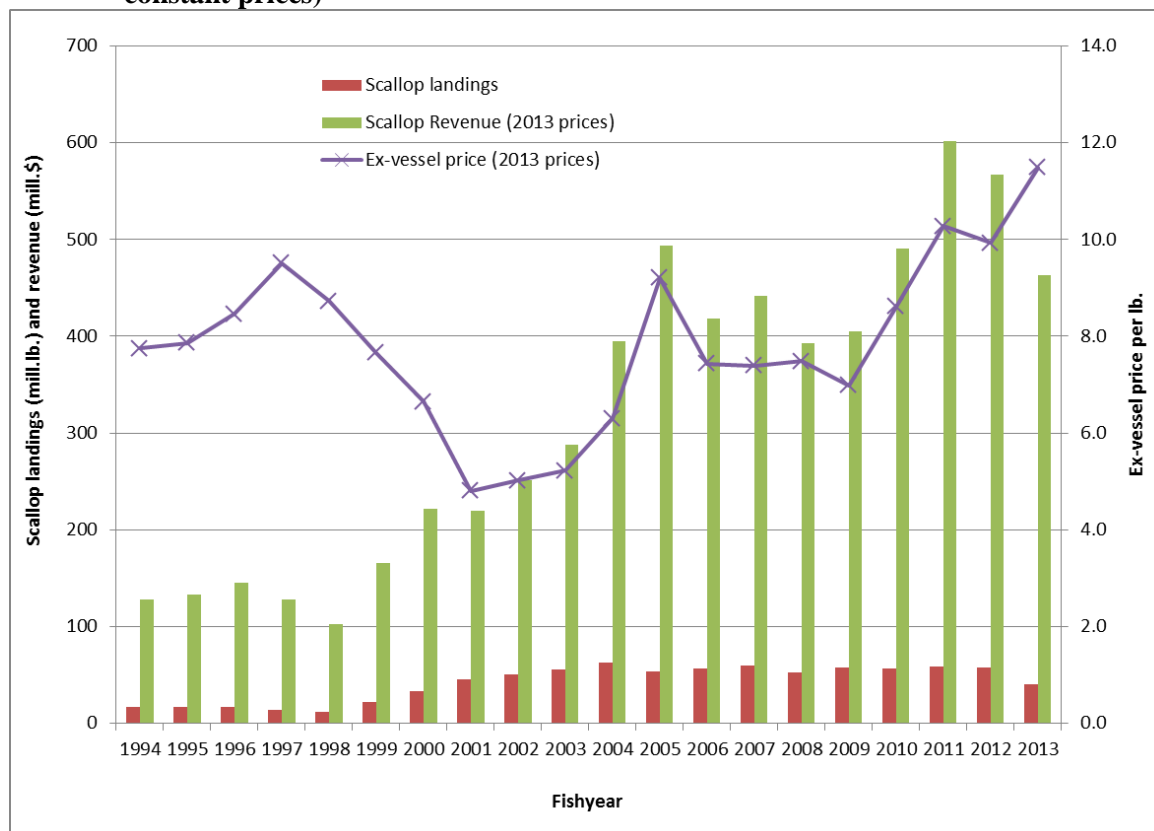


Figure 2 shows that total fleet revenue more than quadrupled in 2011 (\$601 million, in inflation adjusted 2011 dollars) fishing year from its level in 1994 (\$127 million, in inflation adjusted 2011 dollars). Scallop ex-vessel prices increased after 2001 as the composition of landings changed to larger scallops that in general command a higher price than smaller scallops. However, the rise in prices was not the only factor that led to the increase in revenue in the recent years compared to 1994-1998. In fact, inflation adjusted ex-vessel prices in 2008-2009 were lower than prices in 1994 (Figure 2). The increase in total fleet revenue was mainly due to the increase in scallop landings and the increase in the number of active limited access vessels during the same period.

The ex-vessel prices increased significantly to over \$10 per pound of scallops in 2011 fishing year as the decline in the value of the dollar led to an increase in exports of large scallops to the European countries resulting in record revenues from scallops reaching to \$601 million for the first time in scallop fishing industry history (Figure 2). The scallop ex-vessel prices peaked to \$11.5 per lb. in 2013 due to the decline in landings by almost 30% in the same year. As a result, scallop revenue declined by a smaller percentage (18%) relative to the decline in decline in landings, from about \$568 million in 2012 to \$464 million in 2013, a level which still could be considered high by historical standards (Figure 2).

Figure 2. Trends in total scallop landings, revenue and ex-vessel price by fishing year (including limited access and general category fisheries, revenues and prices are expressed in 2013 constant prices)



The trends in landings and revenue per full-time vessel were similar to the trends for the fleet as a whole. Figure 3 shows that average scallop revenue per full-time dredge vessel tripled from about \$536,000 in 1994 to over \$1,612,000 in 2012 as a result of higher landings combined with an increase in ex-vessel prices. For full-time small dredge vessels, average revenue per vessel increased from \$123,910 in 1994 to over \$1,200,000 in 2012 (Figure 3). However, average scallop revenue per full-time vessel declined in 2013 to \$1,300,000 for full-time and to \$788,000 per the full-time small dredge vessel due to the decline in landings in this fishing year.

Figure 3. Trends in average scallop landings per full time vessel by category (Dealer data)

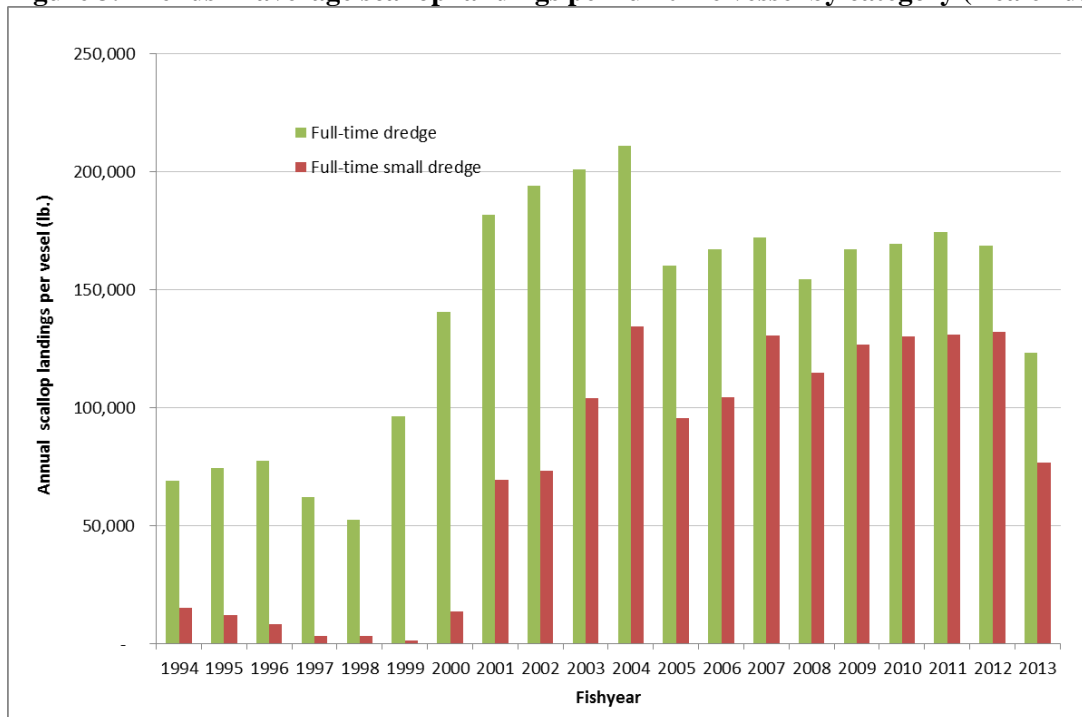
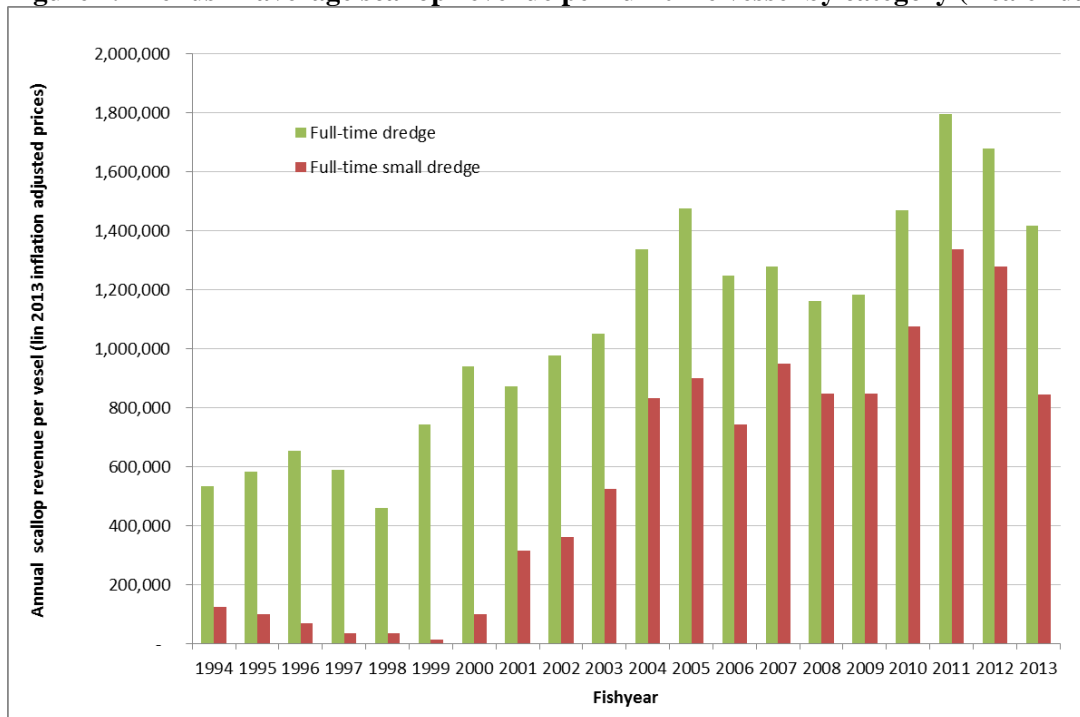


Figure 4. Trends in average scallop revenue per full-time vessel by category (Dealer data)



Although general category landings declined after 2009, scallop landings and revenue per active limited access general category vessel exceeded the levels in 2009 as the quota was consolidated on or fished by using fewer vessels (Figure 5 and Figure 6). It should be noted that these are estimated numbers from dealer data based on some assumptions in separating the LAGC landings from LA landings. It was assumed that if an LA vessel also had an LAGC permit, those trip landings which are less than 600 lb. in 2011 and less than 400 lb. in 2010 and 2009 were LAGC landings and any among above these were LA landings.

Figure 5. Trends in average scallop landings per vessel for the LAGC fishery by permit category

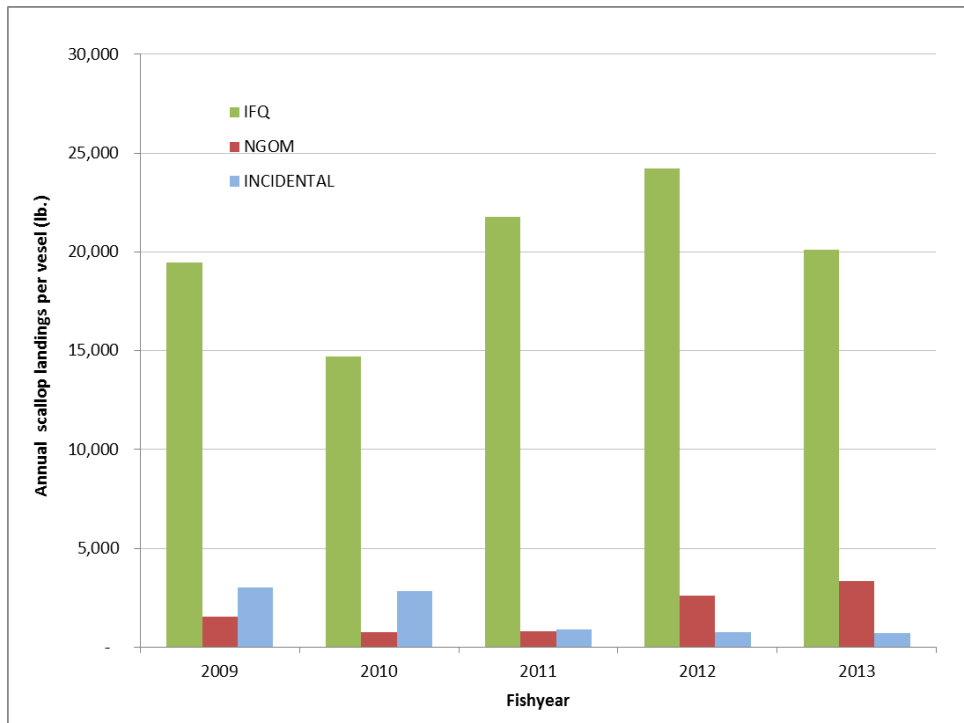


Figure 6. Trends in average scallop revenue per vessel for the LAGC fishery (dealer data, in 2013 inflation adjusted prices)

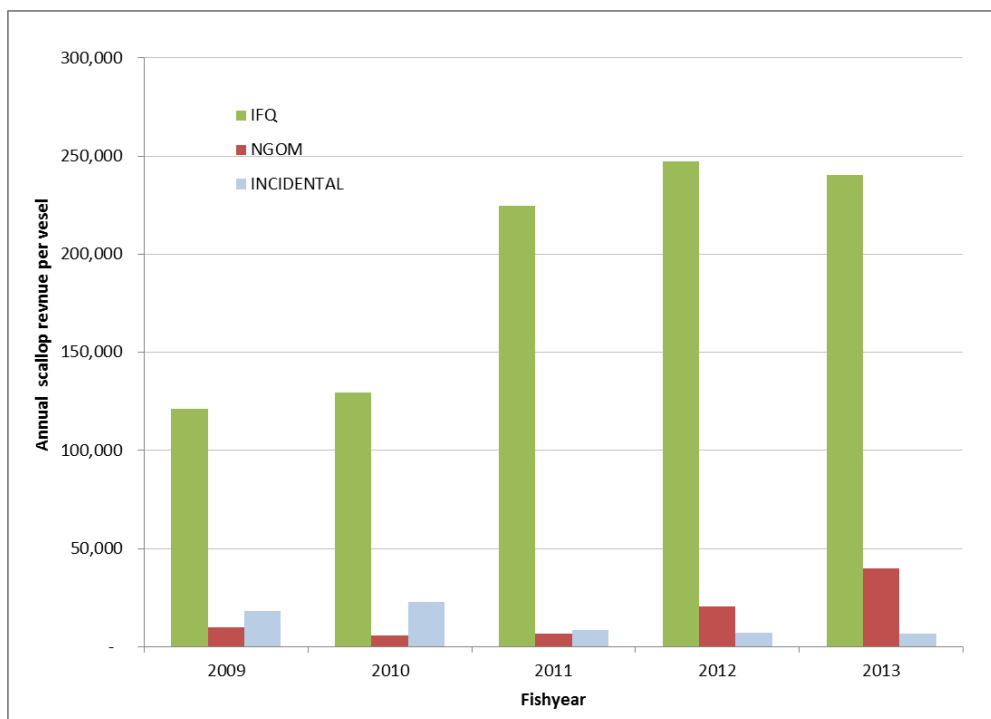


Table 8 through Table 9 describes scallop landings by limited access vessels by gear type and permit category. These tables were obtained by combining the dealer and permit databases. Most limited access category effort is from vessels using scallop dredges, including small dredges. The number of full-time trawl permits has decreased continuously and has been at 11 full-time trawl permitted vessels since 2008 (Table 1). Furthermore, according to the 2009-2011 VTR data, the majority of these vessels (10 out of 11 in 2010) landed scallops using dredge gear even though they had a trawl permit. There has also been an increase in the numbers of full-time and part-time small dredge vessels after 2002.

Table 9 shows the percent of limited access landings by permit and year. In terms of gear, majority of the scallop landings by the limited access vessels were with dredge gear including the small dredges, with significant amounts also landed by full-time and part-time trawls until 2000. Table 9 shows that the percentage of landings by FT trawl permits declined after 1998 to about 3% of total limited access scallop landings in 2011. There were only 11 FT trawl permits in 2011. However, 2009-2011 VTR data also show that over 90% of the scallop pounds by the FT trawl permitted vessels are landed using dredge gear (10 vessels) since these vessels are allowed to use dredge gear even though they have a trawl permit. Similarly, all of the part-time trawl and occasional trawl permits are converted to small dredge vessels. Over 80% of the scallop pounds are landed by vessels with full-time dredge and close to 13% landed by vessels with full-time small dredge permits since the 2007 fishing year. Including the full-trawl vessels that use dredge gear, the percentage of scallop pounds landed by dredge gear amounted to over 99% of the total scallop landings in 2009-2011.

Table 8. Scallop landings (lbs.) by limited access vessels by permit category

Fishyear	FT	PT	FT Small Dredge	PT Small Dredge	FT Trawl	PT Trawl	Occasional Trawl
1994	12,992,793	77,668	NA	NA	1,804,974	191,825	4,290
1995	13,752,423	205,147	NA	NA	1,477,777	140,178	45,409
1996	14,185,833	259,791	NA	13,336	1,282,612	376,874	93,375
1997	11,078,071	148,742		19,093	773,243	242,396	NA
1998	9,486,893	84,929	NA	NA	1,111,119	351,722	NA
1999	18,877,937	303,397	NA	15,692	1,382,335	564,111	15,950
2000	29,221,728	599,186	NA	80,741	1,871,048	710,032	14,284
2001	38,707,405	861,087	765,342	208,176	2,578,316	744,057	17,062
2002	42,319,380	918,534	1,757,695	269,284	2,980,542	504,441	31,876
2003	45,461,772	932,815	3,125,474	482,472	2,612,065	272,668	NA
2004	48,873,669	323,389	5,654,387	825,223	2,432,866	125,949	NA
2005	37,935,508	236,757	4,788,085	1,379,360	1,250,771		NA
2006	40,846,955	NA	5,223,125	1,304,877	1,339,748		
2007	43,091,302	NA	6,917,823	1,601,167	1,678,258		
2008	37,617,260	NA	6,117,525	1,298,183	1,536,814		
2009	41,266,837	NA	6,971,699	1,397,169	1,821,156		
2010	42,484,132	NA	6,774,054	1,927,559	1,790,240		
2011	43,662,880	NA	6,944,234	1,651,826	1,908,903		
2012	42,781,924	NA	7,081,245	1,391,171	1,780,017		
2013	30,809,109	NA	4,057,183	937,523	1,226,997		
2014	19,479,493	NA	2,438,280	544,575	700,174		

*Note: Although these vessels have trawl permits, majority of these vessels used dredge gear. As a result, over 90% of the scallop landings by the FT trawl permitted vessels are caught using dredge gear in 2009-2010 according to the VTR data.

Table 9. Percentage of scallop landings (lbs.) by limited access vessels by permit category

Fishyear	FT	PT	FT Small Dredge	PT Small Dredge	FT Trawl	PT Trawl	Occasional Trawl
1994	85.93%	0.51%		0.02%	11.94%	1.27%	0.03%
1995	87.74%	1.31%		0.06%	9.43%		0.29%
1996	87.35%	1.60%		0.08%	7.90%	2.32%	0.57%
1997	90.35%	1.21%		0.16%	6.31%	1.98%	0.00%
1998	85.92%	0.77%		0.00%	10.06%	3.19%	0.03%
1999	89.21%	1.43%		0.07%	6.53%	2.67%	0.08%
2000	89.88%	1.84%		0.25%	5.76%	2.18%	0.04%
2001	88.21%	1.96%		0.47%	5.88%		0.04%
2002	86.75%	1.88%	3.60%	0.55%	6.11%		0.07%
2003	85.96%	1.76%	5.91%	0.91%	4.94%		0.00%
2004	83.90%		9.71%	1.42%	4.18%		0.03%
2005	83.18%		10.50%	3.02%	2.74%		0.03%
2006	83.72%		10.70%	2.67%	2.75%		0.00%
2007	80.58%		12.94%	2.99%	3.14%		0.00%
2008	80.41%		13.08%	2.78%	3.29%		0.00%
2009	79.84%		13.49%	2.70%	3.52%		0.00%
2010	79.84%		12.73%	3.62%	3.36%		0.00%
2011	80.29%		12.77%	3.04%	3.51%		0.00%
2012	80.35%		13.30%	2.61%	3.34%		0.00%
2013	82.85%		10.91%	2.52%	3.30%		0.00%
2014	83.83%		10.49%	2.34%	3.01%		0.00%

*Note: Although these vessels have trawl permits, majority used dredge gear in 2009-2010 and over 90% of the scallop landings by the FT trawl permitted vessels are caught using dredge gear during the same years.

Since 2001, there has been considerable growth in fishing effort and landings by vessels with general category permits, primarily as a result of resource recovery and higher scallop prices (Table 10, 2014 numbers are preliminary estimates for the partial fishing year from March 2014 to September 2014). Amendment 11 implemented a limited entry program for the general category fishery allocating 5% of the total projected scallop catch to the general category vessels qualified for limited access. The main objective of the action was to control capacity and mortality in the general category scallop fishery. There is also a separate limited entry program for general category fishing in the Northern Gulf of Maine. In addition, a separate limited entry incidental catch permit was adopted that will permit vessels to land and sell up to 40 pounds of scallop meat per trip while fishing for other species.

During the transition period to the full-implementation of Amendment 11, the general category vessels were allocated 10% of the scallop TAC. Beginning with 2010 fishing year, limited access general category IFQ vessels were allocated 5% of the estimated scallop catch resulting a decline in landings by the general category vessels (Table 10 and Table 11). These tables were obtained from the dealer and permit databases. The trip information obtained from the dealer data shows the permit number but does not specify whether a particular trip was taken as a limited access (LA) or general category (LAGC) trip. Because many vessels had and have both

LA and general category permits, to separate the LA trips from LAGC trips for the same vessel requires some assumptions. If a vessel had both an LA and LAGC-IFQ permit, it was assumed that if scallop landings were equal or less than 400lb. (600lb.) for years up to 2010 (after 2010), that was an LAGC trip. If an LA vessel also had an LAGC-incidental permit, it was assumed that if scallop landings were equal or less than 100lb. that was an LAGC-incidental trip. For the LAGC-NGOM fishery it was assumed that if the scallop landings were equal or less than 200lb., that trip was a LAGC trip, otherwise it was an LA trip. In addition to these issues, there were many trips that were not associated with any valid permit plan (perhaps due to mistakes in the entry of permit number by dealers). Thus, it must be pointed out that the separation of landings by permit plan were estimated from the above assumptions and could differ slightly from actual landings. For example, Table 11 shows that in 2011 fishyear, the *estimated landings* by LAGC vessels including those by vessels with IFQ, NGOM and incidental catch permits and including the LAGC landings by the LA vessels that have both permits, amounted to 5.8% of total scallop landings in that fishyear.

Table 10. *Estimated Landings* by permit plan before and after Amendment 11 implementation in 2010 fishing year.

Fishyear	Gencat & LAGC	LA	NA	Grand Total
1994	125,001	15,128,621	1,203,669	16,457,291
1995	123,952	15,675,688	1,080,425	16,880,065
1996	213,535	16,234,409	759,431	17,207,375
1997	357,684	12,264,001	825,890	13,447,575
1998	164,185	11,042,134	567,277	11,773,596
1999	150,498	21,160,523	368,907	21,679,928
2000	425,364	32,510,711	354,600	33,290,675
2001	1,649,749	43,882,217	191,046	45,723,012
2002	1,124,933	48,784,134	132,652	50,041,719
2003	1,861,075	52,930,243	301,670	55,092,988
2004	3,699,334	58,288,383	652,773	62,640,490
2005	7,723,080	45,750,967	184,078	53,658,125
2006	7,097,155	48,888,678	288,678	56,274,511
2007	5,488,221	53,560,101	621,568	59,669,890
2008	4,785,198	46,842,633	847,472	52,475,303
2009	4,203,751	51,738,924	2,030,811	57,973,486
2010	2,330,701	53,277,449	1,352,837	56,960,987
2011	3,122,403	54,432,220	924,766	58,479,389
2012	2,962,148	53,296,551	899,001	57,157,700
2013	2,438,971	37,201,916	710,662	40,351,549
2014*	1,539,230	23,264,651	405,847	25,209,728

*2014 numbers are preliminary, includes only March 2014 to Sept 2014.

Table 11. Estimated Landings by permit plan (Dealer Data)

Fishyear	Gencat & LAGC*	LA	NA	Grand Total
1994	0.76%	91.93%	7.31%	100.00%
1995	0.73%	92.87%	6.40%	100.00%
1996	1.24%	94.35%	4.41%	100.00%
1997	2.66%	91.20%	6.14%	100.00%
1998	1.39%	93.79%	4.82%	100.00%
1999	0.69%	97.60%	1.70%	100.00%
2000	1.28%	97.66%	1.07%	100.00%
2001	3.61%	95.97%	0.42%	100.00%
2002	2.25%	97.49%	0.27%	100.00%
2003	3.38%	96.07%	0.55%	100.00%
2004	5.91%	93.05%	1.04%	100.00%
2005	14.39%	85.26%	0.34%	100.00%
2006	12.61%	86.88%	0.51%	100.00%
2007	9.20%	89.76%	1.04%	100.00%
2008	9.12%	89.27%	1.61%	100.00%
2009	7.25%	89.25%	3.50%	100.00%
2010	4.09%	93.53%	2.38%	100.00%
2011	5.34%	93.08%	1.58%	100.00%
2012	5.18%	93.24%	1.57%	100.00%
2013	6.04%	92.19%	1.76%	100.00%
2014**	6.11%	92.28%	1.61%	100.00%

*Includes landings by LAGC IFQ, NGOM and incidental permits and LAGC landings by LA vessels.

**2014 numbers are preliminary, includes only March 2014 to Sept 2014.

The general category scallop fishery has always been a comparatively small but diverse part of the overall scallop fishery. The number of vessels participating in the general category fishery has continued to rise until 2007 when the New England Fisheries Management Council proposed limiting access in response to concerns of redirected effort from other fisheries. When the limited access general category was implemented, in 2008, there was a corresponding decline in the total number of active vessels. Then again in 2010, there was a decline in the number of active general category vessels when the GC IFQ program began and a “hard” Total Allowable Catch of 5% of the total scallop catch limit was established. These declines are evident in Table 10 and Table 11 and Table 7 where the overall number of active vessels and scallop landings dropped, both in 2008 and in 2010.

3.2.3 Activity per LAGC IFQ Vessel

The changes in effort and activity since the implementation of Amendment 11 in 2010 fishing year is evaluated in terms of active vessels and permits in CPH. An active vessel is defined as a vessel that landed any amount of scallops under a limited access general category IFQ permit, excluding those limited access (LA) vessels that also have an LAGC IFQ permit.

There has been a relatively small decline in the total number of permits in this fishery from 311 in 2010 to 302 in 2012, including the active permits and permits in CPH. The numbers in Figure 4 exclude the number of permits for the replacement vessels in order to capture totality of activity for each active unit at a given point in time. Those numbers also include permits in CPH as of the beginning of each fishing year starting in 2010. All of these permits, except for a few active vessels included in Figure 4, had an IFQ allocation at the beginning of the year.

There has been a noticeable change, however, in the composition of permits due to the decline in the number for active vessels from 154 in 2010 to 129 in 2012 and an increase in the number of inactive permits from 157 in 2010 to 173 in the 2012 fishing year (Figure 4). The inactive permits included those that lease-out their quota as well as permits that were not involved in any leasing activity, some of which transferred their quota during the course of each fishing year.

The share of active vessels in total IFQ allocation was about 53% in 2012, down slightly from 55% in 2010 while the share of inactive vessels in total IFQ allocation increased slightly from 45% to 47% in 2012 (Figure 5). Distribution of allocation among owners is different from these numbers because some of the non-active vessels are owned by active multiple vessel owners who consolidate their IFQ on one vessel to fish for scallops.

These trends are consistent with the changes in landings per vessel since 2010 fishing year. Average scallop landings per active vessel increased from 14,180 lb. per vessel in 2010 to 22,927 lb. in 2012, or by 60% (Figure 9 and Figure 10). This increase exceeded the increase in total scallop landings (35% in the same period) as effort is consolidated on fewer vessels and as some of those vessels leased IFQ from inactive vessels in addition to using their own quota to fish for scallops (Figure 6).

Figure 7. Number of LAGC IFQ permits including active and permits in CPH

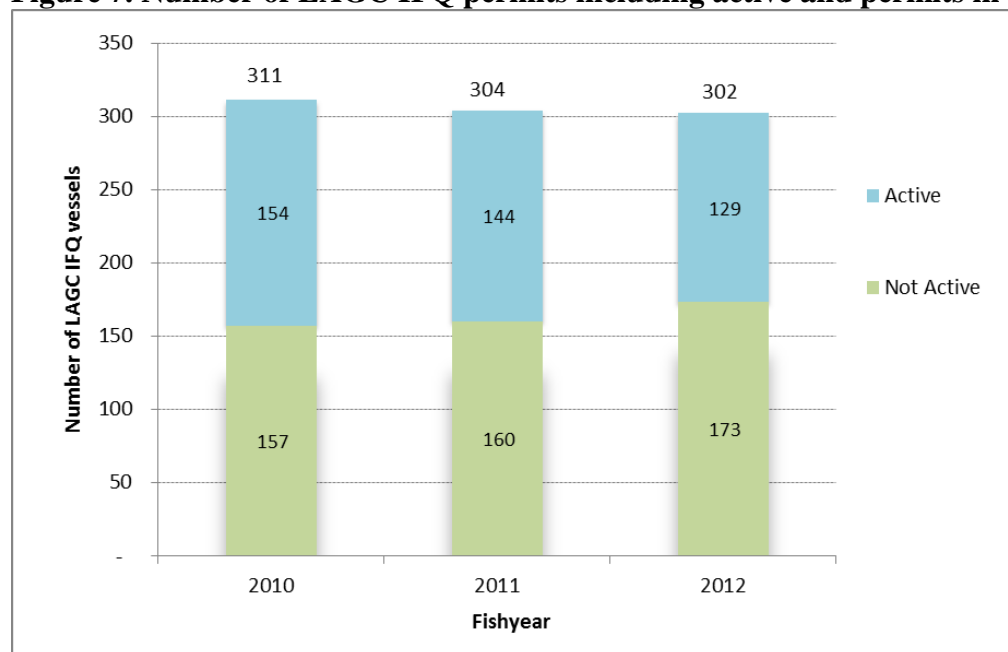


Figure 8. LAGC IFQ allocations by vessel activity group (as a % of total fleet allocation)

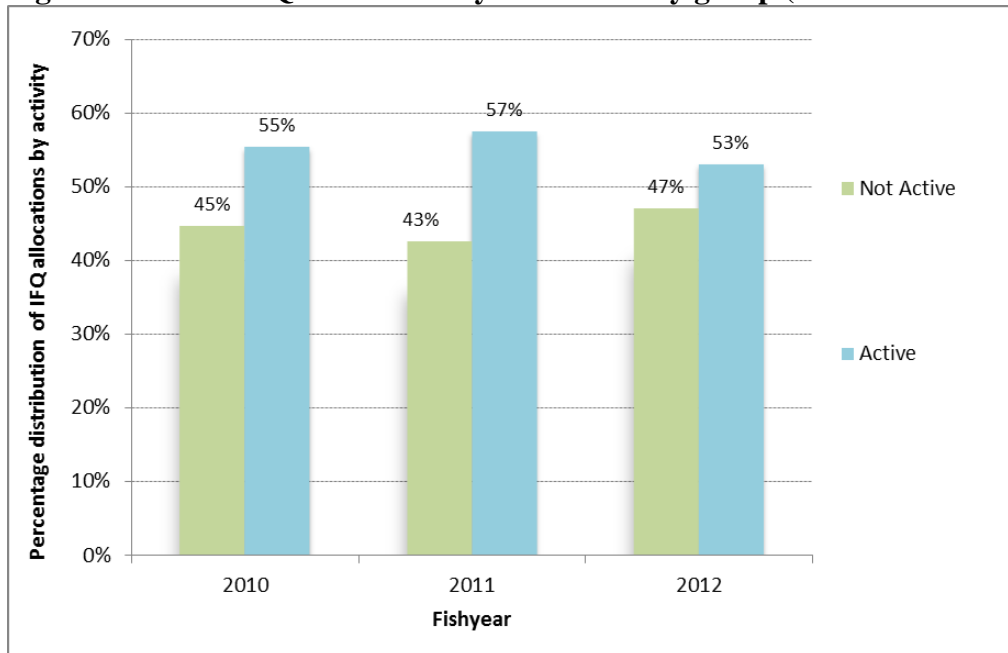


Figure 9. LAGC IFQ landings and allocations per vessel

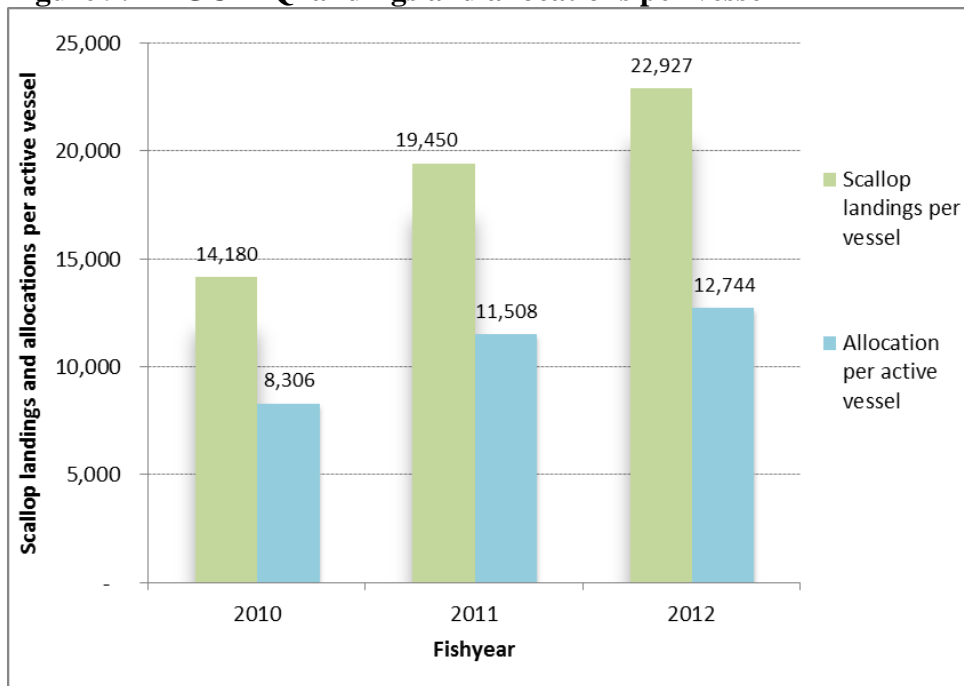
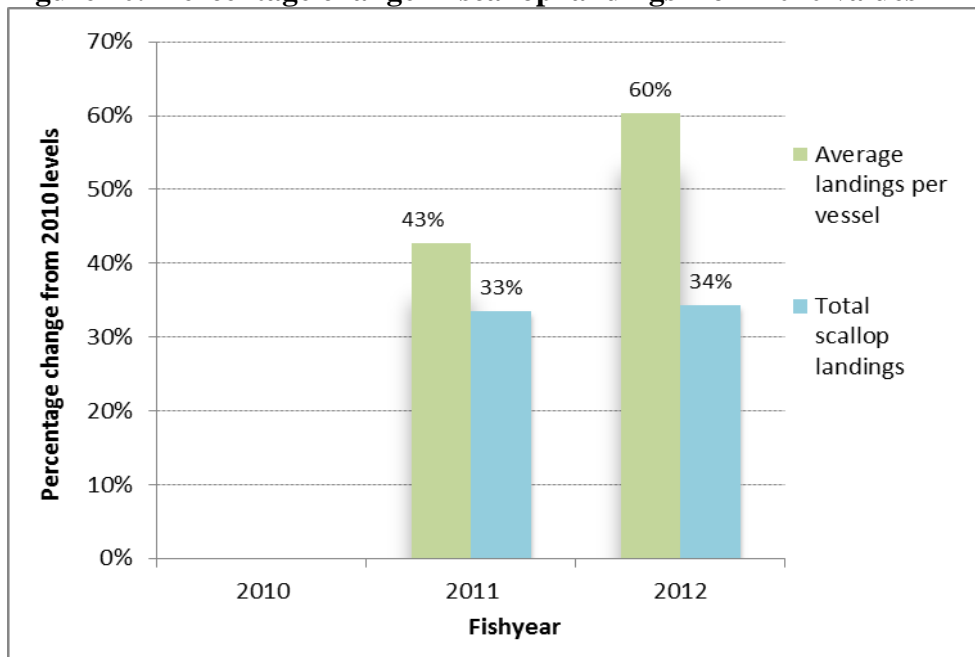


Figure 10. Percentage change in scallop landings from 2010 values



3.2.4 Trends in Effort and LPUE

There has been a steady decline in the total DAS used by the limited access scallop vessels from 1994 to 2011 fishing years as a result of the effort-reduction measures of Amendment 4 (1994). DAS allocations during this period were reduced almost by half from 204 DAS in 1994 to 120 DAS in 2003 fishing year for the full-time vessels and in the same proportions for the part-time and occasional vessels from their base levels in 1994 (Table 12). As a result, estimated DAS-used (VTR data) reached the lowest levels of about 24,000 days in the 1999 from over 30,000 days in 1995-1996 (Figure 11). These numbers were estimated using the VTR database for purposes of analyzing the trends in efforts consistently since 1994 (as the difference between the date sailed and date landed from the VTR data). As it is discussed below, this is different from the value for DAS-used (or charged) based on the VMS database.

Table 12. DAS and trip allocations per full-time vessel

Year	Allocations based on the Management Action	Total DAS Allocation (1)	Open area DAS allocations (2)	Access area trip allocations (3)	Estimated DAS-used per full-time vessel (VTR Data: Date landed-Date sailed)
1994	Amendment 4	204	None	None	123
1995	Amendment 4	182	None	None	144
1996	Amendment 4	182	None	None	153
1997	Amendment 4	164	None	None	148
1998	Amendment 4	142	None	None	134
1999	Amendment 7 Framework 11	120	90 to 120	3	109
2000	Framework 13	120	60 to 120	6	109
2001	Framework 14	120	90 to 120	3	115
2002	Framework 14	120	90 to 120	3	115
2003	Framework 15	120	90 to 120	3	114
2004	Framework 16		42 (MAX.62)	7	103
2005	Framework 16		40 (MAX.117)	5	87
2006	Framework 18		52	5	89
2007	Framework 18		51	5	101
2008	Framework 19		35	5	75
2009	Framework 19		37	5	83
2010	Framework 21		38	4	84
2011	Framework 22		32	4	72
2012	Framework 22		34	4	73
2013	Framework 24		33	2	56

Note that before 2004, access area trips counted toward annual DAS. For example, 10DAS would be charged per vessel if they participated in an access area program. Vessels did not have to take access area trips, but if they did 10 or 12 DAS would be charged against their annual allocation depending on the area and year. Since 2004 vessels are allocated open area DAS and area specific trips (without any corresponding DAS allocation). If vessels do not take any access area trips, they do not get any additional DAS. Possession limit for the access area trips could vary from year to year and it was reduced to 13,000 lb. in 2013 fishing year from 18,000 lb. in 2012 fishing year.

Therefore, DAS allocated and DAS charged after 2003 refers only to the open area trips, while DAS-used based on the VTR data reflects actual number of days spent at sea including the steam time from the port. Last column shows a decline in days-used from 123 days in 1994 fishing year to 56 days in 2013 fishing year.

After fishing year 1999, fishing effort started to increase as more limited access vessels participated in the sea scallop fishery. The increase in total effort was mostly due to the increase in the number of vessels because total DAS allocations (mostly less than 120 days) were lower than the DAS allocations in the mid-1990s (over 142 days, Table 12). The recovery of the scallop resource and the dramatic increase in fishable abundance after 1999 increased the profits in the scallop fishery, thus leading to an increase in participation by limited access vessels that had been inactive during the previous years. Georges Bank closed areas were opened to scallop fishing starting in 1999 by Framework 11 (CAII) and later by Framework 13 (CAII, CAI, NLS), encouraging many vessel owners to take the opportunity to fish in those lucrative areas. Frameworks 14 and 15 provided controlled access to Hudson Canyon and VA/NC areas. As a result, the number of active limited access permits in the sea scallop fishery increased from 258 in 2000 to 303 in 2003. The total fishing effort by the fleet increased to about 33,000 days in 2003 from about 26,700 days in 2000 (Figure 11). Total fishing effort (DAS used) declined after 2003

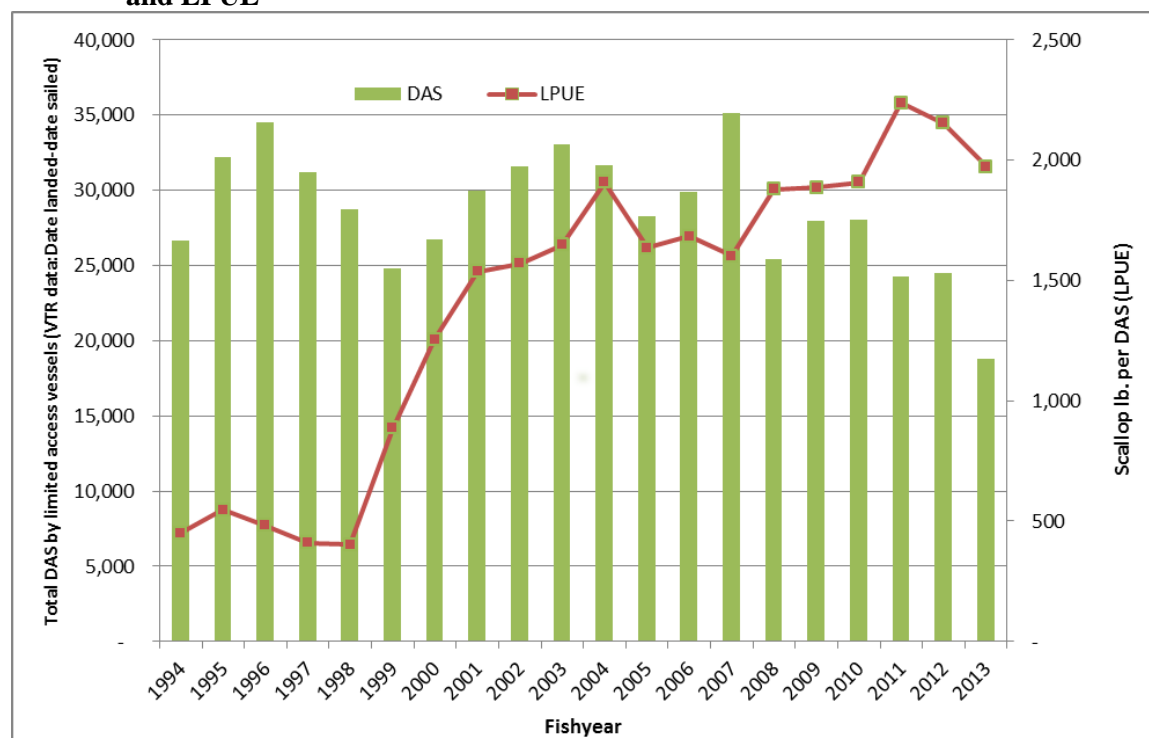
even though the number of active vessels increased to 340 vessels in 2006 from 303 vessels in 2003 (Table 6).

The column 1 in of Table 3 shows total DAS allocations (not DAS-used or days fished). Until the implementation of Amendment 10, each access area trip were assigned a 10 DAS trade-off such that any vessel that choose not to fish in access areas could instead fish for scallops in the open areas for 10 DAS. Thus, total DAS allocation for the access areas is calculated as the number of trips multiplied by 10 DAS (even though it might have taken less than 10 DAS to land the possession limit in those areas). Following this method, Column 1 shows that total DAS allocations for open and access areas per full-time vessel declined from 204 DAS in 1994 to 120 DAS in 2003.

With the implementation of Amendment 10 (2004) the limited access vessels were allocated DAS for open areas and area specific access area trips with no open area trade-offs. Although the vessels could no longer use their access area allocations in the open areas, Amendment 10 and Frameworks 16 to 18 continued to include an automatic DAS charge of 12 DAS for each access area trip until it was eliminated by NMFS.

Total DAS-used declined further in 2008 to about 25,400 days as the open area DAS allocations are reduced by 30% from 51 days to 35 days per full-time vessel, but increased to 26,300 in 2009 as the limited access vessels received access area trips (5 trips per vessel). Total DAS-used by the limited access vessels were higher in 2010 despite lower number of access area trips (4 trips per vessel). Open area DAS allocations were slightly higher in 2010 (38 DAS versus 37 DAS in 2009) and vessels spend more time fishing in the access areas. Total DAS-used further declined in 2011, however, despite the increase in the open area DAS allocations. This because DAS-used in the access areas declined due higher LPUEs in these areas compared to 2010 fishing year. As a result of reduction in the number of access area trips to two trips per full-time vessel in 2013 fishing year, the total DAS-used reached its lowest level in this year with a total of 18,809 days as defined by the difference in the date landed and date sailed from the VTR records.

Figure 11. Total DAS-used (Date landed – Date sailed from VTR data) by all limited access vessels and LPUE



The impact of the decline in effort below 30,000 days since 2005 (with the exception of 2007) on scallop revenue per vessel was small, however, due to the increase in LPUE from about 1600 pounds per day-at-sea in 2007 to over 2237 pounds per day-at-sea in 2011 and to about 1900 lb. per day-at-sea in all areas (As estimated from date landed – date sailed from VTR data, Figure 11). Figure 12 shows that LPUE for the full-time dredge vessels was higher (about 2200 lb. in 2013 fishing year) than the LPUE of small dredge vessels (about 1416 lb. in 2013 fishing year).

It must be cautioned that these LPUE numbers are lower than the estimates used in the PDT analyses used to estimate open area DAS allocations. The numbers in Figure 11 through Figure 12 are obtained from the VTR database and include the steam time as calculated the days spent at sea starting with the sail date and ending with the landing date. In addition, those numbers include both open and access areas. In contrast, total “DAS used” in the fishery is the value incorporated in the LPUE models by the PDT to calculate future DAS allocations in the open areas for the full-time vessels. In these models, the value for DAS used comes from the field “DAS charged” from the DAS database. DAS charged is based on the time a vessel crossed the VMS demarcation line going out on a trip, and the time it crossed again coming back from a trip, so it wouldn’t include the time from (to) the port to (from) the demarcation line at the start (end) of the trip. Therefore, the DAS-used (LPUE) calculated from the VTR data would be greater (lower) than the DAS-used (LPUE) calculated from the demarcation line in the DAS database. Because VTR data is available for a longer period, however, it is useful in analyzing the historical trends in LPUE (from port to port) since 1994.

As a result of this increasing trend in LPUE from about 450 pounds per DAS in 1994 to over 2000 pounds per DAS since 2011, scallop revenue per vessel tripled in the last 10 years since 2004 compared to the levels in 1998.

Figure 12. LPUE for full-time vessels by permit category (VTR data, includes steam time and vessels with IFQ permits)

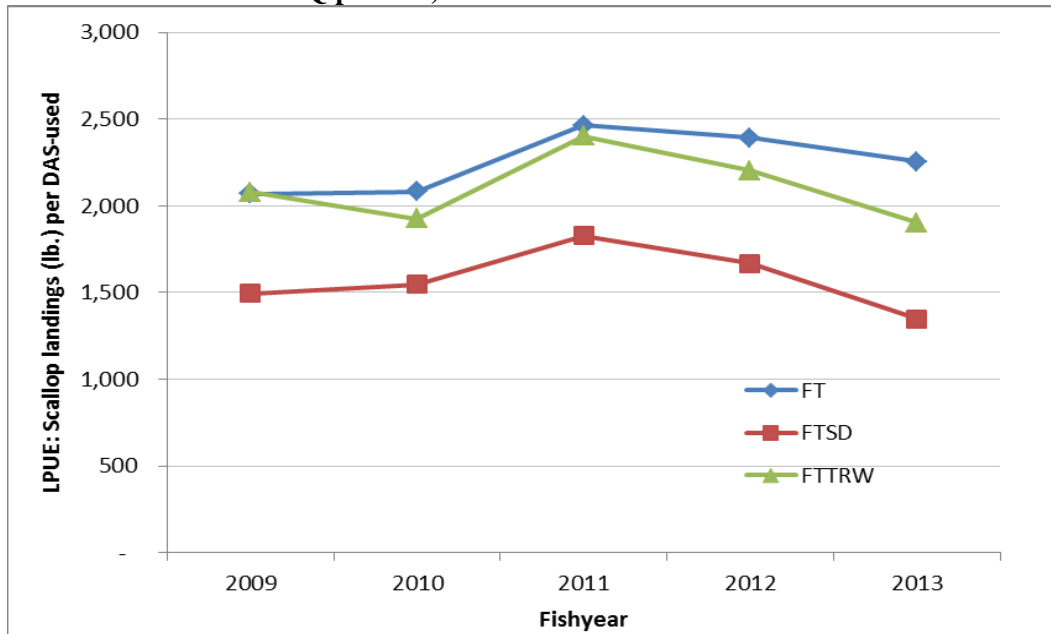
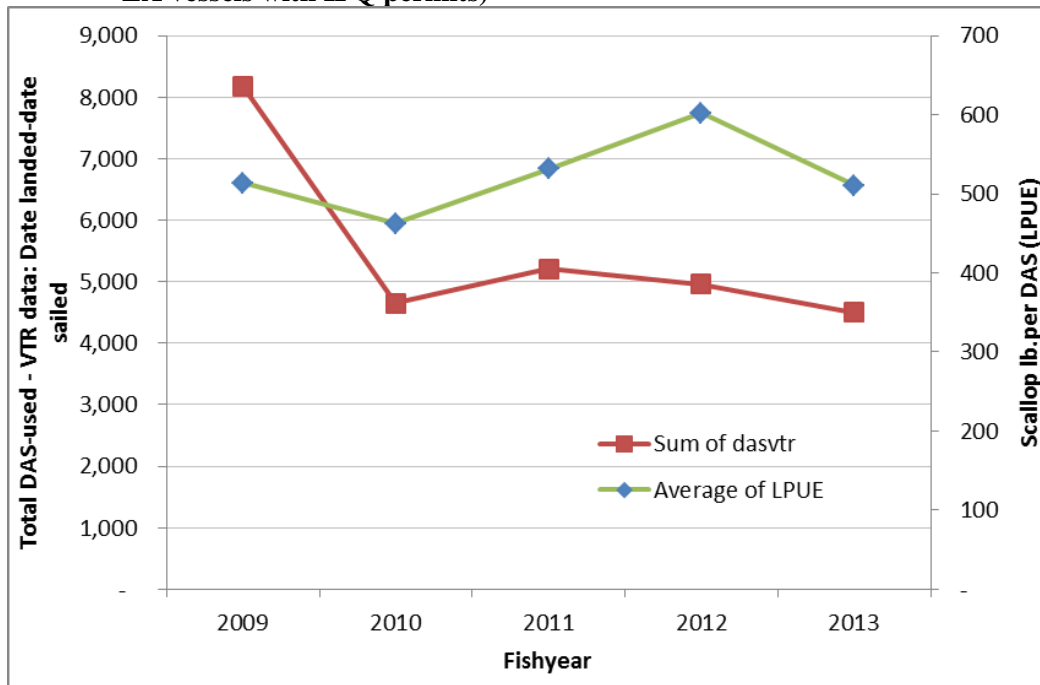


Figure 13. LPUE and DAS-used for LAGC-IFQ vessels (VTR data includes steam time, excluding LA vessels with IFQ permits)



3.2.5 Total and average net revenue for LAGC vessels (producer surplus)

Total net revenue for the LAGC IFQ fleet is equivalent to the producer surplus defined as gross revenue net of variable costs because leasing costs and earnings cancel each other out when summed up to estimate the total net revenue. The economic performance of the LAGC IFQ fishery was positive during the fishing years 2010 to 2012. There has been an increase in the total real net revenue (producer surplus) from \$16.9 million in 2010 to \$26.1, or by 54 %, in 2012 (in 2012 inflation adjusted prices, Figure 16).

In terms of nominal values, average nominal net revenue per owner with an IFQ permit who either earned his/her income by landing scallops or by leasing out scallop pounds to other IFQ owners increased from \$85,299 in 2010 to \$145,881 in the 2012 fishing year. In the same period, total nominal net revenue for the fleet increased by 62%. The increase in net revenue per owner, a 72% increase from 2010, exceeded the increase in net revenue for the fleet as a whole due to the concentration of effort in fewer owners in 2012 (Figure 15 and Figure 16).

In terms of real values, average real net revenue (in 2012 inflation adjusted values) per owner who either earned their income by landing scallops or by leasing out scallop pounds to other IFQ owners increased from \$89,800 in 2010 to \$145,881 in the 2012 fishing year, a 62% increase. A major part of this increase was due to an increase in total fleet net revenue by 54% resulting from the increase in LAGC ACL combined with an increase in scallop prices. Although the trip costs per trip increased due to the increase in fuel prices in this period, the increase in possession limit to 600 lb. per pound after 2010 fishing year and reduction in the number of active vessels slowed this increase to some extent. This implies that as much as 8% of the increase in the net average revenue could be due to the concentration of effort and ownership since the implementation of the IFQ program in 2010. The changes in the net revenue per owner was not uniformly distributed, however, based on the trends by activity and leasing groups, Gini coefficients and Lorenz curves as examined in the following sections.

Figure 14. Total net scallop revenue for LAGC-IFQ fleet (net of leasing and trip costs)

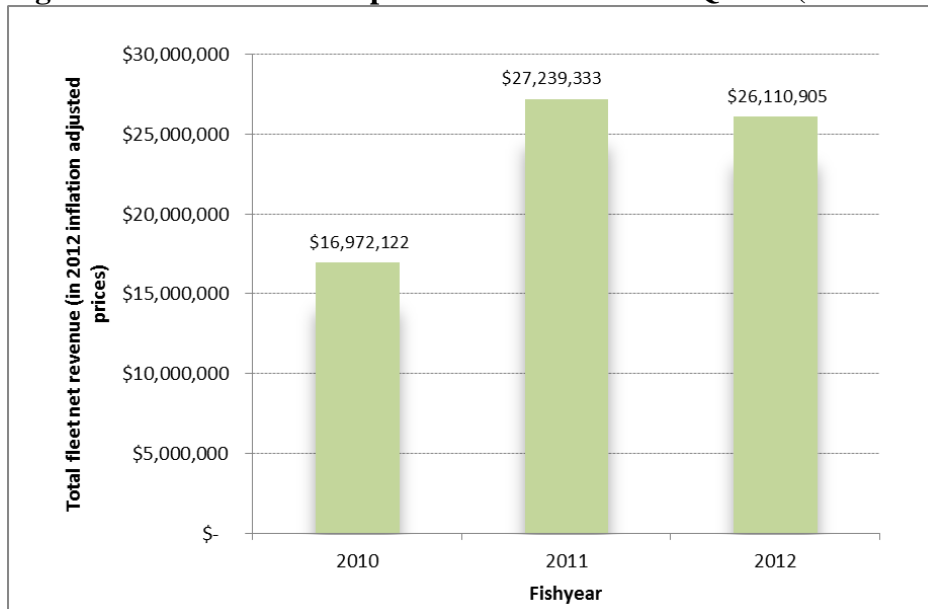


Figure 15. Average net scallop revenue for LAGC-IFQ permit holders (net of leasing and trip costs)

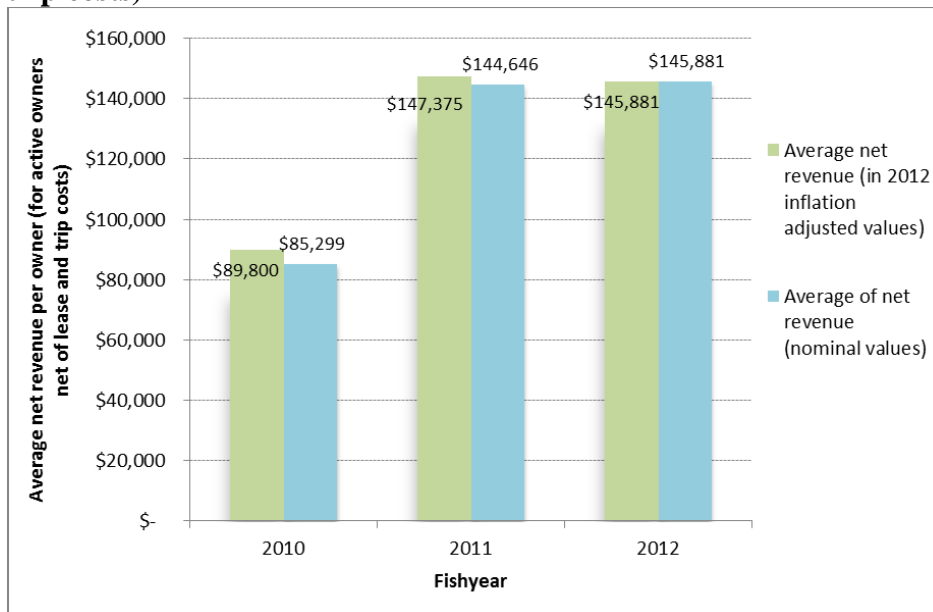
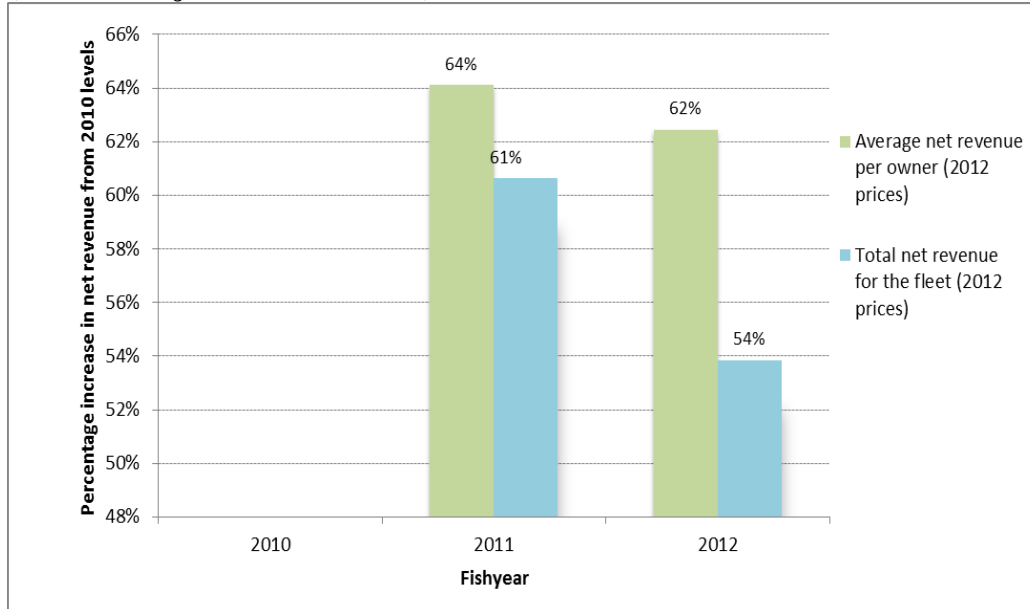


Figure 16. Percentage increase in average and total net fleet revenue from 2010 levels (inflation adjusted 2012 values)



Consistent with the overall trends in landings and revenues, gross and net revenue per active vessel increased during this period respectively by 76% and 77% (Figure 17 and Figure 18). There has been an increase in the number of active vessels (from 46 in 2010 to 58 in 2012) that landed more than 20,000 lb. of scallops. Conversely, the number of vessels that landed up to 5000 lb. of scallops declined from 62 in the 2010 fishing year to 30 in the 2012 fishing year (Figure 19). The average annual net revenue per vessel in the top landing group (>20,000 lb.) was over \$330,000, and the average annual net revenue for the vessels that landed 5000lb. or less was over \$20,800 in the 2012 fishing year (Figure 20). Average annual landings of the top group exceeded 40,000 lb. since the 2011 fishing year (Figure 21).

There has been an increase in the share of the 20,000 lb. group in total landings in 2012, from 73% in 2010 to 82% in 2012 and a decline in the share of other groups with lower average landings in the same period (Figure 22).

Figure 17. Gross and net revenues per active vessel (in 2012 inflation adjusted prices)



Figure 18. Percentage increase in gross and net revenues per active vessel (in 2012 inflation adjusted prices)

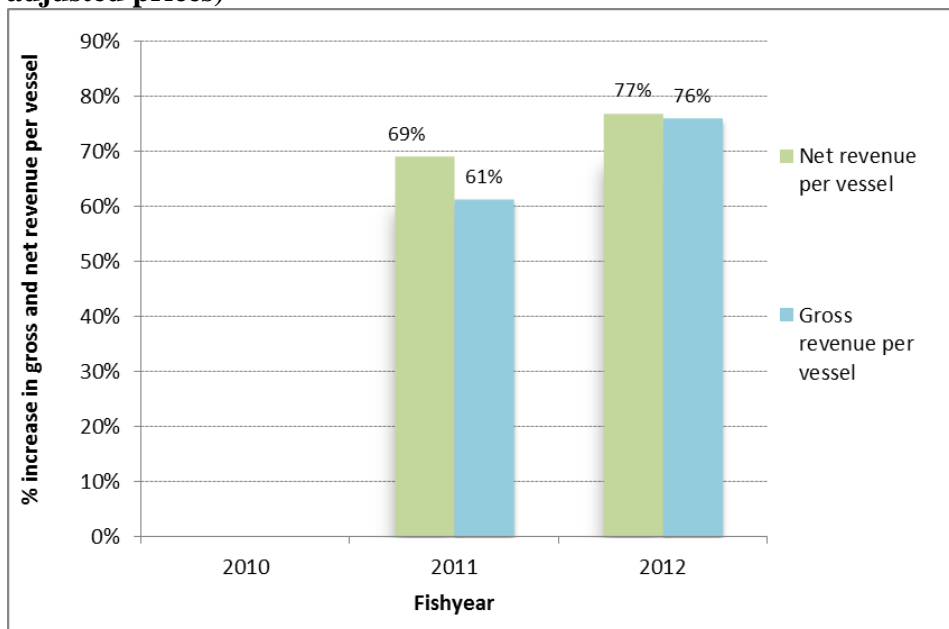


Figure 19. Number of active vessels by pounds landed

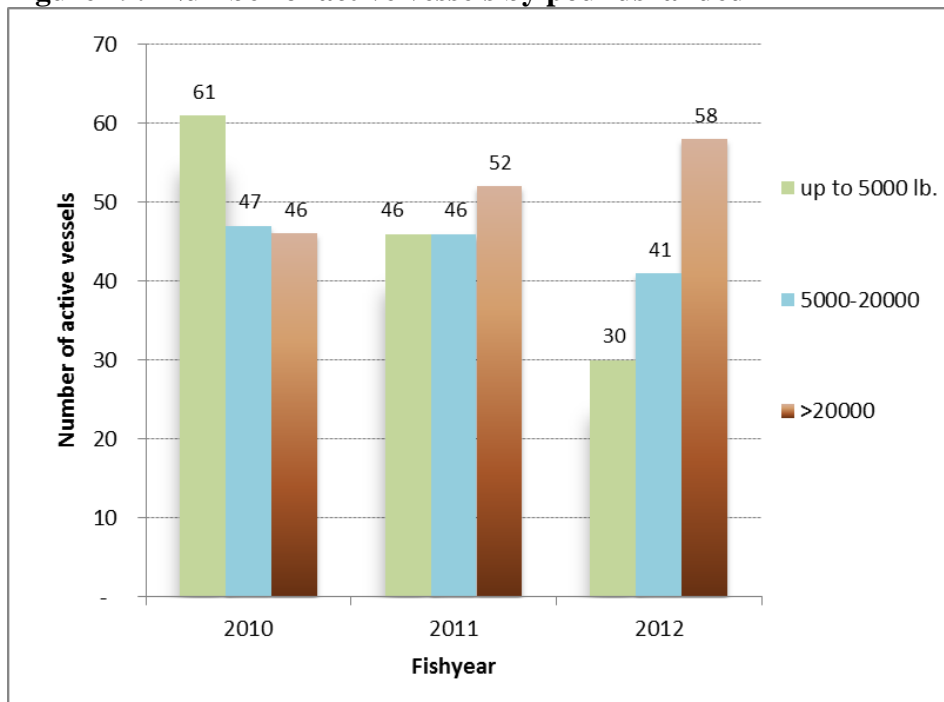


Figure 20. Net revenue per active vessel by pounds landed

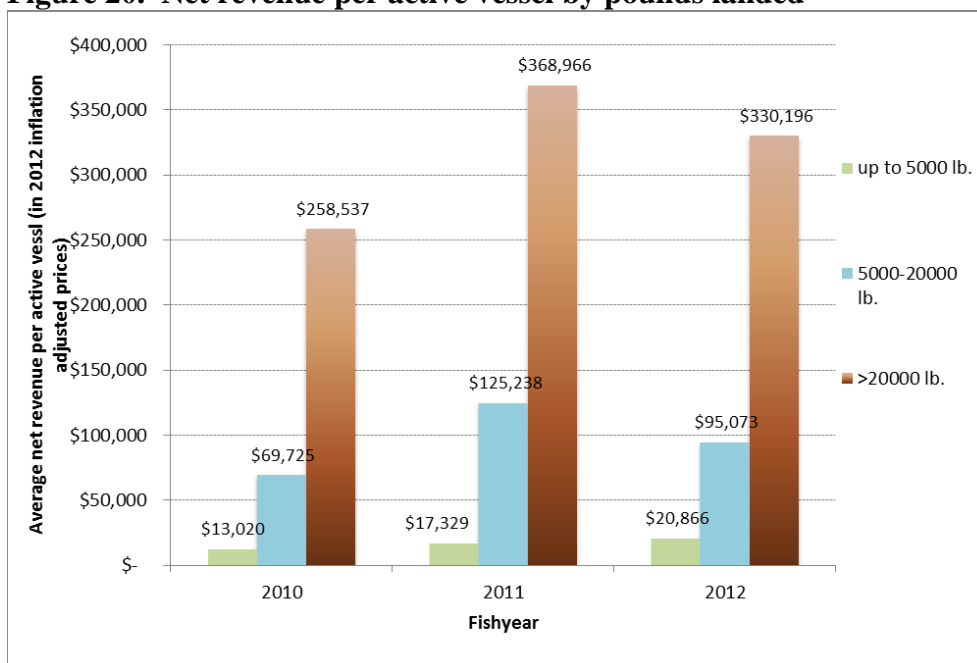


Figure 21. Scallop landings by active vessels

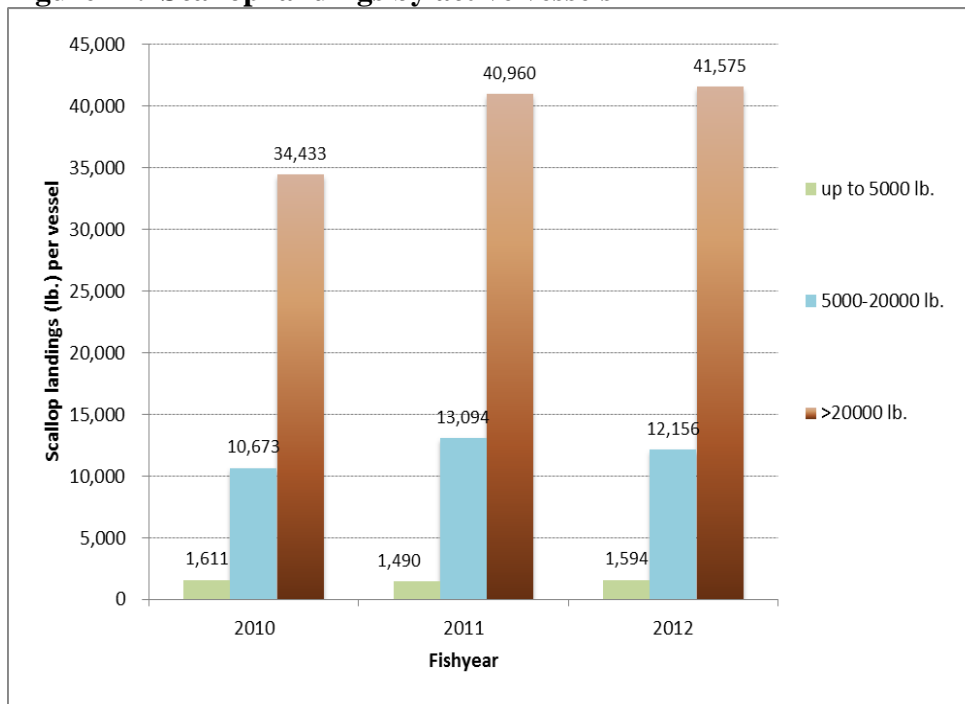
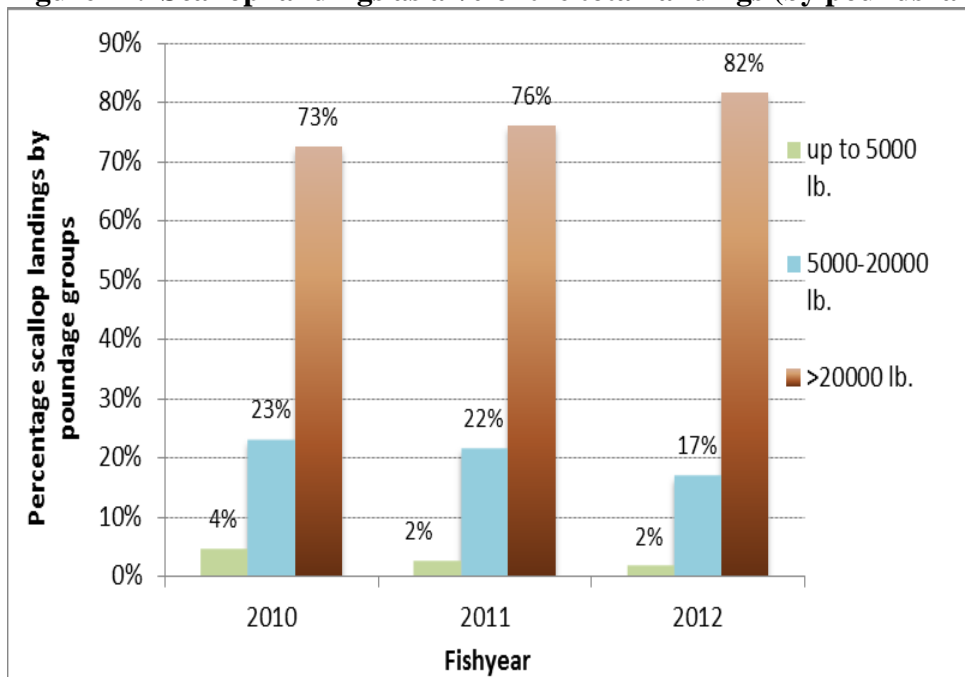


Figure 22. Scallop landings as a % of the total landings (by pounds landed)



3.2.6 LPUE by Area

As a result in the decline in the number of access area trip allocations in 2013 fishing year, the proportion of total landings by the LA vessels from the open areas increased to 78% in 2013 from less than 60% in the previous four years. The proportion of landings coming from the open areas by LAGC vessels increased to 98% in 2012 and 2013 fishing years from less than 90% in the previous three years (Table 13). Because Table 13 and those figures include all areas, these trends cannot be generalized to the landings in inshore areas by LA or LAGC vessels. Despite the decline in the share of open area landings by LAGC vessels in 2013 (to 8.3% in 2013 from 9.5% in 2012), the share of LAGC fishery in total landings increased to 6.7% in 2013 fishing year from less than 6% in 2010-2011 (Table 13).

Open area landings declined in 2013 for both permit types, by about 5% for LA and by 22% for LAGC vessels compared to the 2012 fishing year partly because of lower open area allocations and partly due to the lower LPUEs in those areas (Figure 23). However, while the average open area trip duration for LA vessels declined from 8 days in 2012 to 7.2 days in 2013, it increased from 0.7 days in 2012 to 0.78 days in 2013 fishing year for the LAGC vessels (Figure 24). The trends are line with the information obtained from the Observer data for all areas (See Table 71 to Table 76 in SAFE Report for Framework 26 for LPUEs, trip duration and trip costs by permit).

Table 13 – Scallop landings by area and permit (2014 preliminary for the partial year)

Area	Fishyear	LA Vessels			LAGC vessels			Grand Total
		Landings	% of all LA	% of total	Landings	% of all LAGC	% of total	
Access	2009	24,935,719	51%	96%	1,112,532	24%	4.3%	26,048,251
	2010	20,502,755	41%	97%	570,764	23%	2.7%	21,073,519
	2011	23,844,124	46%	98%	388,610	13%	1.6%	24,232,734
	2012	22,357,381	44%	100%	66,375	2%	0.3%	22,423,756
	2013	7,555,568	22%	99%	38,886	2%	0.5%	7,594,454
	2014	5,483,873	22%	96%	237,800	14%	4.2%	5,721,673
Open	2009	24,108,835	49%	88%	3,440,981	76%	12.5%	27,549,816
	2010	29,638,612	59%	94%	1,872,252	77%	5.9%	31,510,864
	2011	28,493,791	54%	92%	2,498,858	87%	8.1%	30,992,649
	2012	28,127,128	56%	90%	2,964,520	98%	9.5%	31,091,648
	2013	26,793,224	78%	92%	2,410,585	98%	8.3%	29,203,809
	2014	19,439,861	78%	93%	1,405,581	86%	6.7%	20,845,442
All Areas	2009	49,044,554	100%	92%	4,553,513	100%	8.5%	53,598,067
	2010	50,141,367	100%	95%	2,443,016	100%	4.6%	52,584,383
	2011	52,337,915	100%	95%	2,887,468	100%	5.2%	55,225,383
	2012	50,484,509	100%	94%	3,030,895	100%	5.7%	53,515,404
	2013	34,348,792	100%	93%	2,449,471	100%	6.7%	36,798,263
	2014	24,923,734	100%	94%	1,643,381	100%	6.2%	26,567,115

Figure 23–Average LPUEs in the open areas by permit type (2014 preliminary for the partial year)

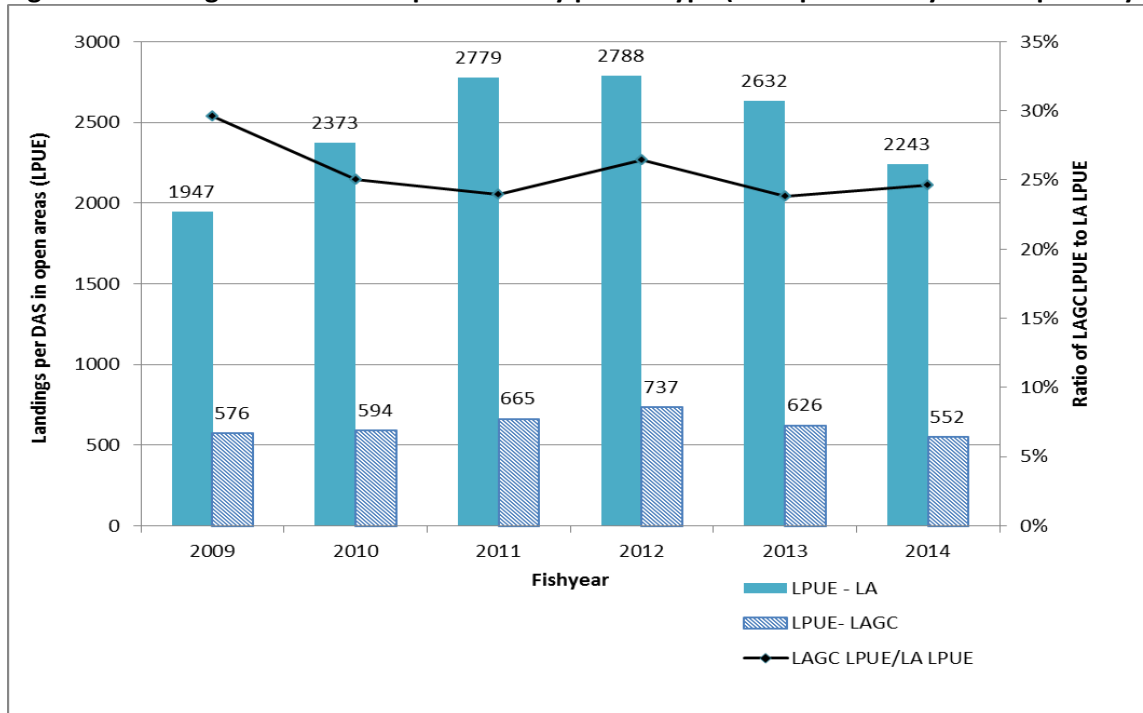
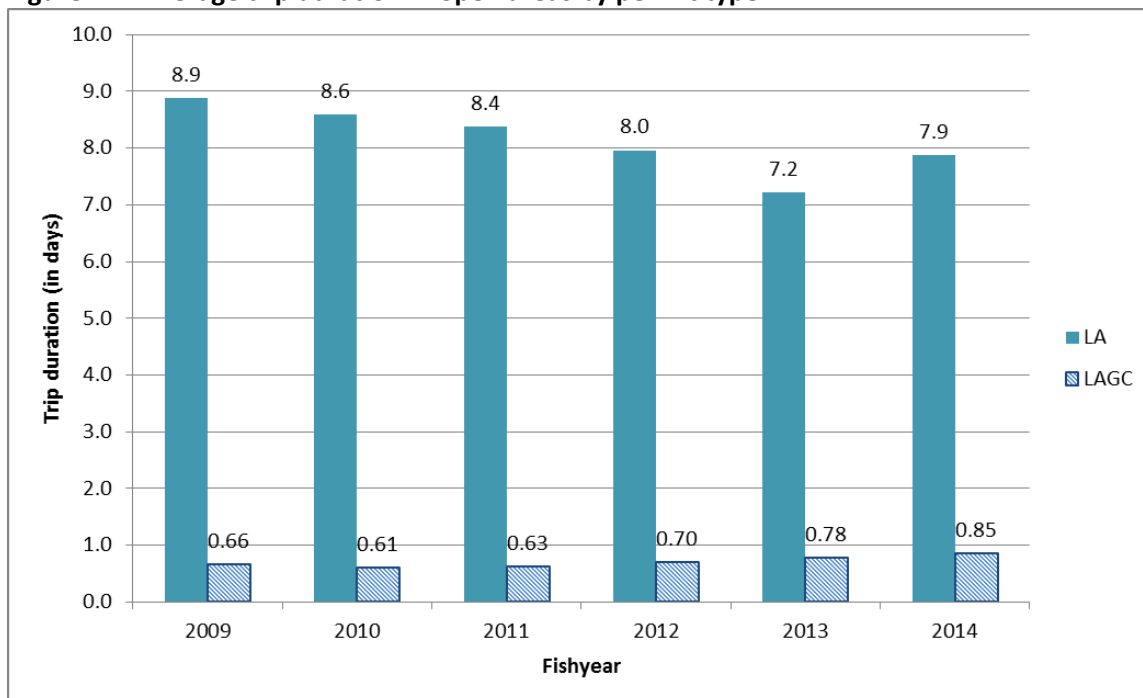


Figure 24 –Average trip duration in open areas by permit type



3.2.7 Fishing space

Insert maps of fishing effort from VMS for both permit types through 2012

PDT working on developing methods to quantify proportion of effort “inshore” versus “offshore”

Also working on VTR maps through 2014 – binned by TMS

These maps will be provided by email before the meeting and paper copies will be brought to the meeting; they were not ready at the mailing data.

3.2.8 Size composition of scallop catch

Consider looking at overall size composition of open area catch for LA and LAGC separately
Average price per size class.

4.0 POTENTIAL MEASURES (DRAFT)

This section included to give examples of potential measures that could be developed in a future action if the Council decides to pursue this issue further.

They are examples only and are included to stimulate conversation of the issues only.

The list is not exhaustive and the alternatives may change dramatically based on future meetings of the Advisory Panel, Committee and Council.

4.1 NO ACTION

4.2 DELENIATE AN INSHORE FISHING ZONE

Where would line be?

For certain areas only or along the entire coast?

Would LAGC vessels be restricted inside the line only and LA vessels excluded? Or would there be some level of movement across the boundary?

What data could be used to help identify potential boundary?

4.3 MAXIMUM NUMBER OF DAS A LIMITED ACCESS VESSEL CAN USE IN INSHORE FISHING ZONE

What is an appropriate DAS limit?

What data could be used to help identify limit, proportion of previous activity? What years?

Should limit in DAS be per vessel or for the entire fleet as a whole?

4.4 DIFFERENTIAL DAS USAGE FOR LIMITED ACCESS VESSELS IN INSHORE FISHING ZONE

What is an appropriate DAS charge inshore? Or should a lower DAS charge be used for farther offshore areas?

What data could be used to help identify the charge, proportion of previous activity? What years?

4.5 MONITOR LAGC CATCH RATES REALTIME AND WHEN CATCH FALLS BELOW A CERTAIN THRESHOLD PROHIBIT LIMITED ACCESS VESSELS IN INSHORE FISHING ZONE

How would catch rates be monitored?

What is an appropriate value to use, what should it be based on? Need to have different values for different zones? Vessel activity quite different in some regions.

4.6 DEVELOP AREA ROTATION PROGRAM FOR INSHORE AREAS

What areas make sense? Off Cape Cod, south of Rhode Island, coastal NJ, off VA/NC?

How designate areas? Need for increased surveys?

What data should be used to identify boundaries and catches?

Limits per vessel or per fleet?

Would LA vessels be permitted in inshore area rotation program – limited level?

Would LAGC vessels be permitted in offshore area rotation areas (NL, ETA, etc)

4.7 INCREASE OR REMOVE POSSESSION LIMIT FOR LIMITED ACCESS GENERAL CATEGORY VESSELS

Increased possession limits or removal of the possession limit could enable vessels to have more flexibility to fish more efficiently if inshore areas a concern – however, may not be in line with vision from Amendment 11 to maintain possession limits.

What data should be used to identify higher possession limit? Should the limit vary with resource condition inshore?

Vessel upgrades restrictions still apply that could restrict ability to increase vessel size/HP

4.8 OTHERS??

5.0 DATA NEEDS – DRAFT

PDT has begun brainstorming potential data needs that may be useful for this workshop. Does the AP have specific ideas or input about the list developed to date?

Description of trends for both fisheries –

- update data in Section 3 through 2013, and part of 2014 if possible
- summarize fishing space offshore using VMS data through 2012, get 2013 if possible

- summarize fishing space offshore using VTR through 2014 – kernel density analysis

Trends in quota per platform

Description of allocation per LAGC vessel groups

Fishing mortality by area – projected and realized – are SAMS areas inshore enough to overlap areas of concern?

LPUE for both fleets – by area and by vessel size if data available

Composition of LA and LAGC IFQ fleets – GRT, length, HP, average crew

Trip length and costs per DAS by permit – take from FW26