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# North Pacific Observer Program DRAFT Annual Deployment Plan 2018

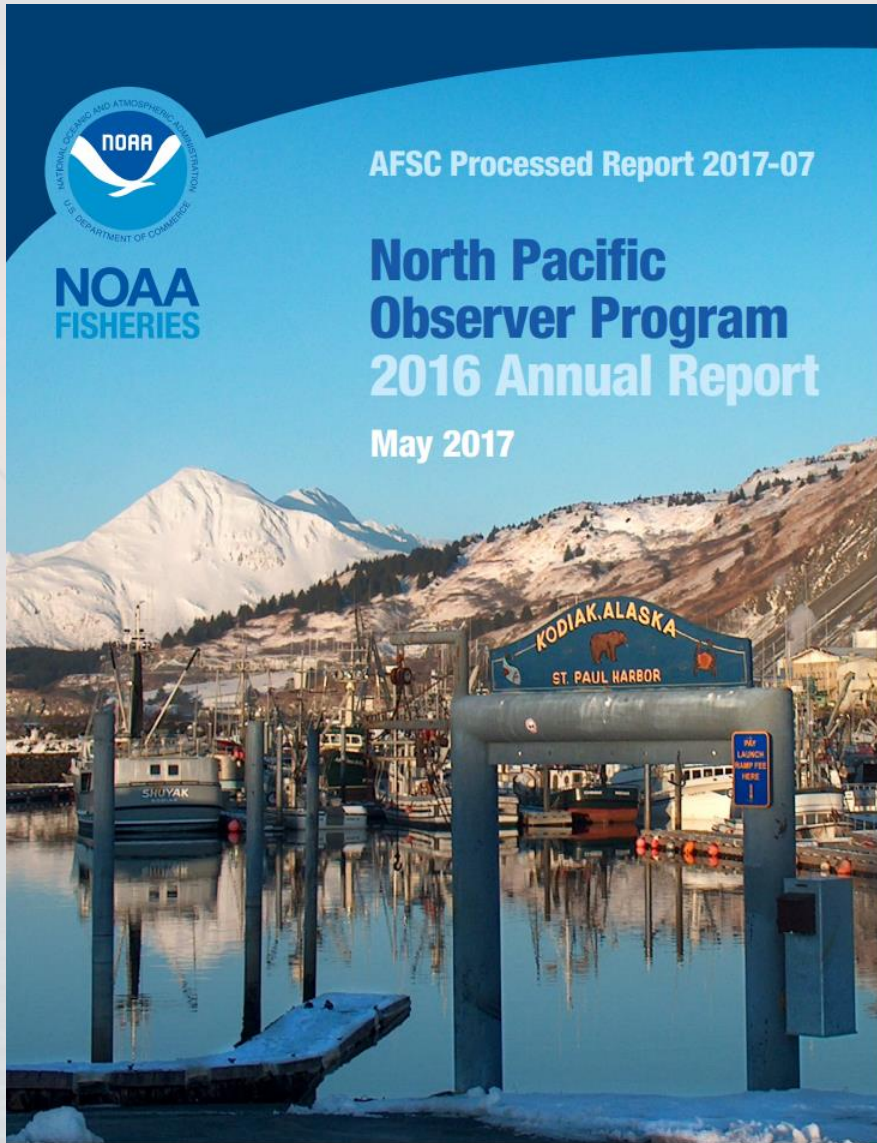
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North Pacific Fishery Management Council October Meeting  
*Joint Plan Team*  
*September 2017*  
*Seattle, WA*





The past : 2016



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## Deployment Performance Review of the 2016 North Pacific Groundfish and Halibut Observer Program

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

July 2017

## 2016 Annual Report

- Predicted effort was 5% higher than actual values.
- ODDS performed as programmed.
- All trip-selection strata rates within expected bounds: Full coverage fleet 100%; HAL = 15% (15% exp.); POT = 14.7% (15% exp.); TRW = 28.0% (28% exp.).
- EM vessel-selection deployment performed as expected for partial coverage but was less than expected for full-coverage (compliance issues).
- Partial coverage trawl pollock fleet observed less than expected, no tendered deliveries observed (N = 322, WGOA)
- No temporal bias.
- Limited spatial bias in all gears.
- Tendered trips  $\neq$  non-tendered trips (POT and TRW)
- Observer effects found in TRW and HAL.





## 2017 ADP (Current program)

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

#### Preliminary Coverage Rates\* % ( $N_h$ ):

- Hook & Line **11.0** (2596) [2016: 15%]
- Pot **3.9** (825) [2016: 15%]
- Trawl **17.6** (2464) [2016: 28%]
- Hook and Line Tender **25** (8)
- Pot Tender **3.9** (6)
- Trawl Tender **14.3** (168)

\* From Final 2017 ADP, appendix B



# I cry wolf (PT presentation last year)

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 (discards).

No Federal Funding + 1.25% fee  
= 3,505 days expected in 2017

2013: 3,533

2014: 4,573

2015: 5,318

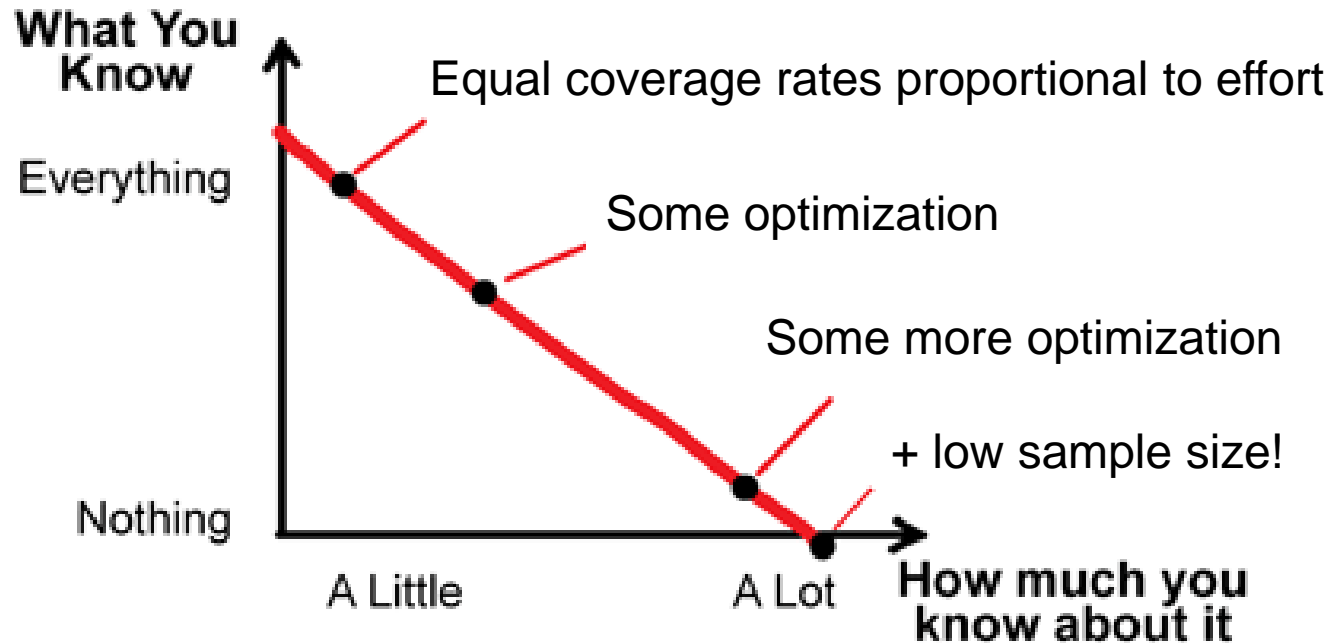
2016; 4,900 (estimated 2016 ADP)

2017 ADP days 30.7 % below the 2013-  
2016 average (4,581)

3,505 -> 4,581 would require  
fee change 1.25 -> 1.63 %, or  
\$1.165M (1076 d x \$1,083 d)\*

Observer deployment in 2017 and beyond  
is likely to be spatially and temporally  
biased and miss some strata entirely  
(Pot Tender, Hook and Line Tender).

# What You Know vs How much you know about it



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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. (Fauce et al. 2017)

## June 9, 2017 Council motion

### Keep:

- ODDS programming that prevents a three in a row selection for 40 – 57.5' fixed gear vessels
- ODDS programming that allows vessels to log up to three trips in advance in ODDS.
- Continue to place vessels less than 40 ft LOA in the no selection pool.

### Evaluate:

- Whether to **continue the tender strata** definition in 2018. **15% + Optimization instead**
- Comparing the following alternative deployment designs: 1) ~~15% coverage rates across all strata~~; 2) equal coverage rates that can be afforded with available funding; and 3) optimization allocations based on discards that includes prioritization of PSC limited fisheries in the weighting schemes.
- ~~A preliminary evaluation of the method to split the fee budget between EM and human deployment.~~

### For the EM pool:

- If funding is insufficient to **expand the EM pool up to 165 vessels**, prioritize deployment in the EM pool as follows: 1) longline vessels, whose data will be used for inseason management; 2) vessels that are already equipped with EM systems; and 3) vessels 40-57.5 ft LOA where carrying a human observer is problematic due to bunk space or life raft limitations
- To the extent possible, the Council recommends that NMFS consult with the EM Workgroup and/or the OAC on policy choices made during the transition to an integrated EM program in the 2018 ADP.

~~Reprogram ODDS to allow vessels to change the dates for observed trips, rather than cancelling and inheriting observed trips.~~

**ODDS constructed to facilitate EM trip logging and cost tracking instead.**

### Low sampling rates:

The Council approves the OAC's recommendation to **create an OAC subgroup** over the summer to scope out potential solutions for addressing low coverage rates.

### Tendering and dockside monitoring:

The Council tasks staff to **develop a discussion paper** identifying specific data concerns with respect to vessels engaged in tendering, and to work with industry groups to develop both short term and long-term solutions, including potential regulatory changes.



*-Draft-*  
2018 Annual Deployment Plan  
for Observers in the Groundfish and  
Halibut Fisheries off Alaska

September 2017



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**FISHERIES**

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## Goals

- Expand EM with dedicated funds (10% risk of \$ overage)
- Set deployment rates for observers such that it has a stable sample size for January 2018 - June 2019 (10% risk of \$ overage)

## Assumptions

- All prior EM wired boats will volunteer.
- Same list of voluntary 100% BSAI vessels
- Fees stable between years with + \$1M 2019 Federal Funds



# Changes from Last Year

New EM expansion – estimation of EM program costs

Variance caused by differences in potential EM participants now included in human observer cost simulations

## Two stratification schemes:

Gear (2016)

Gear x Tender (*status quo*)

## Three allocation strategies:

Equal coverage rates

Base coverage + optimization (hurdle approach to optimization) (OSC recommendation)

Full optimization

## Two allocation metrics:

Groundfish including halibut PSC (*status quo*)

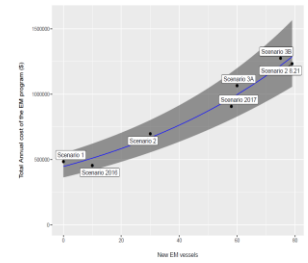
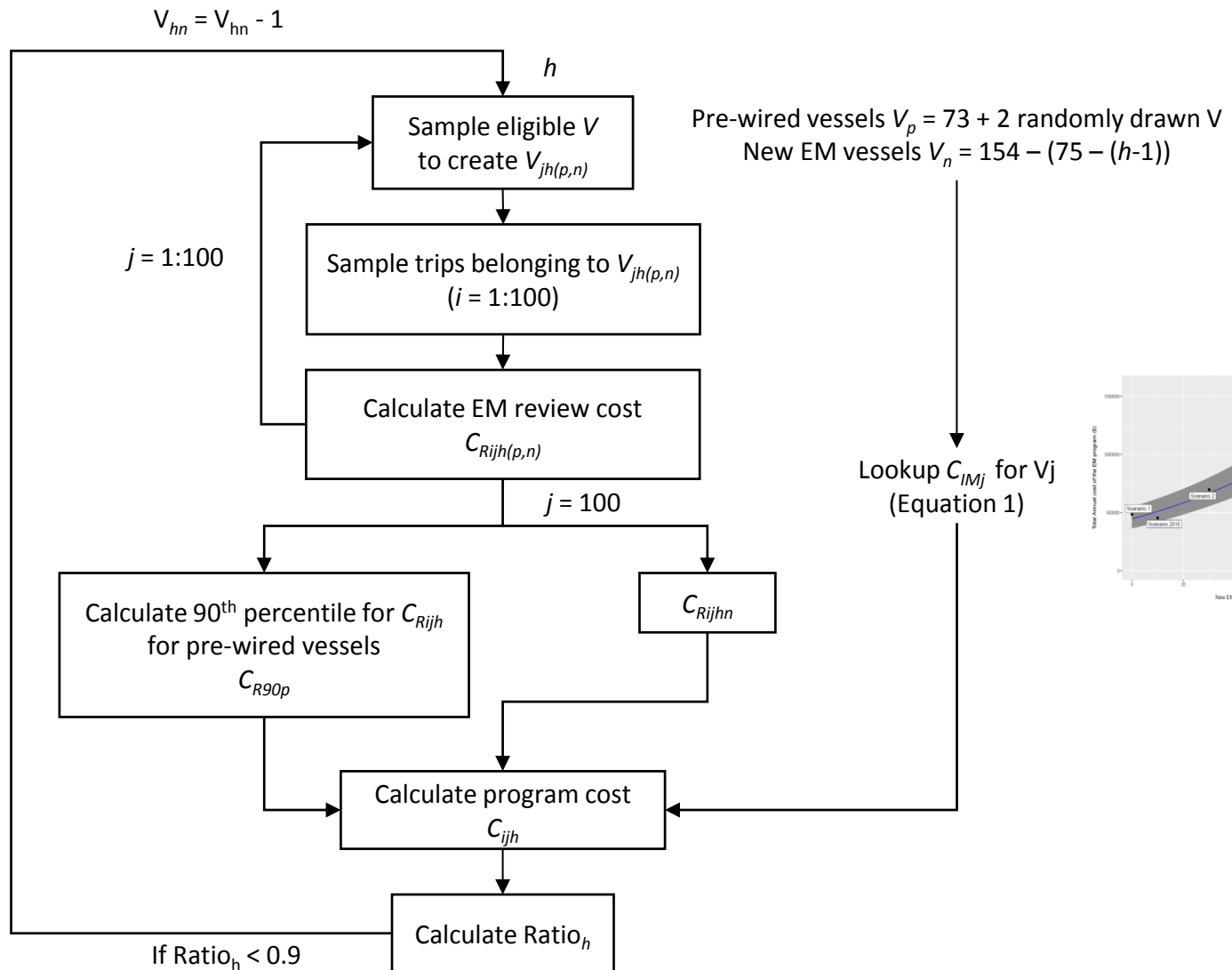
Groundfish including halibut PSC and Chinook PSC

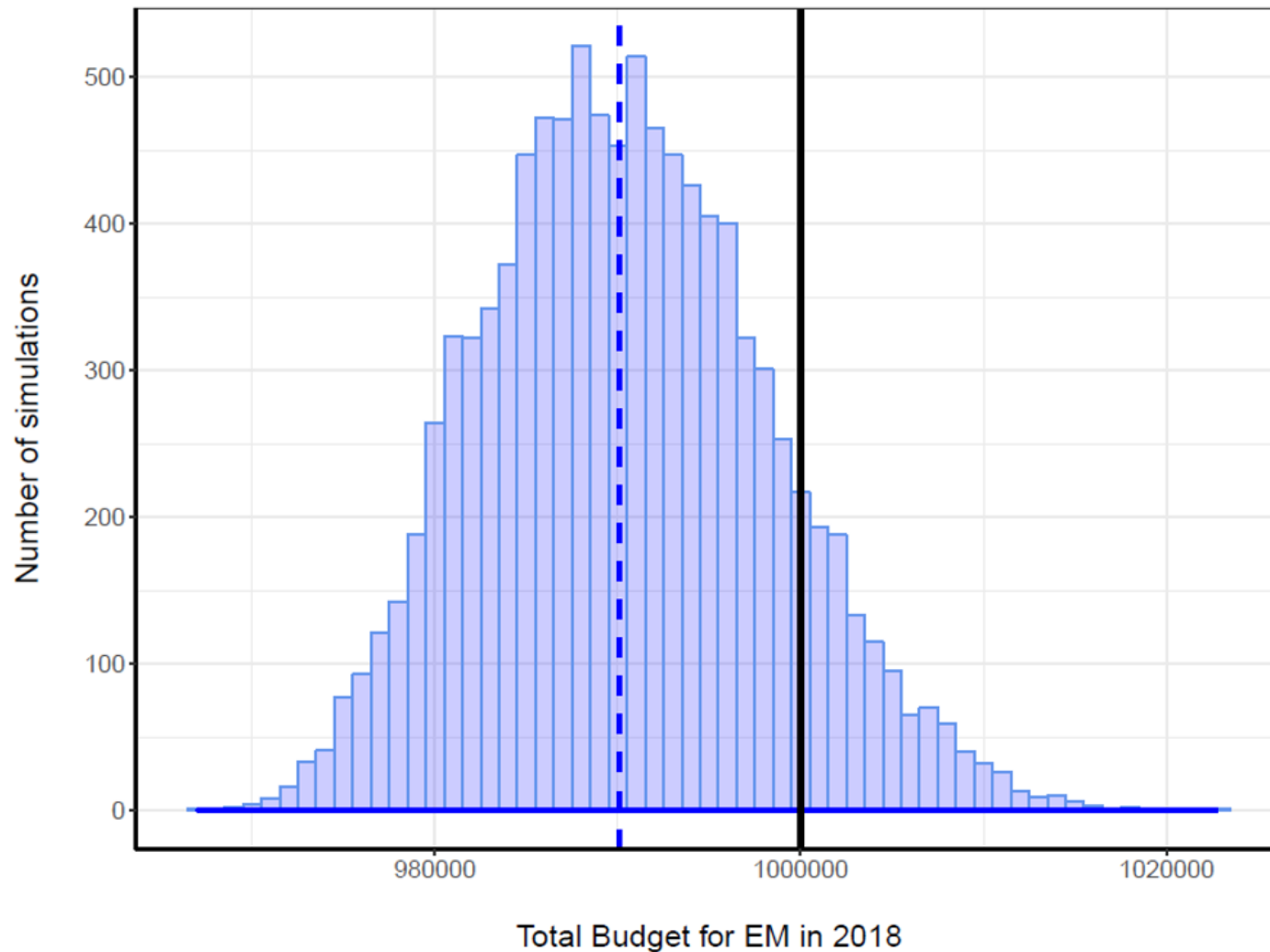


Photo credit: the International Pacific Halibut Commission, NOAA Fisheries – Alaska Fisheries Science Center, and Pacific States Marine Fisheries Commission (IPHC/NMFS, AFSC/PSMFC)



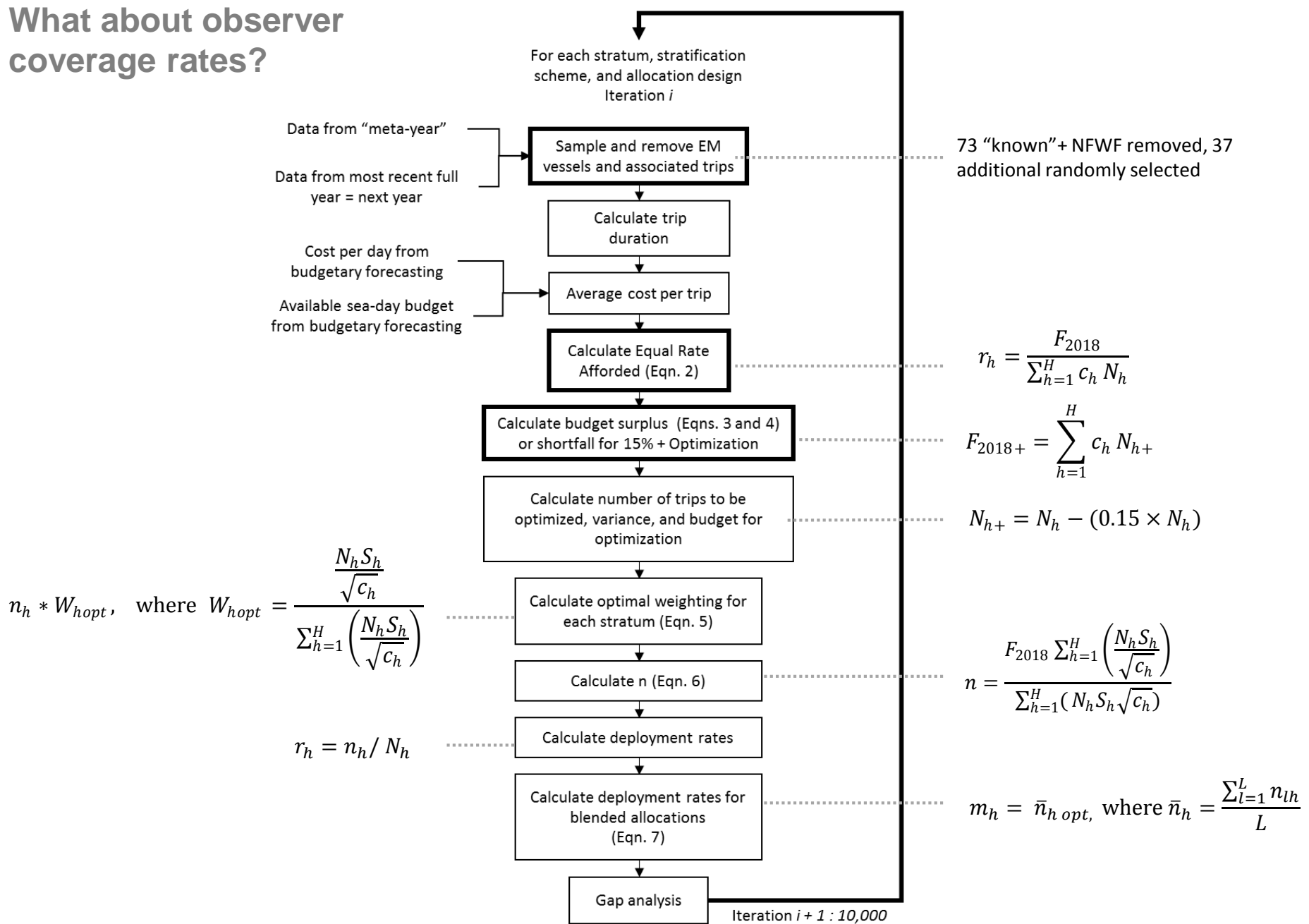
# How many EM boats can we afford?



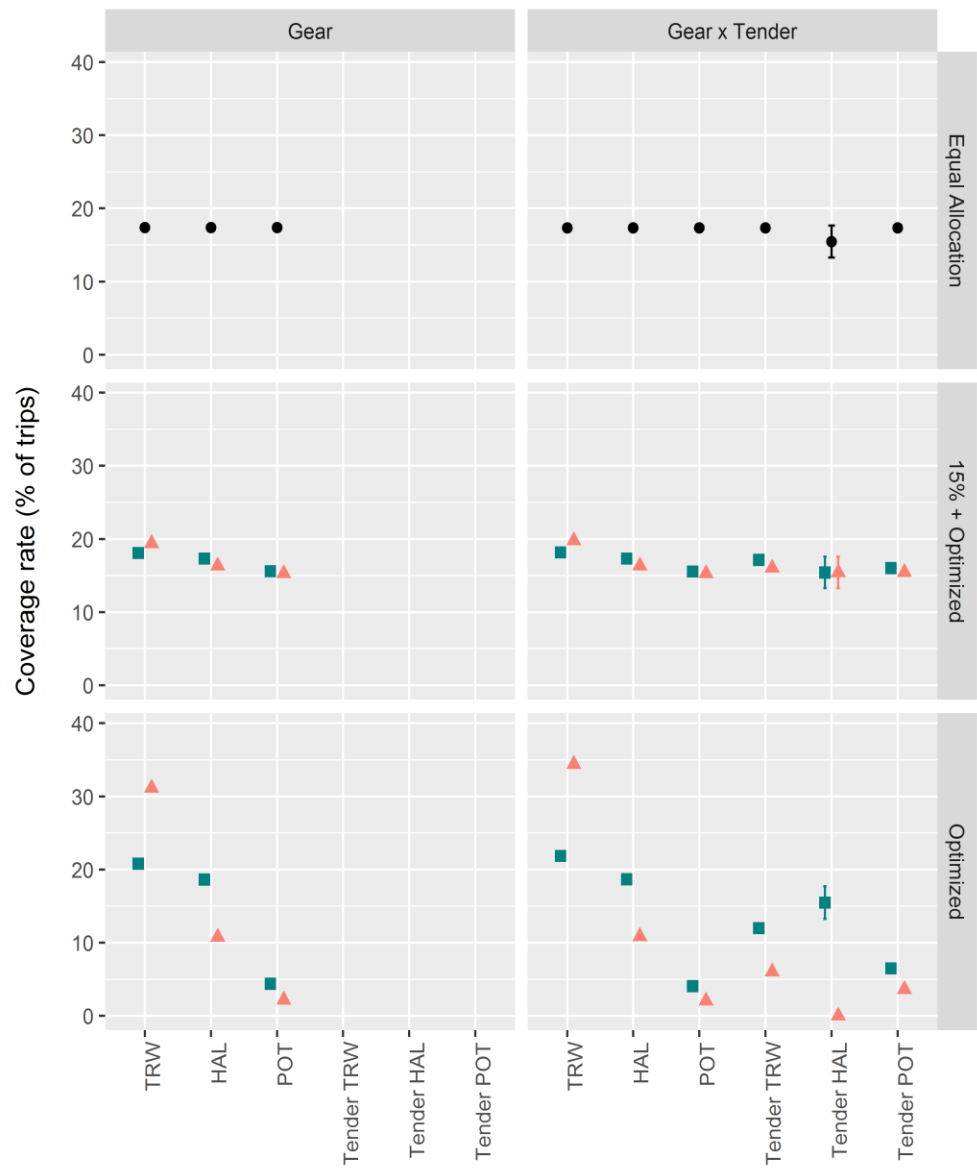


With \$1M, given 73 pre-wired boats, we can expand to another 37 non-trawl boats. (110 total). This total will be supplemented with another 10 vessels funded from National Fish and Wildlife Foundation money (industry solicitation).

# What about observer coverage rates?

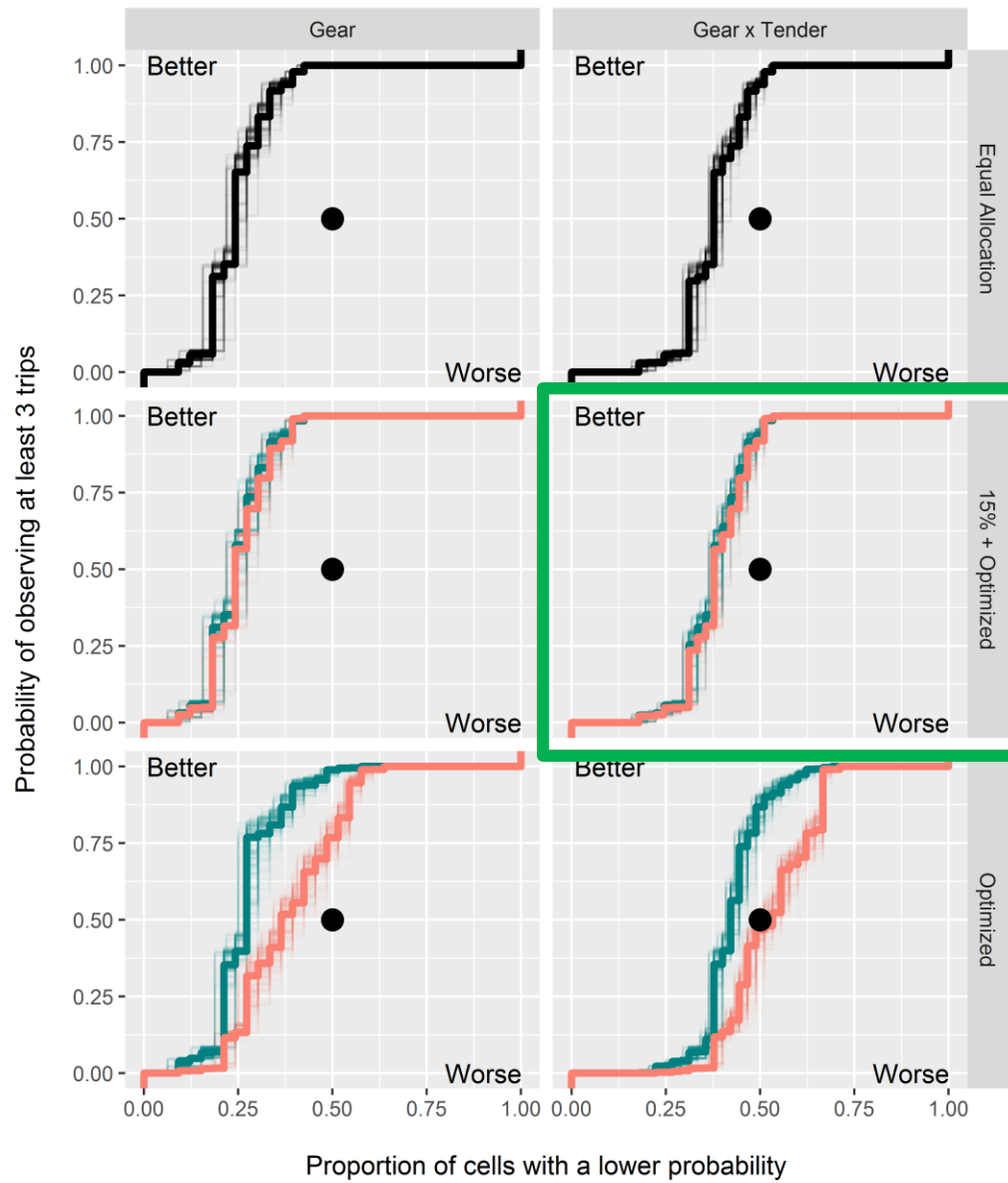






Metrics used in optimization:
 

- None
- Discards w/ halibut PSC (\*Status quo\*)
- ▲ Blended: Discards w/ halibut PSC + Chinook PSC



— None

Metrics used in optimization: — Discards w/ halibut PSC (\*Status quo\*)

— Blended: Discards w/ halibut PSC + Chinook PSC

## NMFS Recommends

### Six observer strata

Baseline + Optimization based on discarded groundfish,  
halibut PSC, and Chinook PSC

Stratum	Total trips	Optimal weighing	Observed rate*
TRW	2,427	0.75	19
HAL	2,231	0.21	16
POT	858	0.02	15
Tender TRW	259	0.02	15
Tender HAL	7	0.00	15
Tender POT	105	0.00	15

\* Rates have been multiplied by 0.95 to account for potential uncertainty in final ADP



# I cry wolf (remix)

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 (discards) and the Council's focus on PSC.

FY rollover + 1M Federal Funding (2019) +  
1.25% fee  
= 4,062 days expected in 2018

2013: 3,533

2014: 4,573

2015: 5,318

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

2017: ~~3,505~~ **3,059**

2018 ADP days 4% below the 2013-2017  
average (4,232)

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:

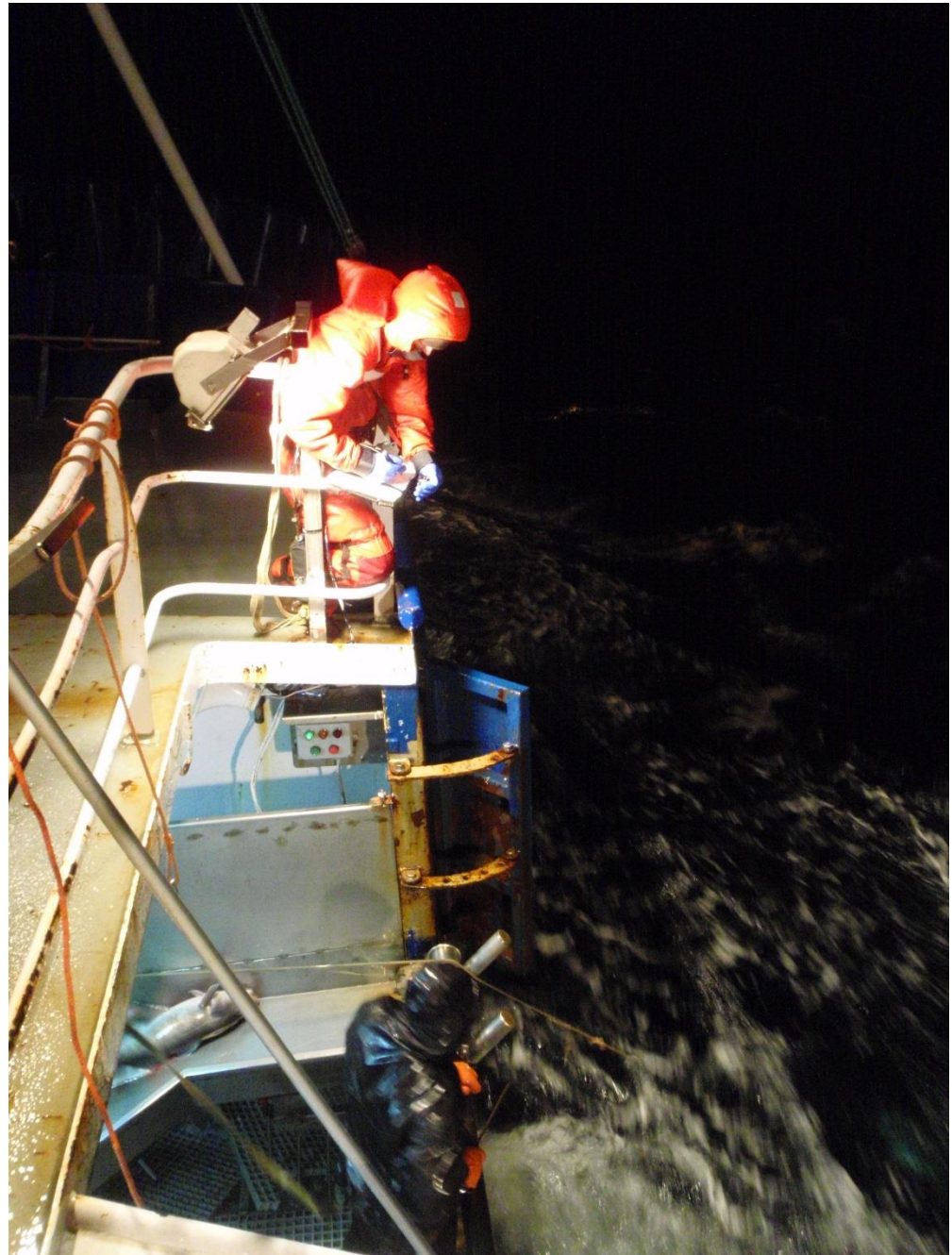
Adjust anticipated fishing effort if warranted given trends seen in fishery Jan-Oct of each year (*incl. 2017*)

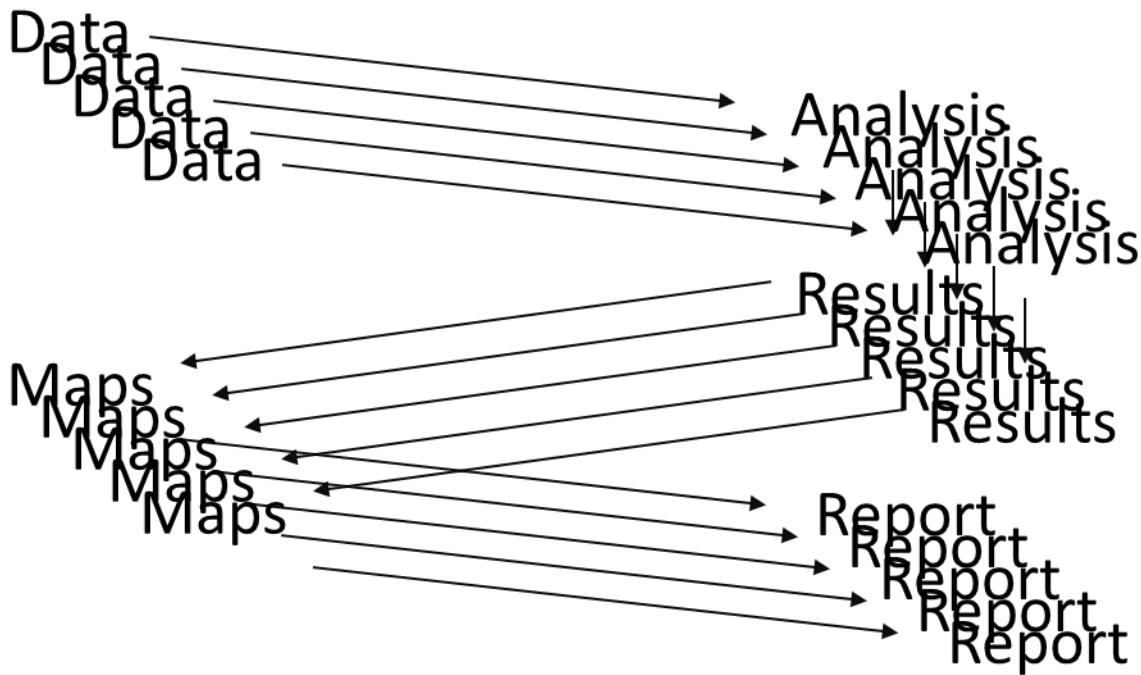
Simulate sampling of '2018' fishery given optimal weightings for each stratum from this draft ADP,

iterate with increasing sample size,

stop when proportion of outcomes over:under budget reaches 0.90.

Present results as 2017 Final ADP and program resulting selection rates into ODDS.

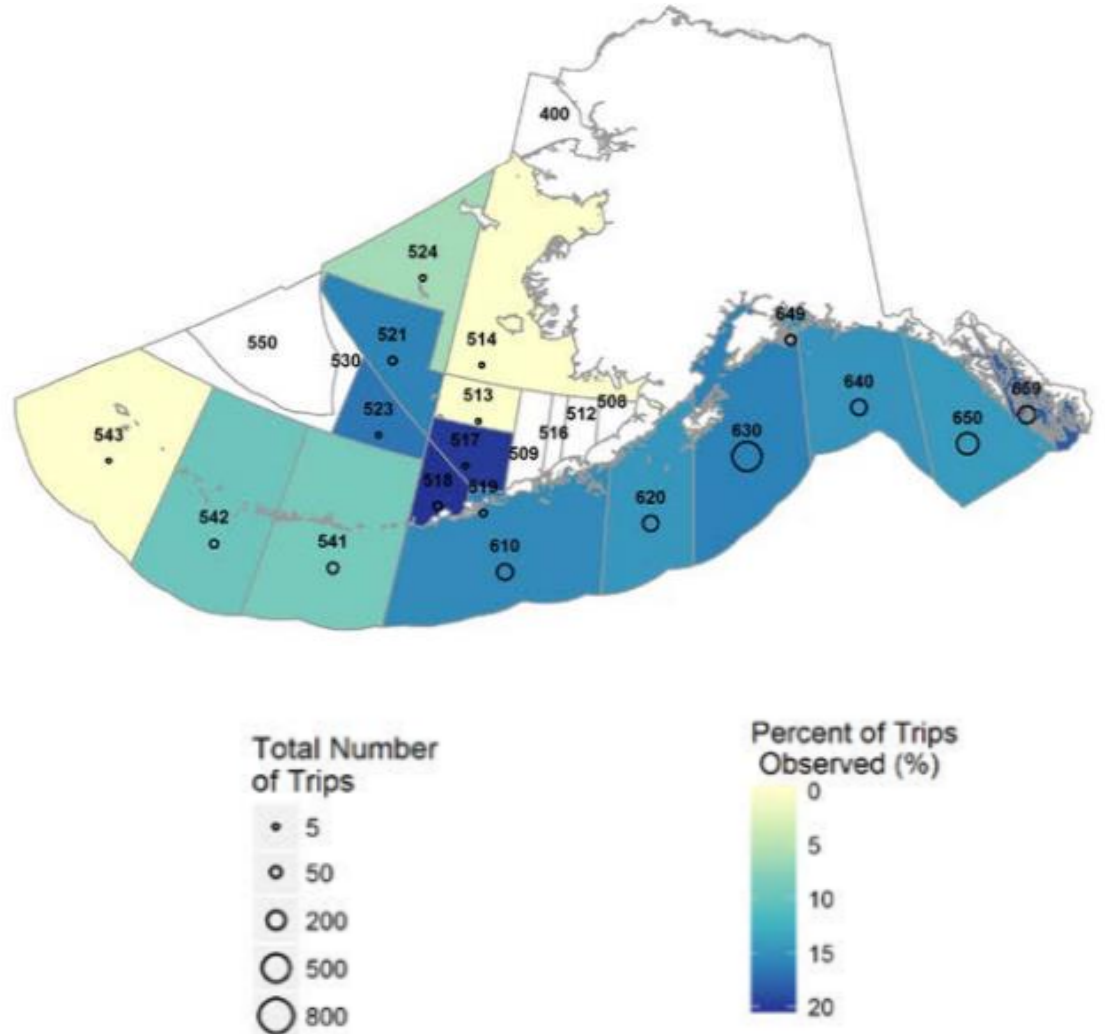
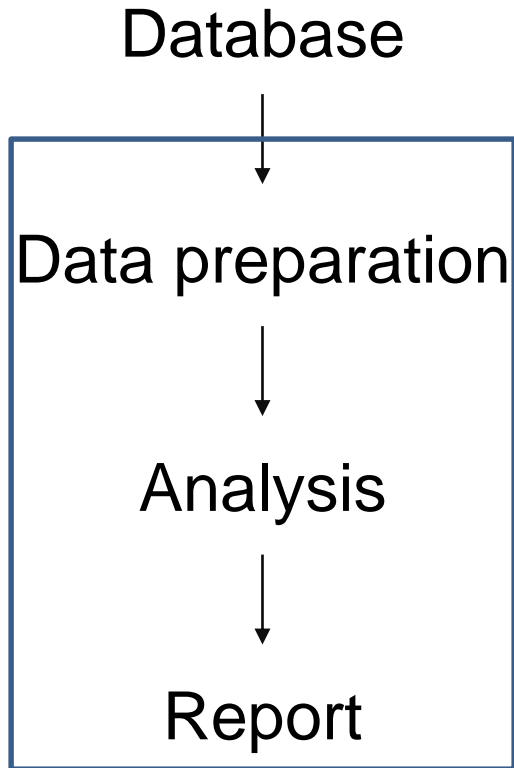




Name

- maps\_1
- maps\_2
- maps\_3
- maps\_4
- maps\_final
- maps\_final\_2
- maps\_final\_FINAL

# New workflow







```

for (i in as.character(unique(perm_sum$STRATA)))
{
  #Extract 'significant' metrics
  signif <- perm_sum %>% filter(STRATA==i & p <
0.05)
  #The results section language changes
depending on how many metrics are significant.
See helpfile for documentation of wordlist():
  results_text <- ifelse(
    length(signif$p)==0,
    #If none of the metrics are significant:
    paste0("Of the six metrics compared in the
*", i, "* stratum, there were no metrics with
low p-values ("),
tbl_nums("OBSERVED_FLAG.results",
display="cite"), ")."),
    #If some are significant, say how many and
list the results:
    paste0("Of the six metrics compared in the
*", i, "* stratum, ",
numbers2words(length(signif$p)), " had low
p-values. Observed trips in this stratum ",
wordlist(signif$interpretation), " than
unobserved trips ("),
tbl_nums("OBSERVED_FLAG.results",
display="cite"), ").")
    #use knit_expand to create a template for each
paragraph. In-line r chunks that are usually
defined with `r ...` are instead defined with
`{...}`. The '\n' is a line break, giving the
paragraph proper formatting.
    out <- c(out,
knit_expand(text=c('{{results_text}}', '\n\n')))
}

```

*Are observed non-tendered trips identical to unobserved non-tendered trips?*

This comparison is the basis for examining if there is an observer effect (i.e., differential behavior when observed compared to when not observed) within non-tendered trips. Sample sizes for this test are presented in Table 3–14.

Of the six metrics compared in the *HAL* stratum, **three** had low p-values. Observed non-tendered trips in this stratum **were 6% (0.3 days) shorter in duration, occurred on vessels 2.5% (1.4 ft) longer in length, and landed 7.5% (0.3) more species than unobserved non-tendered trips** (Table 3–15).

Of the six metrics compared in the *POT* stratum, there were **no** metrics with low p-values (Table 3–15).

Of the six metrics compared in the *TRW* stratum, **two** had low p-values. Observed non-tendered trips in this stratum **occurred on vessels 3.2% (2.7 ft) longer in length and landed 14.2% (0.8) fewer species than unobserved non-tendered trips** (Table 3–15).



# Special thanks

Jane Sullivan



# FOR MORE INFORMATION

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

