



**NOAA**  
**FISHERIES**

Alaska Fisheries  
Science Center

# 2015 *Draft* Annual Deployment Plan

for observers in the Groundfish and Halibut fisheries off Alaska:

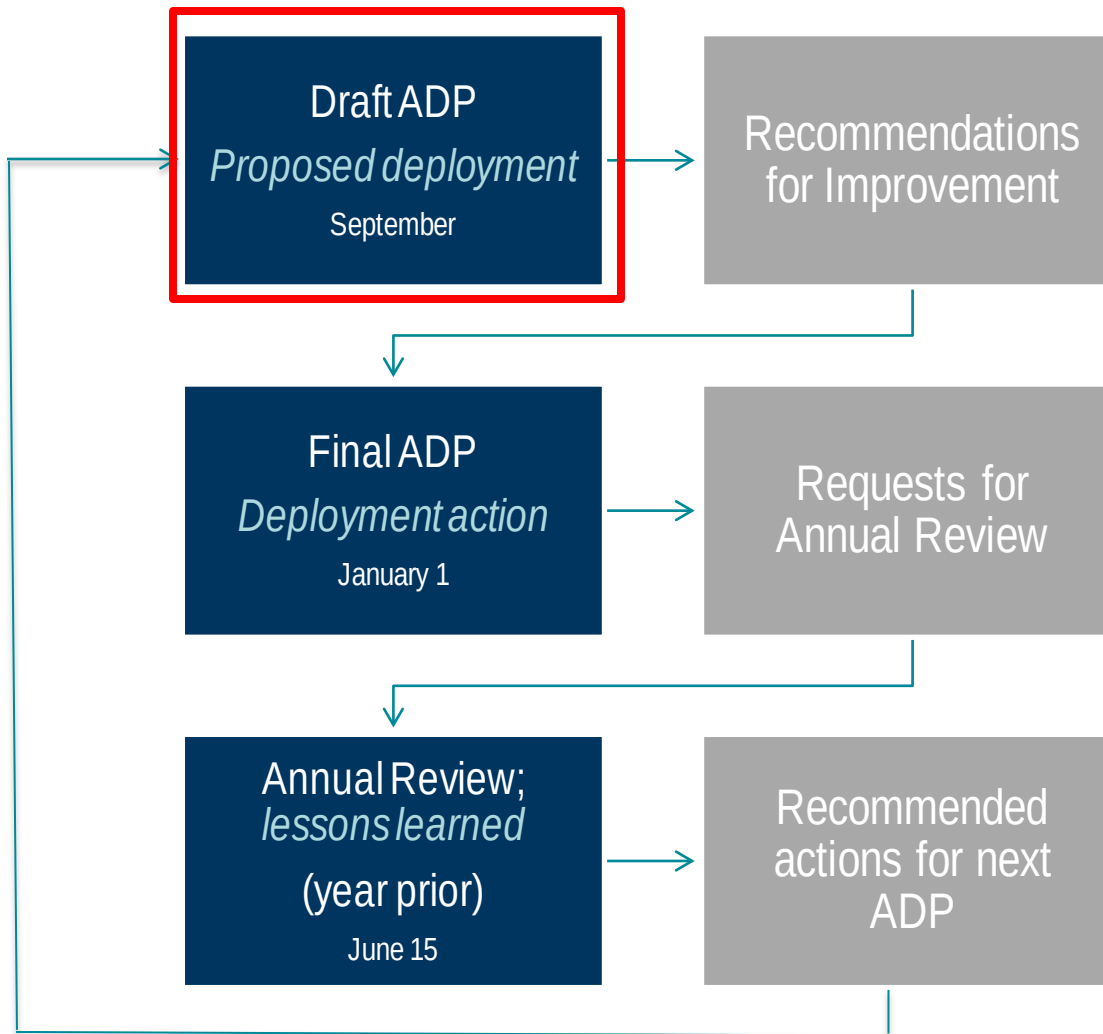
## Description of Analyses

Craig H. Faunce

Fisheries Monitoring and Analysis Division, AFSC, Seattle

*Council briefing*  
*Anchorage, AK*  
**October, 2014**

# Annual process: Government & Public (Council)



| Element                        | 2012                                                                                        | 2013                                                                        | 2014                                                                                                                   | 2015                                           |
|--------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| AFA pollock<br>CVs and CPs     | 100%                                                                                        | FULL COVERAGE                                                               |                                                                                                                        |                                                |
| A80 BSAI flatfish CPs          |                                                                                             |                                                                             |                                                                                                                        |                                                |
| Rockfish Program<br>CV and CPs |                                                                                             |                                                                             |                                                                                                                        |                                                |
| CP Atka BSAI                   |                                                                                             |                                                                             |                                                                                                                        |                                                |
| CP                             | 0-100% dependent on vessel size                                                             | 100% with two exceptions                                                    |                                                                                                                        |                                                |
| CV > 125'                      | 100%                                                                                        | Randomly<br>selected trips<br>14.8%<br>(14.5% expected)                     | Randomly<br>selected trips<br>(16% expected)                                                                           | Randomly<br>selected trips<br>(23.8% expected) |
| CV 60-125'                     | Self-selection:<br>30% days or gear /quarter + 1<br>trip/fishery                            |                                                                             |                                                                                                                        |                                                |
| CV 57.5-60'                    | (57-60'; 0%)                                                                                |                                                                             |                                                                                                                        |                                                |
| CV 40-57.5'                    | 0%                                                                                          | Randomly<br>selected vessels<br>2 month period<br>10.6% (11% expected)      | Randomly<br>selected vessels<br>2 month period<br>(12% expected)                                                       | Randomly<br>selected trips<br>(12% expected)   |
| CV < 40'                       | 0%                                                                                          | ZERO COVERAGE                                                               |                                                                                                                        |                                                |
| Halibut fishery                | no                                                                                          | yes                                                                         |                                                                                                                        |                                                |
| Dockside                       | Days / month by tons processed to<br>collect delivery information and<br>biological tissues | All pollock deliveries for<br>salmon bycatch genetics<br>100% BSAI; 73% GOA | Trawl pollock fisheries for salmon bycatch<br>genetics: 100% AFA (A91) and randomly<br>sampled GOA trawl pollock trips |                                                |



# Selection probabilities

| Stratum    | Small vessel trip-selection |        | Large vessel trip-selection |      |
|------------|-----------------------------|--------|-----------------------------|------|
| ADP year   | Rate (%)                    | unit   | Rate (%)                    | unit |
| 2013       | 11                          | vessel | 11.15 – 14.78               | trip |
| 2014       | 12                          | vessel | 16                          | trip |
| 2015 Draft | 12                          | trip   | 23.76                       | trip |

# How did we get here?

C1 2015 Draft ADP - Faunce PPT  
OCTOBER 2014

## Vessel to Trip Selection

### VS Concept: Increased duration & low coverage rate

Selection frame built from past years' activity.....

- ....No check-in, check-out

- ....New vessels had no chance of being selected

Half the stratum released from coverage in 2013....

- ...needed to select many more boats than desired,

- ...resulting coverage rate was a random variable,

- ...desired coverage rates in two-month time period only achieved when random selection abandoned (all selected)

# Selection probabilities

| Stratum    | Small vessel trip-selection |        | Large vessel trip-selection |      |
|------------|-----------------------------|--------|-----------------------------|------|
| ADP year   | Rate (%)                    | unit   | Rate (%)                    | unit |
| 2013       | 11                          | vessel | 11.15 – 14.78               | trip |
| 2014       | 12                          | vessel | 16                          | trip |
| 2015 Draft | 12                          | trip   | 23.76                       | trip |

# How did we get here?

C1 2015 Draft ADP - Faunce PPT  
OCTOBER 2014

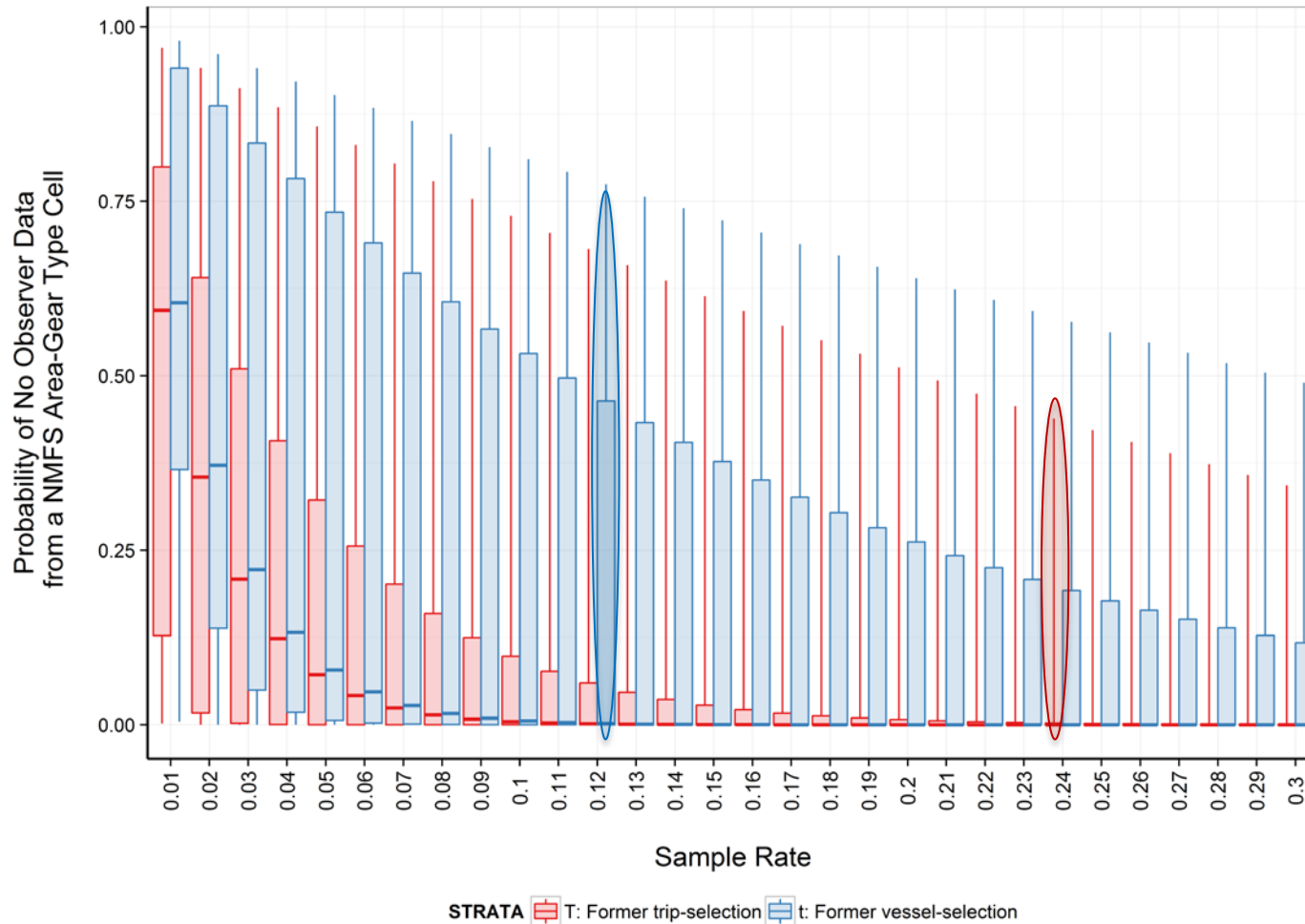
## Selection probabilities

- What are possible strata rate combinations under:  
former VS rate  $\leq$  former TS rate.
- What is the risk of missing data?
- What are other considerations?
- Hold former VS rate same as 2014

# What is the risk?

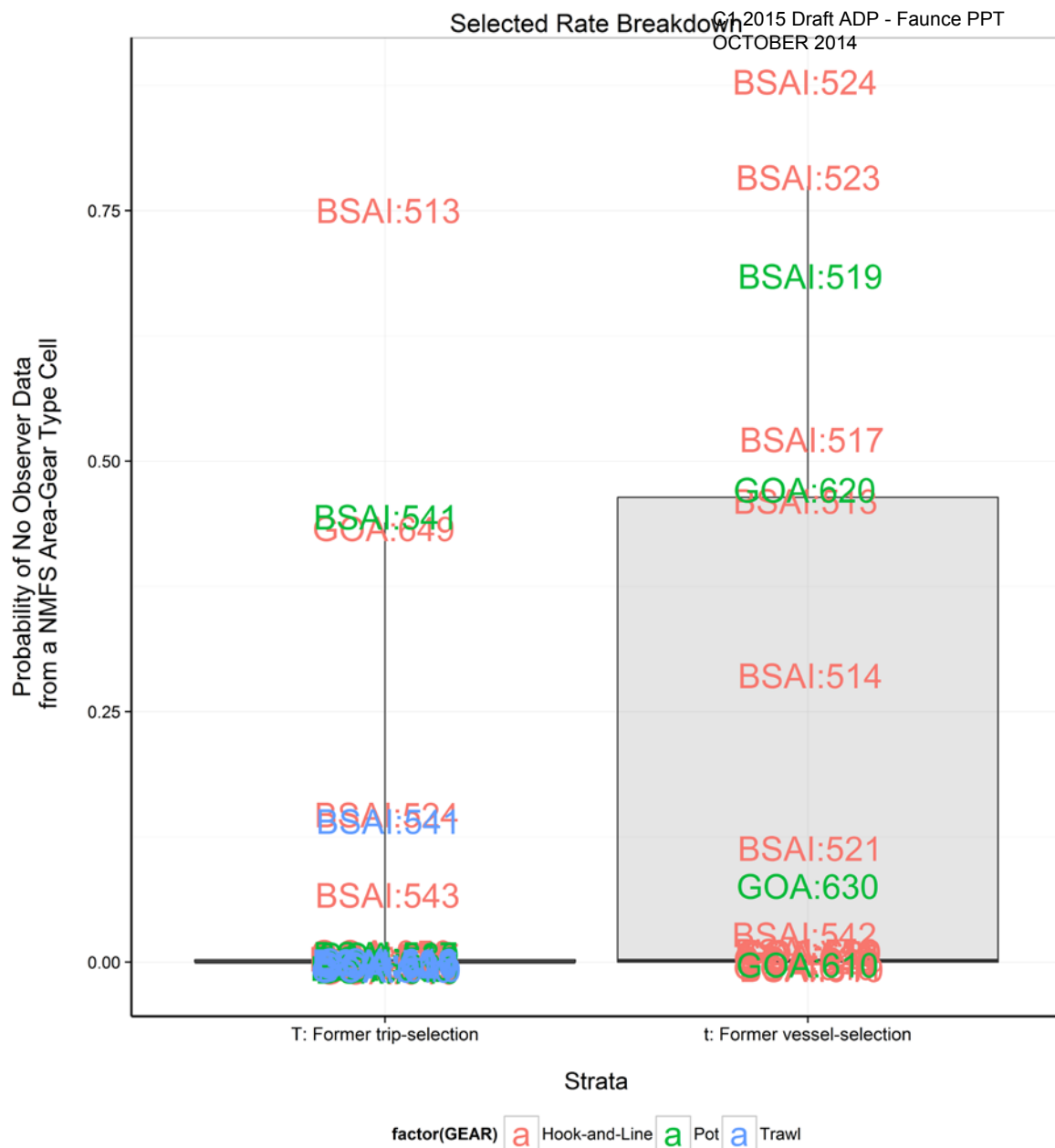
C1 2015 Draft ADP - Faunce PPT  
OCTOBER 2014

Missing data at end of year: NMFS area and gear combination



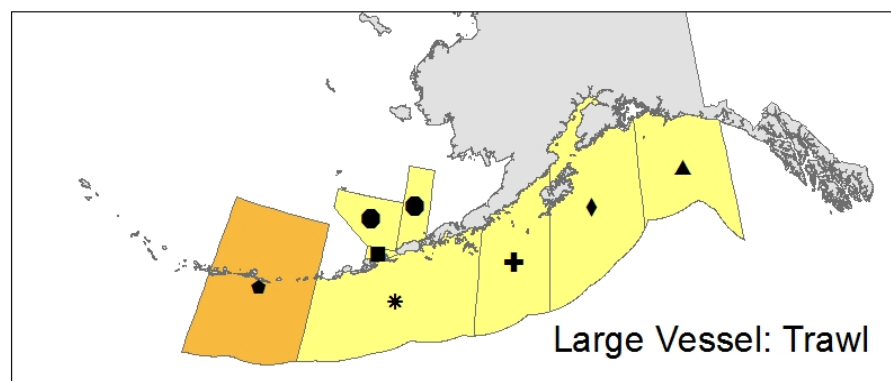
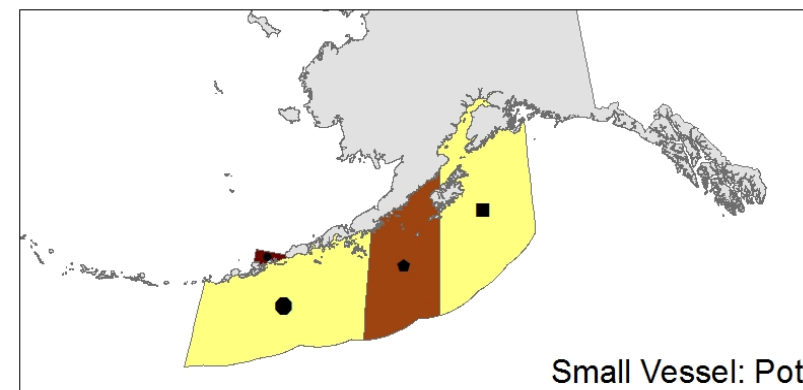
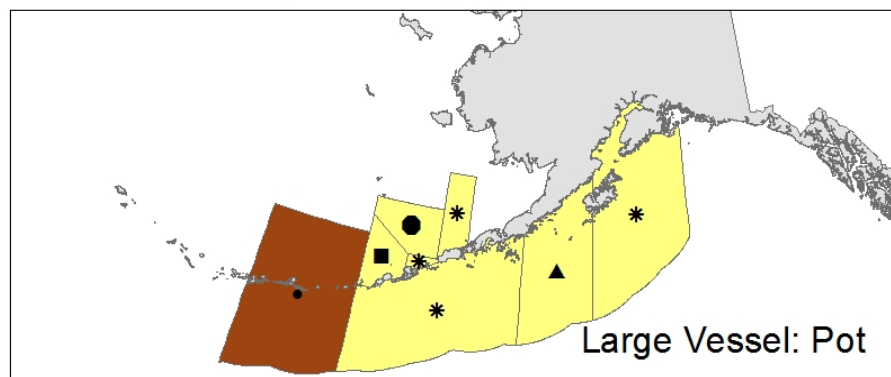
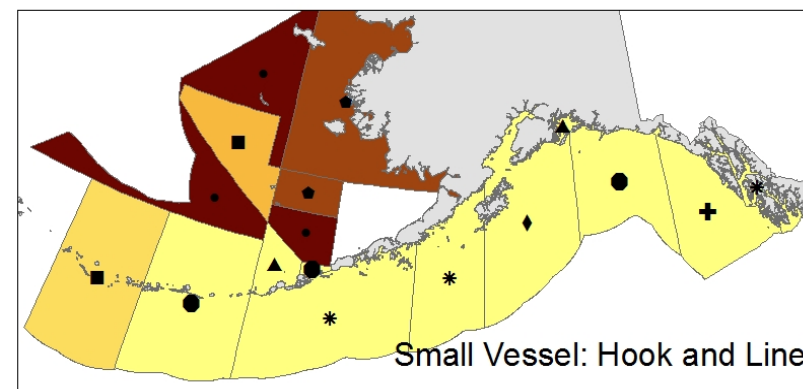
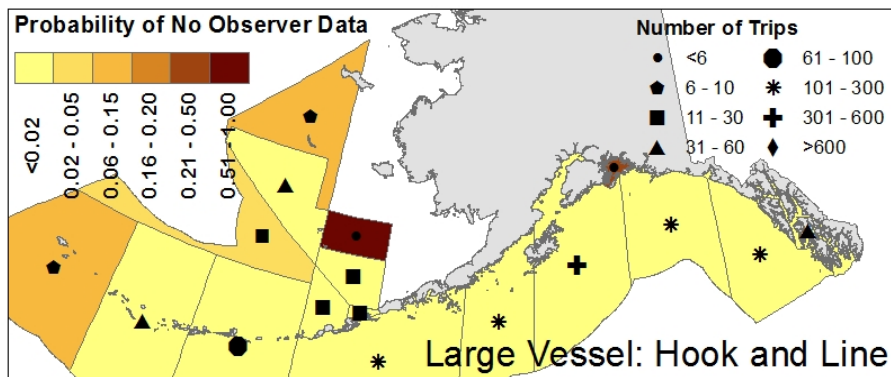


# New Detail



# New Detail

C1 2015 Draft ADP - Faunce PPT  
OCTOBER 2014



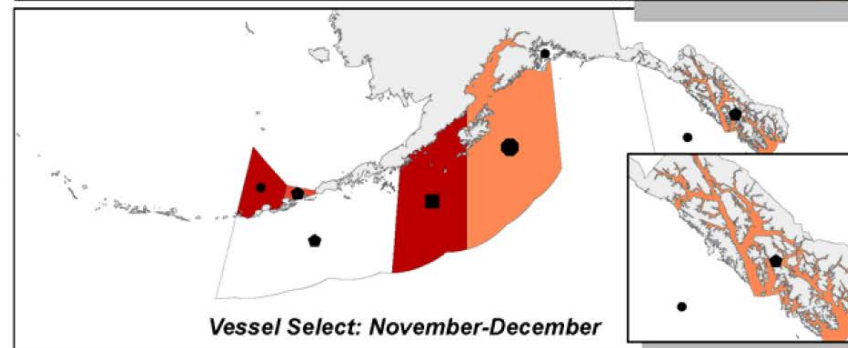
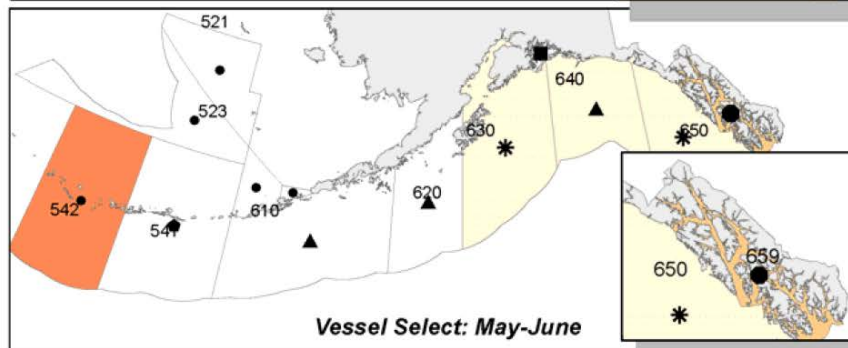
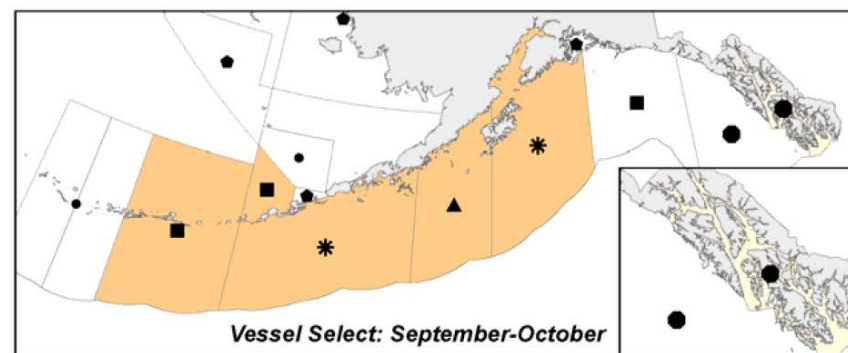
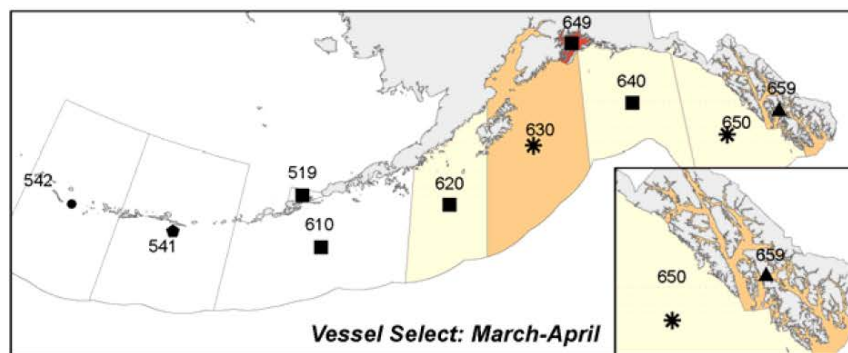
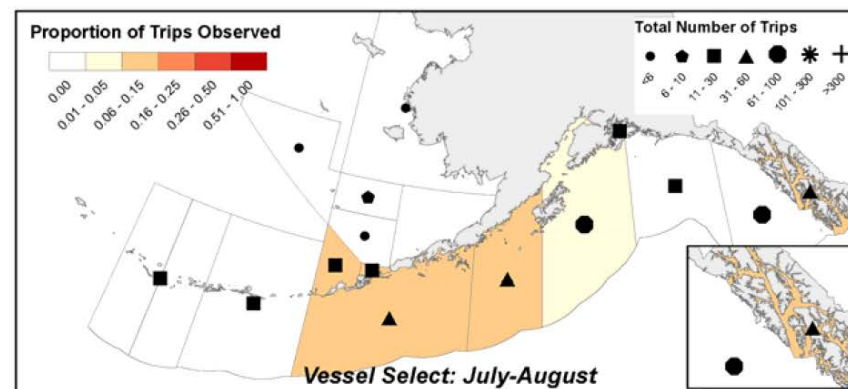
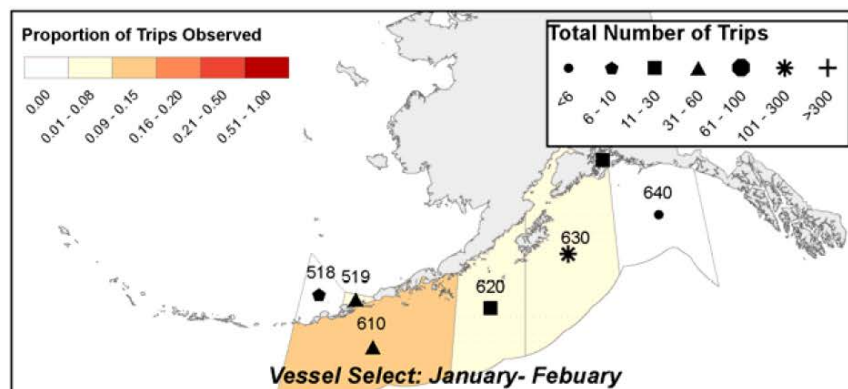


Figure 3-6: Proportion of trips observed in each vessel selection stratum.

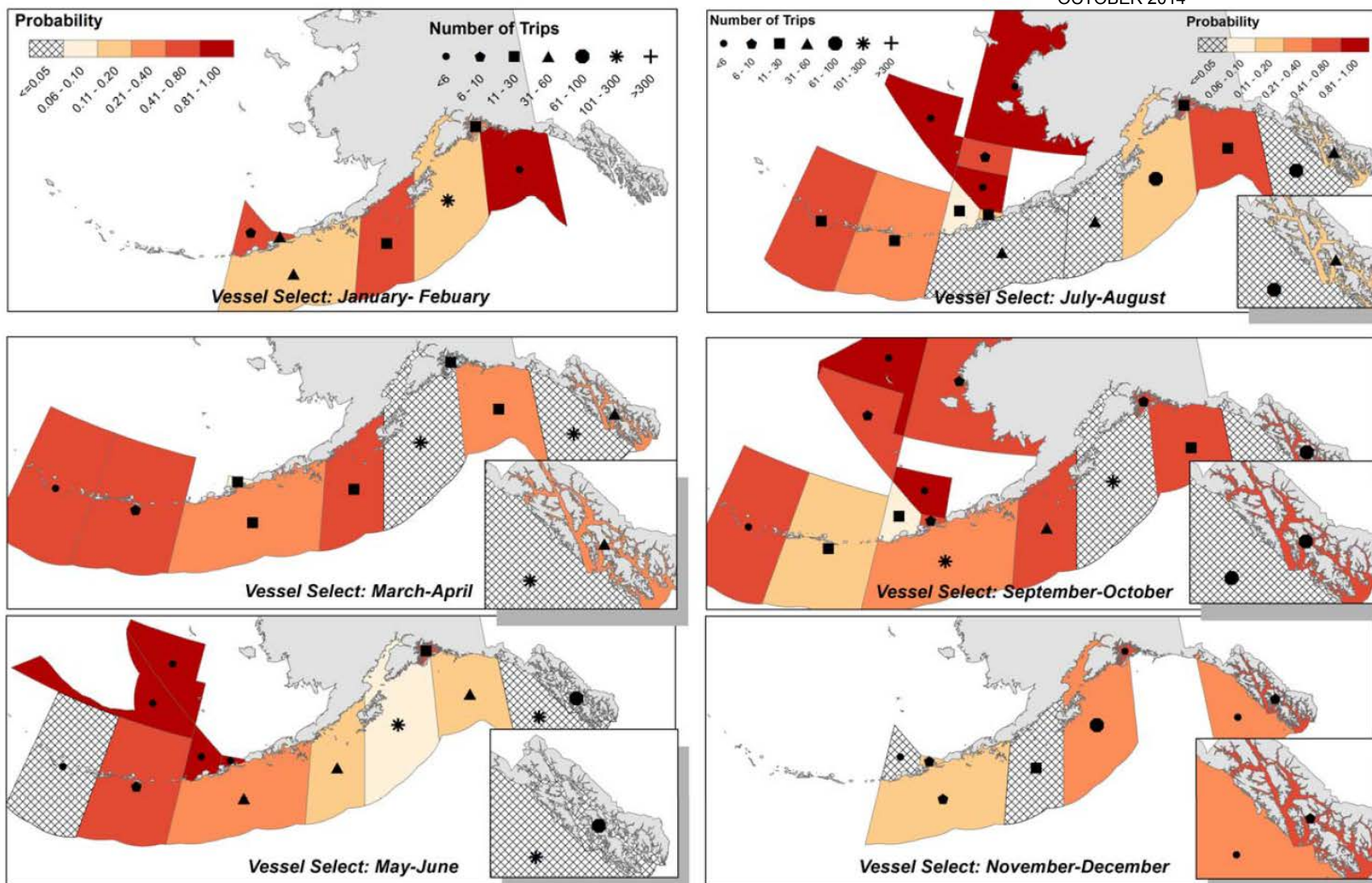


Figure 3-10: The probability of observing a number of trips as far or farther from the expected number than the sample contained (probability of observing a more extreme value).

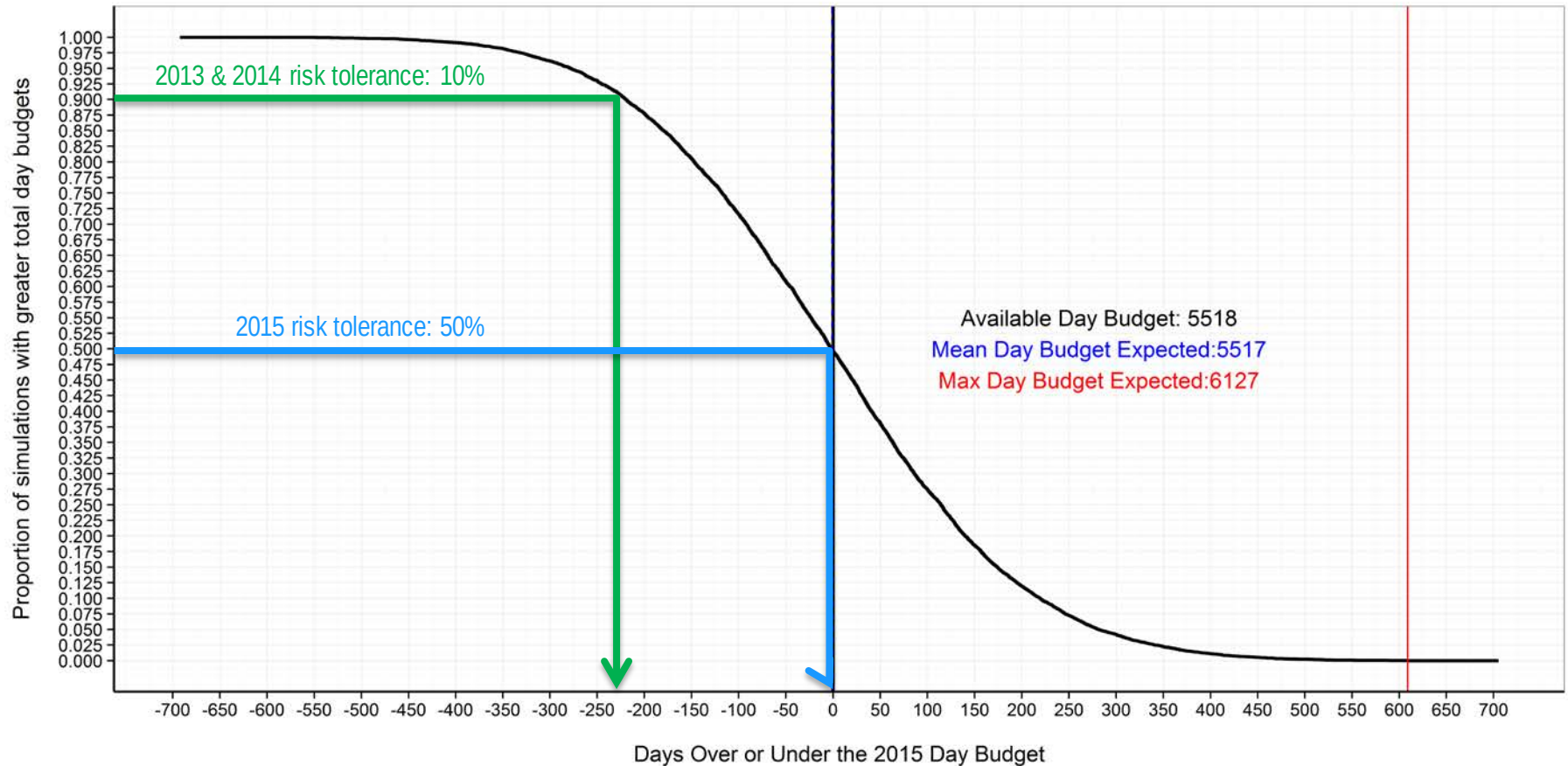


# Selection probabilities

| Stratum    | Small vessel trip-selection |        | Large vessel trip-selection |      |
|------------|-----------------------------|--------|-----------------------------|------|
| ADP year   | Rate (%)                    | unit   | Rate (%)                    | unit |
| 2013       | 11                          | vessel | 11.15 – 14.78               | trip |
| 2014       | 12                          | vessel | 16                          | trip |
| 2015 Draft | 12                          | trip   | 23.76                       | trip |

# What is the risk?

Likelihood of program going over budget





# How did we get here?

## Selection probabilities

- Need to sample at a higher rate to achieve the same outcome in former VS than former TS
  - Former represents more of a rare event
- Increase in coverage rate NOT related to cost
  - Increased tolerance to potential budget overages
  - Changes in fishing effort\* in base years
    - 2013 effort (2015 ADP)= 34,827 days
    - 2012 effort (2014 ADP)= 37,097days

\* Includes zero coverage stratum



| Stratum            | Gear          | Days         |               | Trips       |               | Vessels    |               |
|--------------------|---------------|--------------|---------------|-------------|---------------|------------|---------------|
|                    |               | Total        | Expected Obs. | Total       | Expected Obs. | Total      | Expected Obs. |
| FULL (100%)        | HAL           | 7010         | 7010          | 1110        | 1110          | 36         | 36            |
|                    | POT           | 350          | 350           | 54          | 54            | 3          | 3             |
|                    | Trawl         | 16807        | 16807         | 3674        | 3674          | 139        | 139           |
|                    | <b>TOTALS</b> | <b>24167</b> | <b>24167</b>  | <b>4838</b> | <b>4838</b>   | <b>178</b> | <b>178</b>    |
| T (24%)            | HAL           | 9229         | 2193          | 1527        | 363           | 186        | 44            |
|                    | POT           | 3615         | 859           | 887         | 211           | 97         | 23            |
|                    | Trawl         | 4556         | 1083          | 1566        | 372           | 74         | 18            |
|                    | <b>TOTALS</b> | <b>17400</b> | <b>4134</b>   | <b>3976</b> | <b>945</b>    | <b>304</b> | <b>72</b>     |
| t (12%)            | HAL           | 9415         | 1130          | 2138        | 257           | 378        | 45            |
|                    | POT           | 425          | 51            | 106         | 13            | 21         | 3             |
|                    | <b>TOTALS</b> | <b>9840</b>  | <b>1181</b>   | <b>2244</b> | <b>269</b>    | <b>388</b> | <b>47</b>     |
| ZERO (0%)          | HAL           | 6553         | 0             | 2535        | 0             | 489        | 0             |
|                    | POT           | 25           | 0             | 9           | 0             | 2          | 0             |
|                    | JIG           | 898          | 0             | 499         | 0             | 138        | 0             |
|                    | <b>TOTALS</b> | <b>7476</b>  | <b>0</b>      | <b>3040</b> | <b>0</b>      | <b>610</b> | <b>0</b>      |
| TOTAL HAL          |               | 32207        | 10333         | 7310        | 1730          | 1089       | 125           |
| TOTAL POT          |               | 4415         | 1260          | 1056        | 278           | 123        | 29            |
| TOTAL TRAWL        |               | 21363        | 17890         | 5240        | 4046          | 213        | 157           |
| TOTAL JIG          |               | 898          | 0             | 499         | 0             | 138        | 0             |
| GRAND TOTAL/STRATA |               | 58883        | 29482         | 14098       | 6052          | 1480       | 297           |

## OAC Requested New Detail

unique totals will not be equal to the sum of row totals if a day/trip/vessel changes gears; expected values derived by multiplying totals by sampling rate for strata





# Considerations for conditional release policy

## Appendix C



# How did we get here?

Half the 2013 vessel-selection stratum released from coverage

Direction from the June 2013 Council meeting:

**SSC:** *Changes to the conditional release policy are needed to reduce biases in the observer data collection program. The goal should be to restrict conditional releases to legitimate cases only.*

**Council:** *The Council requests NMFS and AFSC analyze the 2013 vessel selection pool data, as well as likely changes in the burdens associated with carrying an observer on vessels in the trip selection pool, to determine whether a vessel length other than 40' better defines the new trip selection sample frame in the 2015 ADP, in order to remove provisions for conditional release. The Council requests this information in order to make recommendations to NMFS and AFSC as part of the draft 2015 ADP review. The Council is concerned with potential bias introduced in the partial coverage category through conditional releases.*

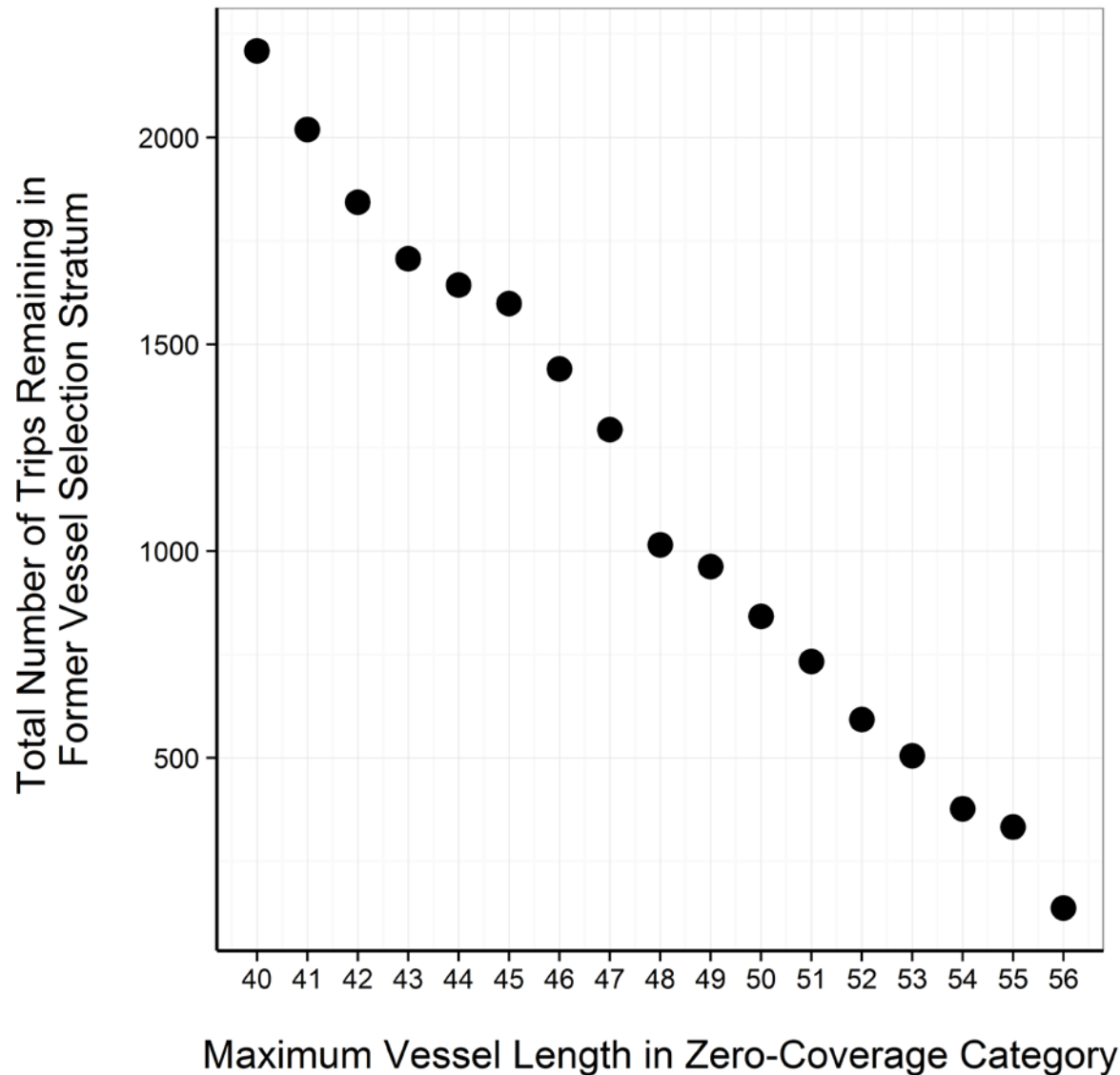
*NMFS has granted releases to 10 vessels participating in cooperative EM.*

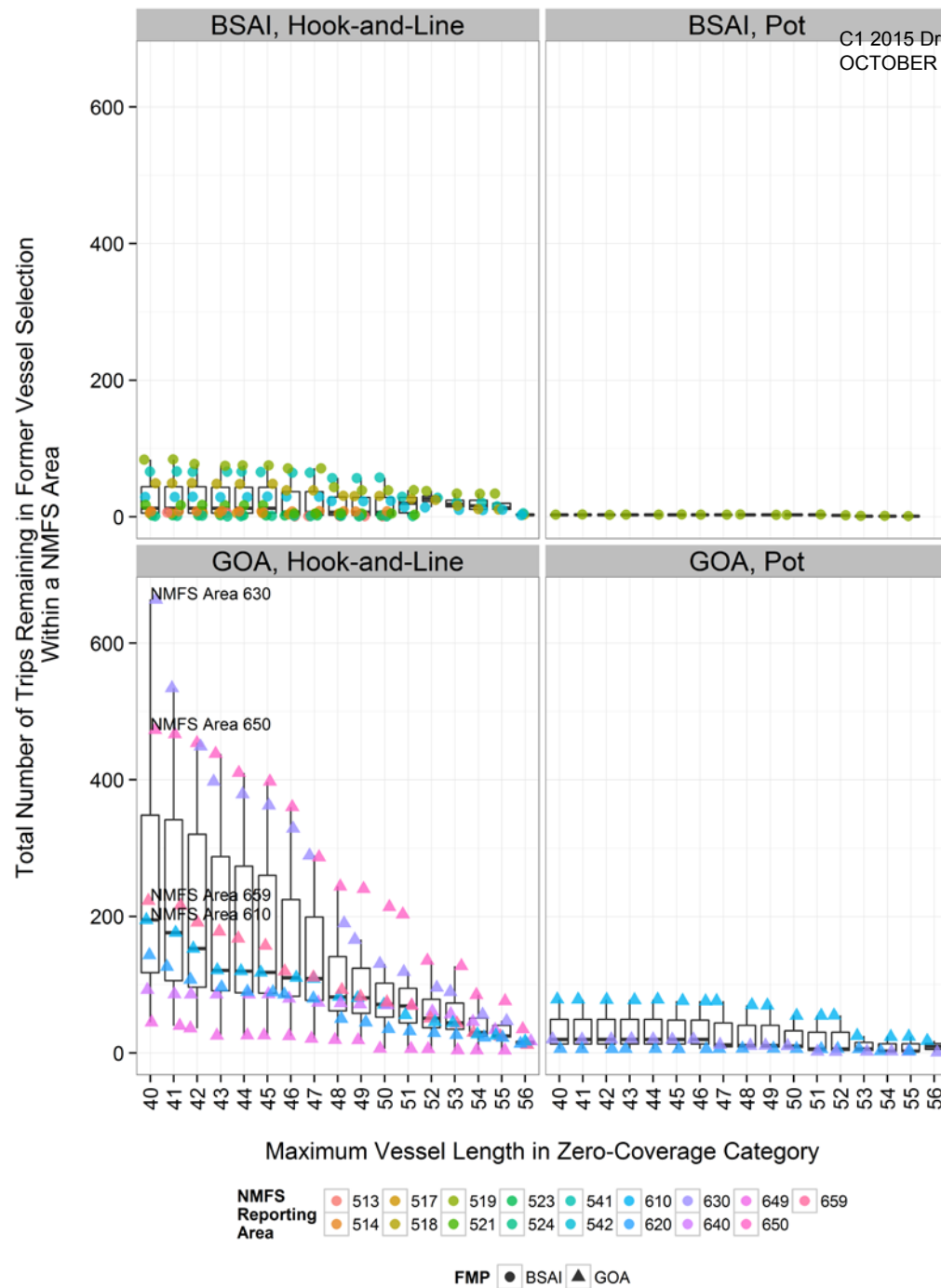
# How did we come up with the 40'?

## EA/RIR/IRFA Appendices 9 & 10

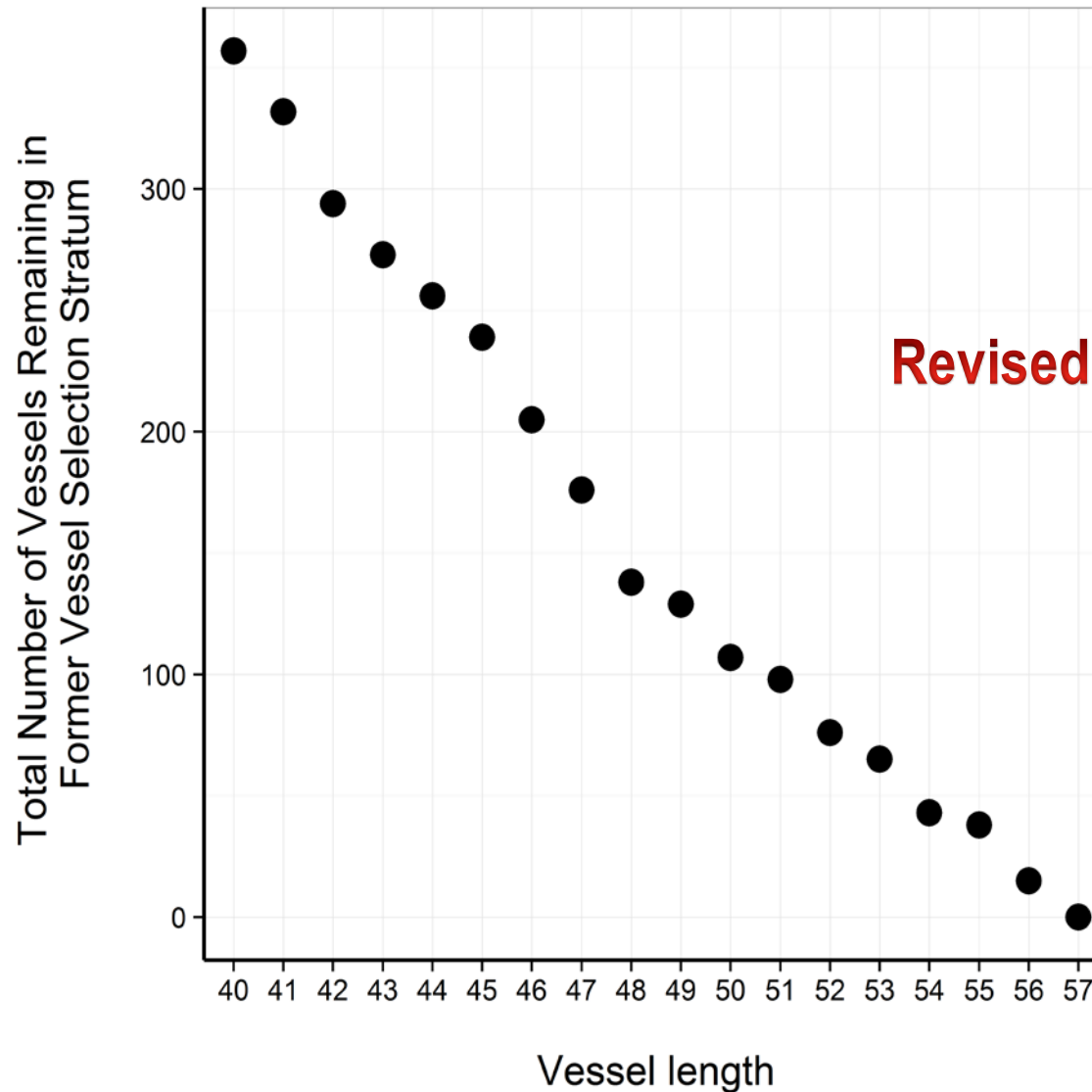
- Regression tree using retained weight and factors known before a trip begins
  - Cutoff at 57.5', minor one at 40'
- Cumulative plots of weight and trips < 57'
  - Differences between cumulative catch and effort by vessel length was “dome-shaped”, i.e. it increased to 40', and decreased thereafter.

# What is left when we remove vessels?





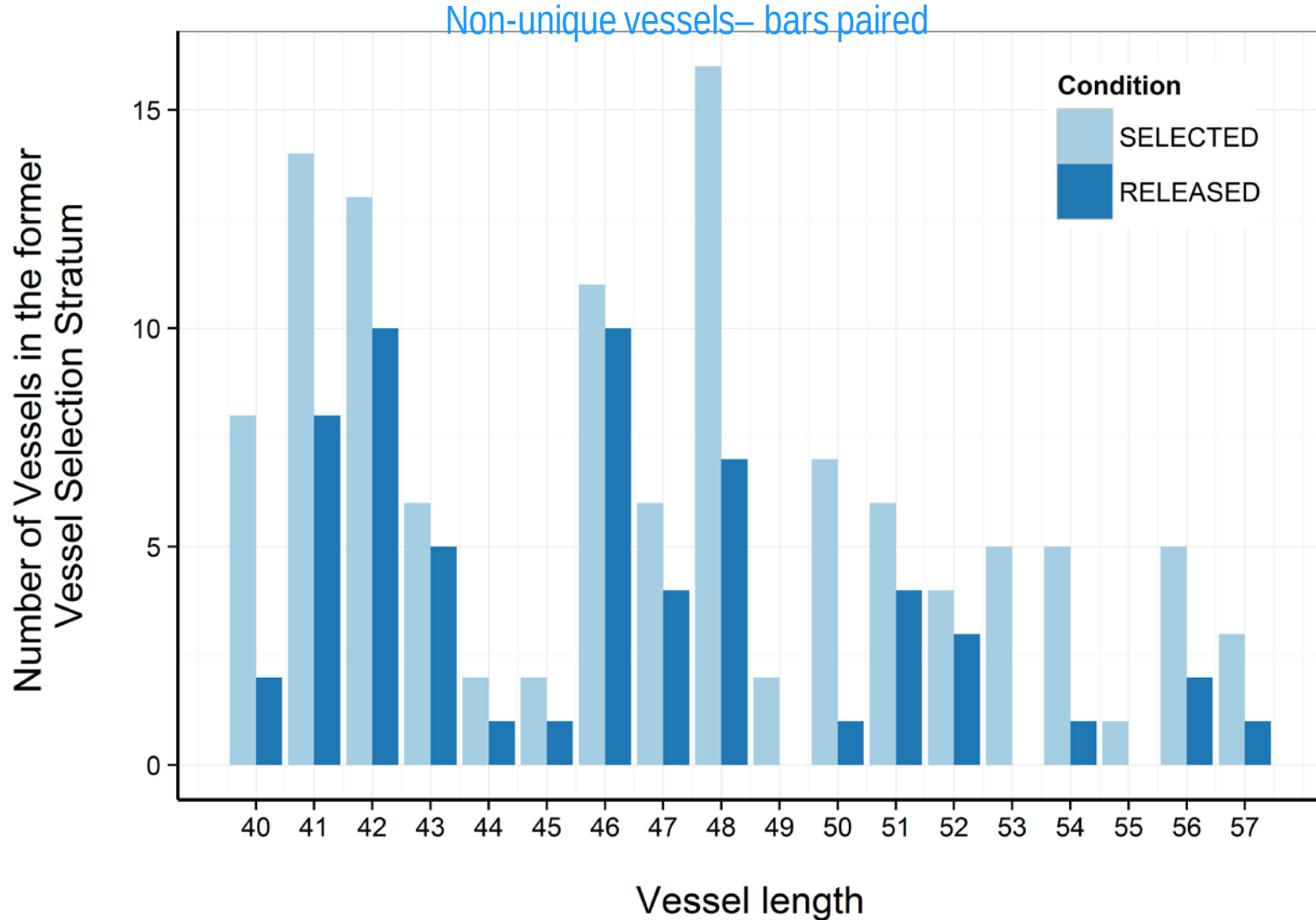
# What is left when we remove vessels?



**Revised Figure C-3**

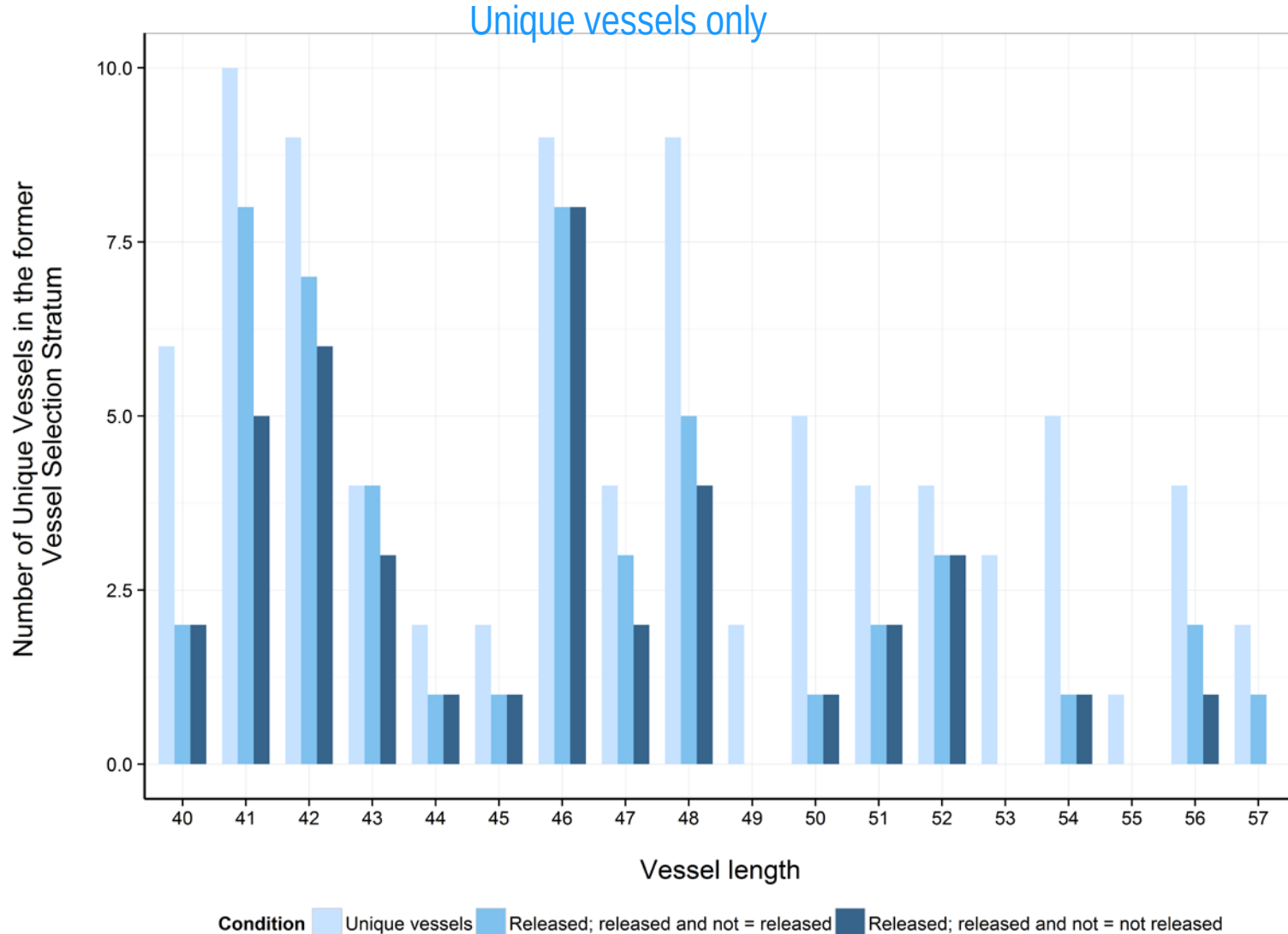
# What is past pattern of releases?

C1 2015 Draft ADP - Faunce PPT  
OCTOBER 2014



# What is past pattern of releases?

C1 2015 Draft ADP - Faunce PPT  
OCTOBER 2014





# In one slide:

- Trip-selection is sole method to assign observers to fishing activities.
- Selection rate for former vessel-selection (small-vessel trip-selection) stratum unchanged.
- Selection rate for former trip-selection (large-vessel trip-selection) stratum increased 50% from 2014.
- Zero-selection stratum increased by 10 EM vessels.
- Observers monitor trawl pollock deliveries for salmon bycatch:
  - 100% in A91 (BSAI);
  - at-sea deployment rates in A93 (Gulf)
- Conditional releases considered at start of year for vessels with four-person life raft and predominant history of four person crew

# For more information:

<http://alaskafisheries.noaa.gov/sustainablefisheries/observers/default.htm>



**NOAA FISHERIES**