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**FISHERIES**

Alaska Fisheries  
Science Center

North Pacific Fishery Management Council

*Joint Plan Team*

*September 2018*

*Seattle, WA*

# 2017 Annual Report

## Draft 2019 Annual Deployment Plan

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*Pacific States Marine Fisheries Commission*

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# Fisheries Monitoring and Analysis

A Division of the Alaska Fisheries Science Center

# How Much **Turmoil** Does the Science Project Cause Families?

## Materials

- At least 1 Kid
- At least 1 grudging parent
- Half-baked idea of very dubious merit
- Procrastination

## Results

yelling + crying

time

\* due date

✓ 75% of kids cry

✓ 90% of parents yell

✓ An average of 15 hrs. of family time ~~is~~ sacrificed

## Findings

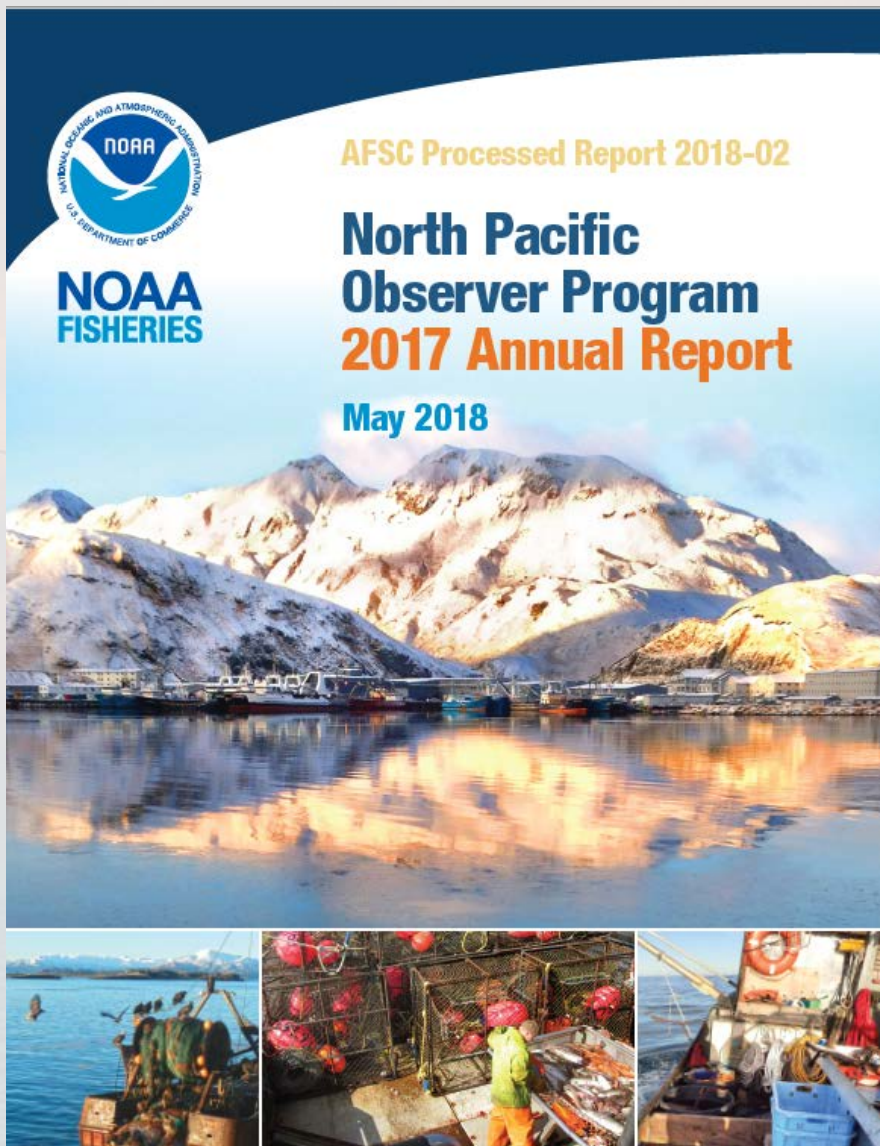
Everyone **HATES**

the science fair

by Susan Messia



The past : 2017



NOAA Technical Memorandum NMFS-AFSC-379

doi:10.7289/N5/TM-AFSC-379

## Deployment Performance Review of the 2017 North Pacific Observer Program

P. Ganz, S. Barbeaux, J. Cahalan, J. Gasper, S. Lowe, R. Webster,  
and C. Faunce

U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Alaska Fisheries Science Center

June 2018

## 2017 Annual Report

- 411 individual observers were trained, briefed, and equipped for deployment.
- Observers collected data on board 418 fixed gear and trawl vessels and at six processing facilities for a total of 41,123 observer days (37,517 full coverage days on vessels and in plants; and 3,606 partial coverage days).
- There were 581 observer debriefings in Seattle, Washington, completed by 27 Fisheries Monitoring and Analysis Division (FMA) staff, 126 debriefings in Anchorage, Alaska, completed by four FMA staff, and 2 debriefings completed in Kodiak, Alaska.
- Through the EM Pre-implementation plan, a total of 96 vessels opted into the EM selection pool; 73 fishing predominantly with hook-and-line gear, and 18 fishing predominantly with pot gear.



## 2017 Annual Report

- Predicted effort was 12.7 % higher than actual values.
- ODDS performed as programmed.
- All trip-selection strata rates within expected bounds or higher with the exception of EM, but not all EM trips reviewed (ex. Pot gear).
- Temporal bias evident in all gear groups excepting tenders.
- Limited spatial bias of limited concern.
- Observer effects found in Trawl and Hook and Line gears.
- Trip-specific salmon counts and genetic samples:
  - Observers do not monitor offloads for tendered trawl pollock trips
  - Dockside monitoring within expected rates for non-tendered trips.



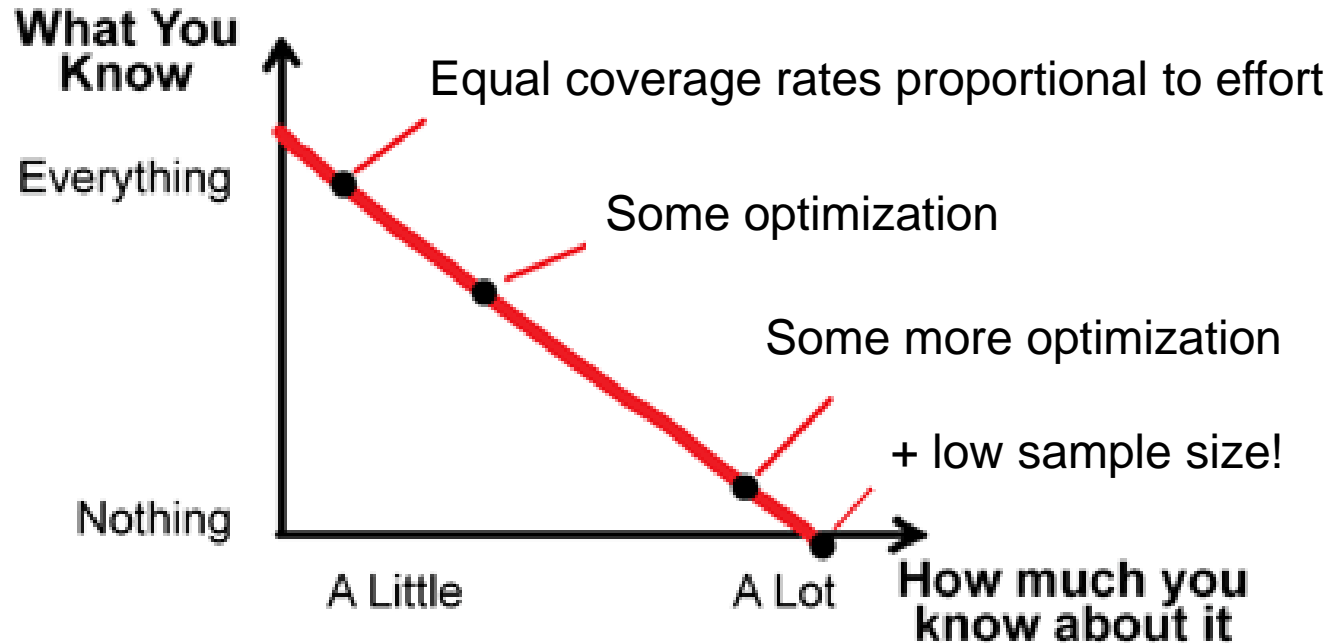
# 2017 Annual Report

A summary of the number of vessels and trips in each strata and realized coverage rates in 2017 are as follows:

Coverage category	Strata	Total vessels	Total trips	Sampled trips	Expected coverage rate	Realized coverage rate	Met expectations?*
Full Coverage	Full	164	3,422	3,422	100.0	100.0	Yes
Partial Coverage	Hook-and-Line	408	2,298	276	11.1	12.0	Yes
	Tender Hook-and-Line	3	4	0	25.0	0.0	Yes
	Pot	104	932	72	3.9	7.7	Higher than expected
	Tender Pot	36	75	4	3.9	5.3	Yes
	Trawl	78	2,090	433	17.6	20.7	Higher than expected
	Tender Trawl	26	69	13	14.3	18.8	Yes
	EM	80	683	142	30.0	20.8	Lower than expected, but not all EM trips were reviewed
No selection	Zero Coverage	396	2,022	0	0.0	0.0	Yes
	Zero Coverage-EM Research	3	36	0	0.0	0.0	Yes

\*Coverage levels were within the 95% confidence intervals of the expected value.

# What You Know vs How much you know about it



JORGE CHAM © 2008

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The OSC recommends that the SSC and Council request NMFS reinstate its funding for observer deployment in the North Pacific at levels necessary to ensure a minimum of 15% coverage among all strata in upcoming ADPs. If the critical 15% coverage rate is surpassed among all strata combined, then sampling days afforded in excess of this amount may be allocated among strata according to an optimization algorithm. (Faunce et al. 2017)



## 2018 ADP (Current program)

**Gear x Tender (6) stratification scheme with discard optimal allocation**

**(HAL + Tender removed for 2018)**

EM vessels automatically in or out unless otherwise specified. Coverage rates set by Council WG process.

**Preliminary Coverage Rates\* %:**

- EM **30**
- Hook & Line **17.2**
- Pot **16.2**
- Trawl **20.2**
- Pot Tender **17.4**
- Trawl Tender **16.7**

\* From Final 2018 ADP, appendix B



*-Draft-*  
2019 Annual Deployment Plan  
for Observers in the Groundfish and Halibut  
Fisheries off Alaska

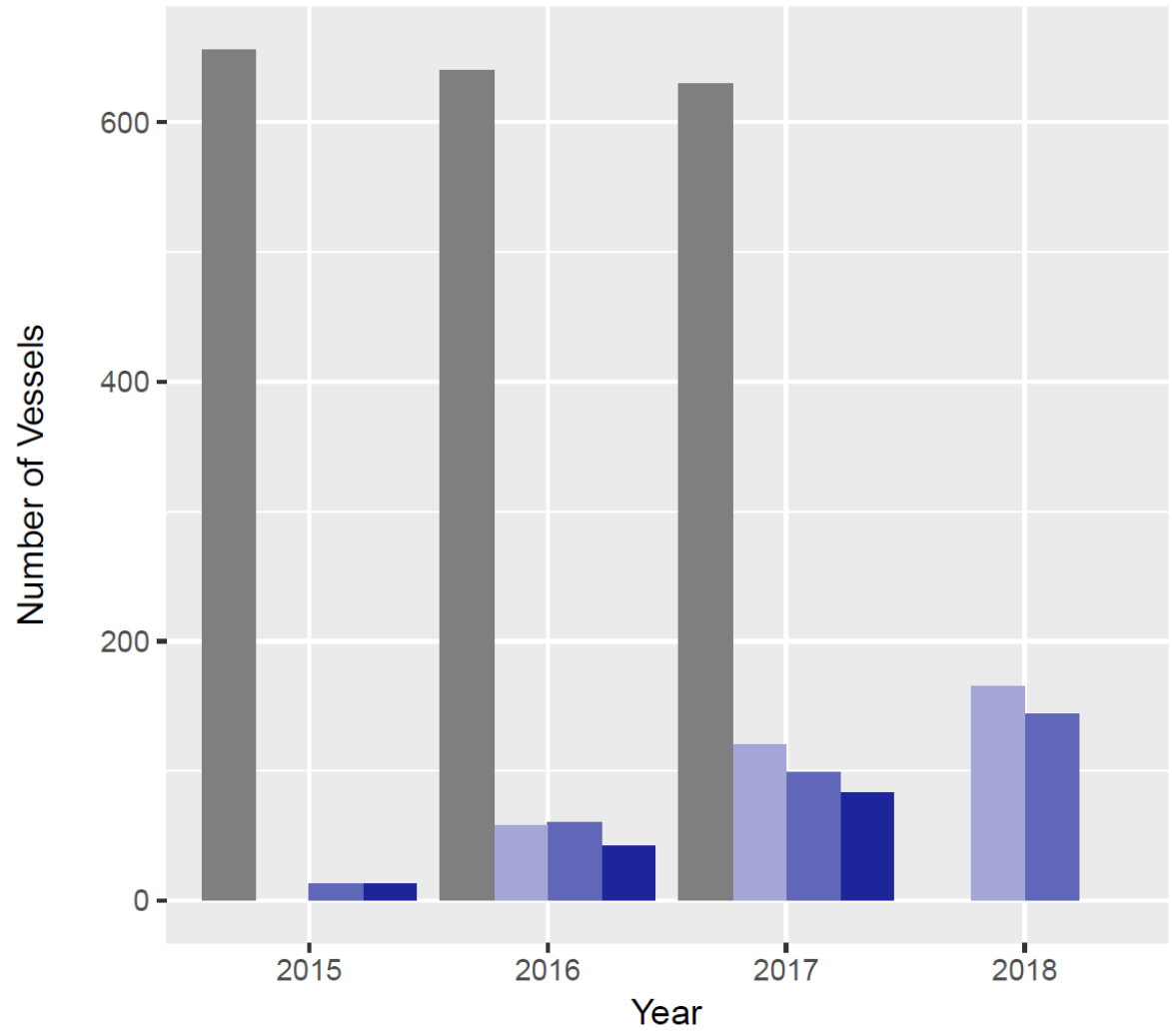
September 2018



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Fisheries Monitoring and Analysis Division, Alaska Fisheries Science Center  
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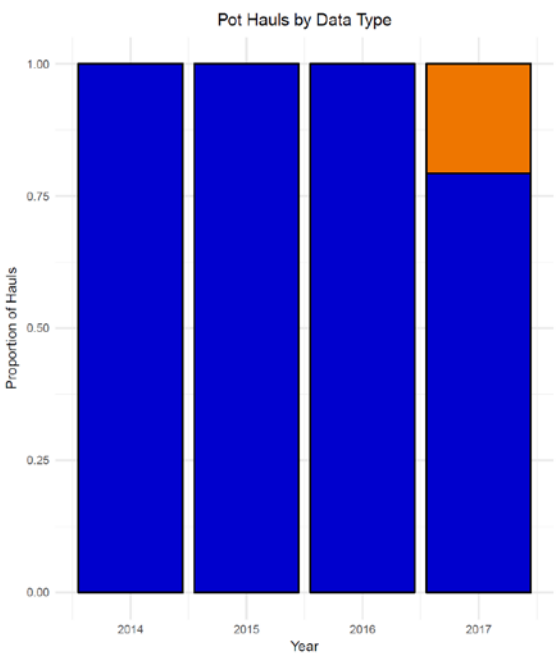
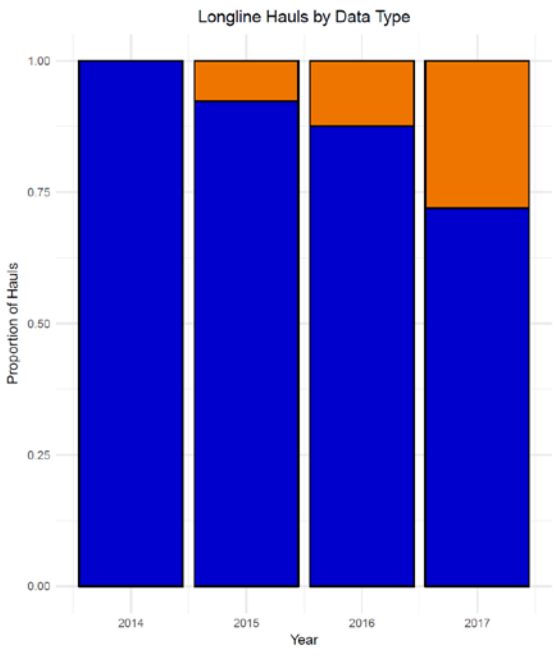
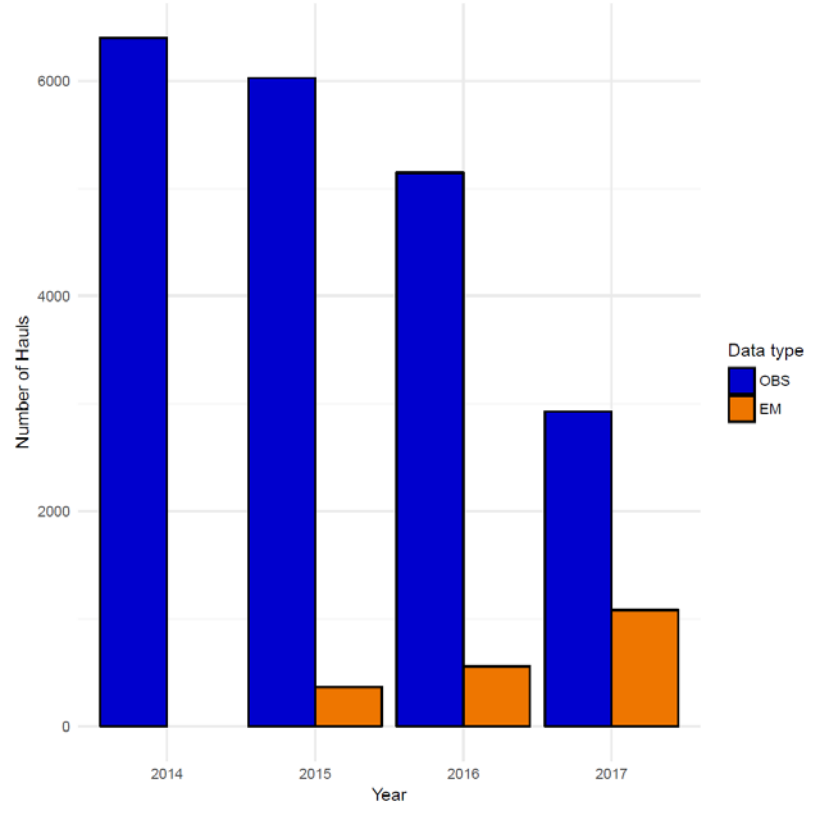
National Marine Fisheries Service, Alaska Regional Office  
P.O. Box 21668  
709 W. 9<sup>th</sup> Street  
Juneau, Alaska 99802



variable PC\_Fleet\_Non\_Zero Council Volunteered Fished



# Number of Hauls Observer (blue) vs EM (orange)





## Goals

- Expand EM only with additional external funds
- Set deployment rates for observers such that it has a stable sample size for January 2019 – January 2021

## Assumptions

- All prior EM wired boats will volunteer.
- Same list of voluntary 100% BSAI vessels
- Fees stable between years



## Changes from Last Year

### Two stratification schemes:

Gear x Tender (*status quo*)

HAL, POT, TRW, POT Tender, and TRW  
Tender

### Three allocation strategies:

Minimum equal allocation

15% + optimization

*\*Gear-specific hurdles other than  
15% are investigated in Appendix E*

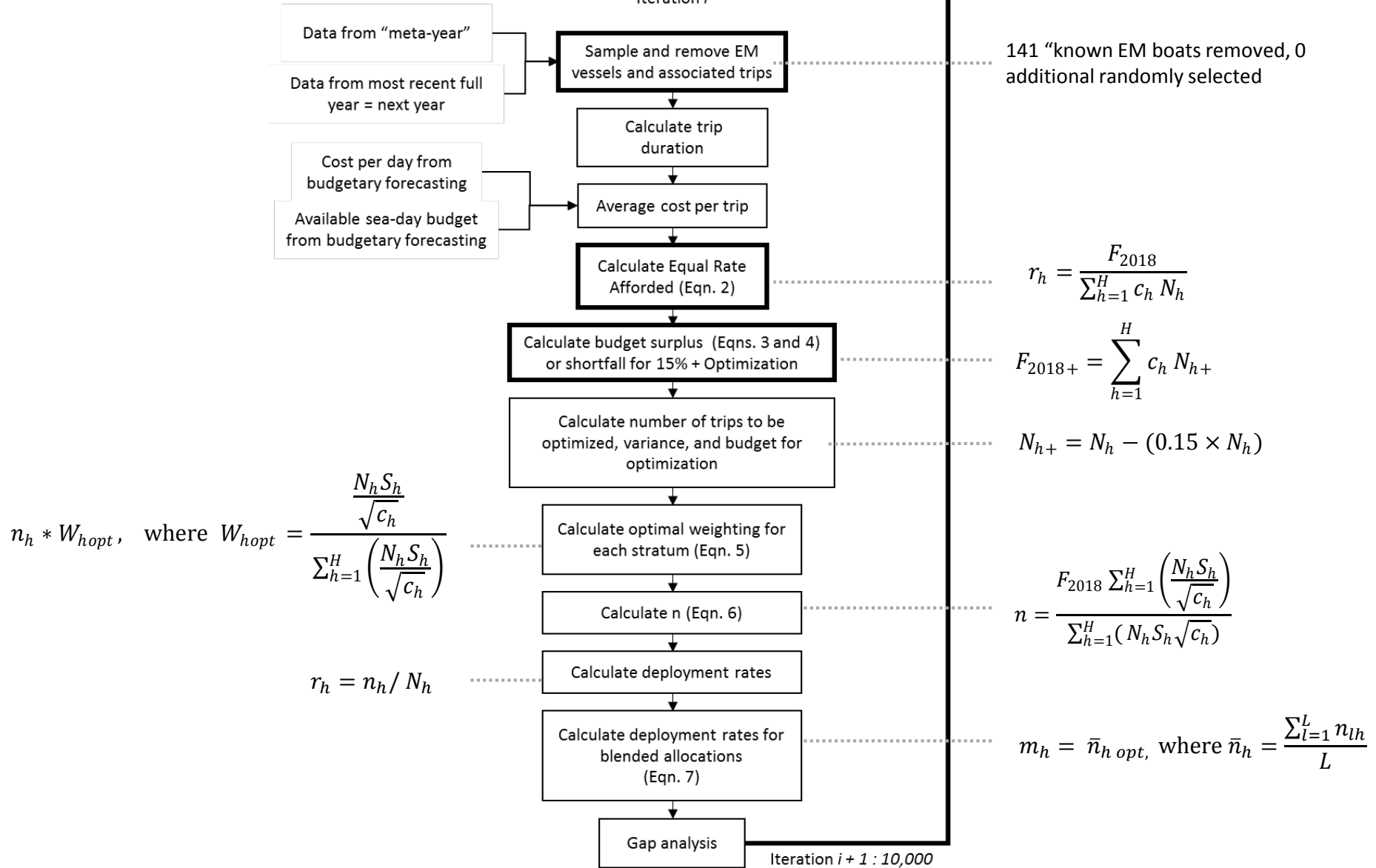
### Two allocation metrics:

15% + optimization on discards,  
halibut, and Chinook

15% + optimization on discards,  
halibut, Chinook, and crab



# What about observer coverage rates?



# Rates and weightings: equal allocation

Stratum (h)	Metric	$N_{h2019}$	$n_h$	$d_h$	$r_h$ (%)
TRW	None	2,085	313	1,014	15.00
HAL	None	2,013	302	1,530	15.00
POT	None	811	122	450	15.00
Tender TRW	None	69	10	52	15.00
Tender POT	None	71	11	63	15.00
TOTAL		5049	758	3109	



# Rates and weightings: 15% + optimized

Stratum (h)	$N_{h2019}$	$n_h$	$d_h$	$W_{hopt}$		$r_h$ (%)
				No crab	With crab	
TRW	2,085	313	1,014	0.72 ↑	0.64 ↓	15.00
HAL	2,013	302	1,530	0.23	0.18	15.00
POT	811	122	450	0.02 ↓	0.15 ↑	15.00
Tender TRW	69	10	52	0.03	0.02	15.00
Tender POT	71	11	63	0.00	0.01	15.00
TOTAL	5049	758	3109	1.00	1.00	

# Gap analysis

Allocation design	G3	G1
Equal Allocation	0.59	0.84
15% + Optimized on Discards + Halibut + Chinook PSC	0.59	0.84
15% + Optimized on Discards + Halibut + Chinook + Crab PSC	0.59	0.84

Stratum	G3	G1
HAL	0.72	0.94
POT	0.57	0.79
TRW	0.83	1.00
POT_TENDER	0.29	0.71
TRW_TENDER	0.25	0.50

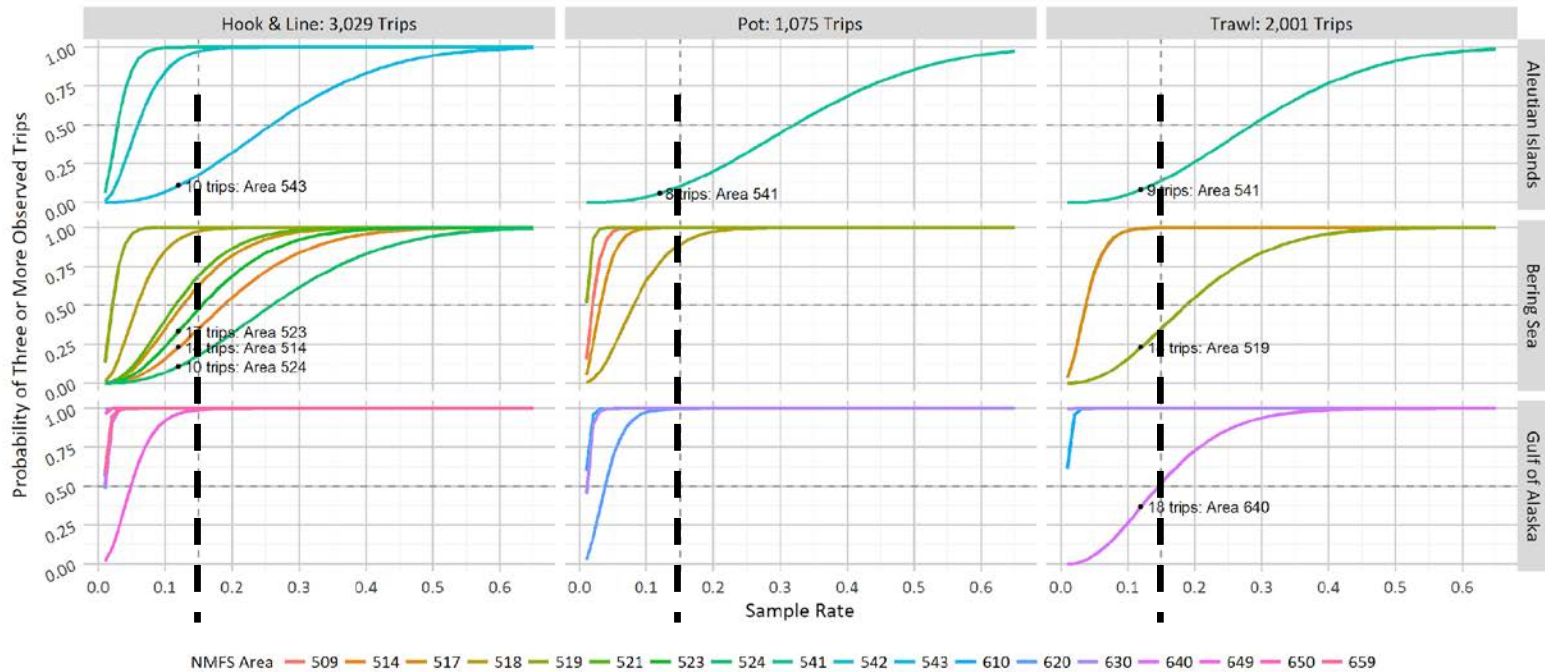
- NMFS recommending the 15% “hurdle” with allocation based on PSC species including crab.

The Fishery Monitoring Advisory Committee (a subgroup of the Council) asked for an ad hoc summary of what coverage rates would look like given a 10% reduction in coverage and setting the “hurdle” for pot gear at 10%.

This analysis will be provided as a separate supplemental to the draft 2019 ADP.

# Appendix E: Choosing a hurdle

Partial Coverage Strata, 2014



Note that only one HAL trip occurred in NMFS Area 513; this data point (NMFS Area) is omitted  
Areas with 20 or fewer trips are labelled

The 15% minimum deployment rate does not guarantee that all post-strata will have at least 3 observed trips. Instead, it represents the point at which many (*but not all*) post-strata have a greater than 50% chance of containing data (at least 3 observed trips) in a year.



Effort reduced by 10%									
New base									
			newN	W	base n	base d	Optim days	Optim trips	new r
15	TRW	Discards w/ halibut PSC + Chinook PSC	1,877	0.72	281.48	912	225	70	18.7
15	HAL	Discards w/ halibut PSC + Chinook PSC	1,812	0.23	271.76	1,377	72	14	15.8
15	POT	Discards w/ halibut PSC + Chinook PSC	730	0.02	109.49	404	6	2	15.2
15	Tender TRW	Discards w/ halibut PSC + Chinook PSC	62	0.03	9.315	48	9	2	17.9
15	Tender POT	Discards w/ halibut PSC + Chinook PSC	64	0	9.585	55	0	0	15.0
						2,796	313	87	
With crab									
15	TRW	Discards w/ halibut PSC + Chinook PSC + crab PSC	1,877	0.64	281.48	912	200	62	18.3
15	HAL	Discards w/ halibut PSC + Chinook PSC + crab PSC	1,812	0.18	271.76	1,377	56	11	15.6
15	POT	Discards w/ halibut PSC + Chinook PSC + crab PSC	730	0.15	109.49	404	47	13	16.7
15	Tender TRW	Discards w/ halibut PSC + Chinook PSC + crab PSC	62	0.02	9.315	48	6	1	16.9
15	Tender POT	Discards w/ halibut PSC + Chinook PSC + crab PSC	64	0.01	9.585	55	3	1	15.9
						2,796	313	87	

**Base for Pot Changed**

New base

			newN	W	base n	base d	Optim days	Optim trips	new r
15	TRW	Discards w/ halibut PSC + Chinook PSC	2,085	0.72	312.75	1,013	110	34	16.6
15	HAL	Discards w/ halibut PSC + Chinook PSC	2,013	0.23	301.95	1,530	35	7	15.3
10	POT	Discards w/ halibut PSC + Chinook PSC	811	0.02	81.1	299	3	1	10.1
15	Tender TRW	Discards w/ halibut PSC + Chinook PSC	69	0.03	10.35	54	5	1	16.3
15	Tender POT	Discards w/ halibut PSC + Chinook PSC	71	0	10.65	61	0	0	15.0
						2,957	152	42	

**With crab**

15	TRW	Discards w/ halibut PSC + Chinook PSC + crab PSC	2,085	0.64	312.75	1,013	97	30	16.4
15	HAL	Discards w/ halibut PSC + Chinook PSC + crab PSC	2,013	0.18	301.95	1,530	27	5	15.3
10	POT	Discards w/ halibut PSC + Chinook PSC + crab PSC	811	0.15	81.1	299	23	6	10.8
15	Tender TRW	Discards w/ halibut PSC + Chinook PSC + crab PSC	69	0.02	10.35	54	3	1	15.8
15	Tender POT	Discards w/ halibut PSC + Chinook PSC + crab PSC	71	0.01	10.65	61	2	0	15.4
						2,957	152	42	



FY rollover + 1.25% fee = 3110 days expected in 2019

2013: 3,533

2014: 4,573

2015: 5,318

2016; ~~4,900~~ 4,677

2017: ~~3,505~~ ~~3,059~~ 2749

2018: ~~4394~~ 2746

2019: 3110

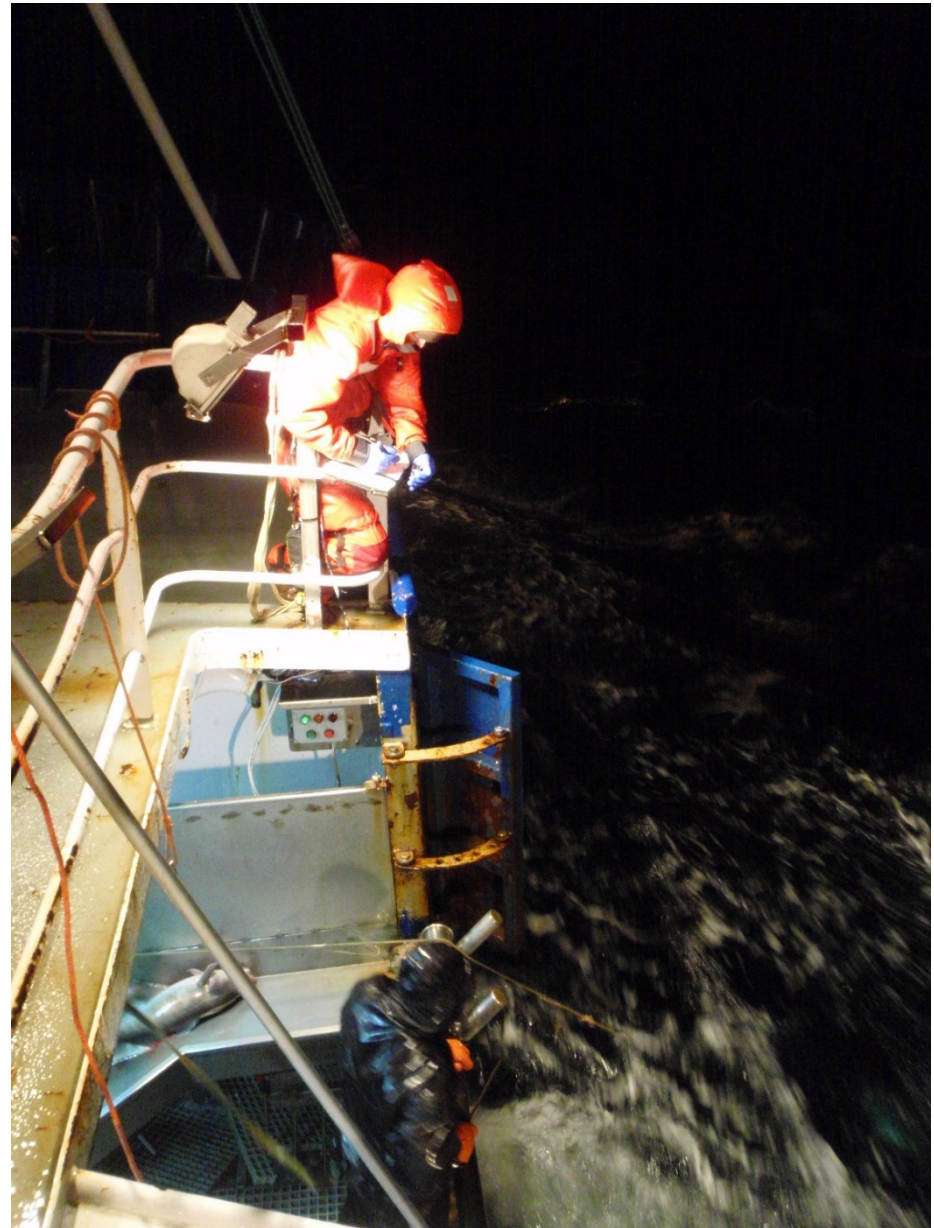
2018 ADP days 13% above updated anticipated 2018 levels but well below past amounts.

- Observer Program is employing optimized allocation while balancing its ability to fill gaps for in-season management of quotas and focusing on core role of at-sea deployment (to estimate discards) and the Council's focus on PSC.
- Observer deployment in 2018 and 2019 is likely to provide minimum acceptable coverage rates for the human observer program in all strata, with the possibility of missing tender strata with low fishing effort.

## Next Steps (Final ADP)

With Final EM and Voluntary 100% BSAI vessel lists:

- Adjust anticipated fishing effort if warranted given trends seen in fishery Jan-Oct of each year (*incl. 2018*)
- Simulate sampling of 2019 fishery given optimal weightings for each stratum from this draft ADP,
  - iterate with increasing sample size,
  - stop when proportion of outcomes over:under budget reaches 0.50.
  - Present results as 2019 Final ADP and program resulting selection rates into ODDS.



- Fee revenues down, program costs are going up, no federal funds
- Current expenditures exceed revenues - program likely to need to be reduced in 2021 or secure additional funding.
- Council investigating the impacts of a potential increase in the fee (currently 1.25%).
  - Analysis must demonstrate how fees at various levels translate to meeting the management objectives.

- NMFS is recommending going forward with a 15% hurdle.
- Rates equal to 15% under current projection.
- Council will be considering whether to allocate (precious few) 'optimized' days with crab PSC included or not. While the former covers more areas, the latter puts more into Trawl gear.
- EM is not expected to expand much in 2019 unless outside funds are secured. Fixed gear (longline and pot) EM is currently 141 vessels and this program is approved to expand up to 165. There are plans to eventually move trawl gear into an EM compliance type situation. This is important to understand because **no** biological data comes from EM vessels.

- Growing frustration among public that 'more is better' for biological samples and lengths is not an acceptable answer.  
**How many does NMFS need to support stock assessments?!**
  - Recognizing that this is different for different stock assessments, a qualitative description of the importance of this data is acceptable, and information on spatial and temporal distribution is critical.
- Propose Plan Team subgroup (Tribuzio, Hulson, Faunce, SSMA members) to address this through the PT process. Necessary bc REFM and Auke Bay are separated from Council & observer program initiatives.

**FOR MORE INFORMATION**

**[HTTPS://ALASKAFISHERIES.NOAA.GOV/FISHERIES/OBSERVER-PROGRAM](https://alaskafisheries.noaa.gov/fisheries/observer-program)**

