Considering the LAGC IFQ possession limit

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Council staff

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Scallop Committee—March 22nd, 2018

New England
Fishery Management Council

2018 Work Priority

Recent Activity:

The Council has identified the consideration of LAGC IFQ trip limits as a priority for 2018. The Council discussed addressing this issue though FW29 in 2017, but ultimately decided to begin work in 2018. The PDT discussed this issue on both conference calls (Feb. 28 & March 12).

Today:

Presentation on background information (see discussion document) and preliminary analyses on this topic, as well as initial PDT input.

Anticipated Outcomes:

Consider a range of trip limits to recommend to the Committee for analysis that will help to inform the scope of this priority.

2018 Work Priority (contd.)

Council discussion stemmed from a letter requesting the LAGC trip limit be raised to 1,200 lbs in FW29. Request letter suggested some of the following benefits to the IFQ fishery:

1) Increase profit & economic efficiency
2) Improve safety at sea
3) Focus fishing on the months of the year when the meats are the largest and most valuable.
4) Target scallops throughout the range of the fishery
5) Improve crew wages

LAGC IFQ management overview

Amendment 4 (1994)

- est. open access general category permit
- No qualification criteria required
- Set possession limit to 400 lb

Amendment 11 (2008)

- est. LAGC IFQ program to control gen cat fleet capacity
- Maintained 400 lb possession limit set in A4
- Vision statement: "…day boat fleet with possession limits to maintain historical character of fishery, provide opportunities to various participants…"

Amendment 15 (2011)

- Made fishery compliant with re-authorized M-S Act
- Increased LAGC IFQ possession limit to 600 lbs
  - Initial pref. raised limit to 1,000 lbs, but was dropped due to Council/public concerns of compromising "dayboat" fishery

Annual allocation & quota restrictions

- 5% of LA APL allocated to LAGC IFQ fleet

Maximum quota caps*:

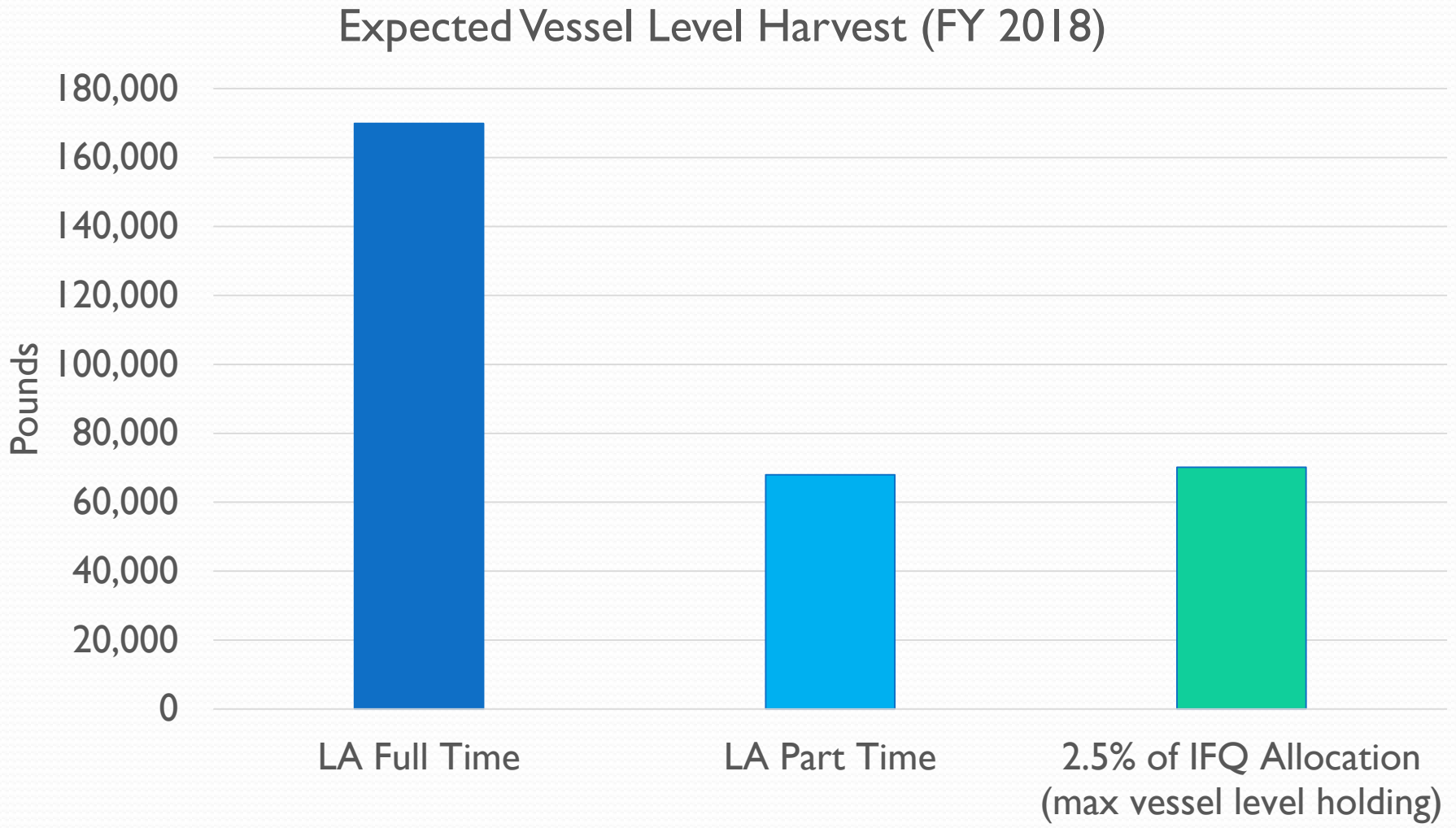
- 2.5% per vessel
- 5% per ownership entity
- 20% per voluntary sector

**does not include quota carried over from previous year (up to 15% carry over allowed)*

Annual LAGC IFQ allocation (excluding LA vessels with LAGC permit) from FY2011-FY2018. The right columns show quota accumulation caps for individual vessels, ownership entities, and sectors for each year.

		quota cap restriction		
		individual vessel	ownership entity	IFQ scallop sector
FY	LAGC sub-ACL (5% of APL/ACL)	(2.5% of sub-ACL)	(5% of sub-ACL)	(20% of sub-ACL)
2011	2,910,102	72,753	145,505	582,020
2012	3,095,450	77,386	154,773	619,090
2013	2,227,142	55,679	111,357	445,428
2014	2,202,859	55,071	110,143	440,572
2015	2,700,663	67,517	135,033	540,133
2016	4,067,529	101,688	203,376	813,506
2017	2,261,943	56,549	113,097	452,389
2018	2,805,500	70,138	140,275	561,100

Expected Harvest



Fishery trends

Use fishery data to:

1) Describe annual trends in fleet activity from FY2010-FY2016/2017
2) Understand activity on monthly basis
3) Compare LAGC capability to LA component

Data used:

- Pooled VMS, VTR, dealer reports at trip level for declared LAGC scallop trips. Does not include LA/LAGC combo vessels (FY2010 to May 30, 2017)
- Pooled observed hauls/trips on LAGC IFQ and LA vessels (FY2010 to Dec 30, 2017)

Active permits (FY2010 to FY2016)

The number of active permits with at least one scallop declaration.

"Total" includes inactive/CPH permits.

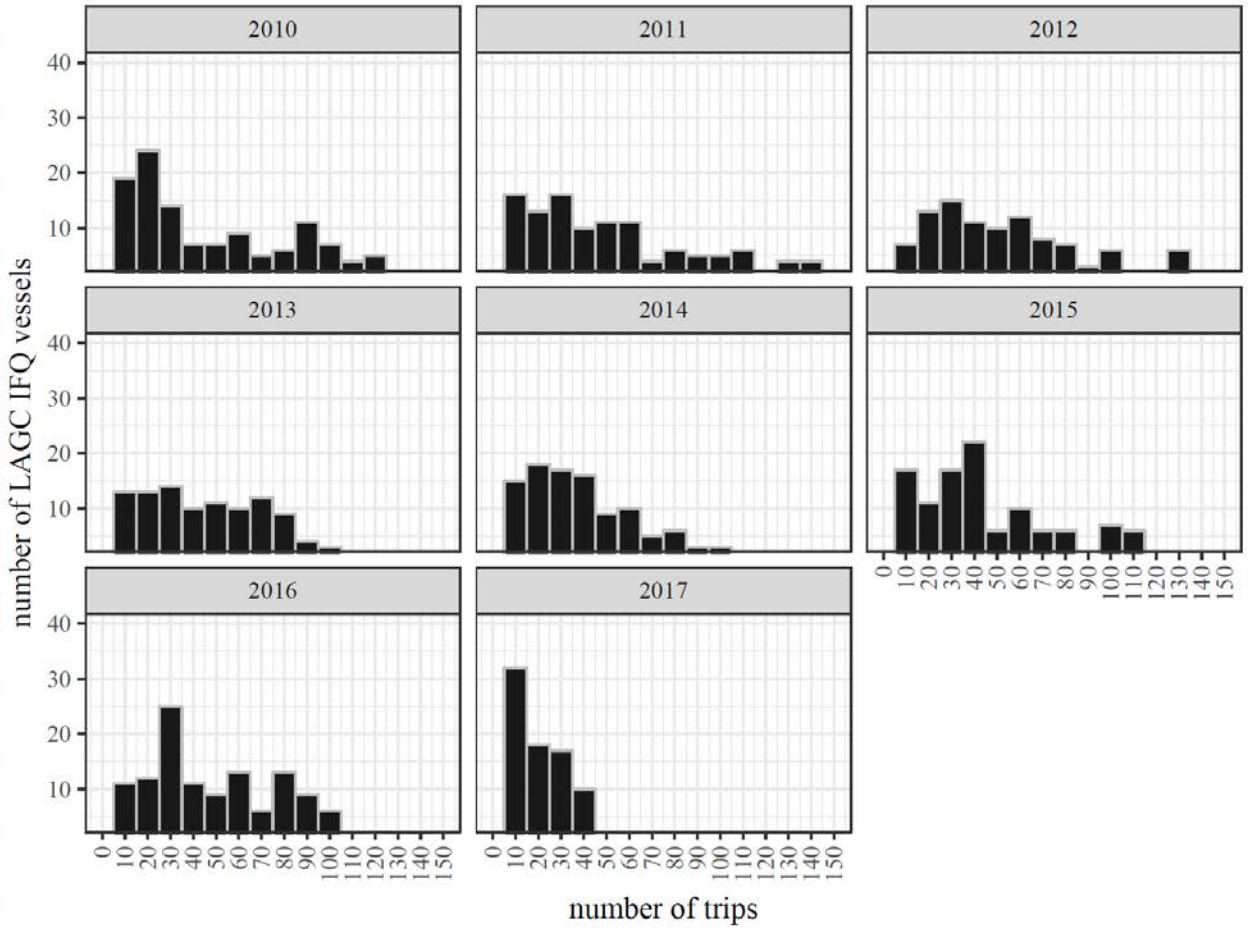
Vessel activity has fluctuated over time, but appears to be increasing in recent years.

FY	Active permits (LAGC only)	Active (including combo vessels)	Total permits
2010	131	151	330
2011	124	138	330
2012	109	123	318
2013	108	118	316
2014	113	131	316
2015	115	128	313
2016	130	141	314

Vessel participation, FY2010-FY2017

- Number of trips taken vary in concert with allocation
  - Most take 50 trips or less per year
  - Vessels appear to take more trips per year in FY2015 → compared to previous years

The number of LAGC vessels binned by number of trips taken from FY2010 to FY2017 (bin size = 10 trips; FY2017 data reported through May 30, 2017). Note that the y-axis starts at 4.

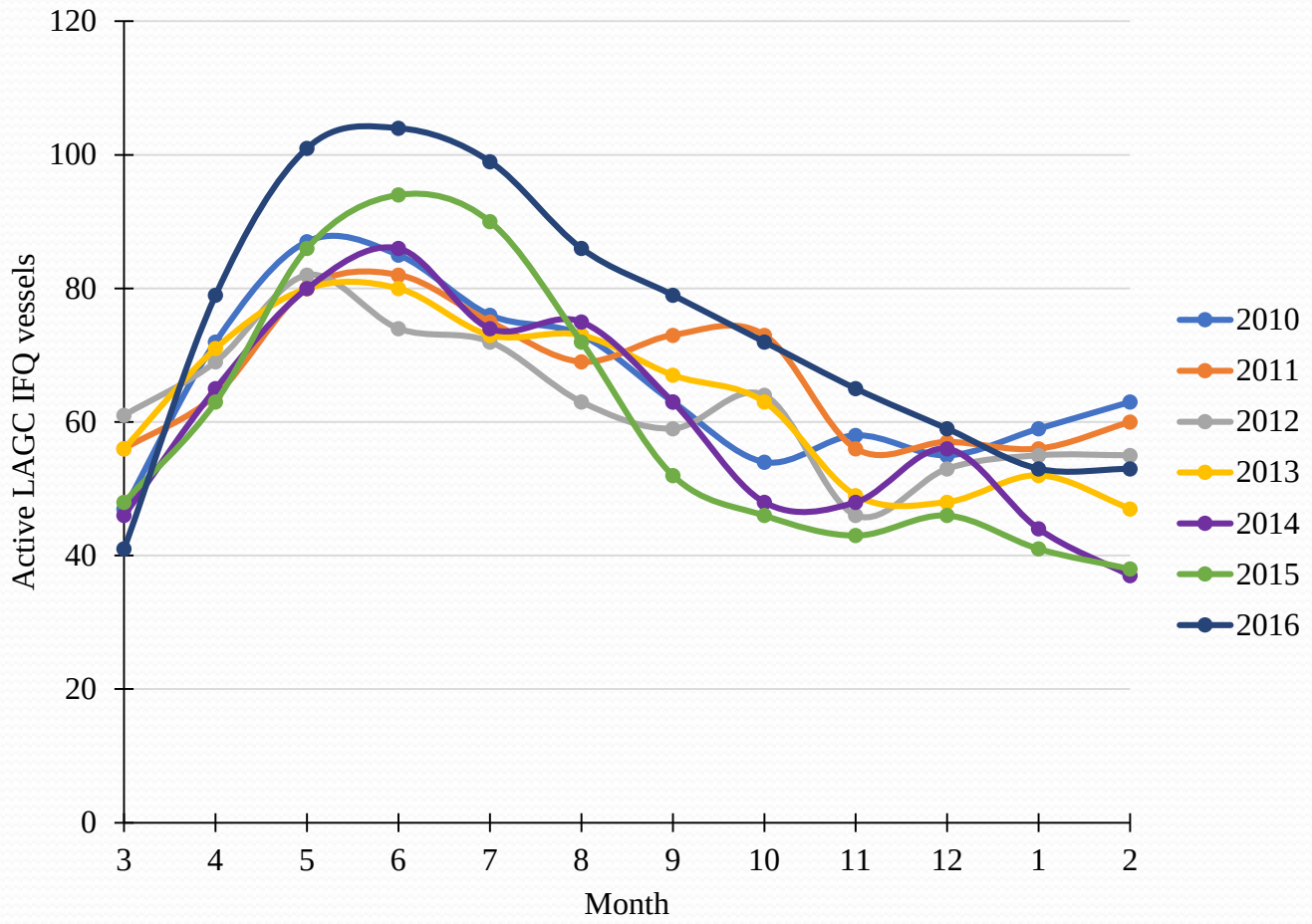


Monthly activity

- Vessel activity varies year to year, but relatively consistent on monthly basis

- Most vessels active in late spring/early summer→ optimal meat yield

The number of active LAGC IFQ vessels by month in FY2010 to FY2016.



Monthly activity

- Trip frequency follows vessel activity trend—increase trips in spring/summer months
- average trips per vessel also increases in spring/summer months

LAGC vessels fish year-round, however, fishing stacks up in months with best meat yield.

Figure 7. The number of LAGC IFQ trips taken by month from FY2010 to FY2016.

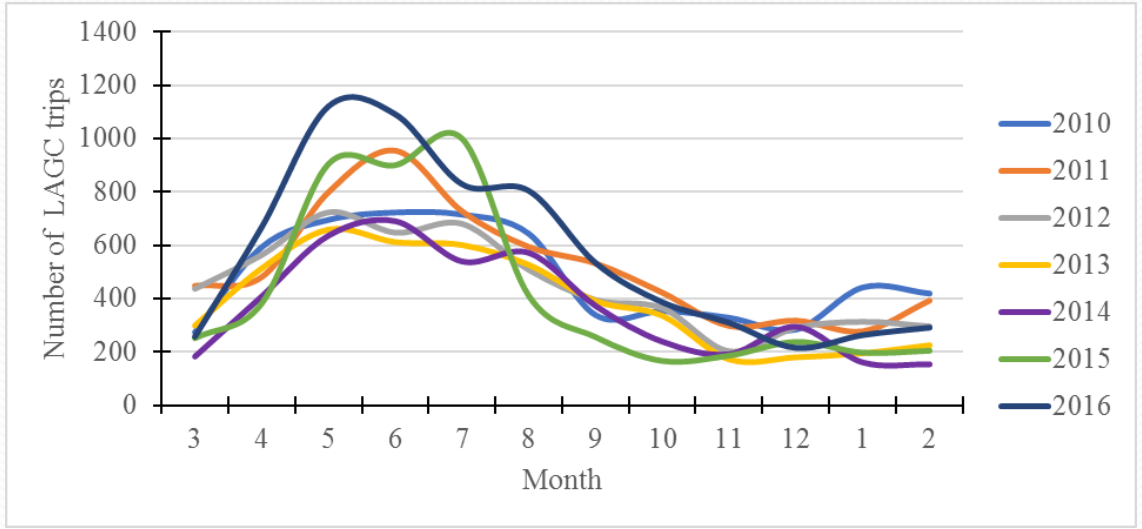
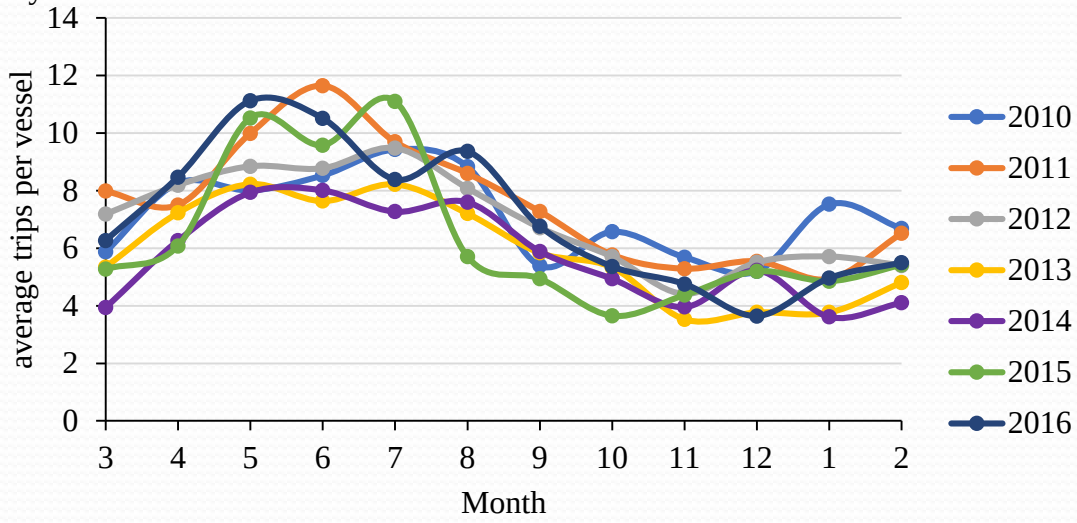


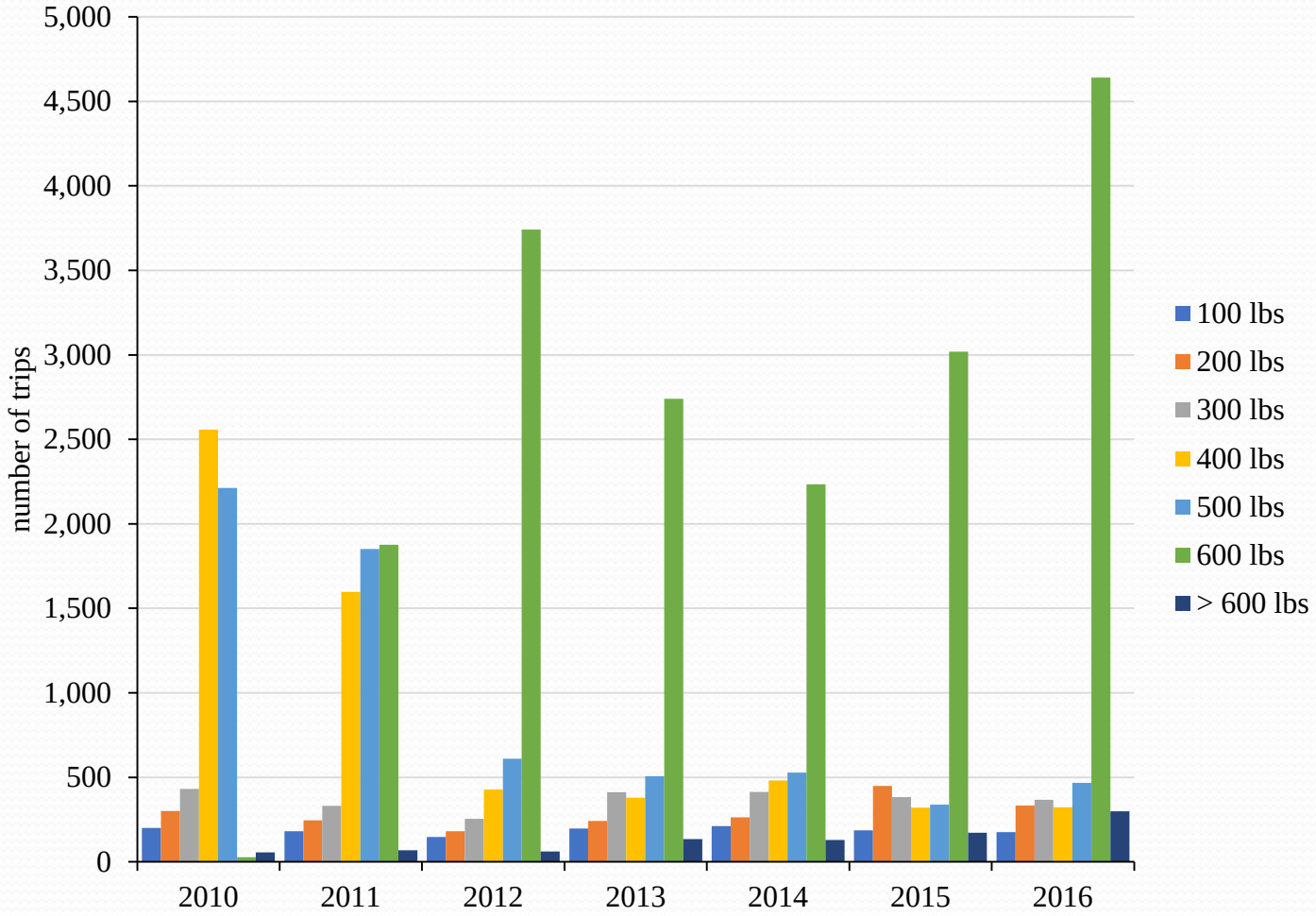
Figure 9. The average number of trips taken by LAGC IFQ vessels per month from FY2010 to FY2016. Monthly averages were calculated using data from active vessels only.



Trips by pounds landed (updated)

FY2011: roughly same number of 400, 500, 600 lbs trips → due to mid-season increase in trip limit.

The majority of LAGC trips land ~600 lbs.



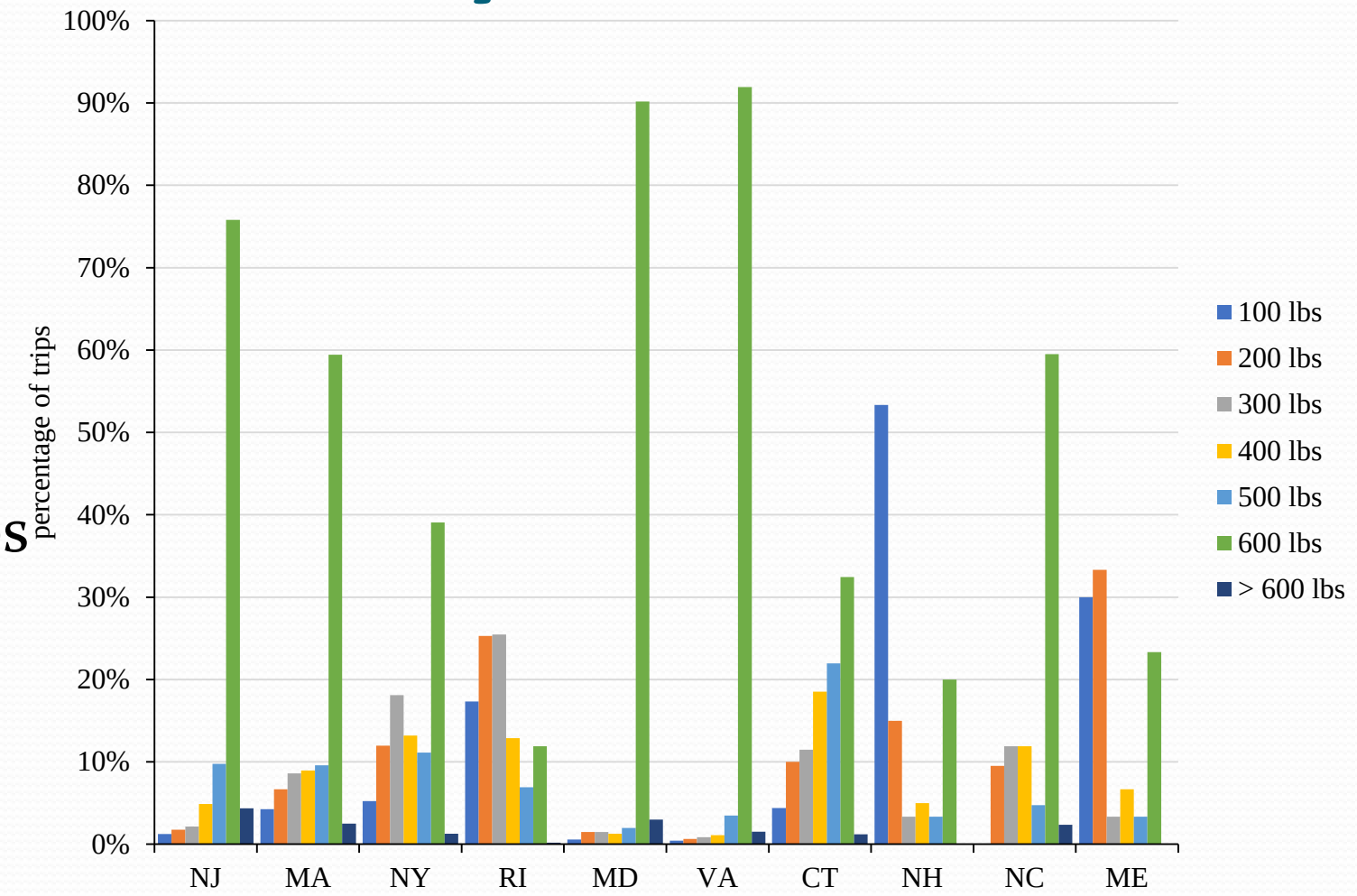
Doesn't include NGOM or research trips.

Trips by pounds landed by state

Breakdown shows proportion of declared scallop trips per state by pounds landed, FY2012-FY2016

States in descending order, most trips (left) to least trips (right).

Note spread of <500 lb trips in RI, NH, ME vs. NJ and MA.



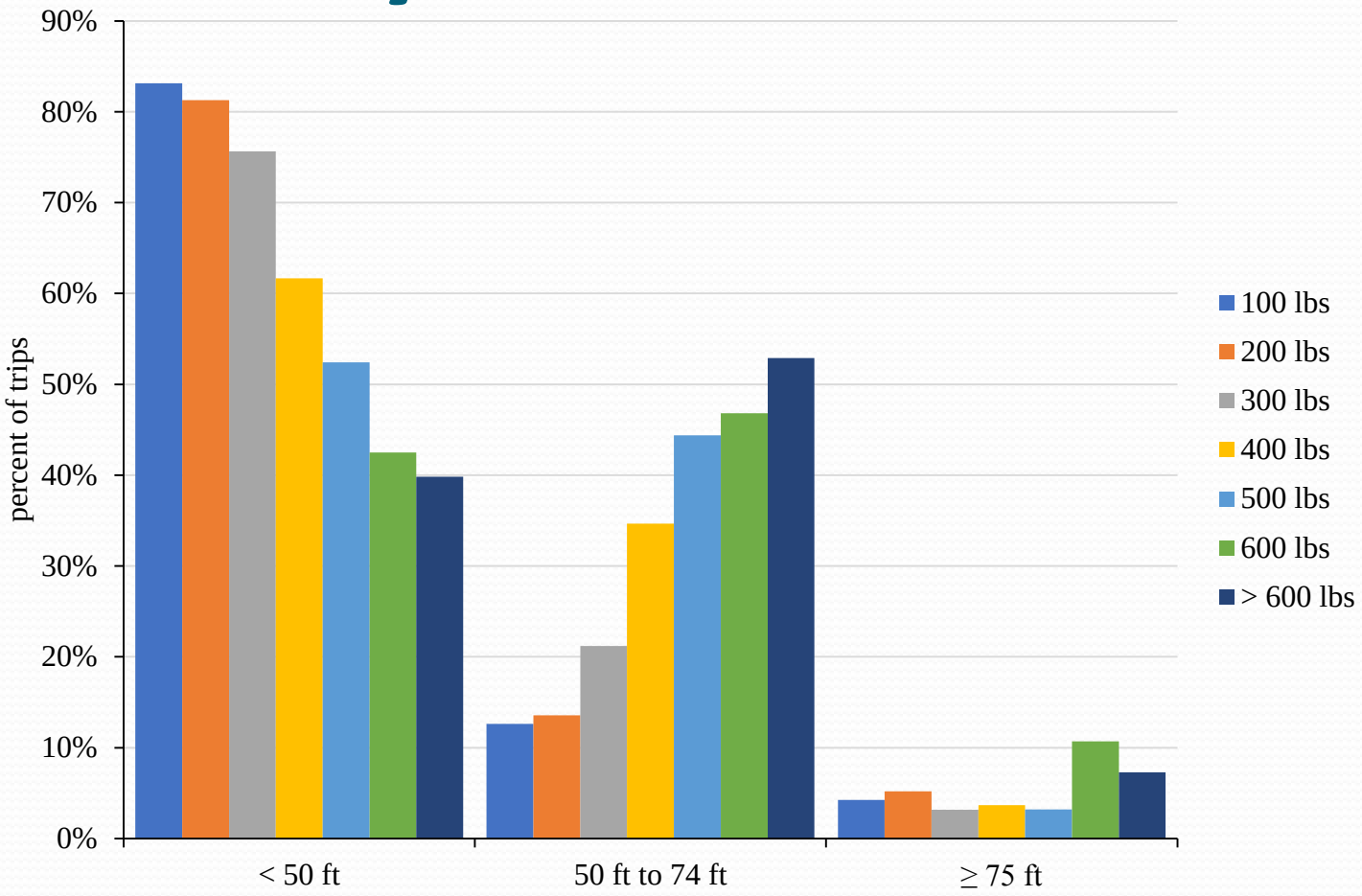
Doesn't include NGOM or research trips.

Trips by pounds landed by vessel size

Pooled FY2012-FY2016 trip data shows percentage of declared scallop trips in "trip group" landed by vessel size.

Ex: 83% of 100 lb trips were landed by vessels less than 50 ft.

- ***Smaller vessels (< 50') land greater proportion of ≤ 400 lbs trips.***
- ***Smaller vessels (< 50') and larger vessels (50-74') land similar proportion of 500-600 lbs trips.***

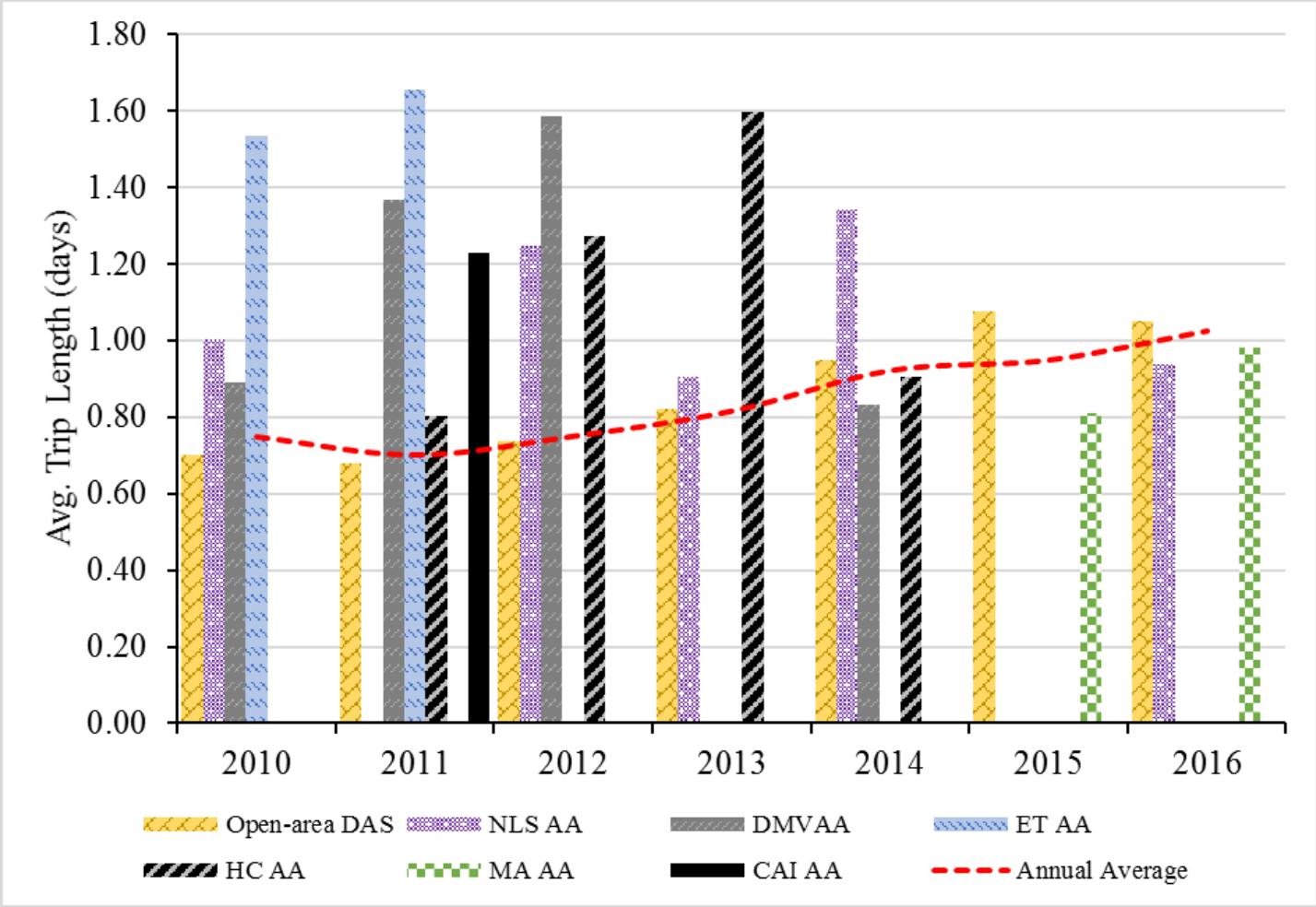


Doesn't include NGOM or research trips.

Trip length

- Overall trip length = ~1 day
- AA trips typically longer than open (with exceptions)

The average trip length (days) of LAGC IFQ vessels fishing open trips and access area trips.



Access Area fishing

- Notably greater trip time to AA usually corresponded with fewer allocated trips being taken (and vice versa).
  - FY2011—trip time to ET was highest in time series. Less than 1% of ET trips were taken.
  - FY2016—trip time to NLS and MAAA less than open trips. All allocated NLS and MAAA trips were taken.

The percent of allocated access area trips taken by LAGC IFQ vessels from FY2010 to FY2016. Data used in the table also includes RSA compensation trips.

	CAI AA	NLS AA	DMV AA	ET AA	HC AA	MA AA
FY	Trips Taken	Trips Taken	Trips Taken	Trips Taken	Trips Taken	Trips Taken
2010		69.5%	96.6%	4.3%		
2011	5.5%		11.8%	0.8%	103.9%	
2012		12.8%	1.7%		14.2%	
2013		31.1%			2.8%	
2014		1.2%	79.3%			
2015						101.5%
2016		100.0%				100.2%

Haul vs steam time

Average hours with gear in the water compared to average hours transiting to fishing grounds (observed).

Tradeoff between steam time and quality of fishing evident, ex:

	CAI		DMV		HC		MAAA		NL		Open	
FY	haul	steam	haul	steam	haul	steam	haul	steam	haul	steam	haul	steam
2010			5.6	7.2					6.5	10	6.9	3
2011	2.7	9.7	7.5	14	7.7	8.6					6.8	3.2
2012					7.2	5.2			4.4	13	8	3.2
2013									5	8.9	13	4
2014			7.7	6.3					30	8.3	16	3.9
2015							7.2	6.7			18	4.2
2016							11	7.6	3	9.5	16	5.1
2017							12	7.8	5.3	9.8	16	5

- FY2016—haul v steam time in NLS and MAAA less than open trips. All allocated NLS and MAAA trips were taken.

LAGC fleet will transit farther to reach optimal fishing conditions.

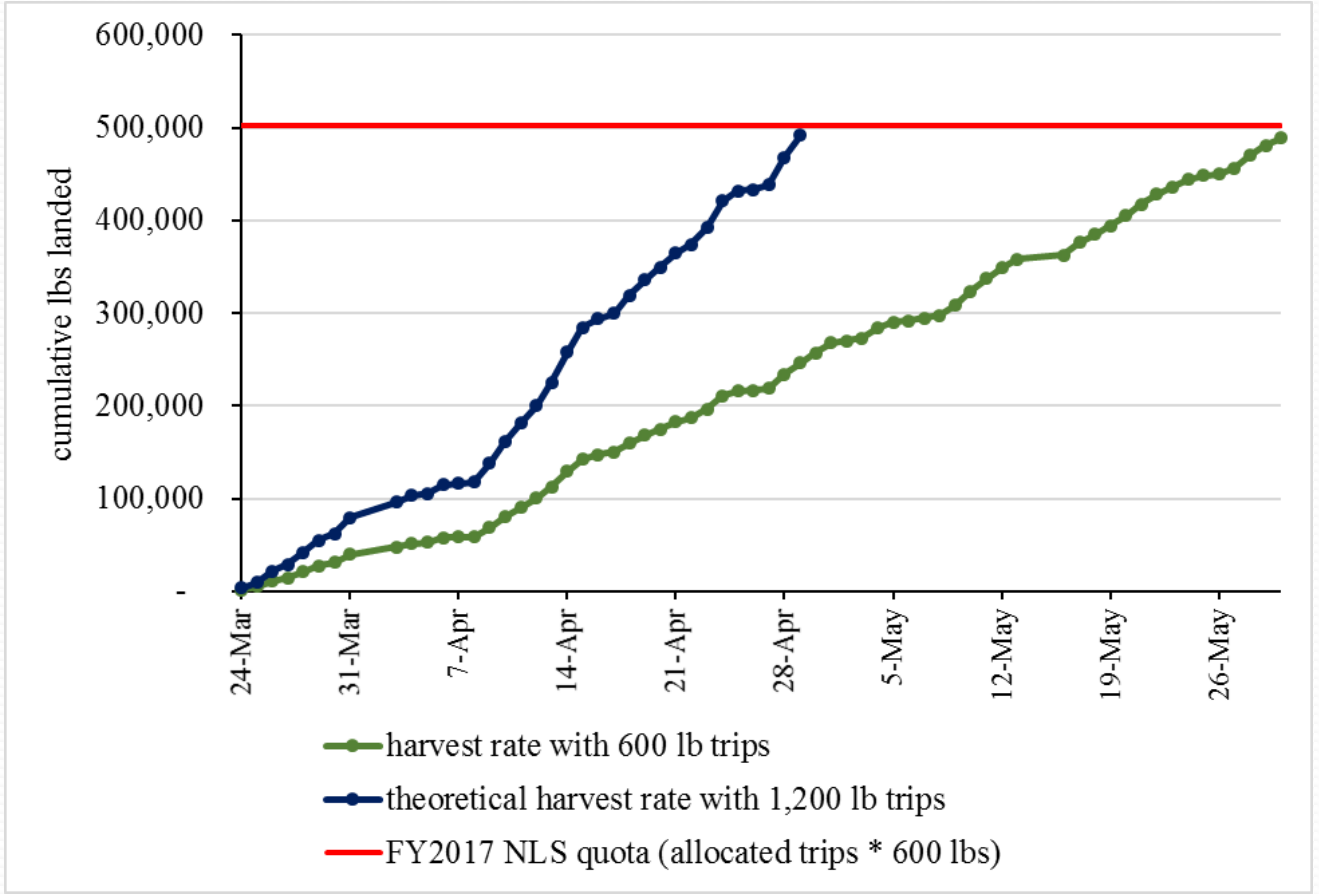
Harvest rate from AA

FY2017 NLS as an example:

LAGC fishery completed NLS AA allocation in ~2 months (837 trips).

- Nature of LAGC fishery means potential for 'derby' in AA's exists (i.e. AA trips allocated at fleet level)

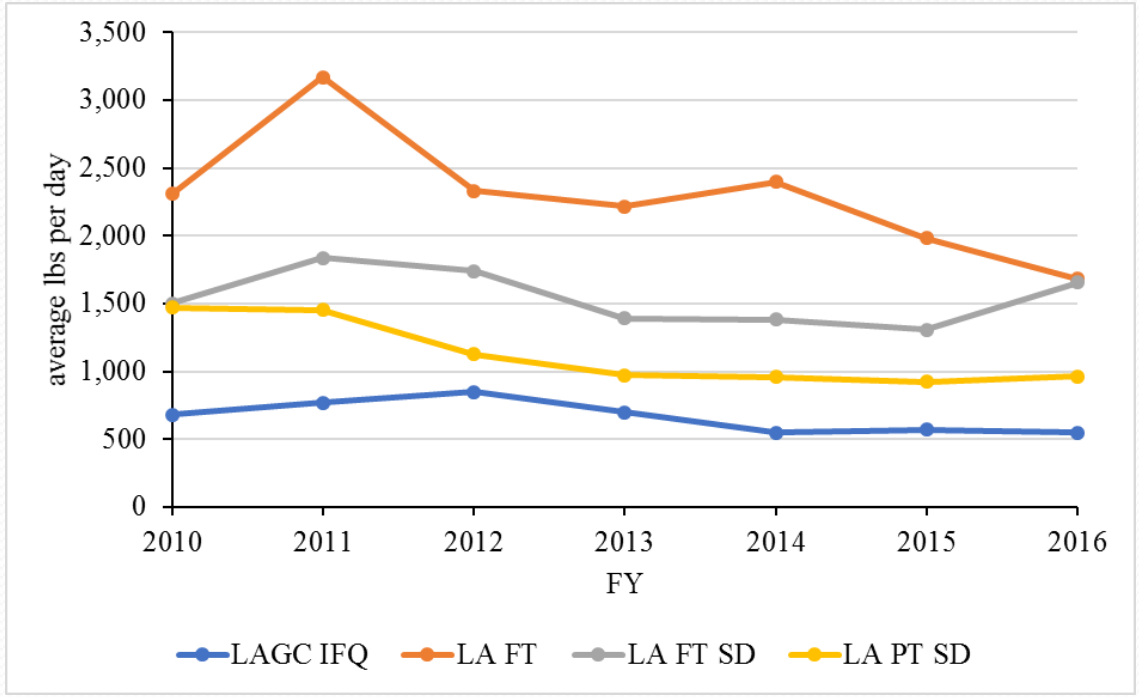
What are the consequences of a ~1 month fishery in NLS?



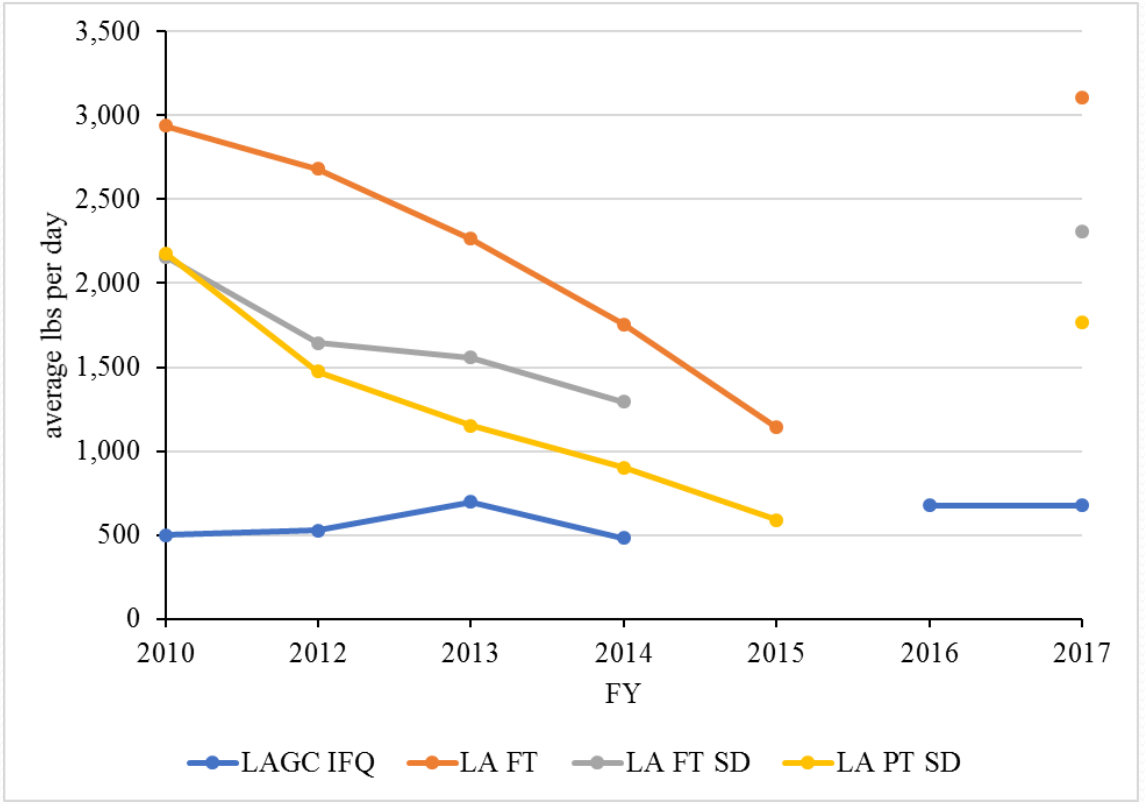
Green line—rate of harvest in NLS
Blue line—theoretical harvest rate with 1,200 lb trip limit
Red line—FY2017 NLS trip allocation in lbs (837 trips * 600 lbs).

LAGC vs. LA catch rate

Average pounds of scallops landed per day by vessel type.



Average pounds of scallops landed per day from the NLS by vessel type.



Catch rate is average of scallops landed/total trip length by vessel type.

- Note LA small dredge ('SD') are limited to 10.5' dredge width. Same as LAGC IFQ (except when fishing in Mid-Atl).

- lbs per day follows similar annual trend across vessel types, but at different magnitude
- LA part-time small dredge and LAGC IFQ appear to be most closely related.

IFQ landings on non-scallop trips

Pooled VTR, VMS, dealer data for LAGC IFQ vessels with reported scallop landings on non-scallop declarations

- Fluctuated annually, ranging from ~31K to ~88K.
- Landings attributed to between 22 and 36 permits.

Annual IFQ landings by LAGC vessels on non-scallop trips (FY2010-FY2016) in lbs (left column) and as a percentage of LAGC IFQ allocation (middle column). The right column shows the number of permits landings were attributed to.

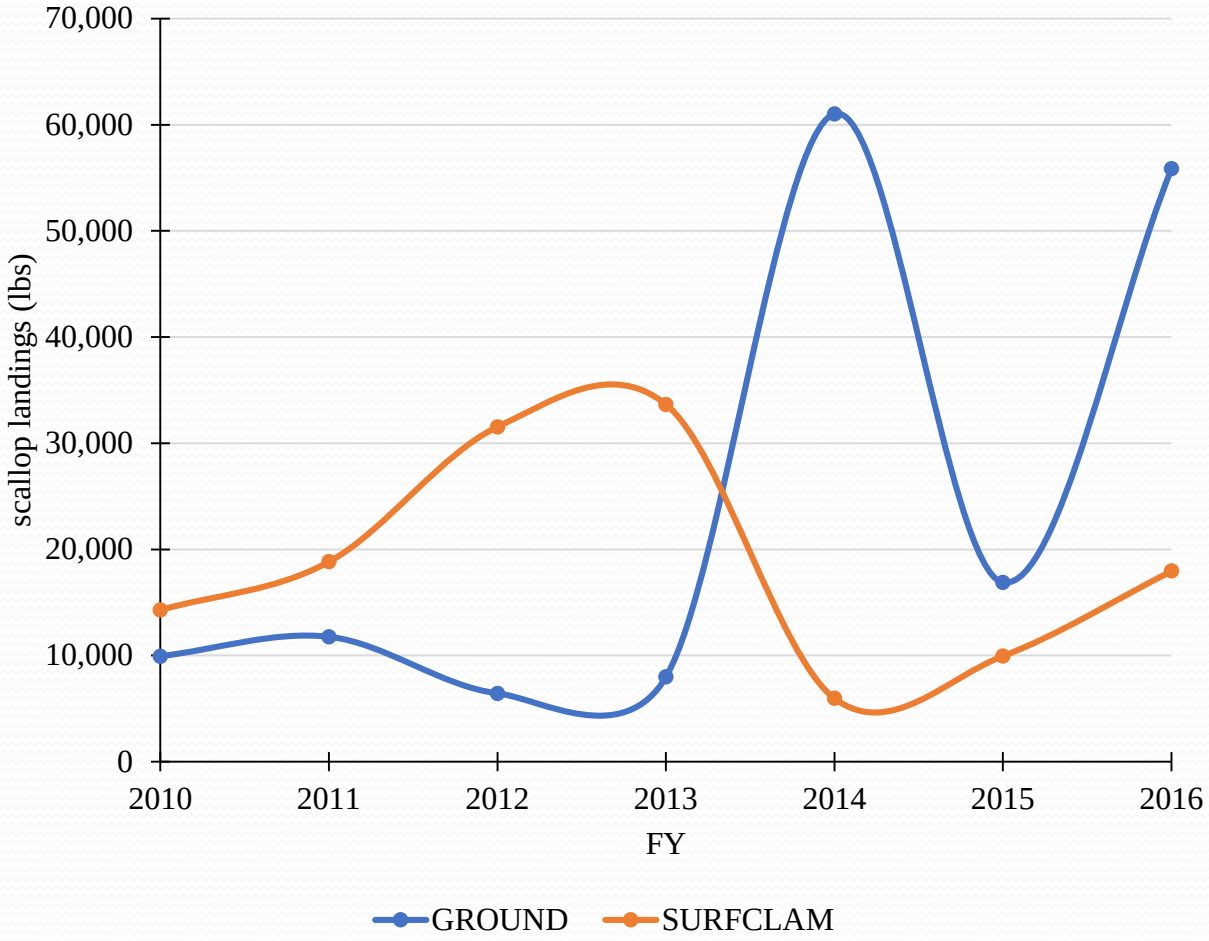
FY	scallop landings (lbs)	perc. of allocation	number of permits
2011	47,100	1.6%	36
2012	49,796	1.6%	25
2013	44,041	2.0%	23
2014	88,204	4.0%	30
2015	37,246	1.4%	25
2016	78,019	1.9%	22

IFQ landings on non-scallop trips

- Majority of landings attributed to:
  - **GROUND**
  - **SURFCLAM**

Minimal landings also from: FLUKE, MONKFISH, SCUP, SQUID/WHITING

Figure 1. IFQ landings by vessels on declared groundfish and surf clam trips (FY2010-FY2016).



Overall landings/revenue by LAGC vessels

Annual landings/revenue were categorized for LAGC vessels that made at least 1 declared scallop trip in a year:

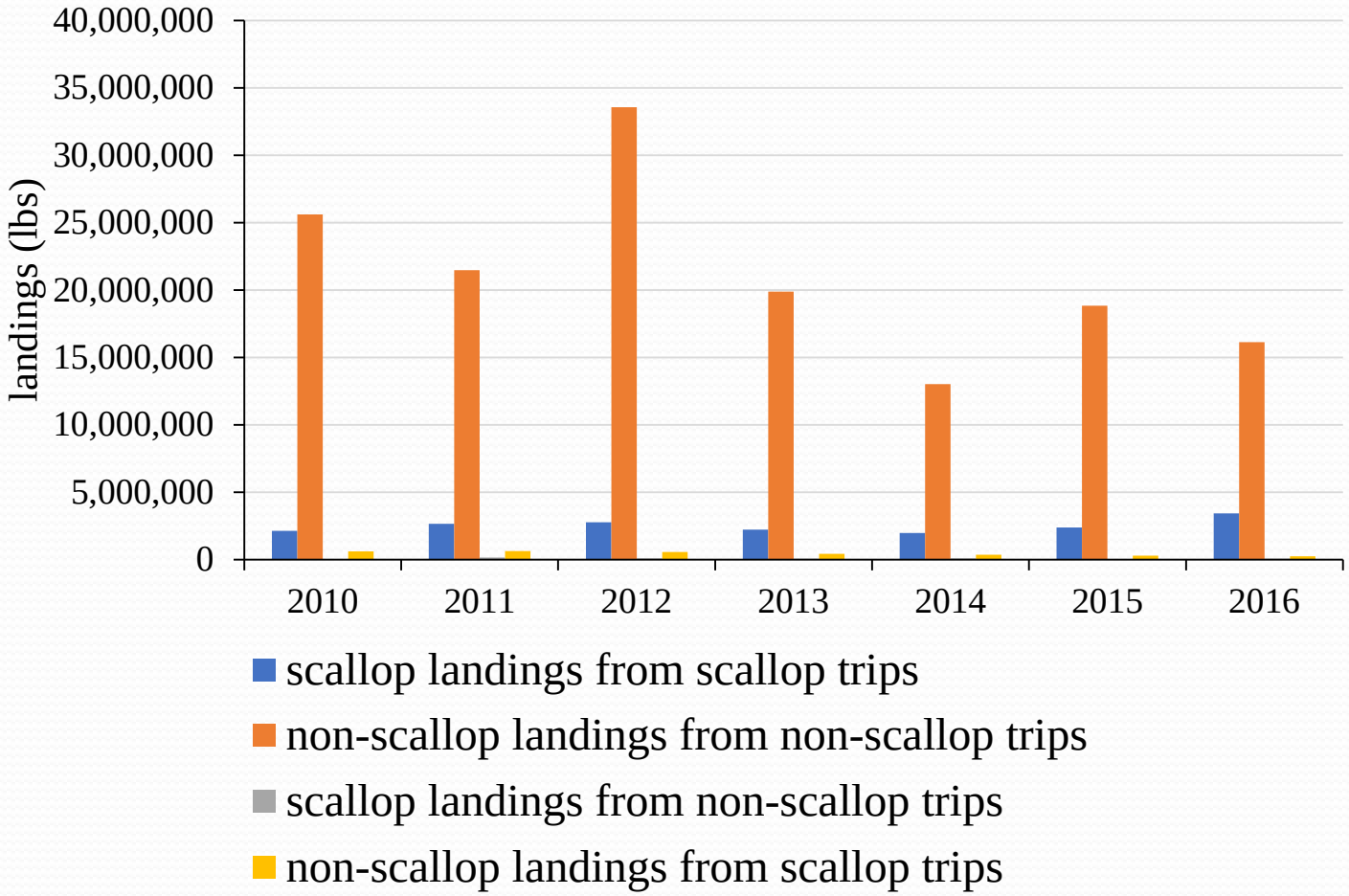
1. Scallop landings/revenue from scallop trips
2. Non-scallop landings/revenue from non-scallop trips
3. Scallop landings/revenue from non-scallop trips
4. Non-scallop landings/revenue from scallop trips

- Does not include LA/LAGC combination vessels
- Does not specify ‘non-scallop’ trip type or ‘non-scallop’ species

Categorized landings by active LAGC vessels

- Substantially greater landings coming from outside of directed scallop fishery

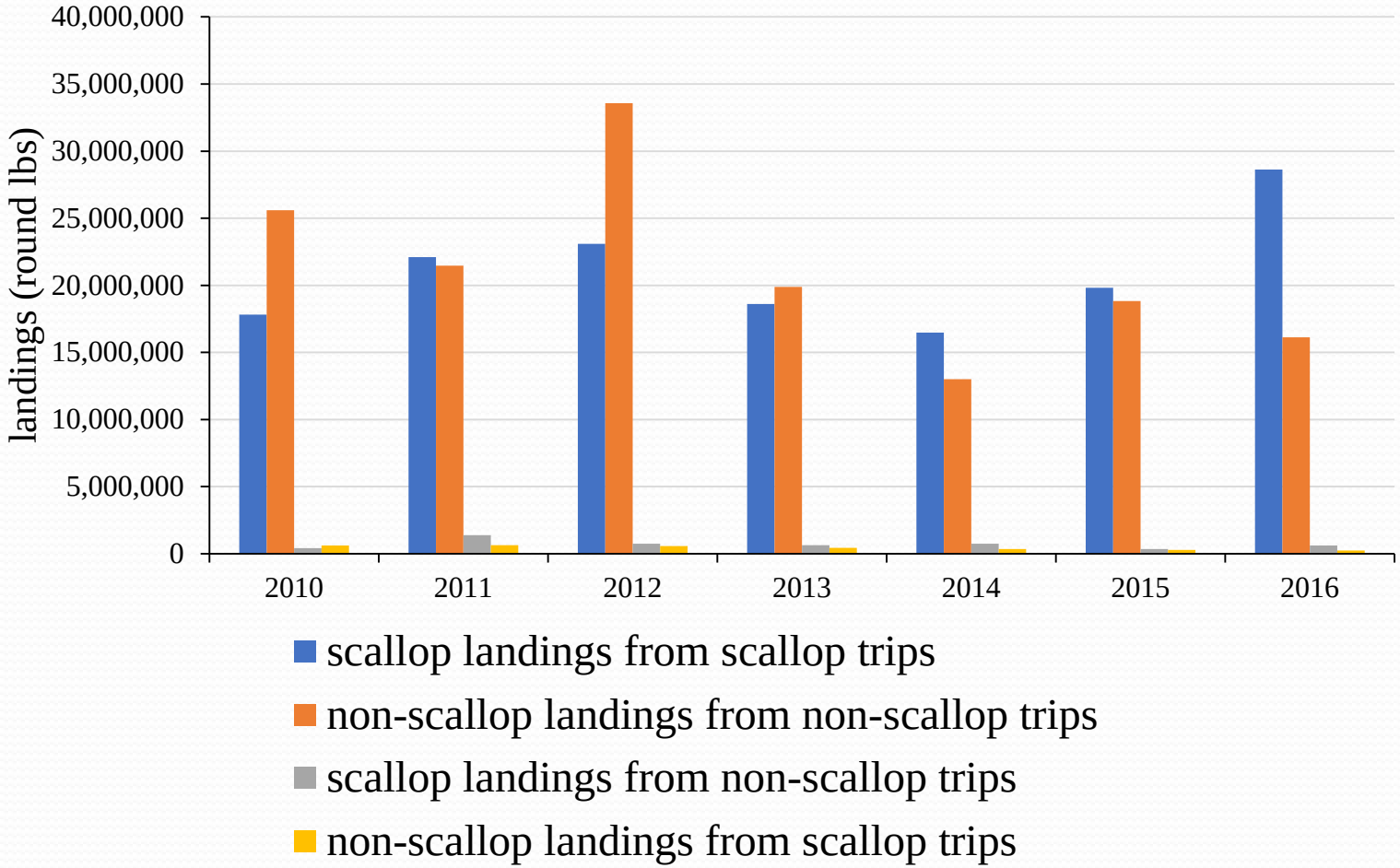
…“apples and oranges” caveat of comparing scallop meat lbs to round weights of fish species…



Categorized landings by active LAGC vessels

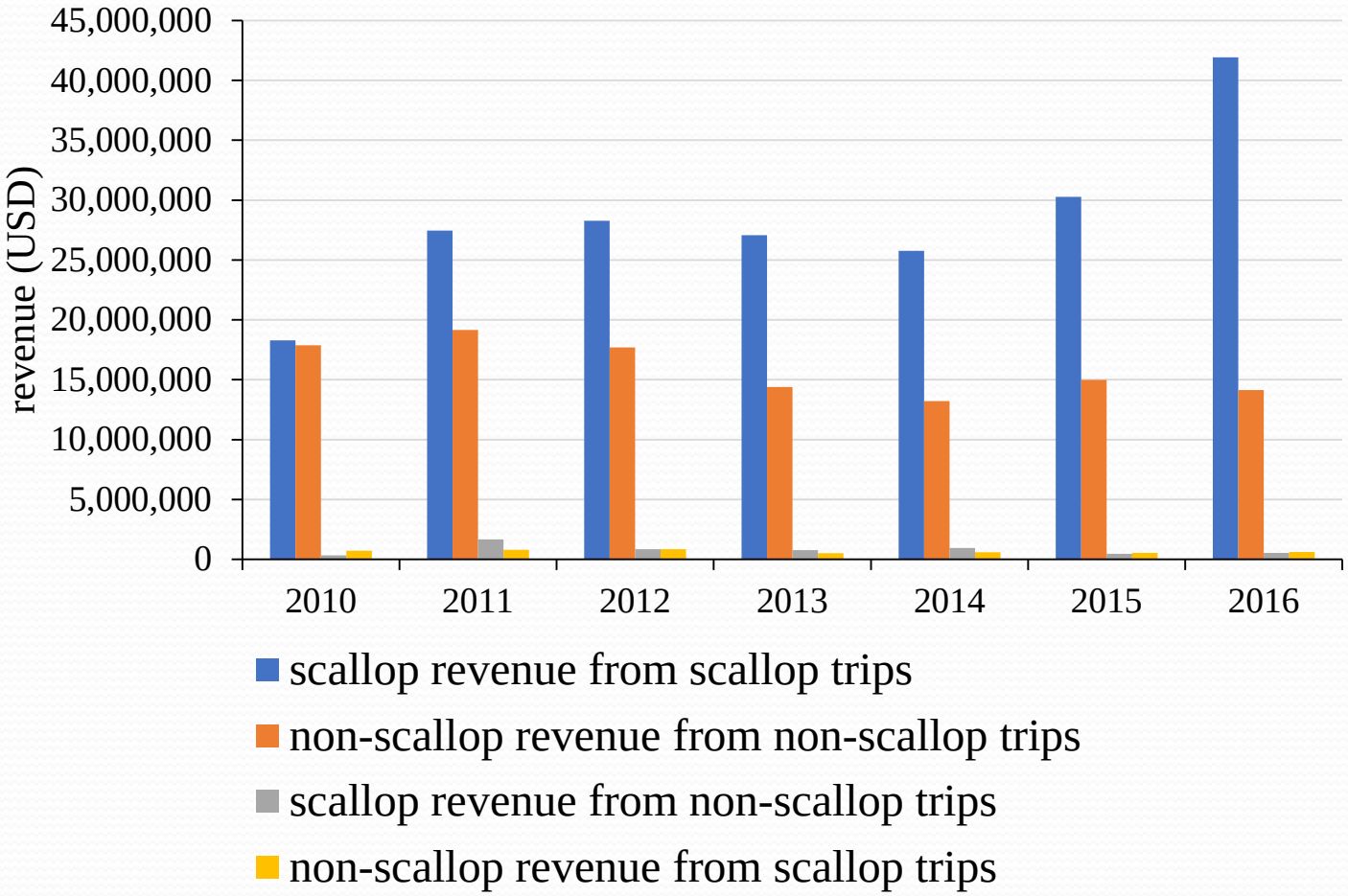
Same data, but with scallop landings in round weight (dressed weight * 8.33)

- Scallop vs. non-scallop landings not as skewed
- Scallop landings from scallop trips highest from FY2014 →



Categorized revenue by active LAGC vessels

- In FY2010–comparable value of directed scallop fishery vs. other fisheries.
- From FY2011 → value of directed scallop fishery increases, value of other fisheries decreases.
- FY2016—directed scallop fishery value substantially greater than non-scallop fisheries that LAGC vessels participate in.

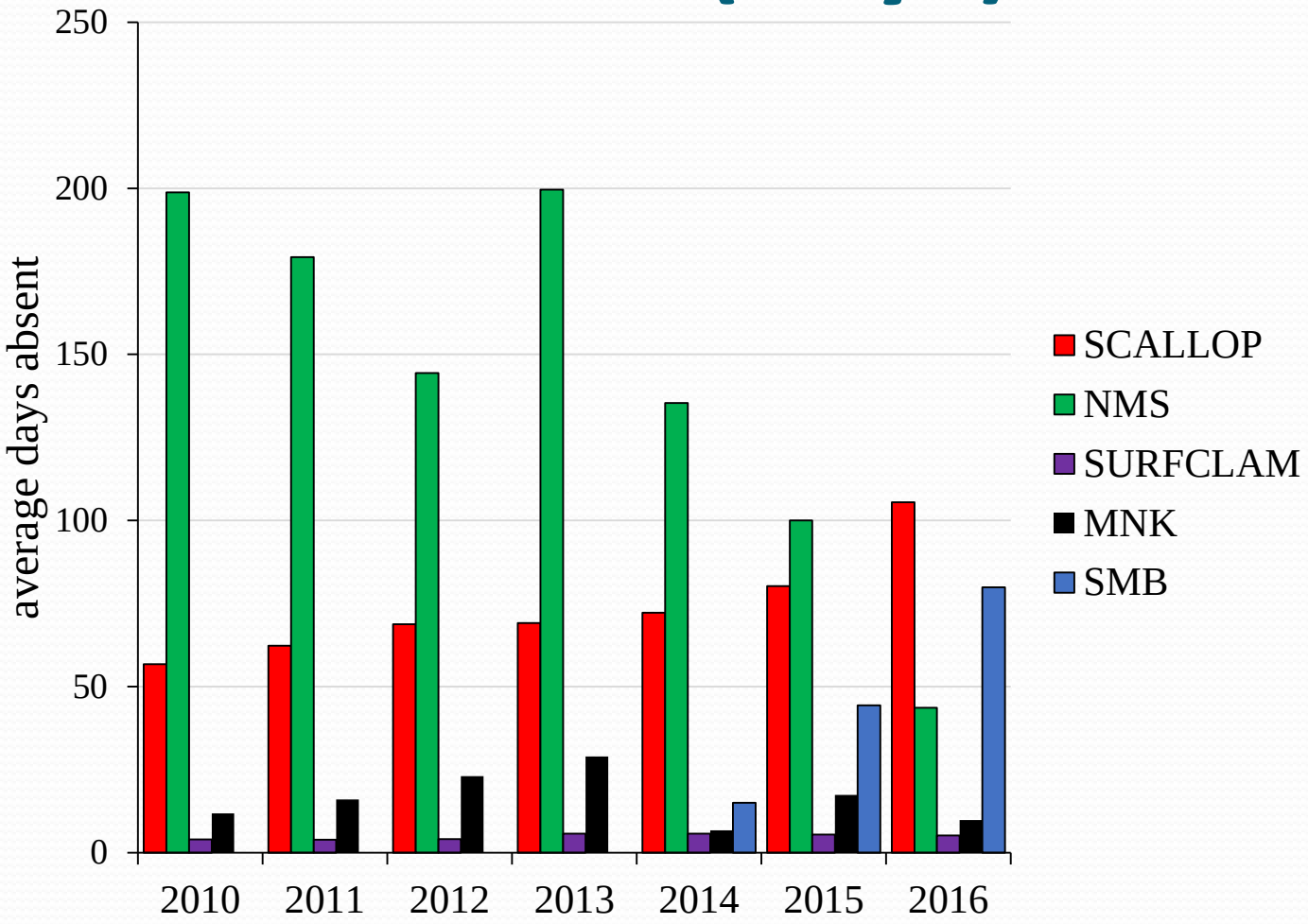


Participation in other fisheries (days)

Participation measured in average days absent per year by fishery.

- avg. scallop days have increased from FY2010-FY2016
- Notable decrease in NMS days

What are implications of reduced scallop days on other fisheries?



Active LAGC IFQ vessels only (no combo vessels).

PDT discussion/initial input

- Increasing the trip limit could add to the seasonal distortion of when the most fishing is already occurring (i.e. late spring and early summer)—consider potential impacts on market prices and revenue of LAGC and LA components.
- There may be ways to better manage derby fishing in access areas (i.e. delaying access to months with the best yield).
- If the Council considers increasing the trip limit, it should also consider the current regulations governing the amount of observer compensation LAGC IFQ vessels are eligible for (i.e. only one day, even for multi-day trips).

PDT discussion/initial input (contd.)

- The threshold between what could be done in a FW vs. amendment depends on the range of trip limits considered.
  - Council considered a 1,000 pound possession limit in A15, but ultimately felt it would compromise the structure of the LAGC day boat fishery.
- Update econ. models with FY2016-FY2017 data to est. impacts of possession limit on trip costs, lease prices, market prices, crew wages, etc.

Anticipated Outcomes

- Discuss preliminary analysis related to consideration of LAGC IFQ possession limit work priority.
- Provide input on the recommended scope of this work priority moving forward.
  - **Consider recommending a range of trip limits—this will help to determine the proper vehicle (FW vs. Amendment).**

Lease model info

Potential impacts of trip limit on lease prices

- Changes in trip limit affect trip duration, trip costs per lb. and price received per lb. of scallops net of costs
- Lease price per pound of scallops varies with the net price received and other factors
- An annual lease price model was estimated using 2010- 2015 data
- Need to take into account the impacts on repairs and maintenance and other fixed costs such as insurance
- Could be updated using 2016 and 2017 depending on data availability

Estimation of lease-out prices

Nonlinear GMM Summary of Residual Errors

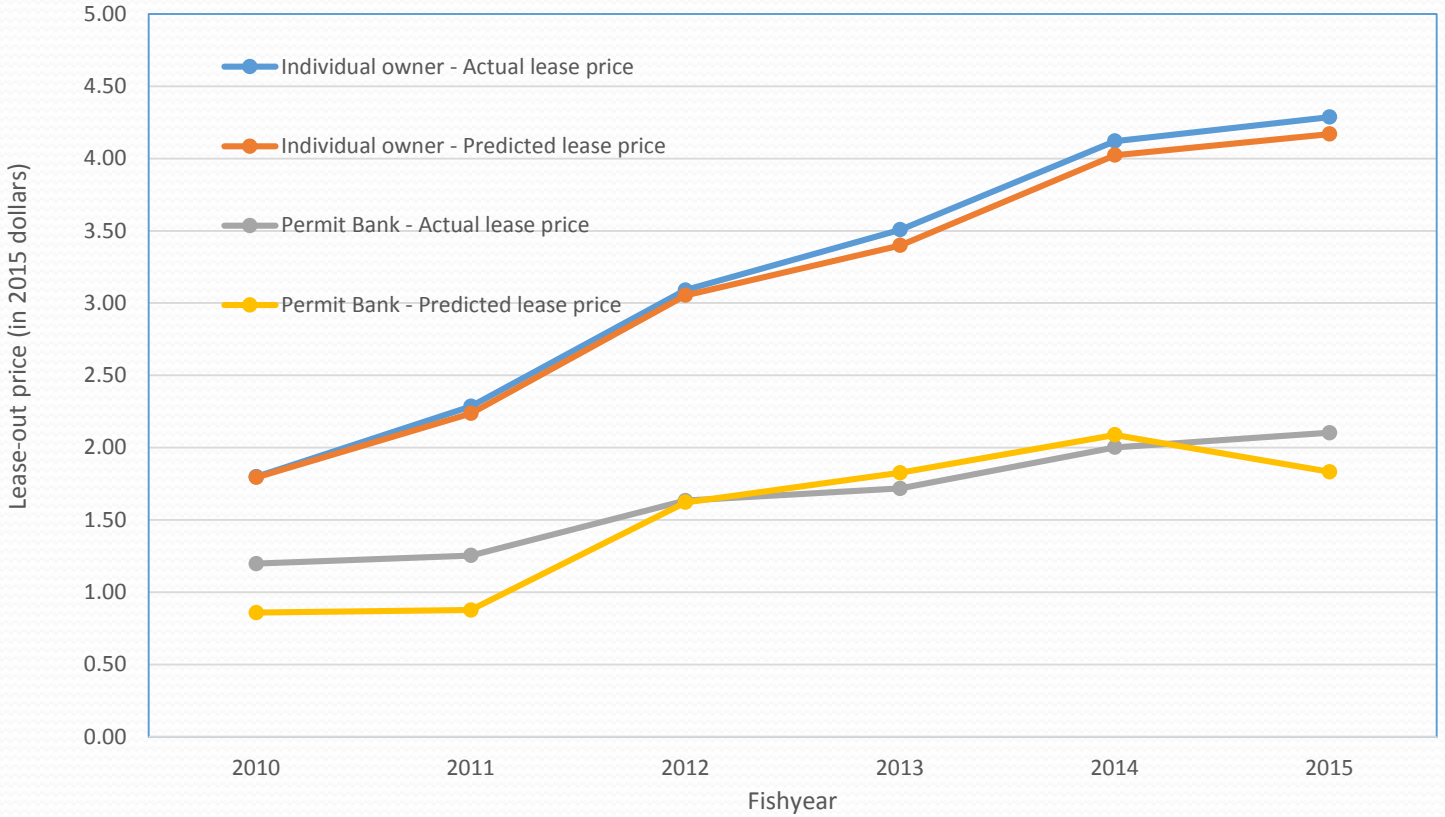
Equation	DF Model	DF Error	SSE	MSE	Root MSE	R-Square	Adj R-Sq
lnleasepr	6	547	23.8202	0.0435	0.2087	0.6898	0.6870

Nonlinear GMM Parameter Estimates

Parameter	Estimate	Approx Std Err	t Value	Approx Pr > |t|
intercept	-1.76089	0.3554	-4.95	<.0001
Netprice	0.229974	0.0118	19.45	<.0001
Owngrp	0.097857	0.0424	2.31	0.0215
Affgrp	0.659753	0.0198	33.30	<.0001
Pctactallo	-4.31394	0.4935	-8.74	<.0001
Numves	0.027101	0.00348	7.78	<.0001

- Netprice: ex-vessel price per lb. net of trip costs per lb. of scallops
- Owngrp: if leased out to different affiliation=1, if leased out to same afflation=0
- Affgrp: individual owner=1, permit bank=0
- Pctactallo= total ifq allocation for the active owners as a % of total ifq allocation
- Numves= number of vessels that were net leasers (lease-in)

Actual and estimated lease-out prices



Simulations with trip limits

- Impacts on crew – depends on the how much is leased and the crew lay system (more crew may be needed)
- Impacts on profits – depends on how fixed costs change (maintenance and repairs could decline - cost function)
- Trip limit increase may increase prices received if areas with larger scallops could be accessed (+ impact on prices)
- Derby impacts on prices – Estimate a monthly model to capture those impacts

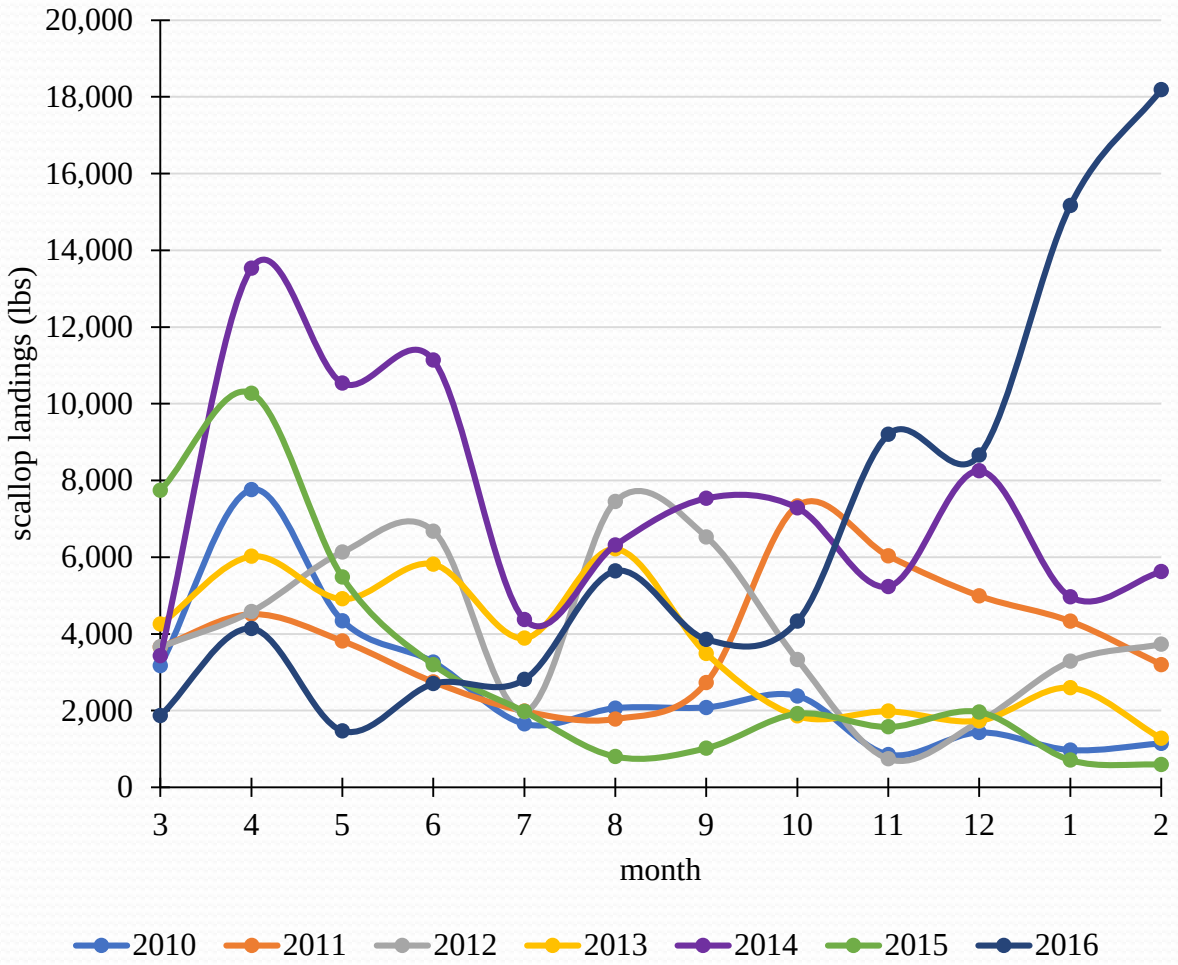
	600 lb.	900 lb.	1200 lb.
Price	12.7	12.7	12.7
Trip costs per DA	332.8	332.8	332.8
LPUE	600	900	1200
Trip costs per lb.	0.55	0.28	0.14
Net price	12.15	12.42	12.56
pctactallo	0.54	0.54	0.54
numves	74	74	74
fuelp	2.52	2.52	2.52
lease price estimate	4.33	4.62	4.77
% change in lease price		7%	10%

Other slides

IFQ landings on non-scallop trips

- Difficult to spot trend in monthly IFQ landings on non-scallop trips.
- 2016 Allocation substantially higher than other years (4.4 mil lbs)—could explain ramping up in Jan/Feb

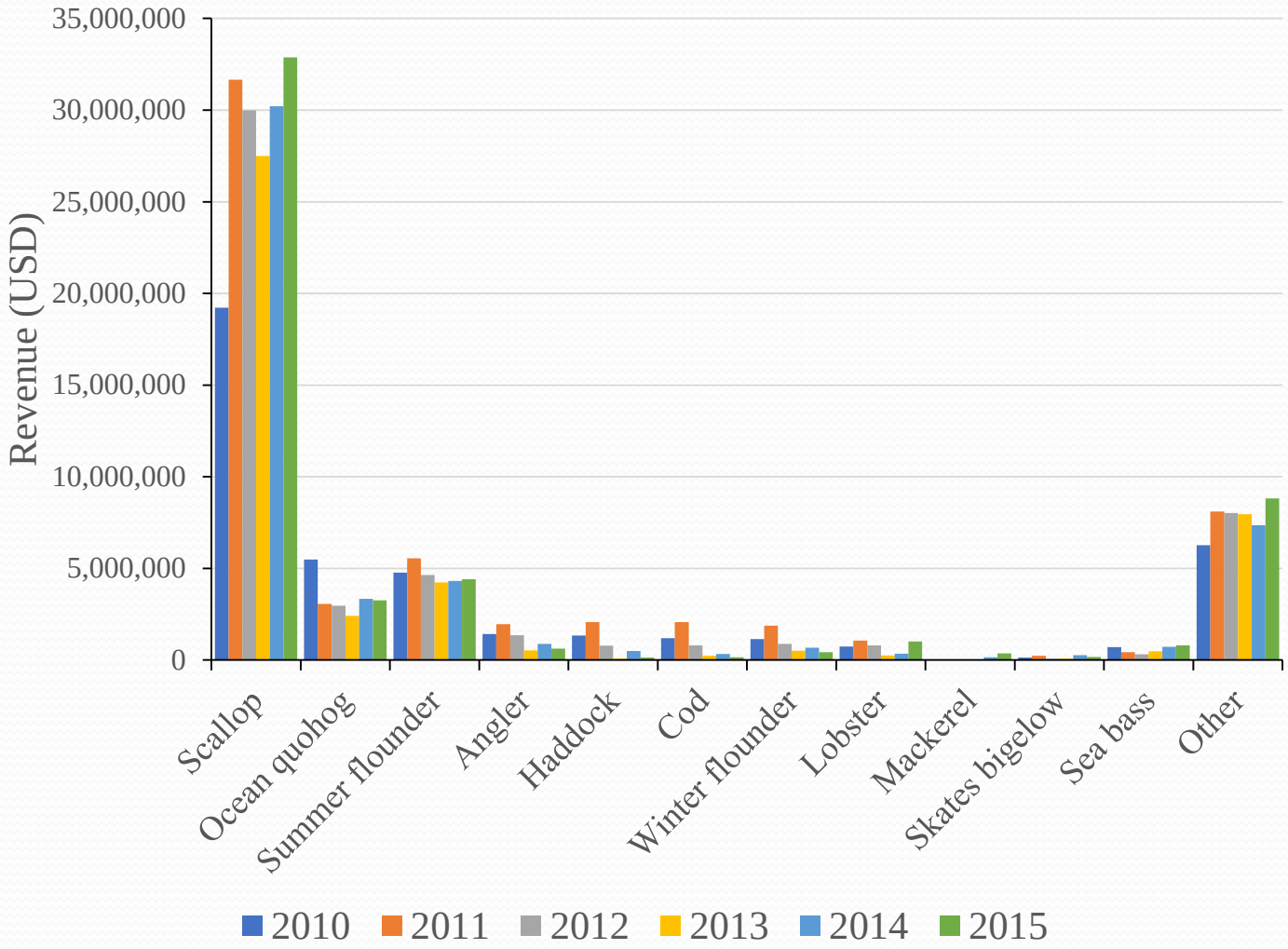
Figure 1. Monthly IFQ landings by vessels on non-scallop trips (FY2010-FY2016).



‘Other’ revenue by active LAGC vessels (source: LAGC IFQ 5-year review)

Narrower look at ‘other’ revenue as described in LAGC IFQ 5-year review

Note category “other” is mostly menhaden revenue



IFQ carry over pounds

Fleet wide carryover info from scallop year-end reports (source: GARFO)

- Note that 15% carryover allowance pertains to individual vessels

FY	Allocated	Landed	LAGC IFQ carryover (lbs)	percent of allocation carried over
2011	2,910,800	2,773,744	193,622	7%
2012*	3,095,450	N/A	N/A	N/A
2013	2,227,142	2,261,389	301,354	14%
2014	2,202,859	1,894,232	209,897	10%
2015	2,700,665	2,133,306	243,041	9%
2016	4,067,529	3,135,800	356,536	9%

*FY2012 report did not include landings or carryover pounds.

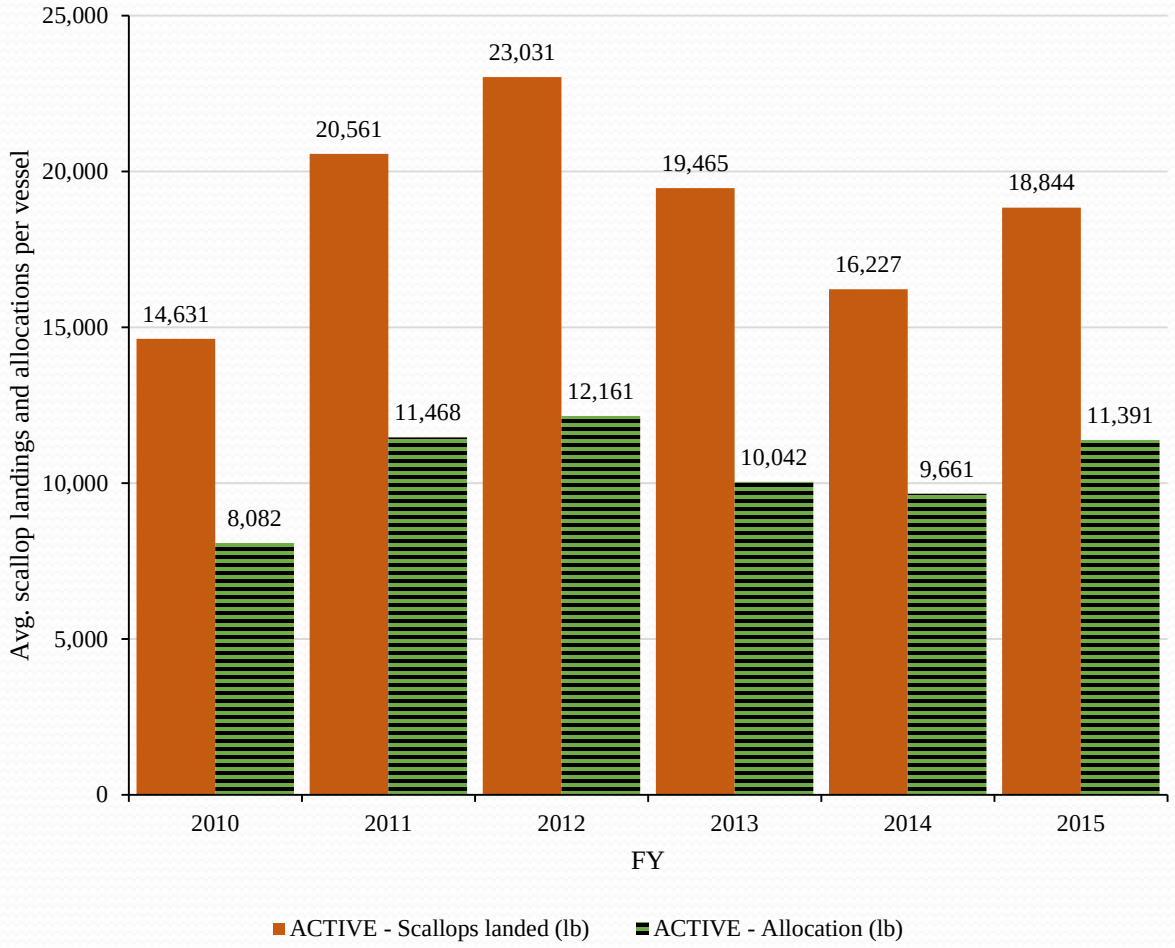
Carry over is quota allocated in year 1 that is carried over to year 2. Ex: 301,354 lbs allocated in FY2013 were carried over to FY2014.

Average landings vs. allocation (FY2010-FY2015)

Figure produced for LAGC IFQ 5-year review

- average lbs landed and average lbs allocated per active vessel

Suggests majority of vessels lease in quota.



Access area activity

Figure 4. The average trip length (days) of LAGC IFQ vessels fishing open trips and access area trips.

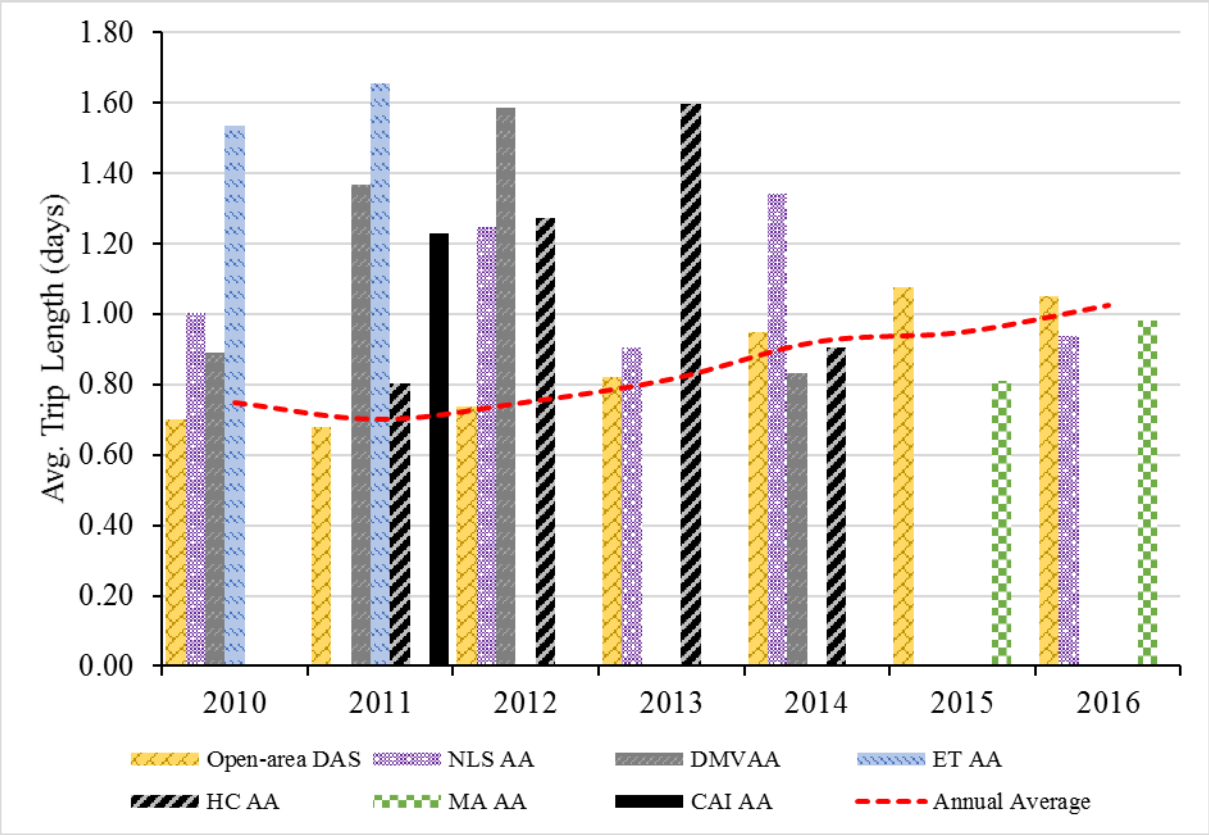


Table 5. The percent of allocated access area trips taken by LAGC IFQ vessels from FY2010 to FY2016. Data used in the table also includes RSA compensation trips.

	CAI AA	NLS AA	DMV AA	ET AA	HC AA	MA AA
FY	Trips Taken	Trips Taken	Trips Taken	Trips Taken	Trips Taken	Trips Taken
2010		69.5%	96.6%	4.3%		
2011	5.5%		11.8%	0.8%	103.9%	
2012		12.8%	1.7%		14.2%	
2013		31.1%			2.8%	
2014		1.2%	79.3%			
2015						101.5%
2016		100.0%				100.2%

Table 6. Average hours spent fishing ('haul') and average hours of steam time to fishing grounds ('steam') on observed LAGC IFQ trips from FY2010 to FY2017. Averages are shown by trip type (open trips and access area trips). FY2017 data is reported through December 30, 2017.

	CAI		DMV		HC		MAAA		NL		Open	
FY	haul	steam	haul	steam	haul	steam	haul	steam	haul	steam	haul	steam
2010			5.6	7.2					6.5	10.0	6.9	3.0
2011	2.7	9.7	7.5	14.1	7.7	8.6					6.8	3.2
2012					7.2	5.2			4.4	12.6	8.0	3.2
2013									5.0	8.9	13.1	4.0
2014			7.7	6.3					29.8	8.3	15.6	3.9
2015							7.2	6.7			18.1	4.2
2016							10.5	7.6	3.0	9.5	15.9	5.1
2017							12.2	7.8	5.3	9.8	16.1	5.0

FY2018, LA vs LAGC potential

Table 2. Expected harvest per vessel in FY2018 for full-time and part-time limited access vessels relative to the maximum quota an individual LAGC IFQ vessel could hold (2.5% of LAGC IFQ allocation).

LA FT			LA PT			LAGC IFQ			
AA	OPEN (DAS * projected LPUE)	TOTAL	AA	OPEN (DAS * projected LPUE)	TOTAL	2.5% of LAGC IFQ allocation (vessel quota cap)	2% of LAGC IFQ allocation	1.5% of LAGC IFQ allocation	1% of LAGC IFQ allocation
108,000	61,944	169,944	43,200	24,778	67,978	70,138	56,110	42,083	28,055

Observed LPUE, LA v LAGC

Figure 15. ***Georges Bank open area*** observed LPUE (kept lbs/hour fished)

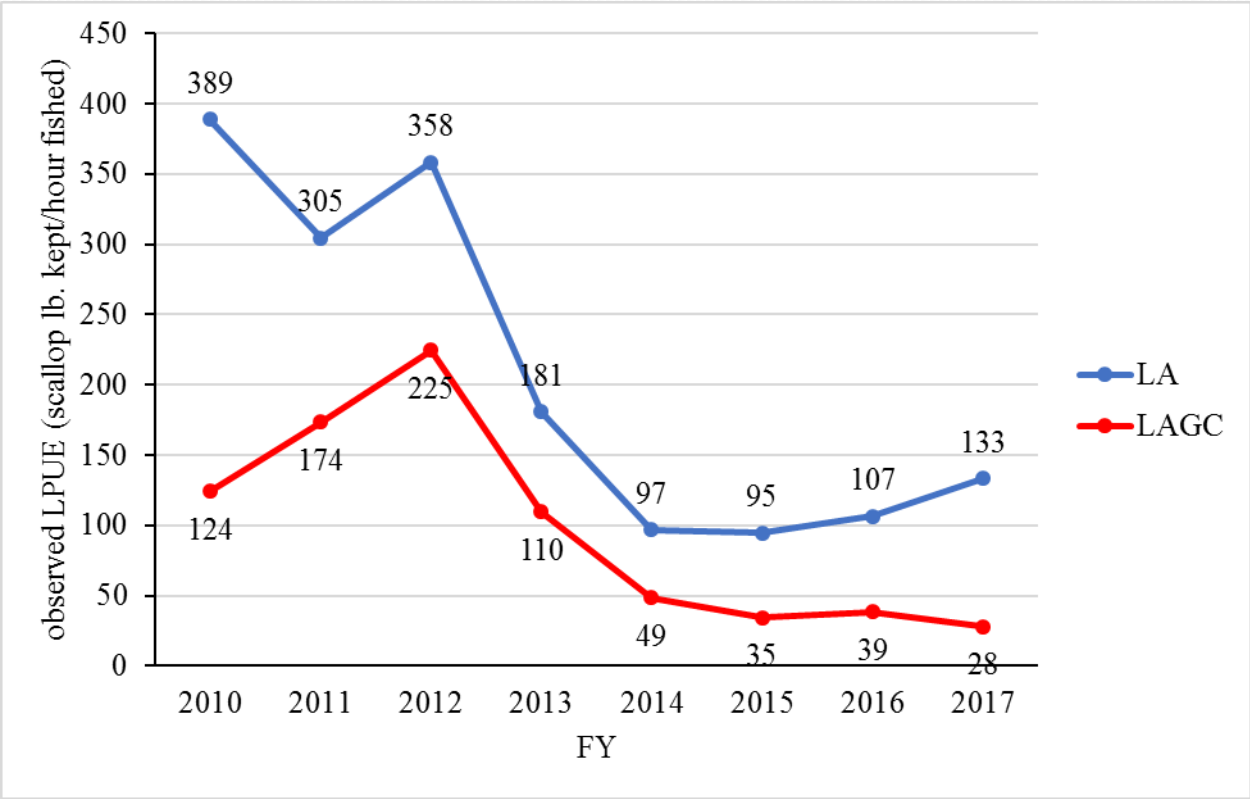
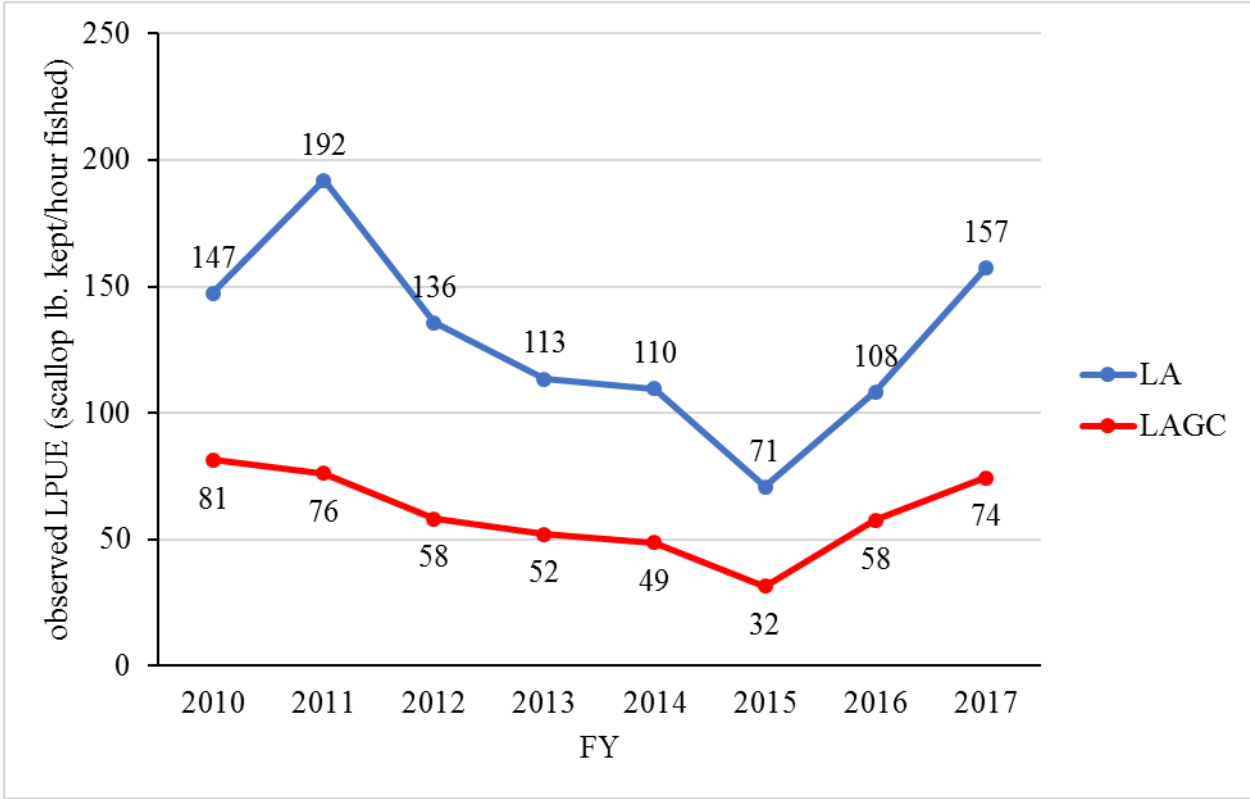
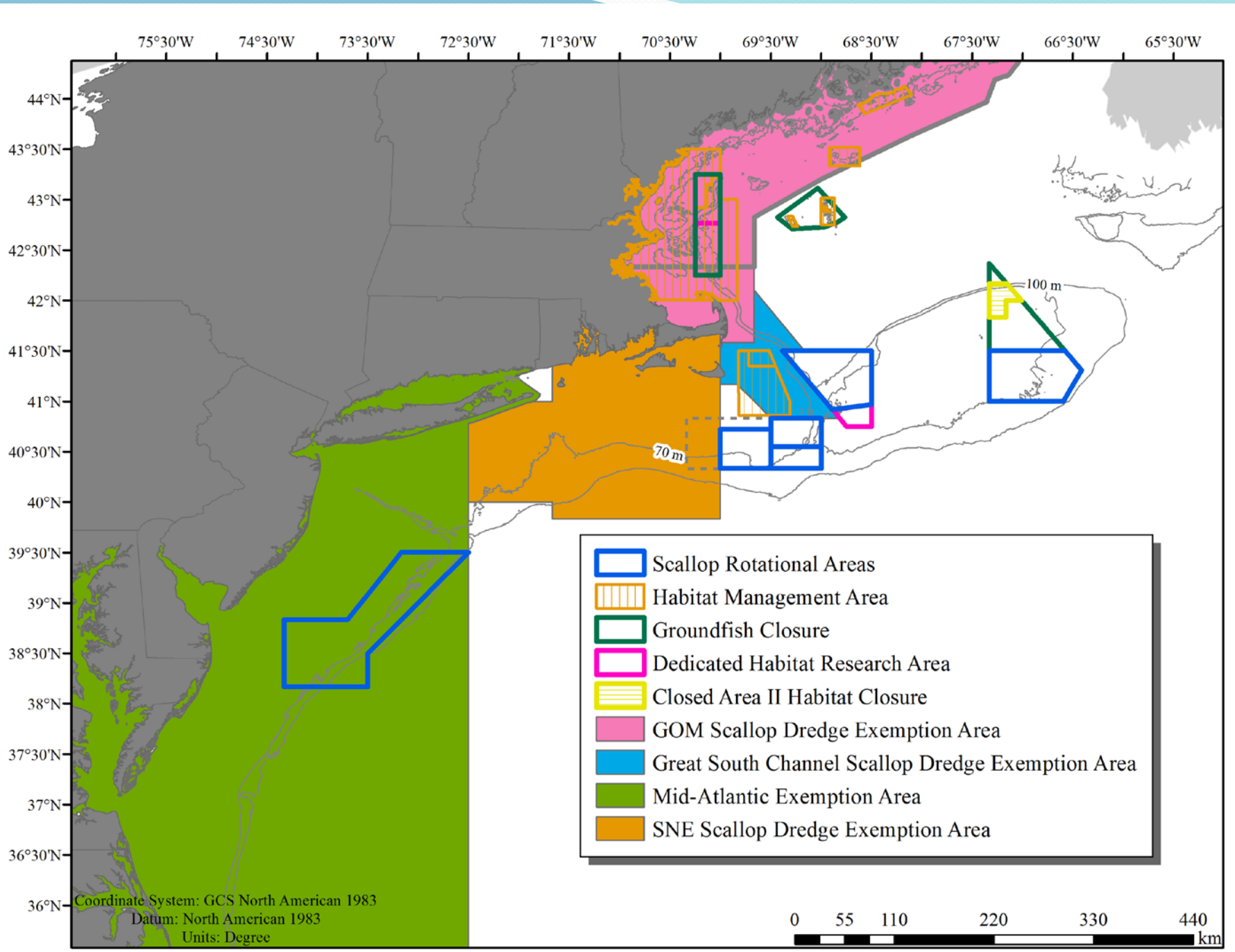


Figure 16. ***Mid-Atl. open area*** observed LPUE (kept lbs/hour fished)




75°30'W
74°30'W
73°30'W
72°30'W
71°30'W
70°30'W
69°30'W
68°30'W
67°30'W
66°30'W
65°30'W
44°N
43°30'N
43°N
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
38°N
37°30'N
37°N
36°30'N
36°N
100 m
70 m
Scallop Rotational Areas
Habitat Management Area
Groundfish Closure
Dedicated Habitat Research Area
Closed Area II Habitat Closure
GOM Scallop Dredge Exemption Area
Great South Channel Scallop Dredge Exemption Area
Mid-Atlantic Exemption Area
SNE Scallop Dredge Exemption Area
Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
0 55 110 220 330 440
km

Number of active vessels by size