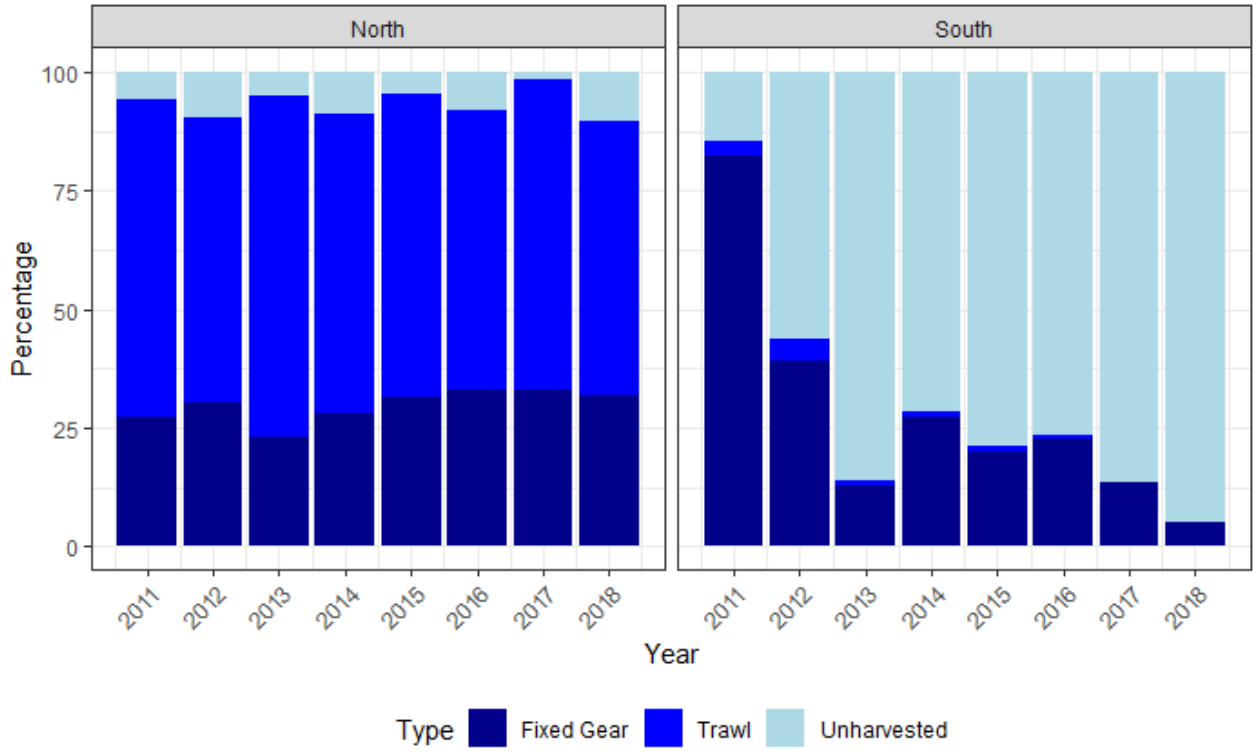
# Review General Analysis

October 2019 SaMTAAC Meeting

# FISHERY AND SABLEFISH MARKET

# Utilization by Gear and Area

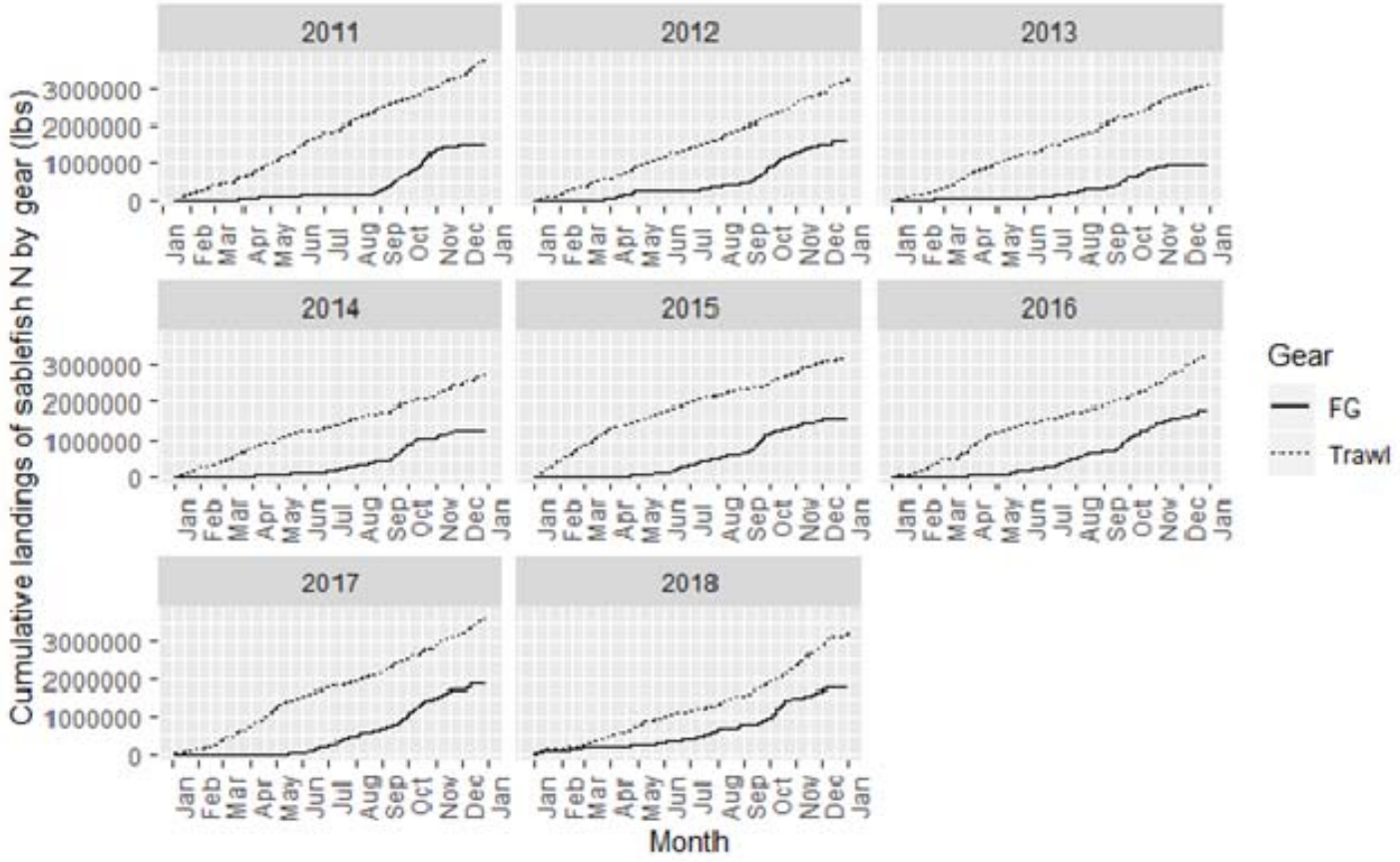


# Relation of unharvested QP to surplus carryover

| Year | Unharvested QPs | Carryover Issued (percent of available QPs) |
|---|---|---|
| 2011 | 5.81% | 0.00% |
| 2012 | 9.39% | 4.72% |
| 2013 | 4.82% | 3.31% |
| 2014 | 8.19% | 4.39% |
| 2015 | 3.76% | 2.82% |
| 2016 | 7.11% | 5.70% |
| 2017 | 1.12% | 1.90% |
| 2018 | 10.26% | 4.42% |

- QP is generally about half of the unharvested QPs, with 2017 being the exception
- With attainment over 90%, surplus carryover may be a cause of under-attainment rather than the existence of quota unable to be used

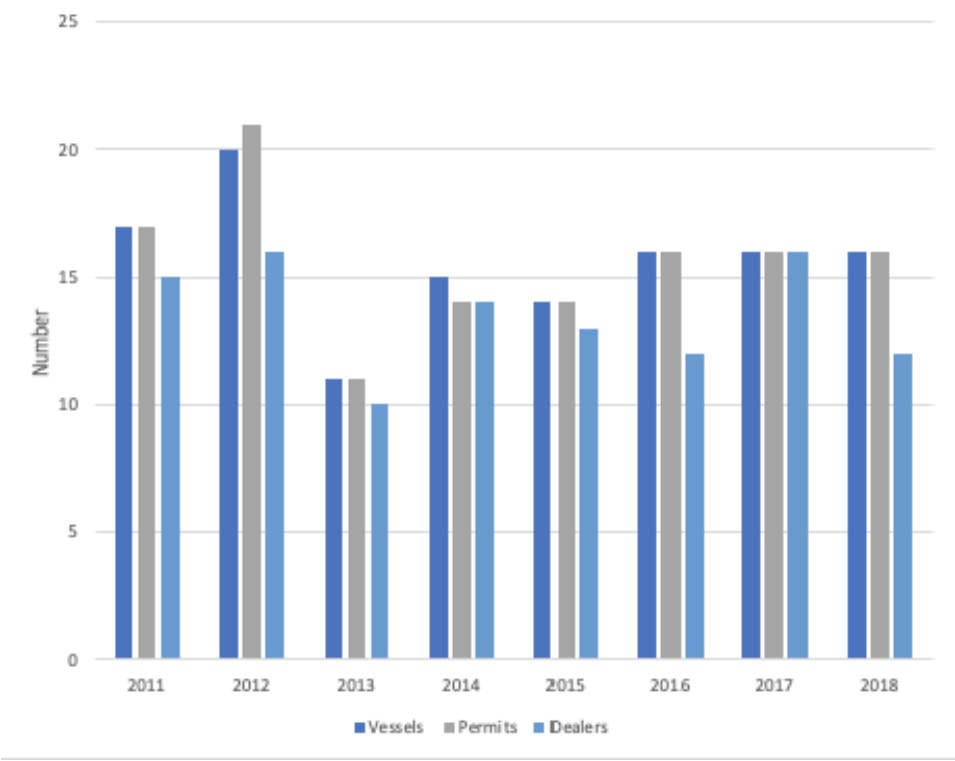
# Cumulative sum of landings



# FLEET AND BUYERS

# Fleet Participation- Fixed Gear

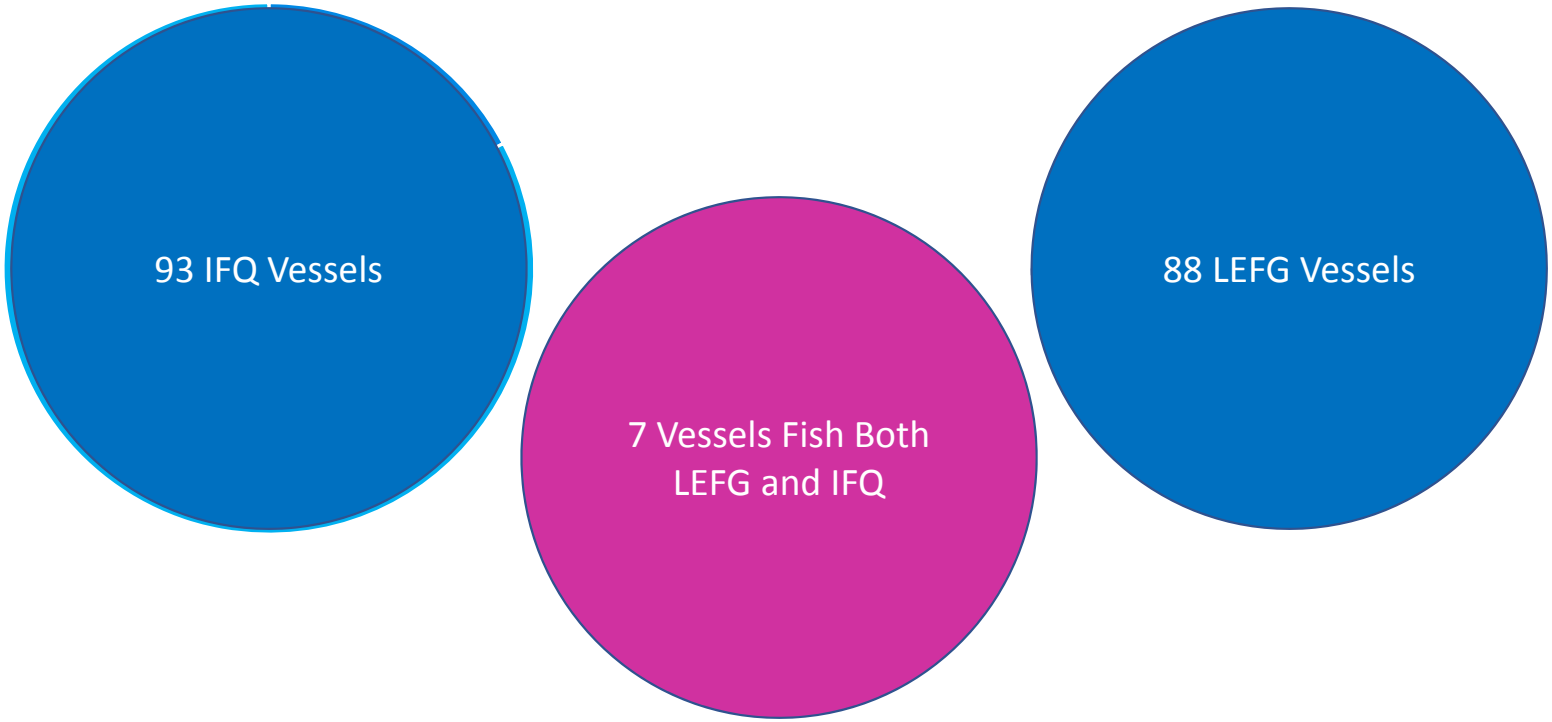
- Participation has leveled out in recent years
- Less than 2 vessels on average have used both trawl and fixed gear to harvest sablefish north



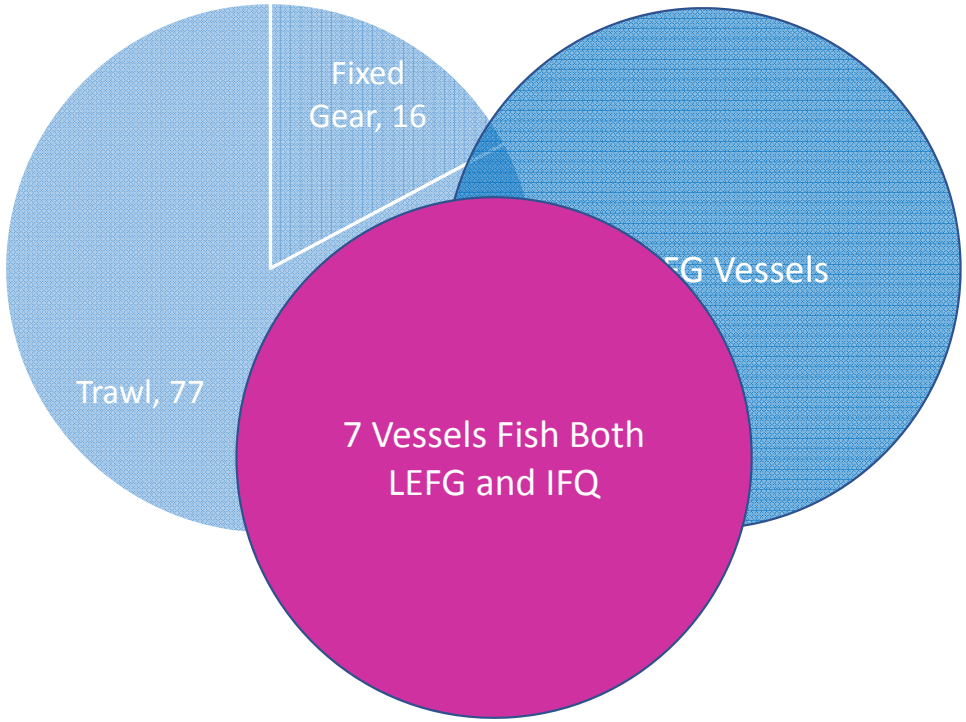
# Permits By Year

| Year | Number of Permits that Landed Sablefish N | Number of Permits with IFQ Landings | Latent Permits | | Total Trawl Endorsed Permits Available |
|---|---|---|---|---|---|
| | | | Vessels Associated with Permit “Unidentified" For Entire Year | Permits with No IFQ Landings | |
| 2011 | 104 | 116 | 14 | 51 | 167 |
| 2012 | 100 | 108 | 22 | 57 | 165 |
| 2013 | 94 | 109 | 25 | 56 | 165 |
| 2014 | 95 | 105 | 23 | 60 | 165 |
| 2015 | 88 | 93 | 25 | 72 | 165 |
| 2016 | 86 | 93 | 31 | 72 | 165 |
| 2017 | 93 | 95 | 24 | 70 | 165 |
| 2018 | 93 | 96 | 27 | 69 | 165 |

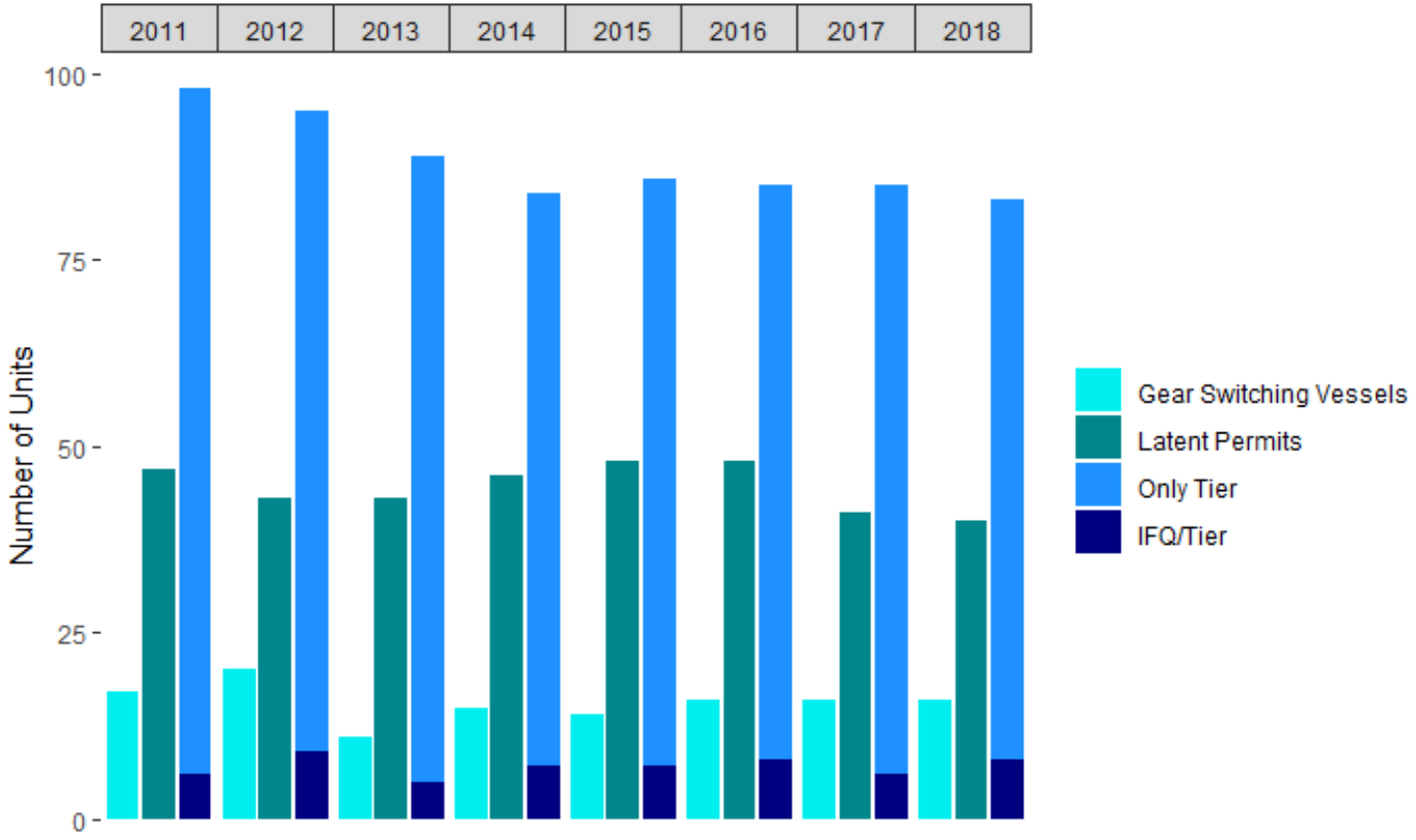
# Crossover Between IFQ and LEFG



# Crossover Between IFQ and LEFG



# Potential for Additional Crossover?



# Primary vs. IFQ Limits

- 2019 Comparison
  - Primary max (3 tier 1 permits)=142,911 lbs
  - IFQ AVL=256,086 lbs
- Difference in ex-vessel revenue=$316,890
- If fished both at max levels, ~400,000 lbs valued at $1.1 million

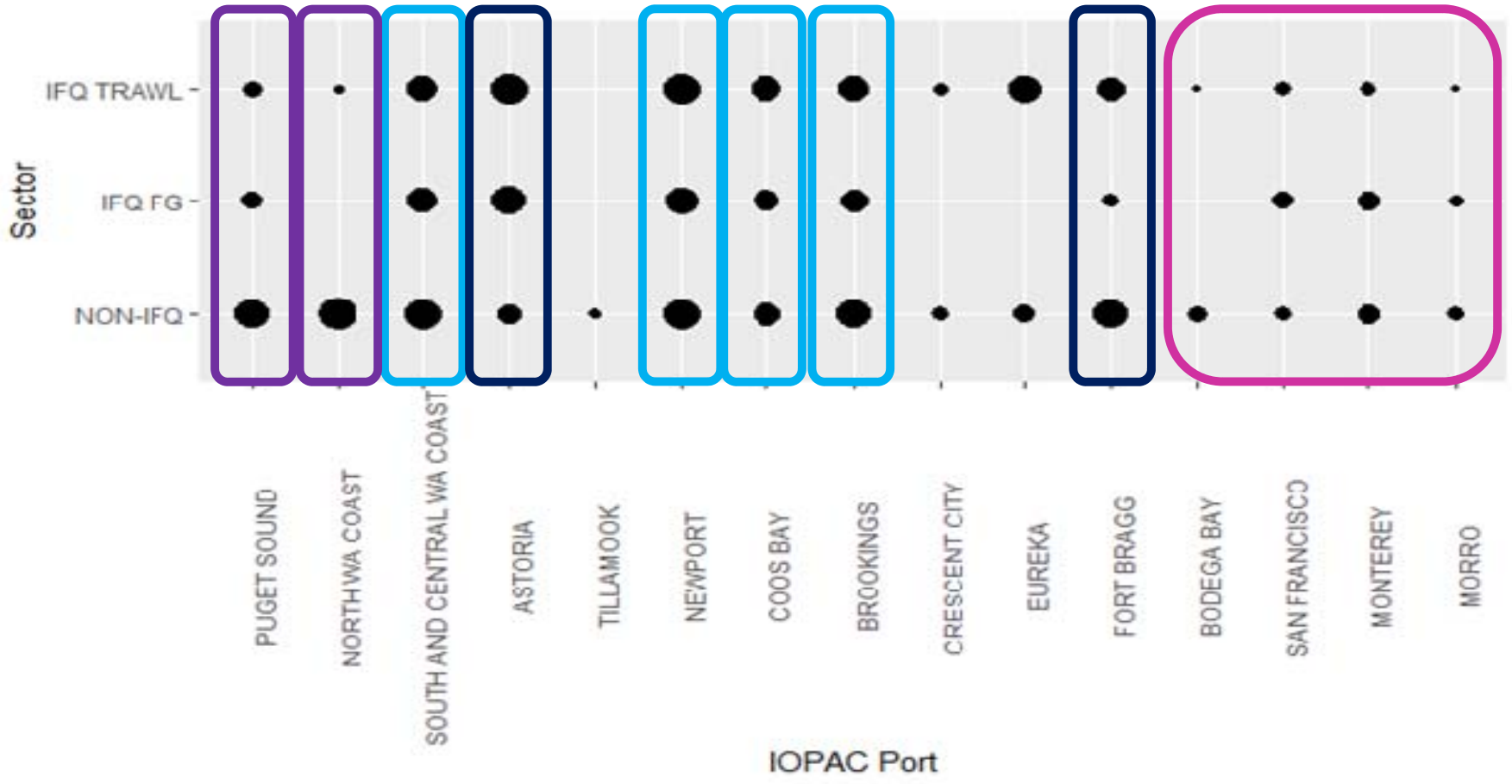
# Primary and IFQ Interaction

- For all those vessels that fished both IFQ and primary from 2016-2018, all had at least 1 Tier 1 permit

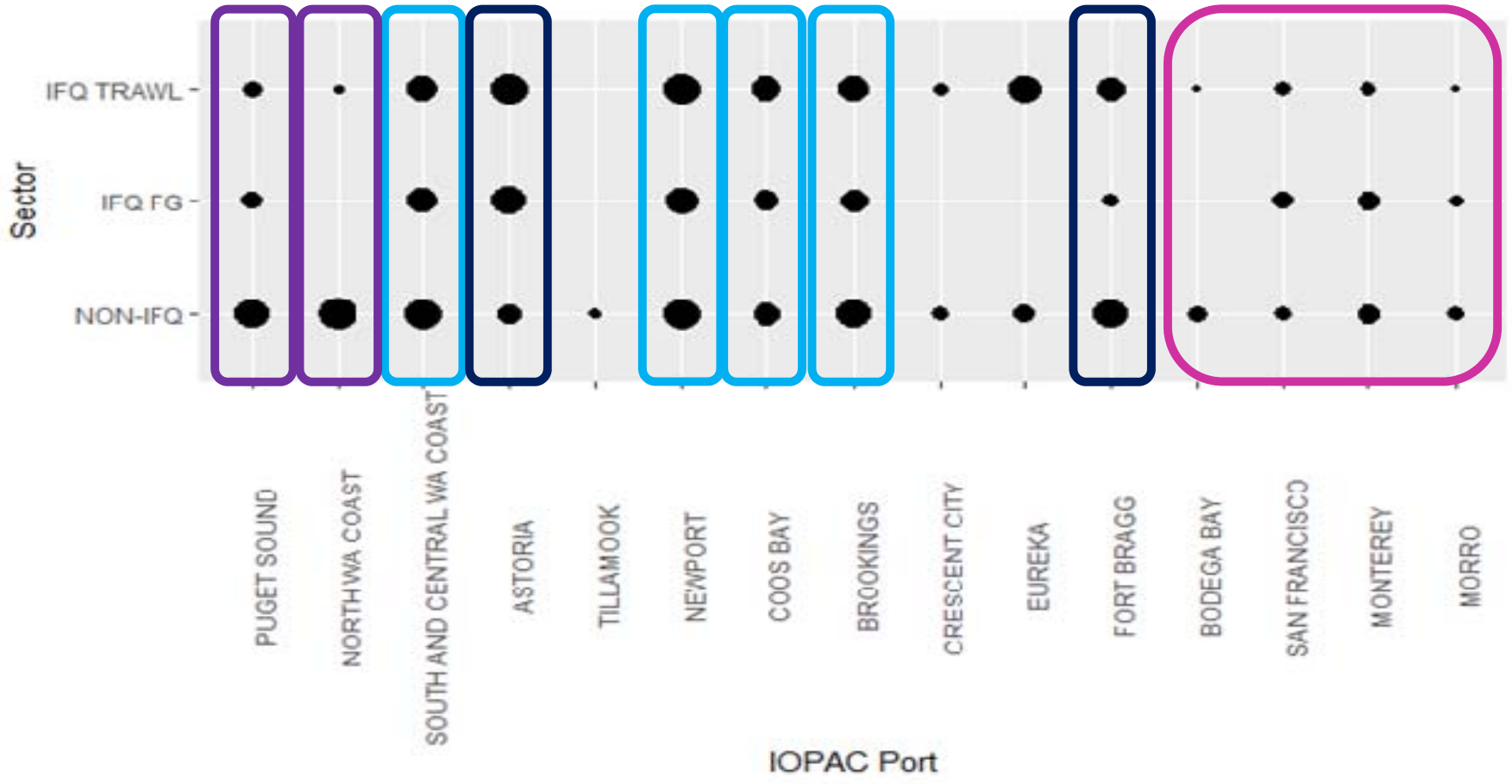
- Between 19-23 vessels in 2016-2018 had three stacked permits and did not fish in the IFQ sector

| Tier Combination | Number of Vessels |
|---|---|
| 3,0,0 | 2 |
| 2,1,0 | 3 |
| 1,2,0 | 1 |
| 1,1,1 | 1 |
| 0,2,1 | 1 |

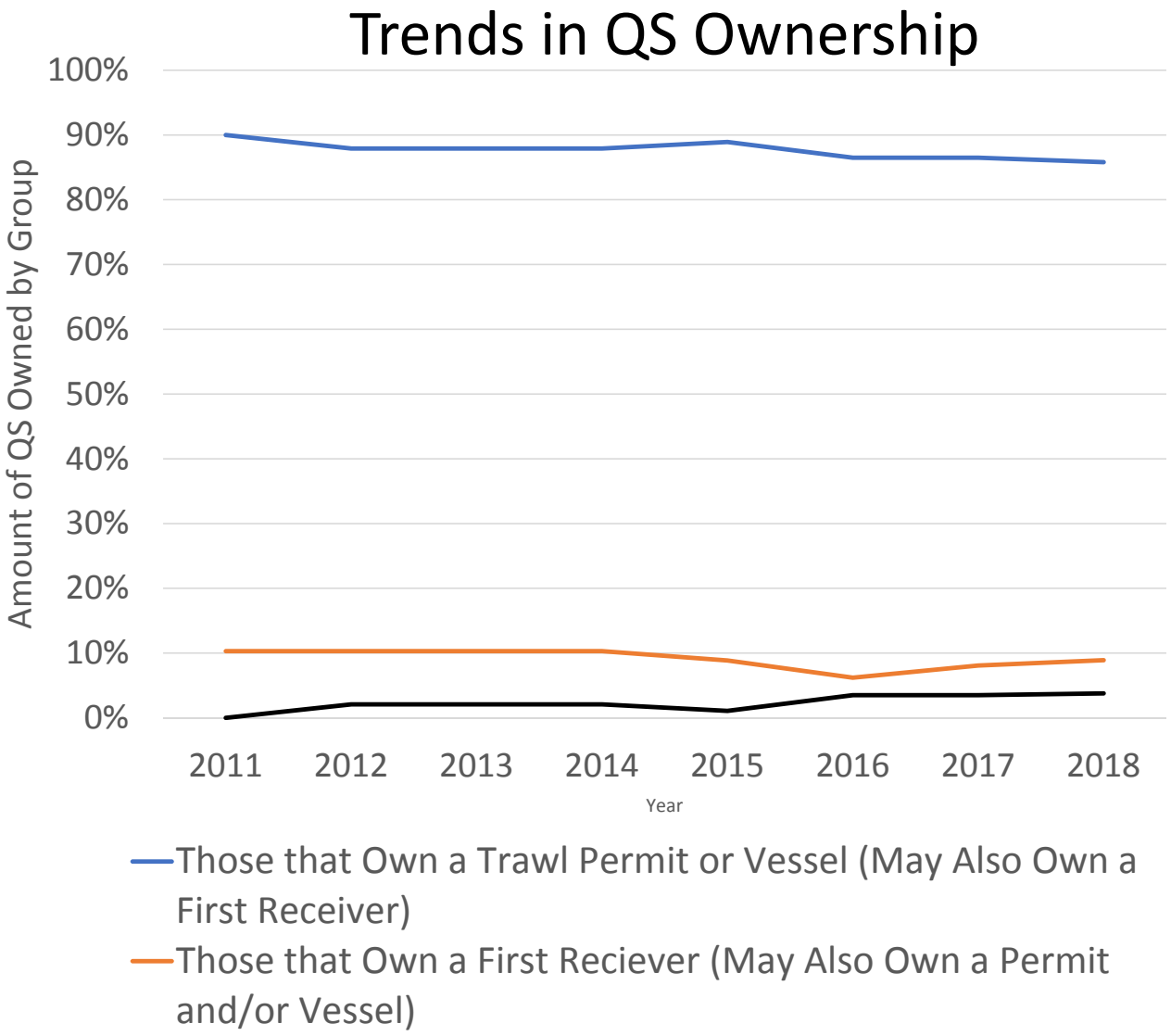
# Geographic Distribution of Sablefish N Landings



# Geographic Distribution of Sablefish N Landings



# OWNERSHIP

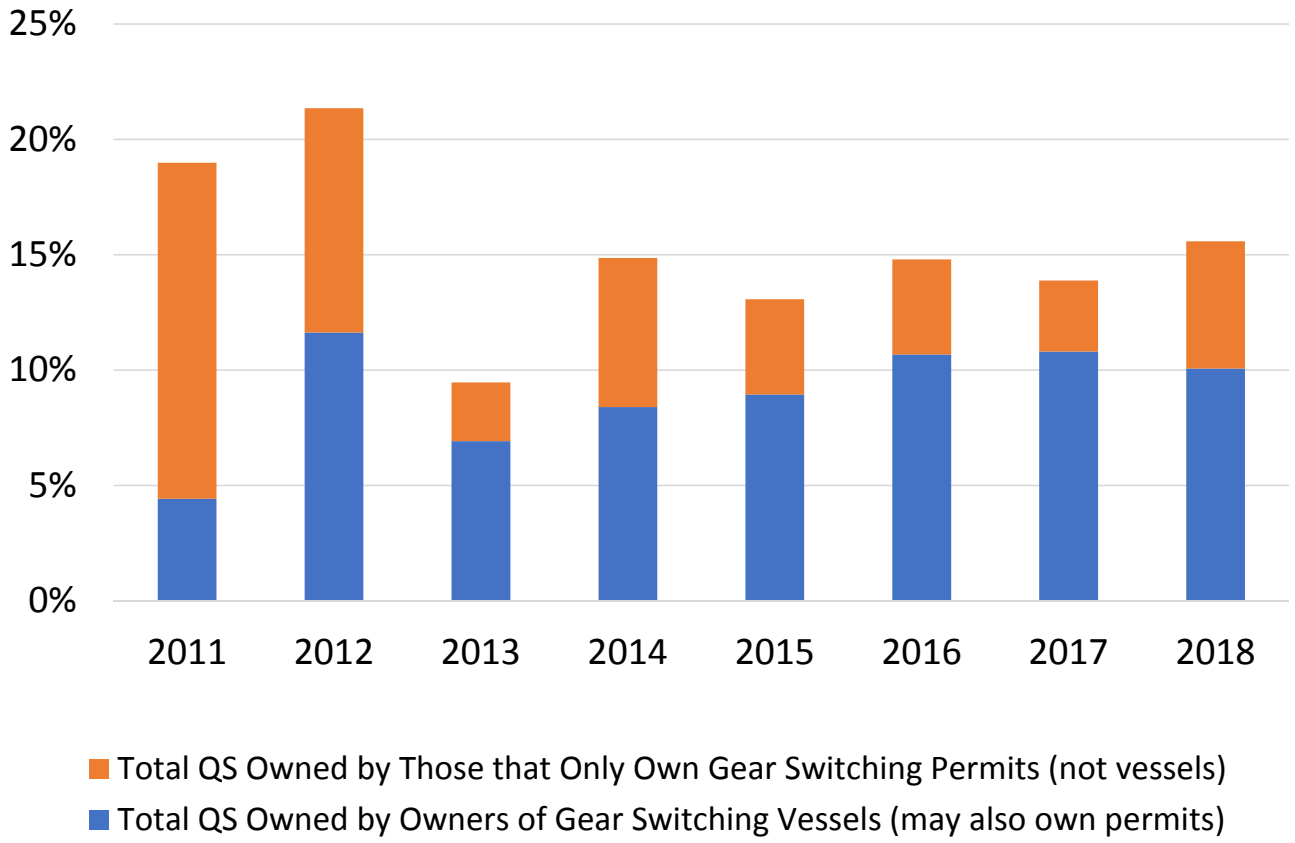


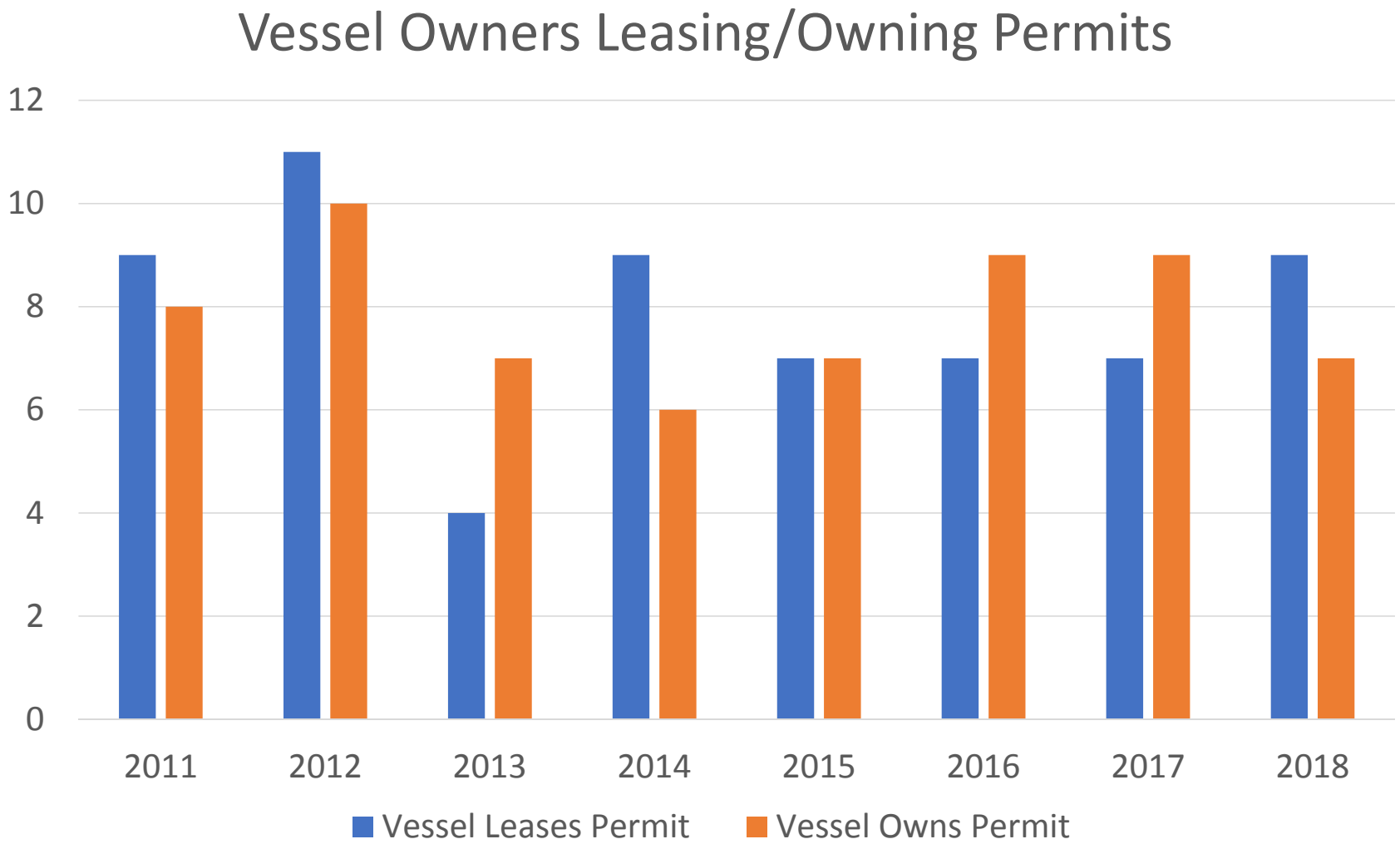

QS Transactions – Arms Length

Buyers

60 percent trawl businesses
30 percent gear switching businesses
10 percent processing businesses

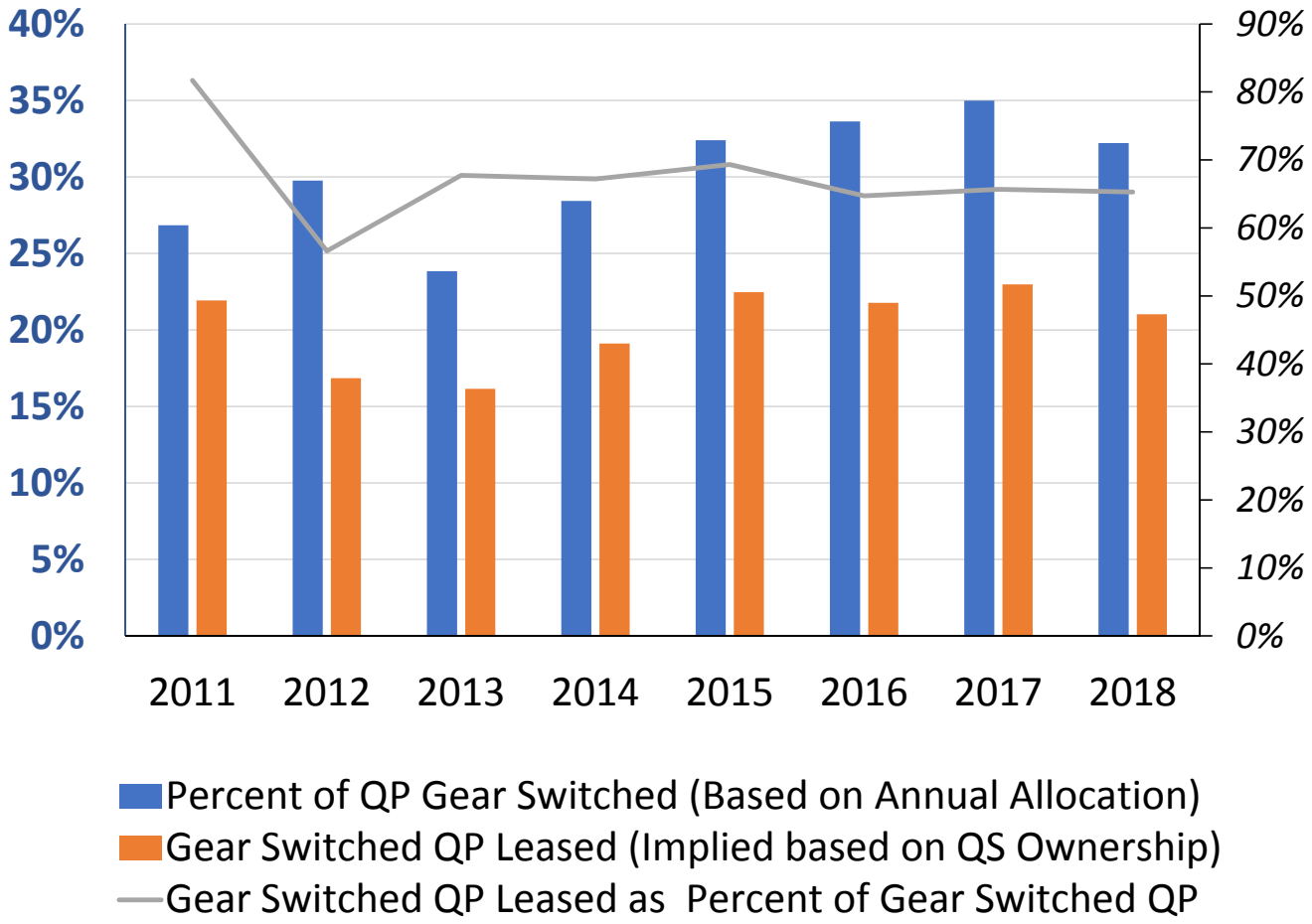
# QS Owned by Busnesses Owning Gear Switching Vessels or Permits




Vessel Owners Leasing/Owning Permits
12
10
8
6
4
2
0
2011
2012
2013
2014
2015
2016
2017
2018
Vessel Leases Permit
Vessel Owns Permit

# QP MARKETS

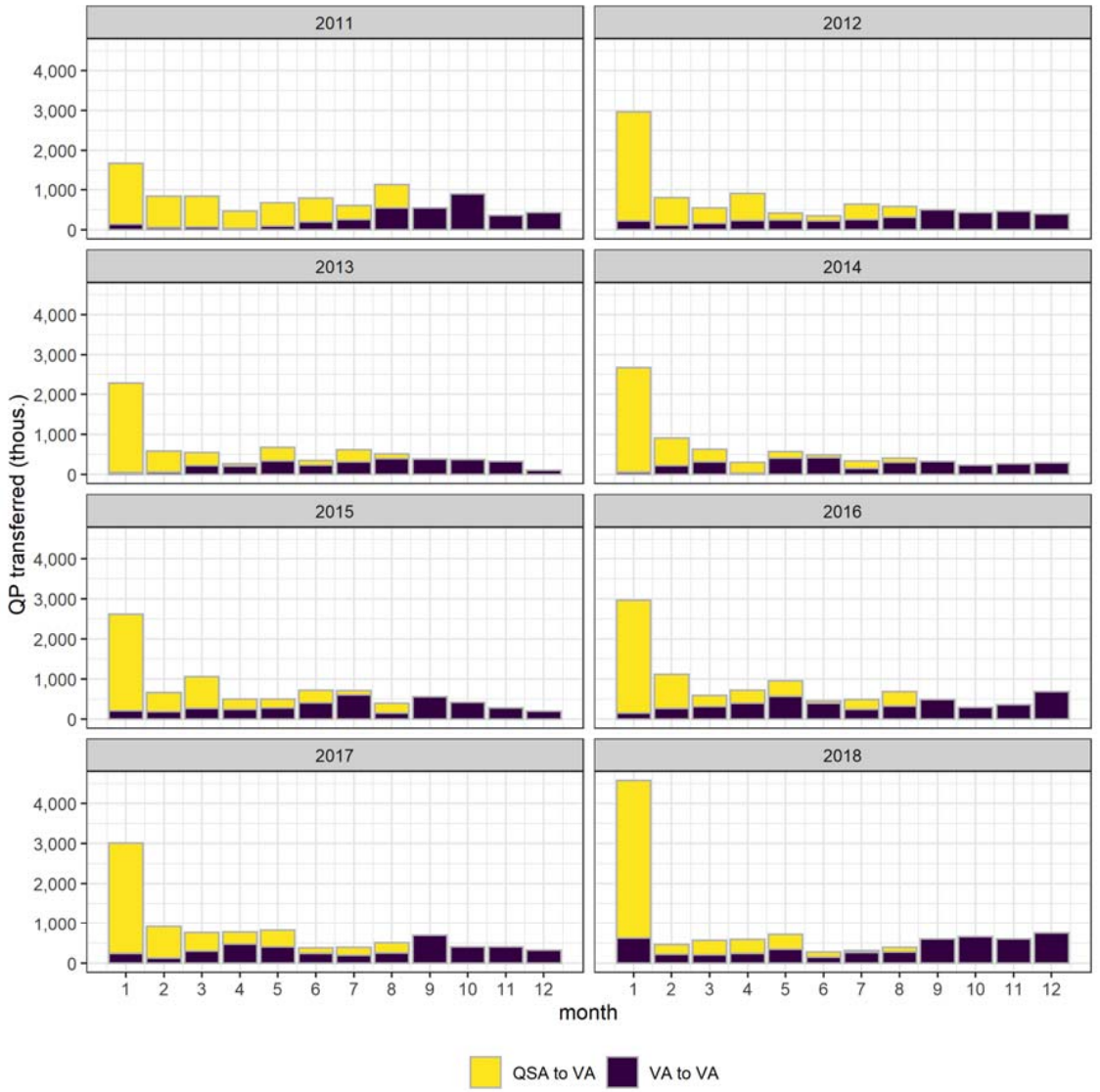
# Amount of Gear Switching and Implied QP Leasing



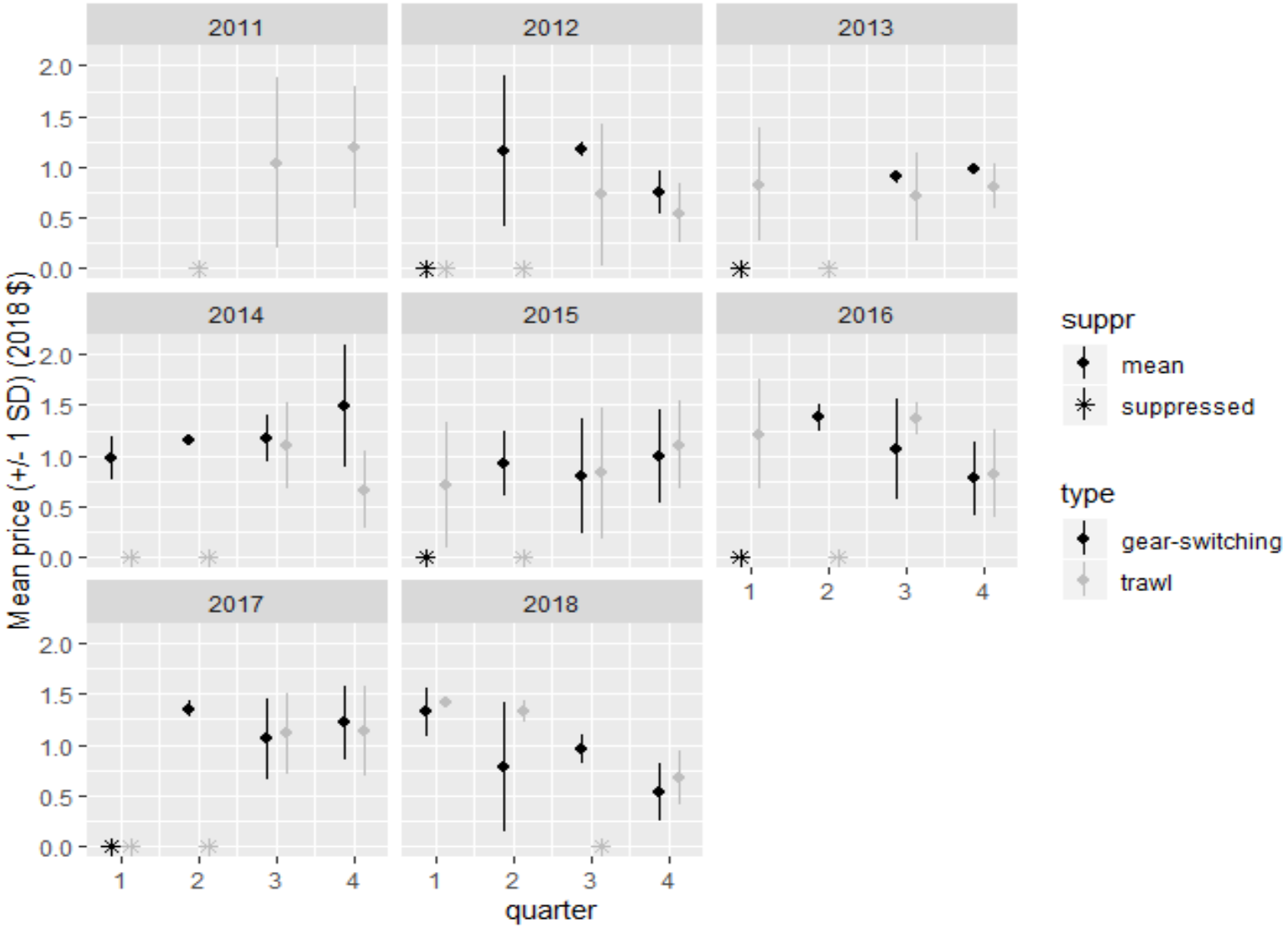
# Seasonality of QP Transfers

QSA=>VA (yellow)
VA=>VA (purple)

Quota Share Account (QSA)
Vessel Account (VA)



# Prices for N Sablefish QP



# F. REFINE ALTERNATIVES

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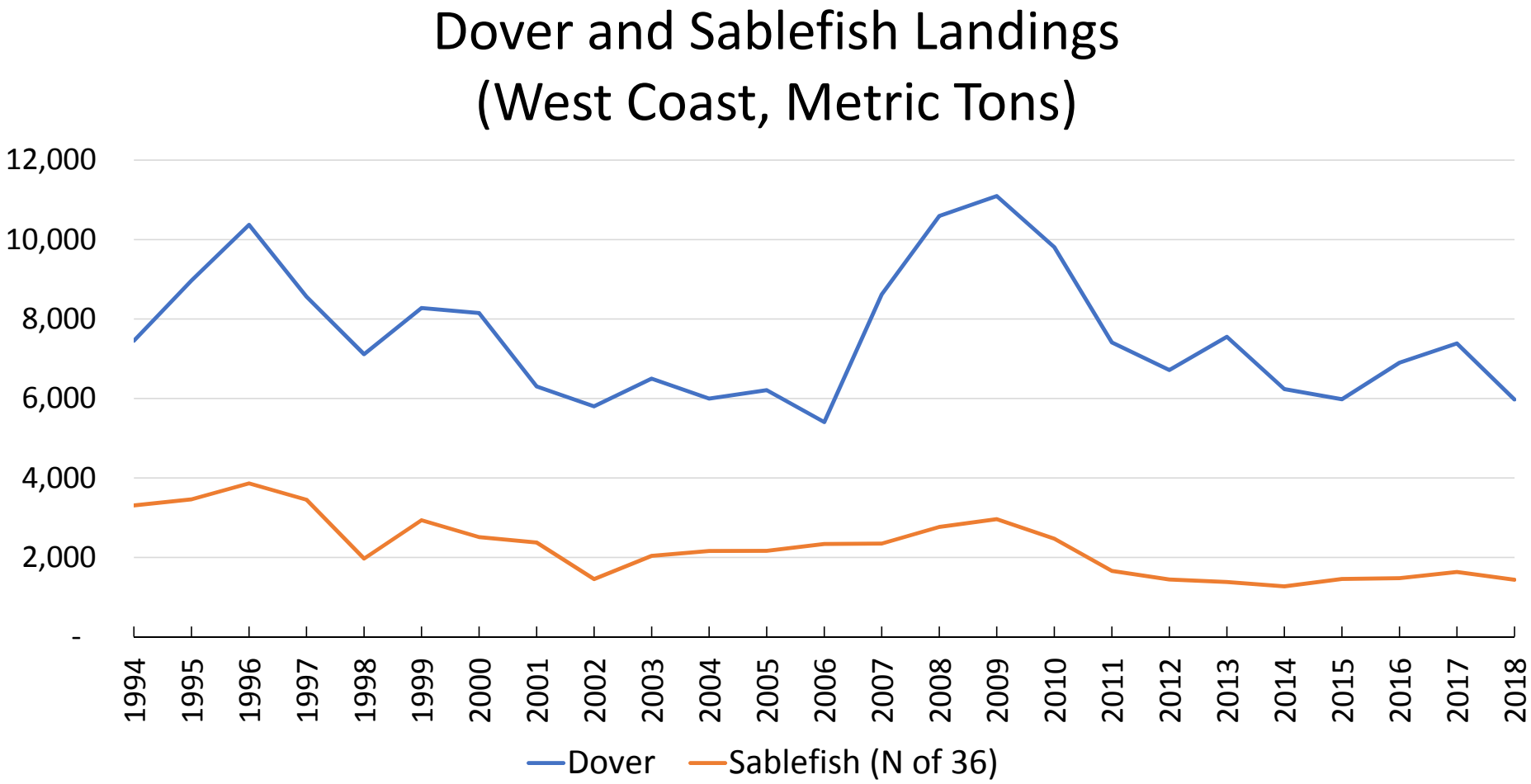
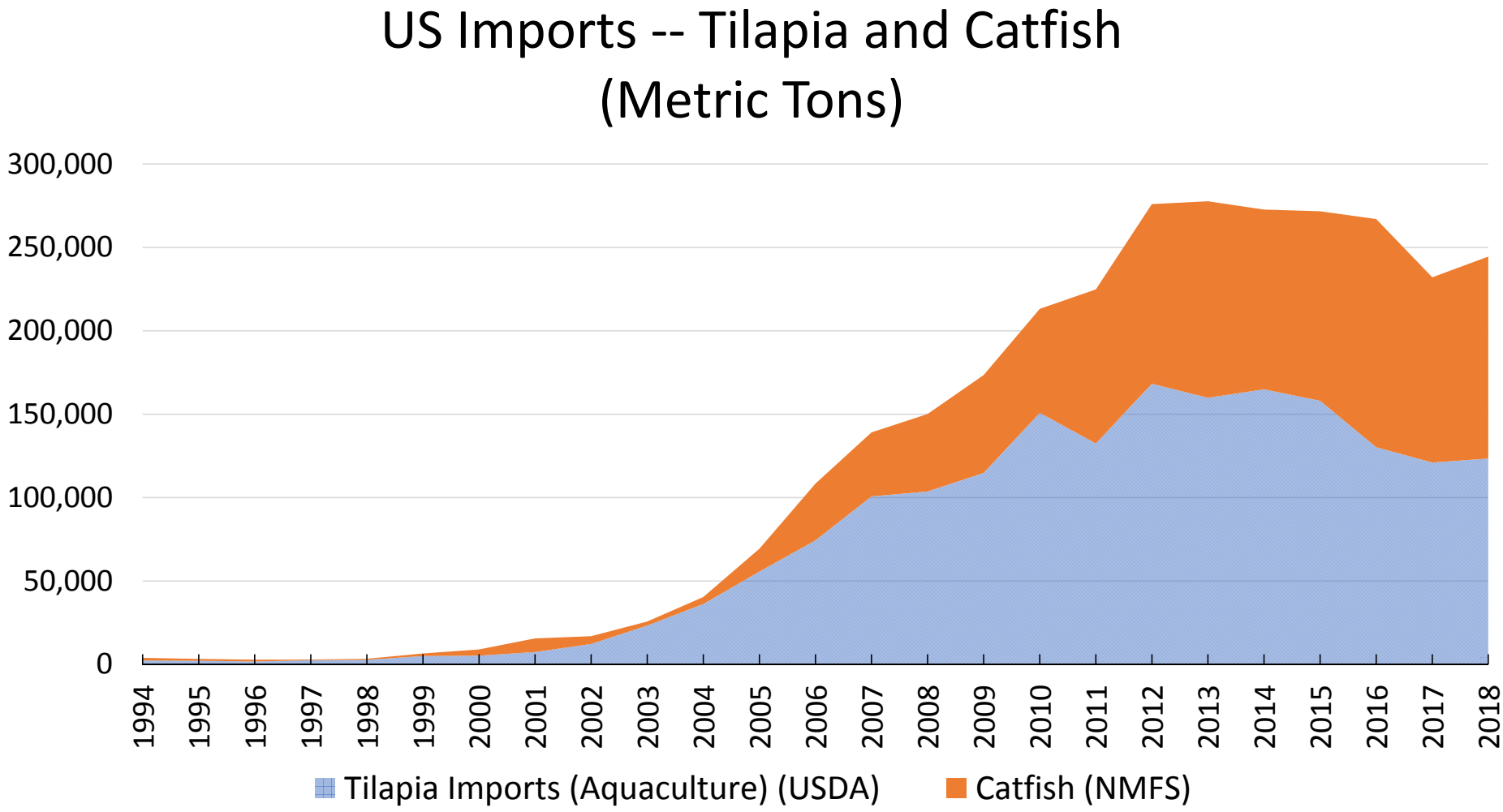
# F.3. Analysis Applying Across Several Alternatives

# INFORMATION RELATED TO THE AMOUNT OF GS ALLOWED


Dover and Sablefish Landings
(West Coast, Metric Tons)
12,000
10,000
8,000
6,000
4,000
2,000
-
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Dover
Sablefish (N of 36)


US Imports -- Tilapia and Catfish
(Metric Tons)
300,000
250,000
200,000
150,000
100,000
50,000
0
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Tilapia Imports (Aquaculture) (USDA)
Catfish (NMFS)

# Constraint on DTS

- Update on methodology described on page 44 of document

- 2015-2017 ratio of 4.65 lbs Dover sole: 1 lb sablefish

- Would need 21.8 million lbs of sablefish at that ratio to catch the entirety of 2020 Dover allocation

| Species | 2011-2014 | | | 2015-2017 | | |
|---|---|---|---|---|---|---|
| | Actual Utilization | Lower bound | Upper Bound | Actual Utilization | Lower bound | Upper Bound |
| Dover sole | 32.8 | 32 | 45.7 | 15 | 17.9 | 25.5 |
| Longspine thornyhead | 48.3 | 48.3 | 64.1 | 25.6 | 37.5 | 49.8 |
| Shortspine thornyhead | 51.6 | 52.5 | 73.1 | 45.6 | 54.4 | 75.8 |

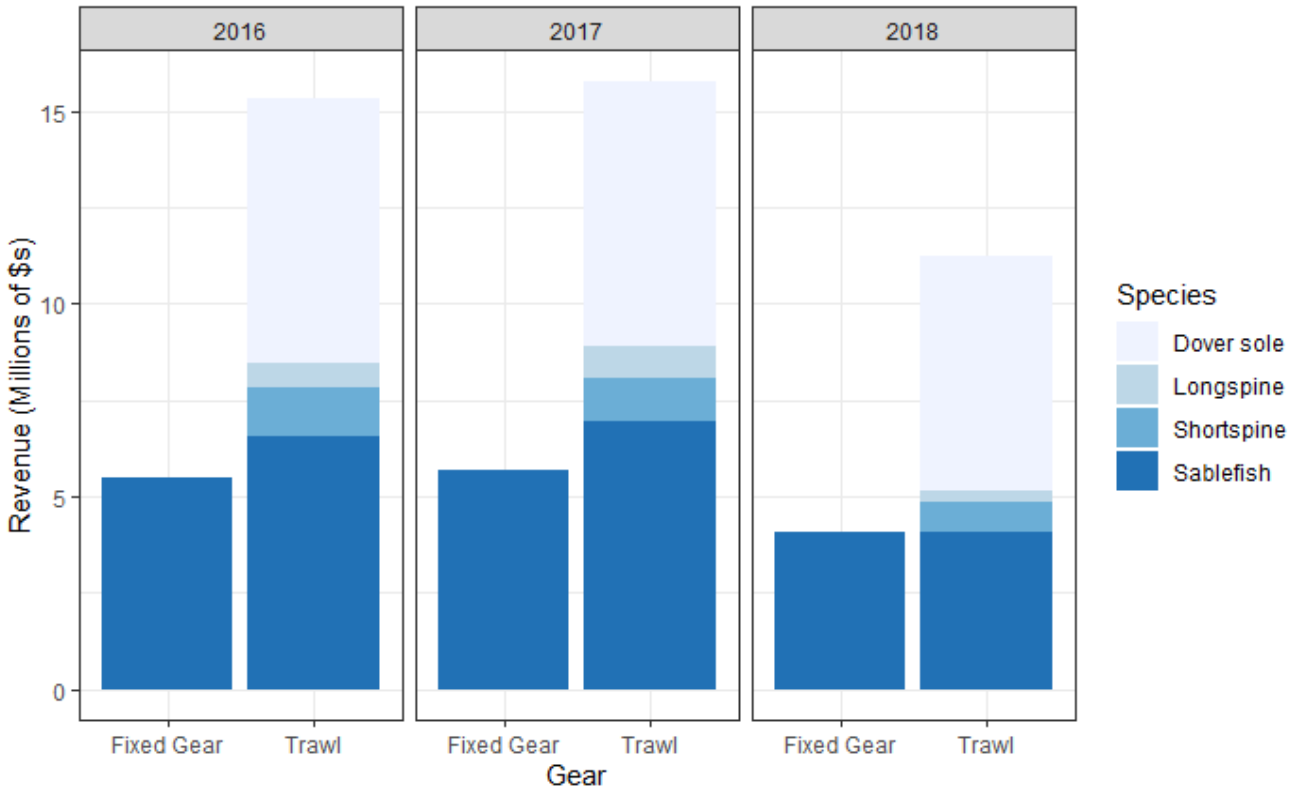
# Increasing Dover Utilization

| Year | Actual | | | | Projected under 4.65:1 Ratio | | Projected under 10:1 Ratio | |
|---|---|---|---|---|---|---|---|---|
| | Dover Avail. Lbs | Dover QPs Used | Sabl N QPs Used | Percent Attain. | Dover QPs | Percent Attain. | Dover QPs | Percent Attain. |
| 2016 | 110.67 | 15.86 | 5.07 | 14.33% | 23.58 | 21.30% | 50.70 | 45.81% |
| 2017 | 110.91 | 16.20 | 5.57 | 14.60% | 25.92 | 23.37% | 55.75 | 50.27% |
| 2018 | 111.06 | 14.05 | 5.09 | 12.65% | 23.65 | 21.29% | 50.86 | 45.79% |

Assuming the average price for Dover sole in these years, additional revenue of $4 million under 4.65 ratio and ~$16.5 million under 10:1 ratio.

However, these projections also must consider the market development for Dover sole at these levels and the economic viability of these trips.

# Revenue by Species and Gear



Good Spot to Break

# CHOICE OF QUALIFYING ENTITIES

# History of Allocation Choices

Considerations include historic, recent, and current participation

- Amendment 6 – License Limitations – Vessel History
- Amendment 9 – Sablefish Endorsement – Permit History
- Amendment 14 – Sablefish Tiers – Permit History
- Amendment 20 – Catch Shares – Permit History

# Vessel-Permit Relationships

- 49 distinct combinations from 2011-2018
- There has not been any combination that has landed in all eight years
- 14 combinations would likely be held “neutral” under alternatives where privilege based on vessel or permit history
- About half the permits are leased and half owned by the gear switching entity

| Number of Years | Distinct Permit-Vessel Combinations |
|---|---|
| 1 | 23 |
| 2 | 12 |
| 3 | 3 |
| 4 | |
| 5 | 8 |
| 6 | |
| 7 | 3 |

# QS Accounts
# Proportional Method – Connection by QP Transfer

Table 29. Percentage of all QSAs' QP activity portfolios scored falling into the two gear portfolio categories by year, expressed as a percentage of QP traced to the Fishing in Year portfolio category and also as a percentage of all QP transferred out of QSAs each year.

| Year | Fished QP | | All QSA QP | |
|---|---|---|---|---|
| | Gear Switch. | Trawl | Gear Switch. | Trawl |
| 2011 | 28.9% | 71.1% | 27.2% | 66.9% |
| 2012 | 34.1% | 65.9% | 29.9% | 57.7% |
| 2013 | 24.5% | 75.5% | 23.3% | 71.8% |
| 2014 | 31.3% | 68.7% | 28.8% | 63.2% |
| 2015 | 33.8% | 66.2% | 32.6% | 63.8% |
| 2016 | 36.4% | 63.6% | 33.8% | 59.1% |
| 2017 | 33.7% | 66.3% | 33.0% | 64.9% |
| 2018 | 35.9% | 64.1% | 32.3% | 57.5% |

# Proportional = Weighted Average

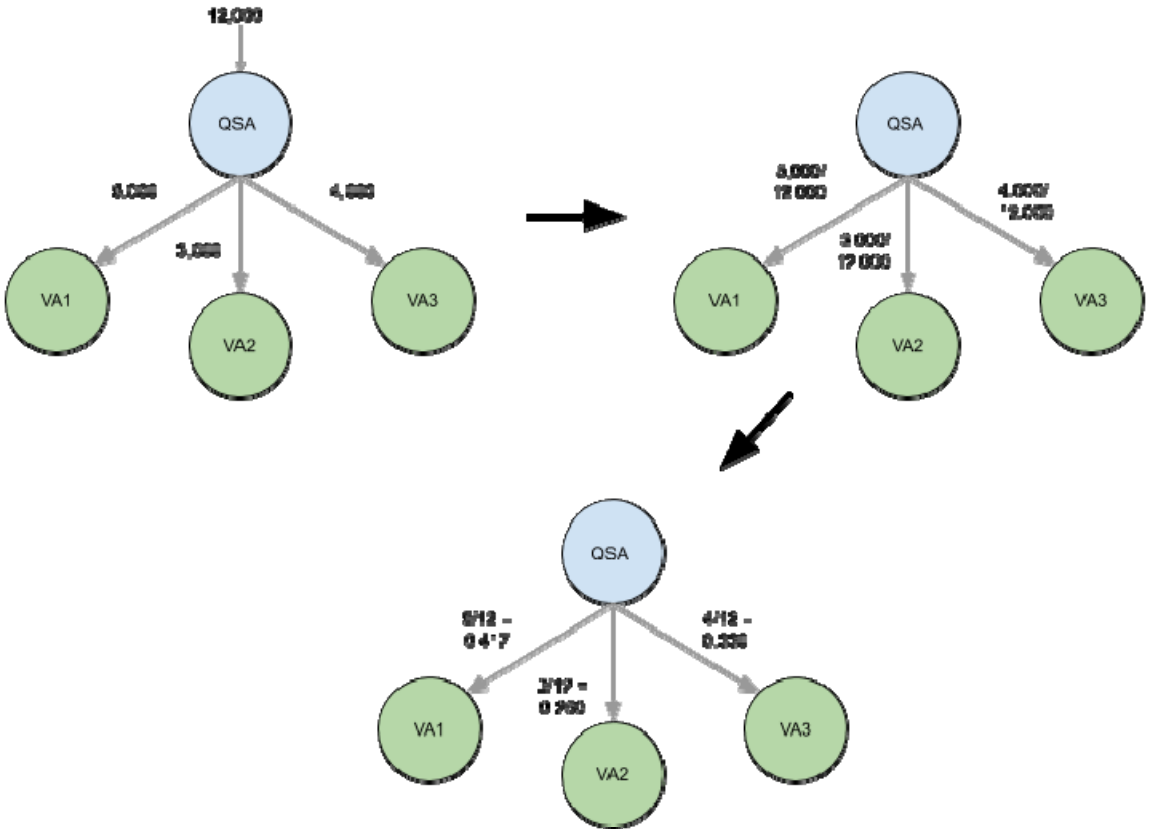
*The weighted average equation for this example is:*

$$QSA =$$

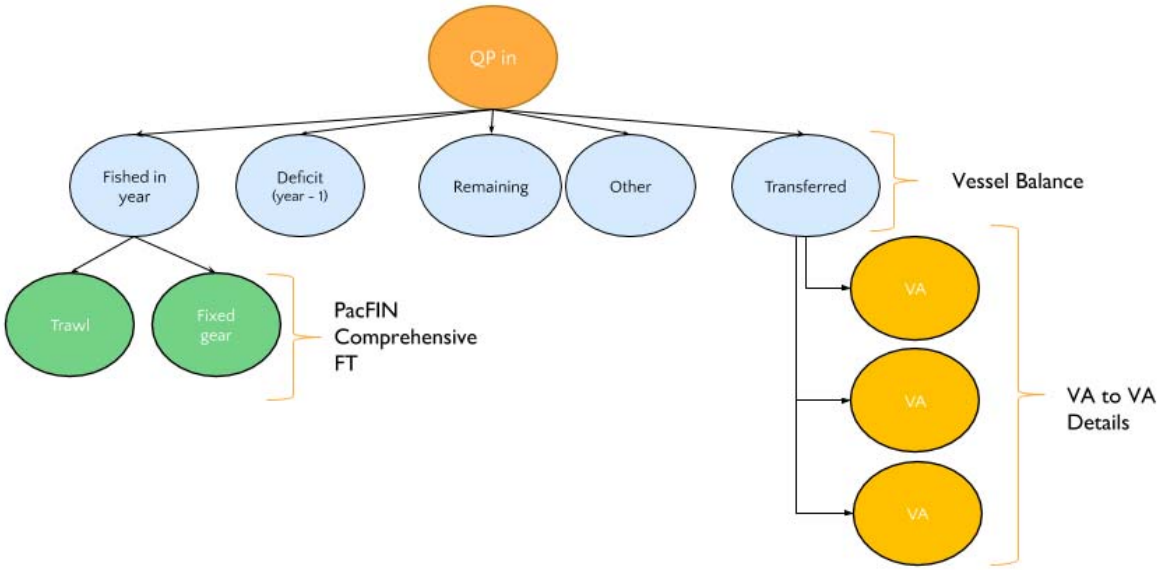
$$0.41667 \times VA1 +$$

$$0.25 \times VA2 +$$

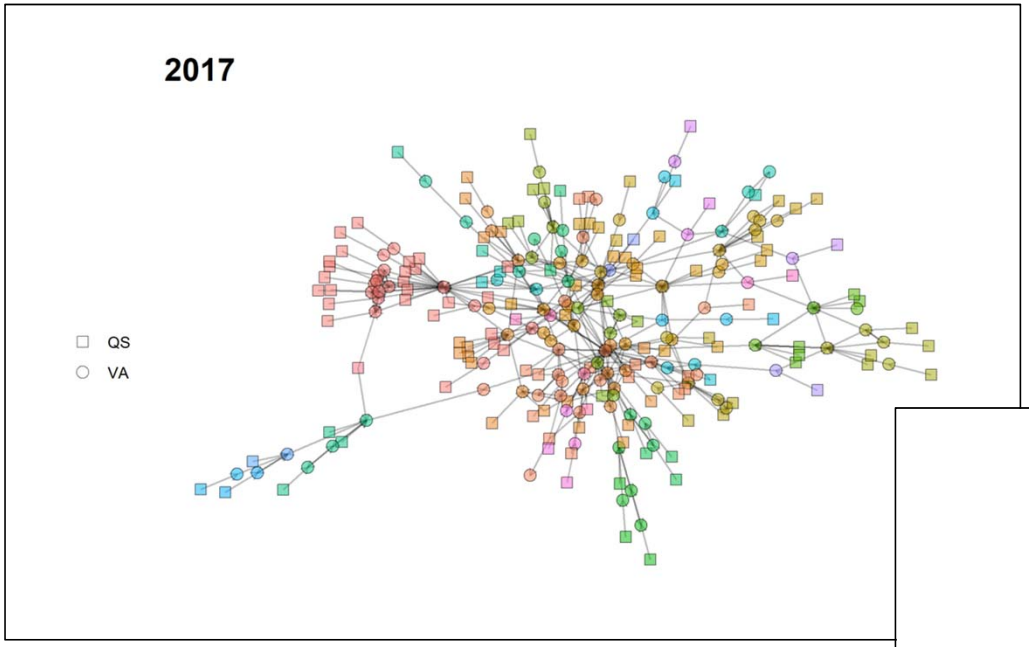
$$0.33 \times VA3$$

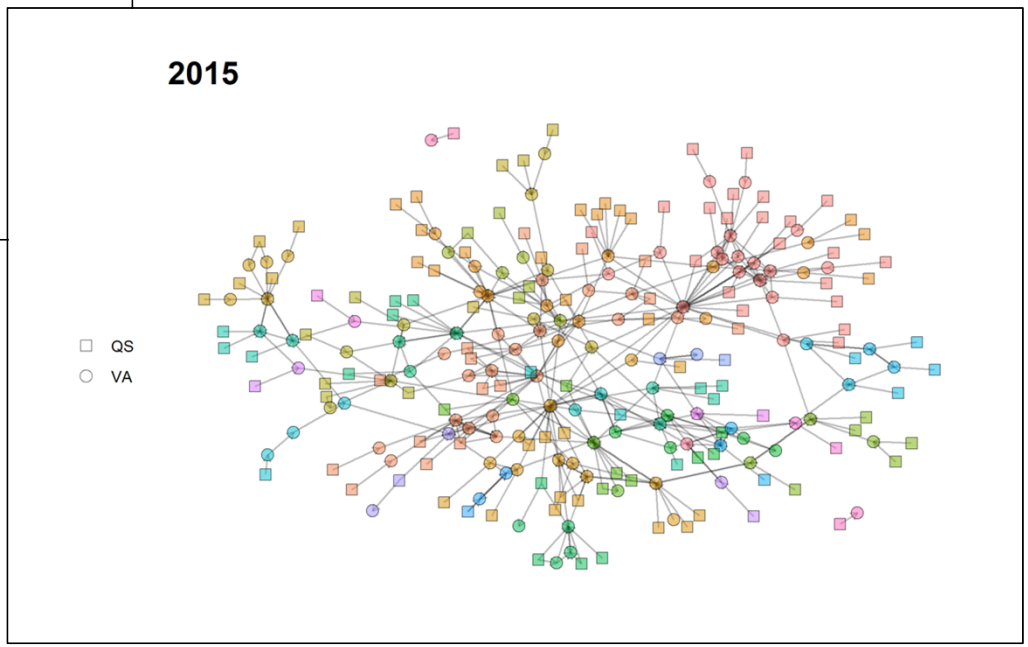


# The Vessel QP Balance/Activity Portfolio



# Sablefish North QP transfer network graphs



# Influence of “Indirect” network relationships

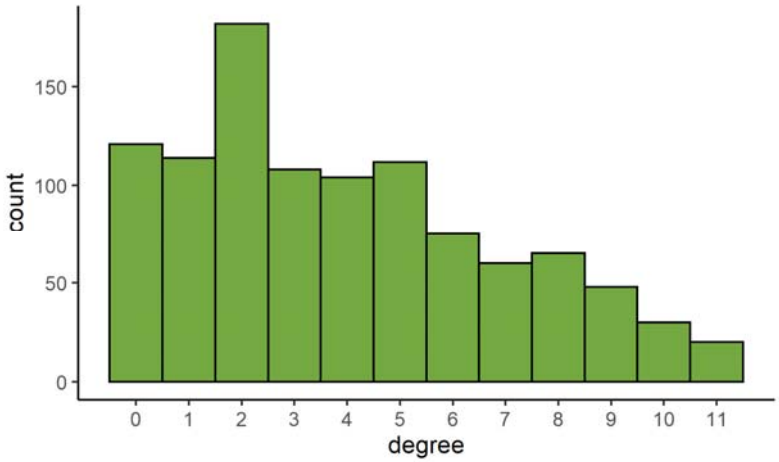



**Figure 23 shows the furthest degree of separation detected for the full set of QSAs, 2011-2018. The computer was only asked to go as far as 11 degrees.**

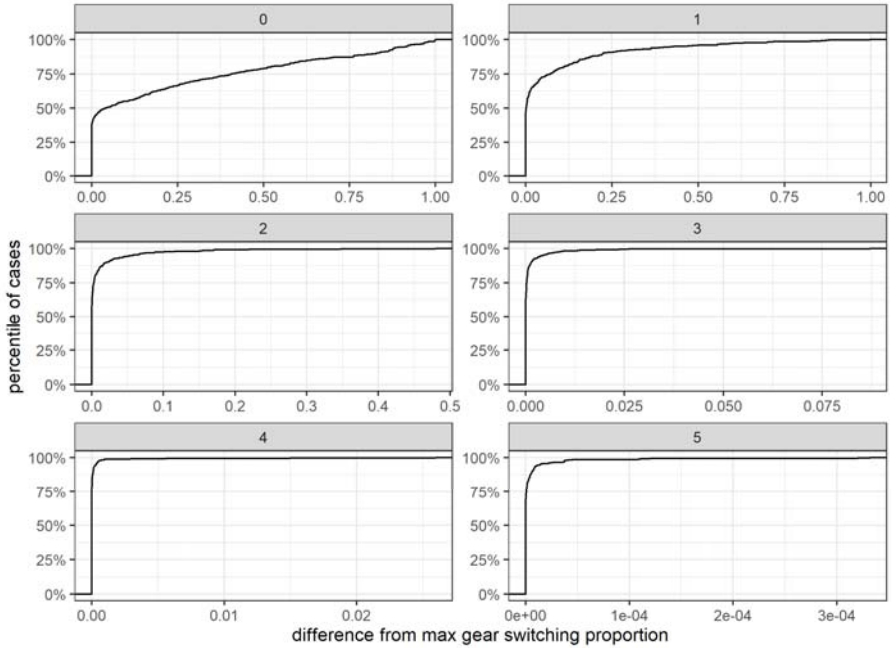



**Figure 22, shows how far QSAs’ scores are from their final score by degree of separation.**

# Eligibility Scenarios

For these scenarios, the annual Gear Switch QP Score for a QSA equals:

$$\frac{p\ fixed\ gear}{p\ fished} \times (p\ fished + p\ remain + p\ defict)$$

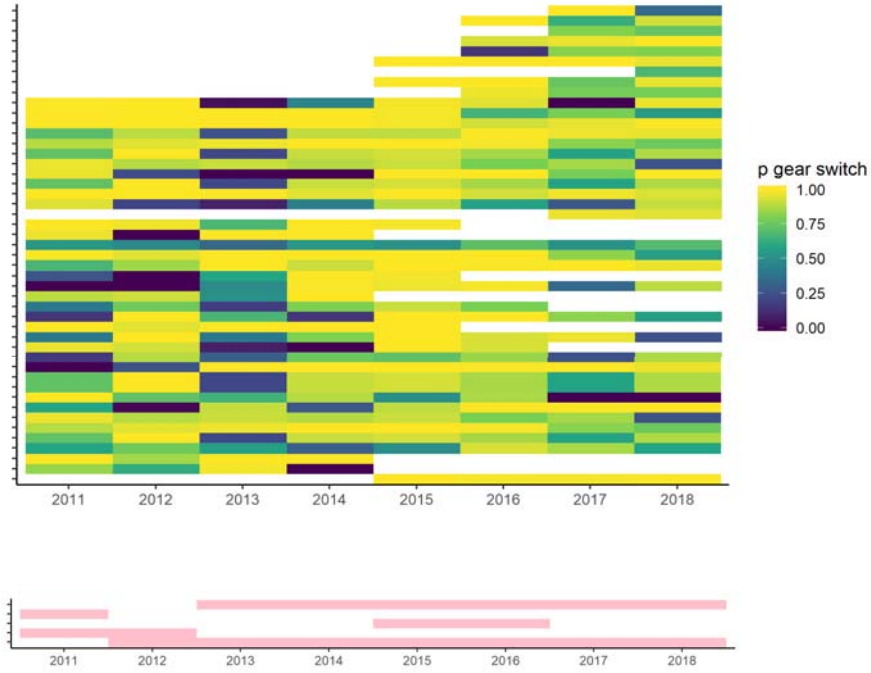
Table 30. Eligibility scenarios and preliminary results from the weight average scoring method. To illustrate how to read the table using the first row, there are 34 QSAs that have 5 or more years with a gear switching score of 0.25 or more of their Sablefish North QP associated with gear switching. Those 34 QSAs held 22.2 units of QS on the control date, which equates to 24.7 percent of the Sablefish North QS.

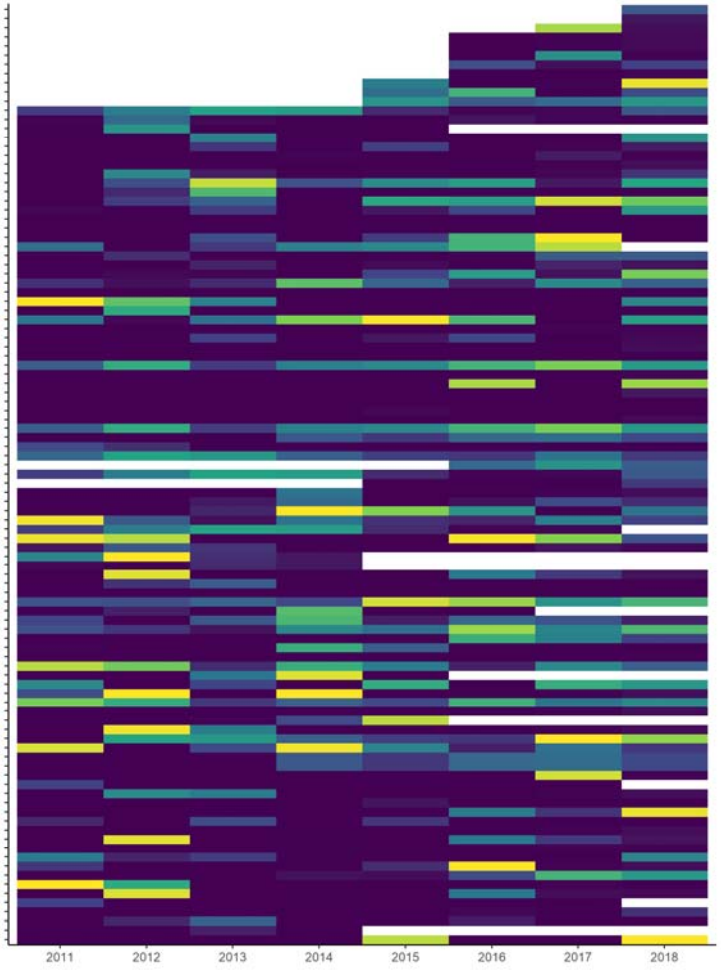
| Years | Gear Switch QP Score | QSAs | QS | % of QS Allocated[a/] |
|---|---|---|---|---|
| >= 5 | >= 0.25 | 34 | 22.200 | 24.7% |
| | >= 0.50 | 22 | 15.119 | 16.8% |
| | >= 0.75 | 11 | 9.859 | 11.0% |
| | >= 0.90 | 8 | 8.021 | 8.9% |
| | >= 0.95 | 7 | 6.767 | 7.5% |
| >= 4 | >= 0.25 | 42 | 26.269 | 29.2% |
| | >= 0.50 | 26 | 16.117 | 17.9% |
| | >= 0.75 | 21 | 14.507 | 16.1% |
| | >= 0.90 | 9 | 8.021 | 8.9% |
| | >= 0.95 | 9 | 8.021 | 8.9% |
| >= 3 | >= 0.25 | 57 | 34.385 | 38.2% |
| | >= 0.50 | 41 | 26.300 | 29.2% |
| | >= 0.75 | 27 | 17.378 | 19.3% |
| | >= 0.90 | 22 | 15.140 | 16.8% |
| | >= 0.95 | 14 | 10.794 | 12.0% |
| >= 2 | >= 0.25 | 72 | 42.097 | 46.8% |
| | >= 0.50 | 54 | 32.310 | 35.9% |
| | >= 0.75 | 38 | 22.781 | 25.3% |
| | >= 0.90 | 28 | 18.417 | 20.5% |
| | >= 0.95 | 19 | 13.906 | 15.5% |
| >= 1 | >= 0.25 | 97 | 61.803 | 68.7% |
| | >= 0.50 | 80 | 47.212 | 52.5% |
| | >= 0.75 | 64 | 40.298 | 44.8% |
| | >= 0.90 | 53 | 31.743 | 35.3% |
| | >= 0.95 | 44 | 27.181 | 30.2% |

a/ 10 percent of the QS remains unallocated but the associated QPs are distributed to QS holders in proportion to their QS holdings.

## Annual variation in the QSA proportion fixed gear scores, 2011-2018

*Each row in the three panels represents a QSA over 2011-2018. White in all three panels indicates that the QSA did not have activity in that year. The blue-to-yellow color scale in the two largest panels shows the proportion of a QSA's QP tracked to fishing by gear switching vessels. The smallest panel shows 5 QSAs (all pink) that have a set of active year shared by fewer than 3 QSAs and so potentially confidential. The two large panels are grouped by time series average: left panel shows averages > 0.50 and the right panel, <= 0.50.*

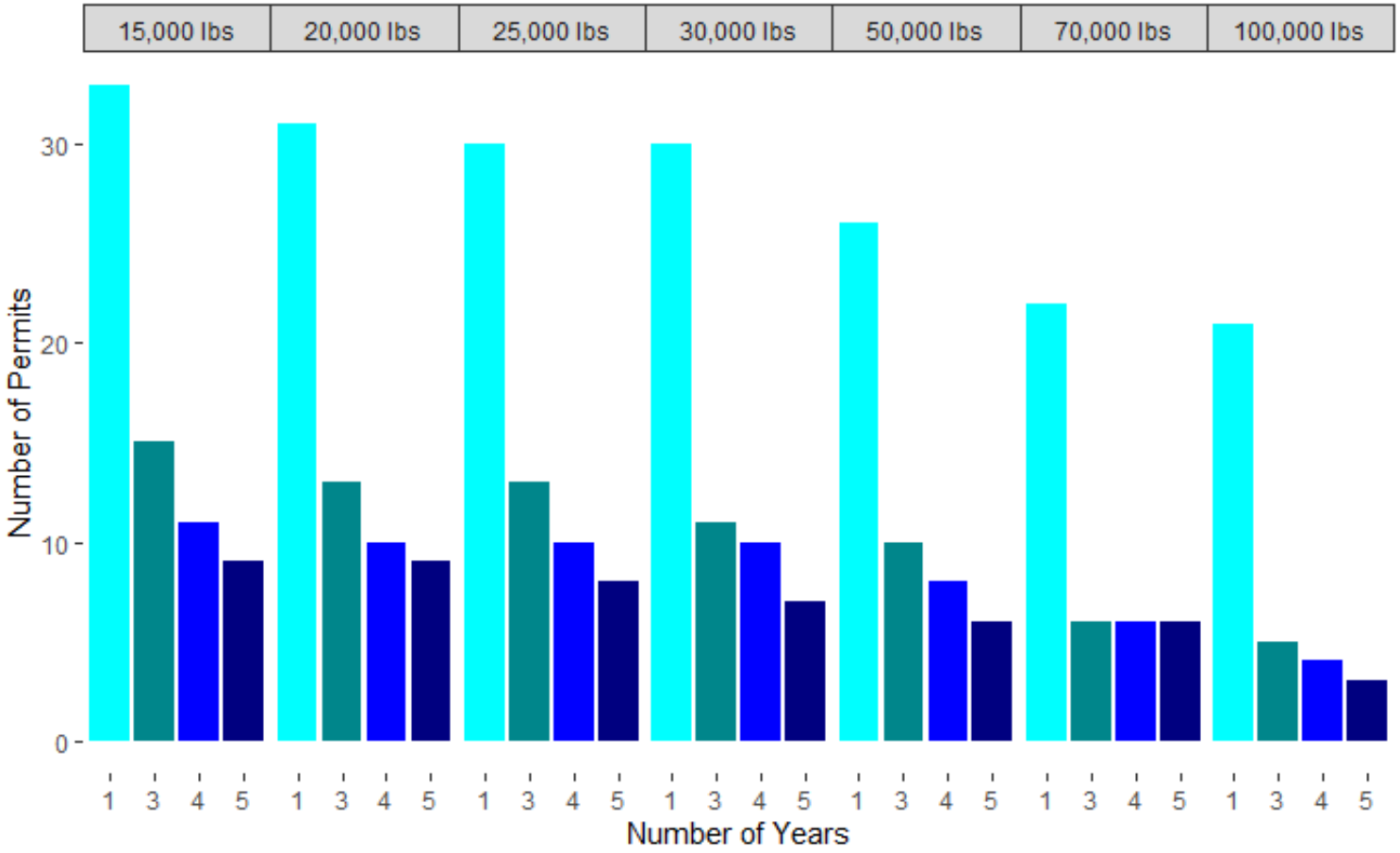


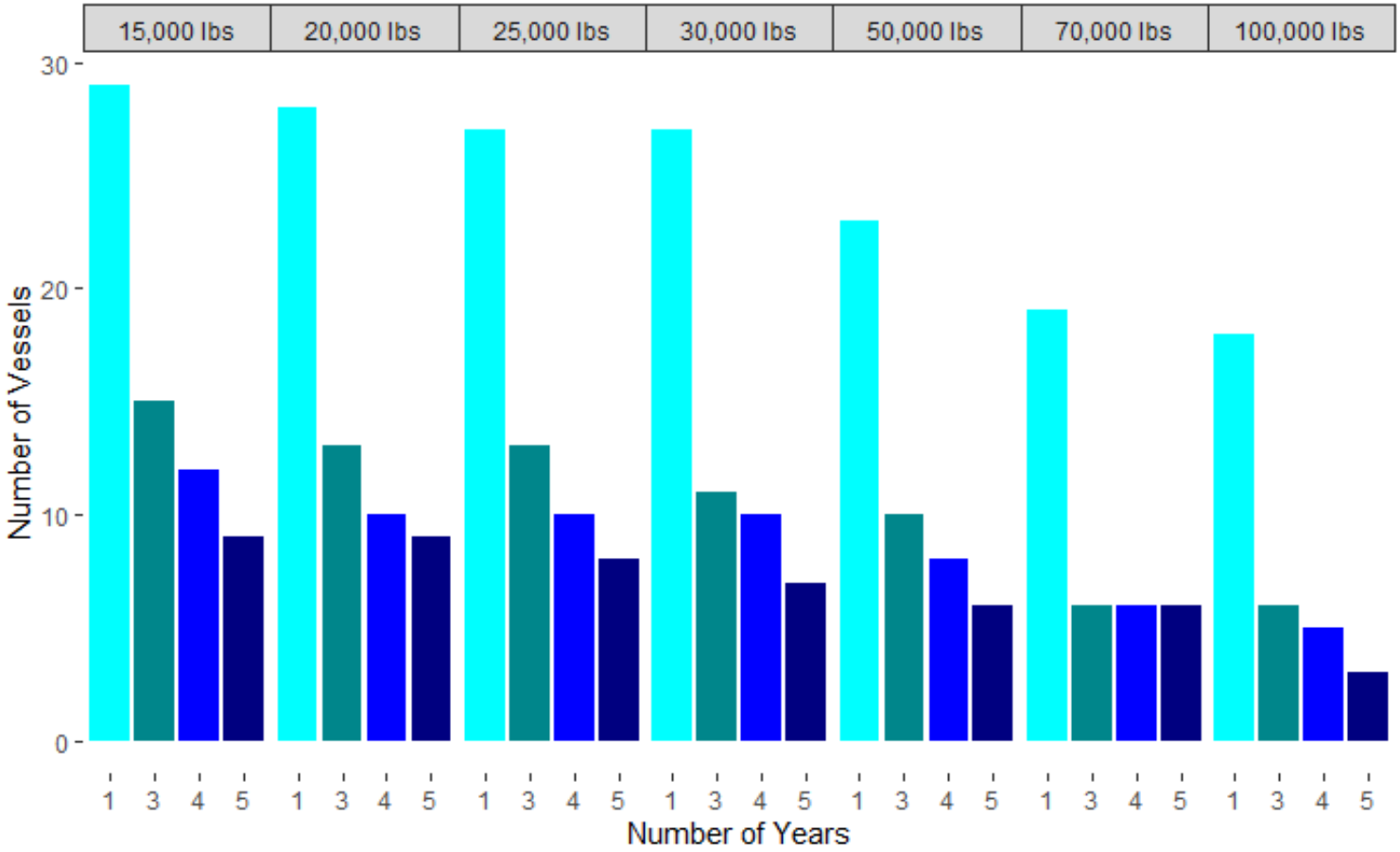
# Permit and Vessel Qualification

- Tables 26 and 27 in the document
- Analysis period is 2011-control date

# Permit Qualification



# Vessel Qualification



# F.4. Alternative-Specific Provisions

October 2019 SaMTAAC Meeting

# Alternative 1 -- Conversion Date

- If option selected, then would need to select date in which “trawl only” QPs would revert to sablefish QPs (“unrestricted”)
- Between 50-70% of fixed gear landings occur before October 1
- 2018 saw the highest percentage of total available QPs taken through August at 10.91%

| Utilization through | Conversion Date | Average % of Total FG QPs Used | Average % of Total QP Available |
|---|---|---|---|
| July | August 1 | 25.04 | 7.67 |
| August | September 1 | 34.87 | 10.61 |
| September | October 1 | 59.51 | 17.90 |

# Alternative 3 -- Gear Switching Endorsement

- Qualifications and resulting endorsement allowances shown in Table 27 and 28
  - Projections assume all vessels or permits at that qualification level would fish
- For those without an endorsement, analysis examined two populations for potential limits:
  - Those vessels who historically fished trawl and fixed gear in the same year
  - Those vessels that took non-sablefish targeted trips with fixed gear
  - Based on results, examined proposed limits of 6,000, 25,000, and 125,000 lbs

# Catch Projections for Qualifying Permits

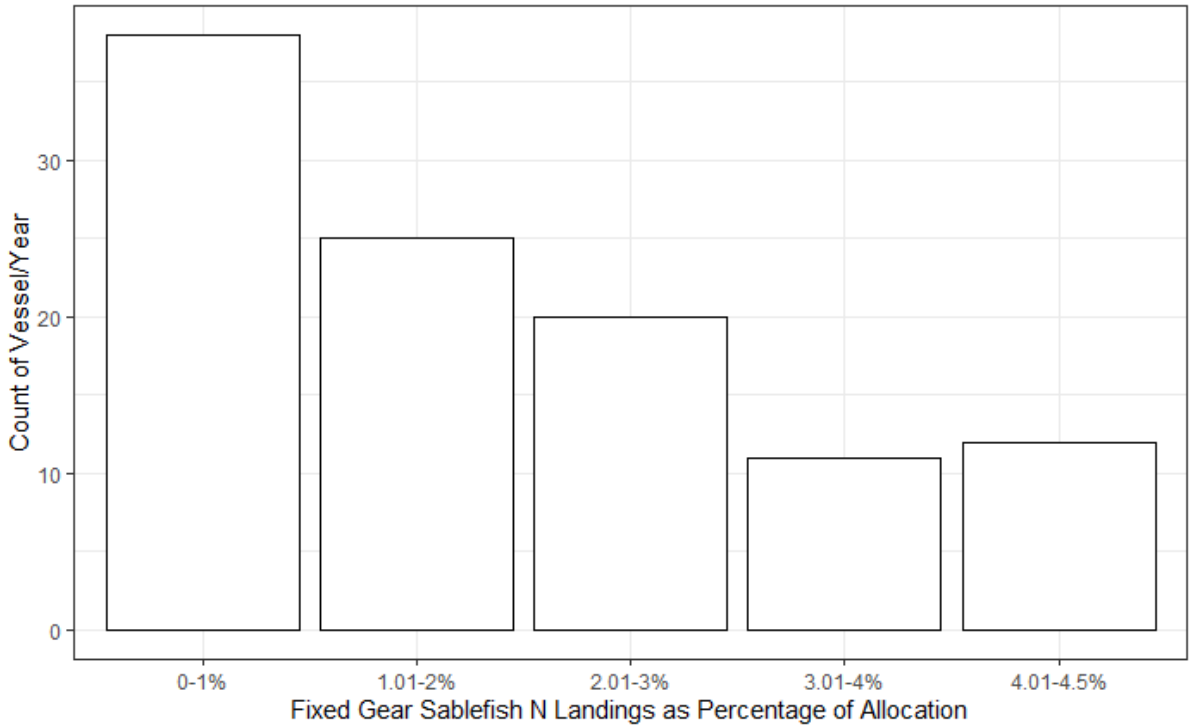
| Landings Amount | Number of Years | Number of Permits | Assuming permits land max in any year… | | Assuming permits land average in any year… | |
|---|---|---|---|---|---|---|
| | | | Total QPs | Total % of 2020 Trawl Allocation | Total QPs | Total % of 2020 Trawl Allocation |
| 1 | 1 | 36 | 4,070,804 | 70.03 | 3,024,770 | 52.03 |
| 15,000 | 3 | 15 | 2,134,470 | 36.72 | 1,363,189 | 23.45 |
| 30,000 | 3 | 11 | 1,853,741 | 31.89 | 1,190,083 | 20.47 |
| 70,000 | 3 | 6 | 1,206,652 | 20.76 | 832,455 | 14.32 |

# Catch Projections for Qualifying Vessels

| Landings Amount | Number of Years | Number of Vessels | Assuming vessels land max in any year… | | Assuming vessels land average in any year… | |
|---|---|---|---|---|---|---|
| | | | Total QPs | Total % of 2020 Trawl Allocation | Total QPs | Total % of 2020 Trawl Allocation |
| 1 | 1 | 36 | 3,523,728 | 60.62 | 2,718,230 | 46.76 |
| 15,000 | 3 | 15 | 2,024,832 | 34.83 | 1,336,916 | 23.00 |
| 30,000 | 3 | 11 | 1,860,909 | 32.01 | 1,224,447 | 21.06 |
| 70,000 | 3 | 6 | 1,213,820 | 20.88 | 868,966 | 14.95 |

# How many Vessels are taking an Annual Vessel Limit?

- Overall, only 5 vessels have taken more than 4% of the AVL in a year with fixed gear
- Looking at maximum for each vessel from 2011-2018, take of allocation percentages range from 0.00005%-4.43% (not including discard)



# Impacts of Limits for Non-Endorsed Vessels

| Qualification | Number of Vessels Affected | Percent of 2020 Allocation Assuming Each Vessel Lands… | | | | |
|---|---|---|---|---|---|---|
| | | Maximum Landing | Average Landing | Projection under 6,000 Limit | Projection under 25,000 Limit | Projection under 125,000 Limit |
| 15,000 for 3 years | 21 | 25.8 | 23.8 | 1.9 | 6.6 | 21.5 |
| 30,000 for 3 years | 25 | 28.6 | 25.7 | 2.4 | 8.1 | 23.5 |
| 70,000 for 3 years | 30 | 39.7 | 31.8 | 2.9 | 10.3 | 29.5 |

# Back Up Slides

# Price Vs. Utilization for FG Sablefish North (back up)