



NOAA
FISHERIES

North Pacific Observer Program DRAFT Annual Deployment Plan 2018 Appendices B and C

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North Pacific Fishery Management Council
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Seattle, WA

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



- ✓ 75% of kids cry
- ✓ 90% of parents yell
- ✓ An average of 15 hrs. of family time sacrificed

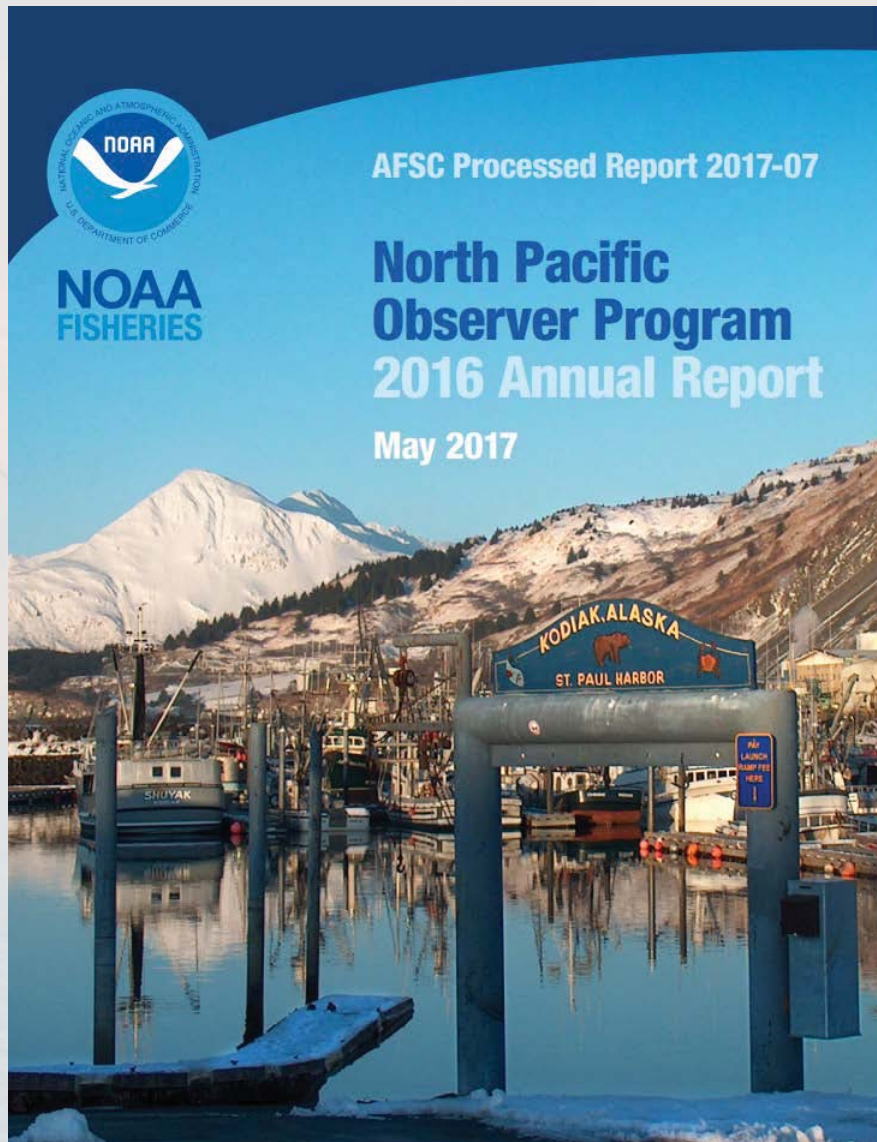
Findings

Everyone **HATES** the science fair

by Susan Messer



The past : 2016



NOAA Technical Memorandum NMFS-AFSC-358
doi:10.7289/V5/TM-AFSC-358

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

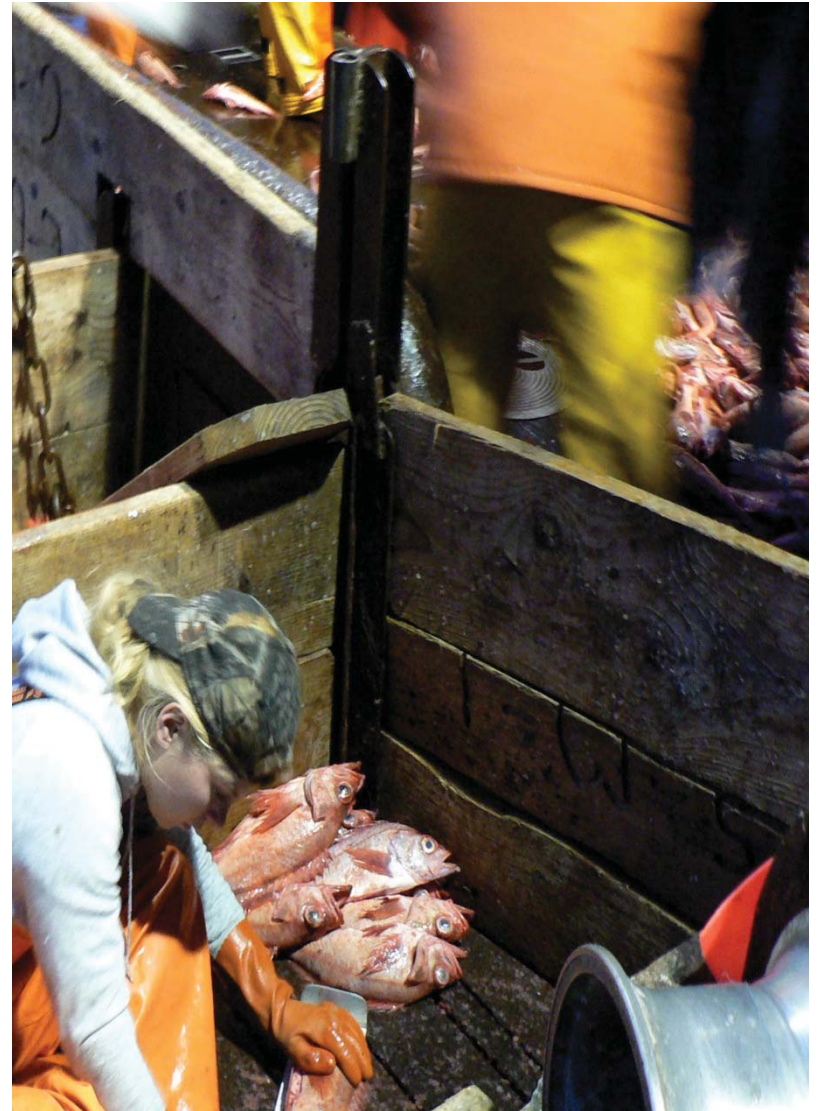
C. Faunce, J. Sullivan, S. Barbeaux, J. Cahalan, J. Gasper,
S. Lowe, and R. Webster

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

Strata	2017 ADP Rate	2016 Rate
Hook and line	11.0	15
Pot	3.9	15
Trawl	17.6	28
Hook and Line Tendered	25.0	
Pot Tendered	3.9	
Trawl Tendered	14.3	

Multi-year outlook (from Plan Team presentation last year)

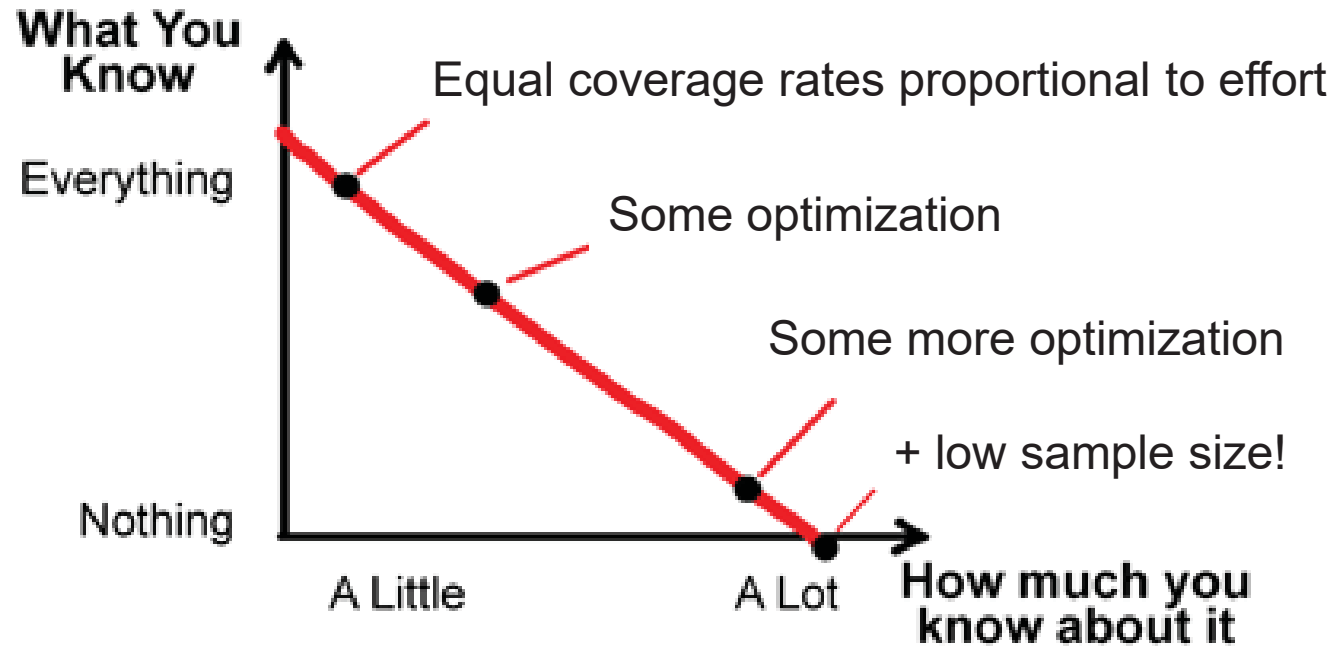
Observer Program is employing optimized allocation while balancing its ability to fill gaps for in-season management of quotas and focusing on core role of at-sea deployment (discards).

Year	Days afforded	% change from average
2013	3,533	
2014	4,573	
2015	5,318	
2016	4,900	
2013 – 2016 Average	4,581	
2017, 2018, 2019	3,505	-30.7

3,505 -> 4,581 would require a 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



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.



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

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Council Motion (2016 Annual Report)

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

Council Motion (2016 Annual Report)

- Evaluate whether to continue the tender strata definitions in 2018.
- Comparing the following alternative deployment designs:
 - 1) ~~15% coverage rates across all strata~~; **15% + Optimization hurdle done instead**
 - 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.

Council Motion (2016 Annual Report)

- 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.
- 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

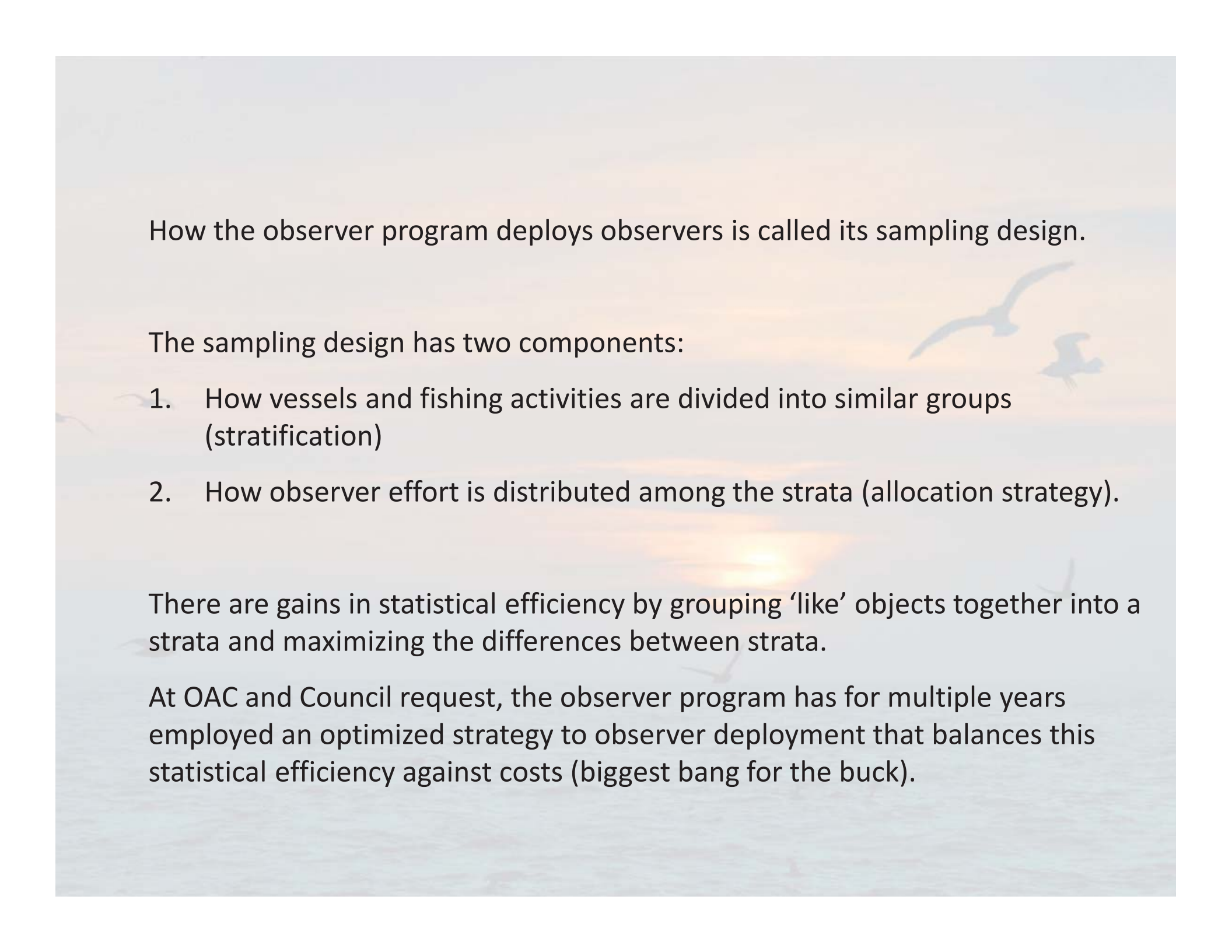
September 2017



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How the observer program deploys observers is called its sampling design.

The sampling design has two components:

1. How vessels and fishing activities are divided into similar groups (stratification)
2. How observer effort is distributed among the strata (allocation strategy).

There are gains in statistical efficiency by grouping 'like' objects together into a strata and maximizing the differences between strata.

At OAC and Council request, the observer program has for multiple years employed an optimized strategy to observer deployment that balances this statistical efficiency against costs (biggest bang for the buck).

Draft ADP analytic to-do list:

- Figure out how many boats the Agency can expand EM to given its dedicated funding of \$1,000,000 for this purpose with only a 10% chance of going over budget.
- Given the above, for two different metrics (discard groundfish + halibut PSC & discard groundfish + halibut PSC + salmon PSC), conduct the following for two different stratifications schemes (three gear & three gear x tendering)
 1. Calculate rates from equal allocation
 2. Calculate rates from a 15% + Optimization allocation
 3. Calculate rates from a full optimization allocation
- **2 metrics x 2 stratification schemes x 3 allocation strategies = 12 alternatives for Council consideration.**

Draft ADP analytic to-do list:

- For each alternative, which vessels participate in EM is unknown and which trips will be selected are unknown, so incorporate the variability in potential cost outcomes given this uncertainty.
- Select coverage rates that result in only a 10% change of going over budget.
- Incorporate variability between years.
- The above analyses are listed as one of three items in the first project of analytical priorities from the council of which there are now over 20.

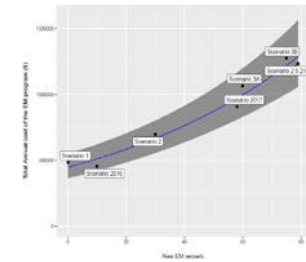
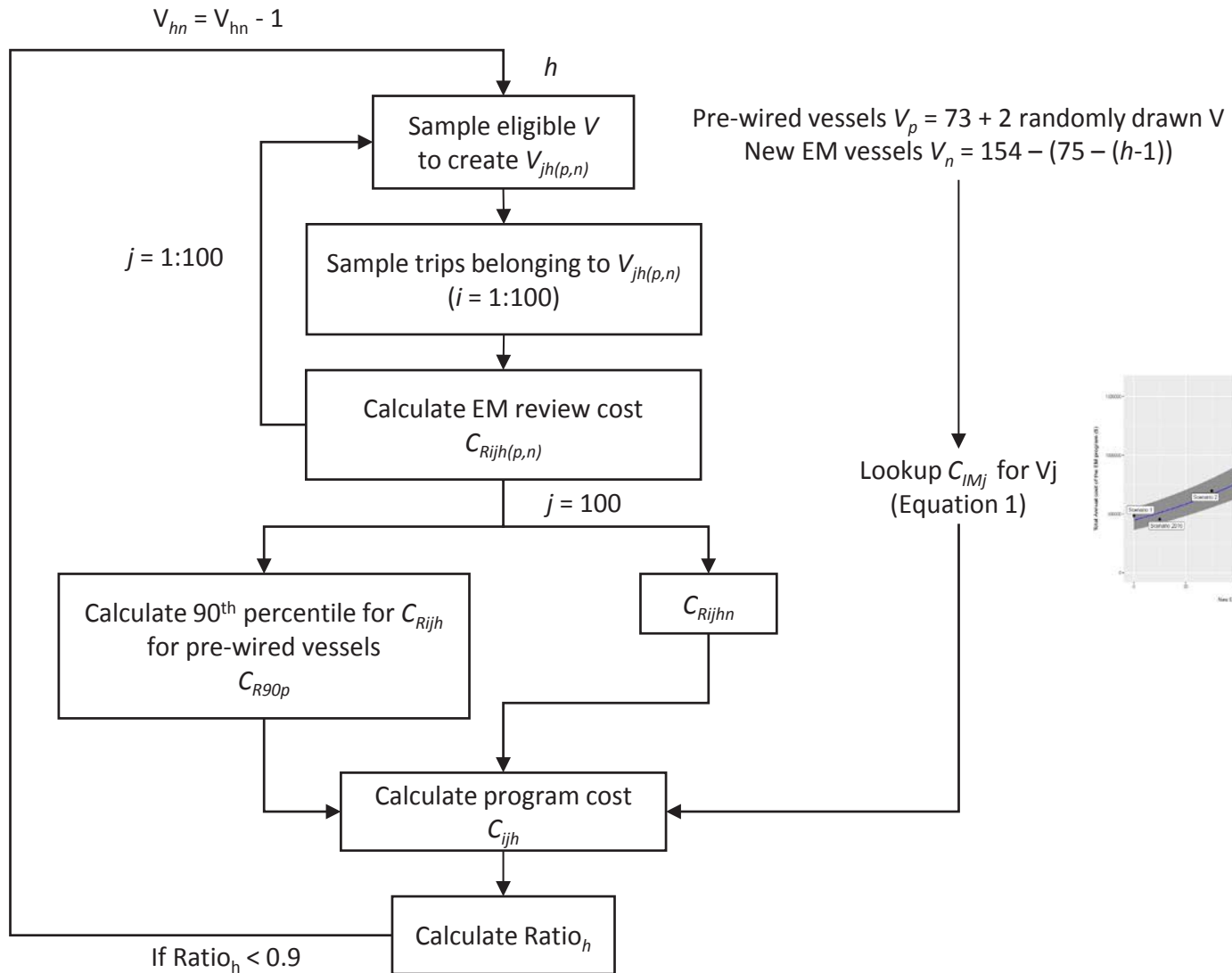
Assumptions

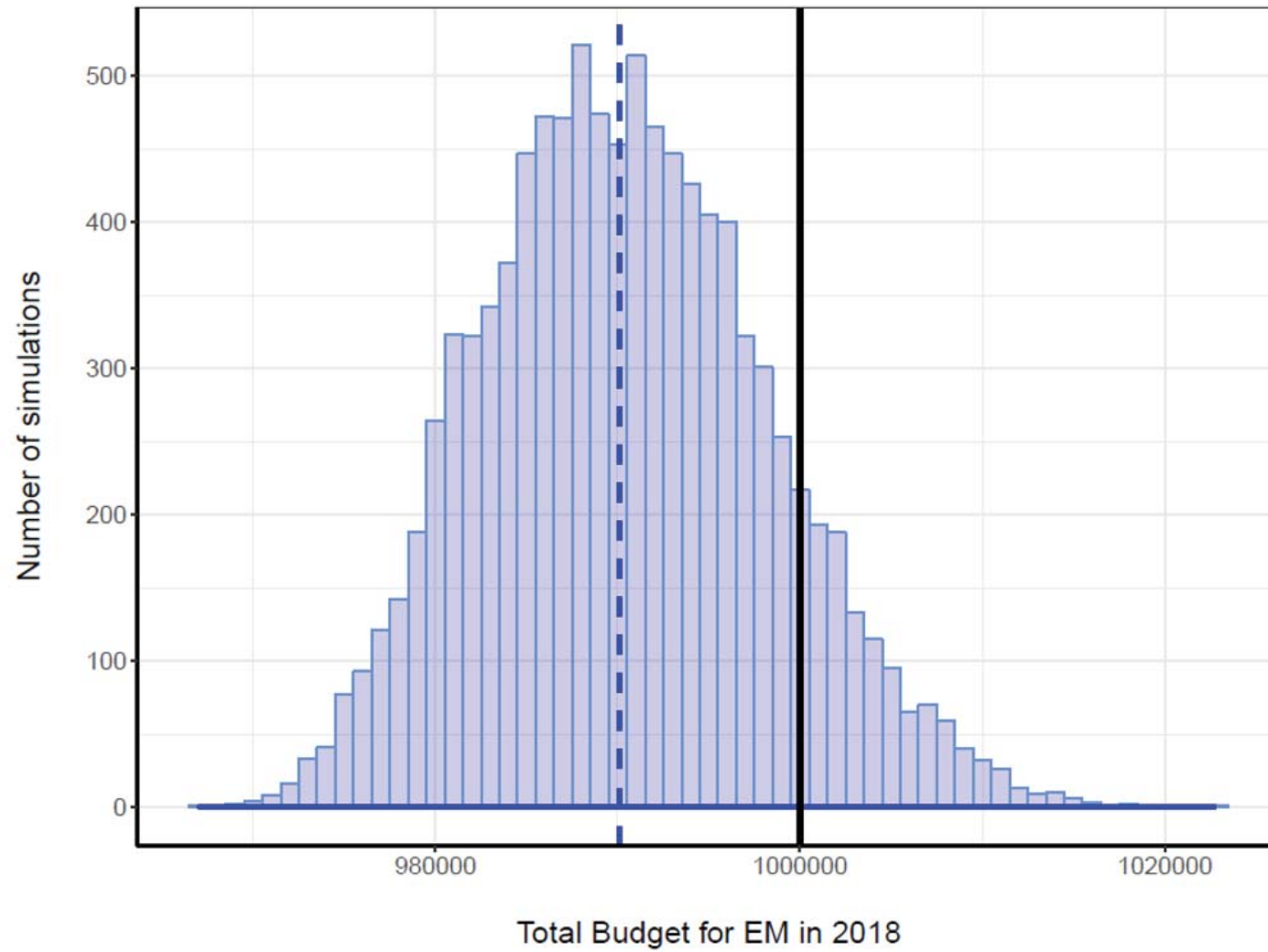
- All prior EM wired boats will volunteer.
- Same list of voluntary 100% BSAI vessels
- Fees stable between years with + \$1M 2019 Federal Funds



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?





EM expansion results

With \$1M, given 73 pre-wired boats, we can expand to another 37 non-trawl boats. (110 total).

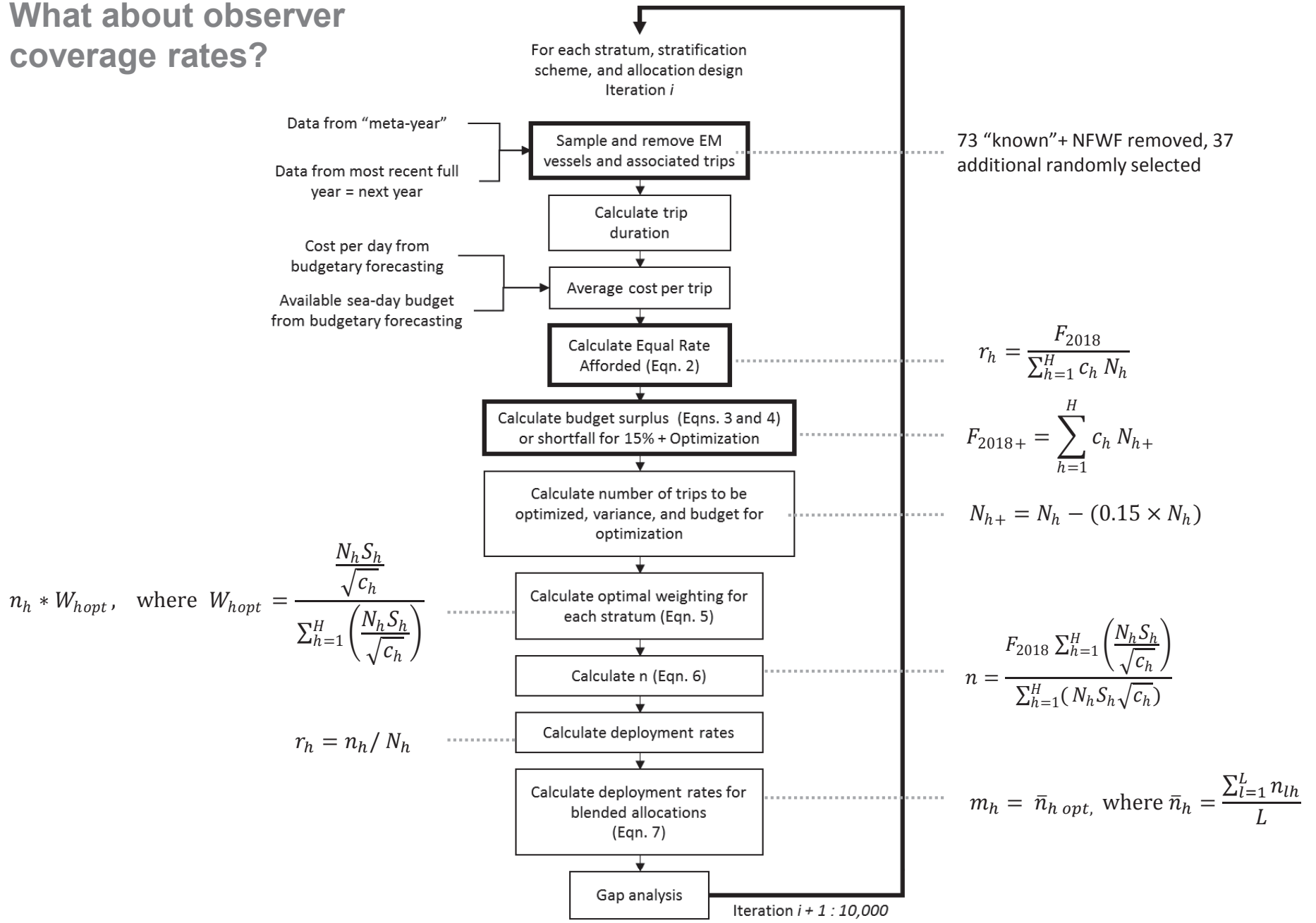
This total will be supplemented with another 10 vessels funded from National Fish and Wildlife Foundation money (industry solicitation).

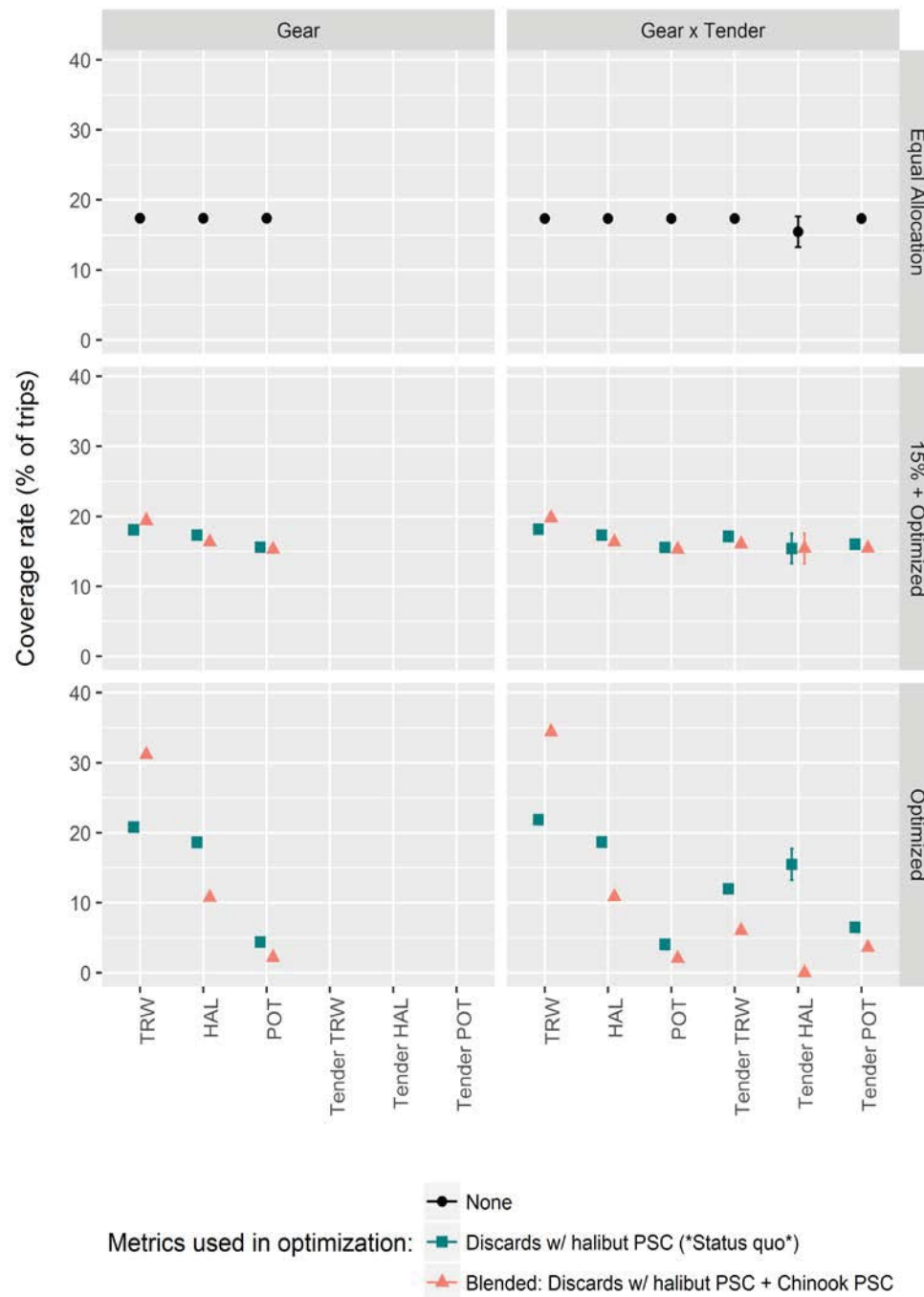
For the Final ADP, these values are subject to change, since we will know the actual EM vessels and what their expected monitoring costs will be. If less pre-wired boats than 73 volunteer, costs will go up and the number of vessels permitted must come down.

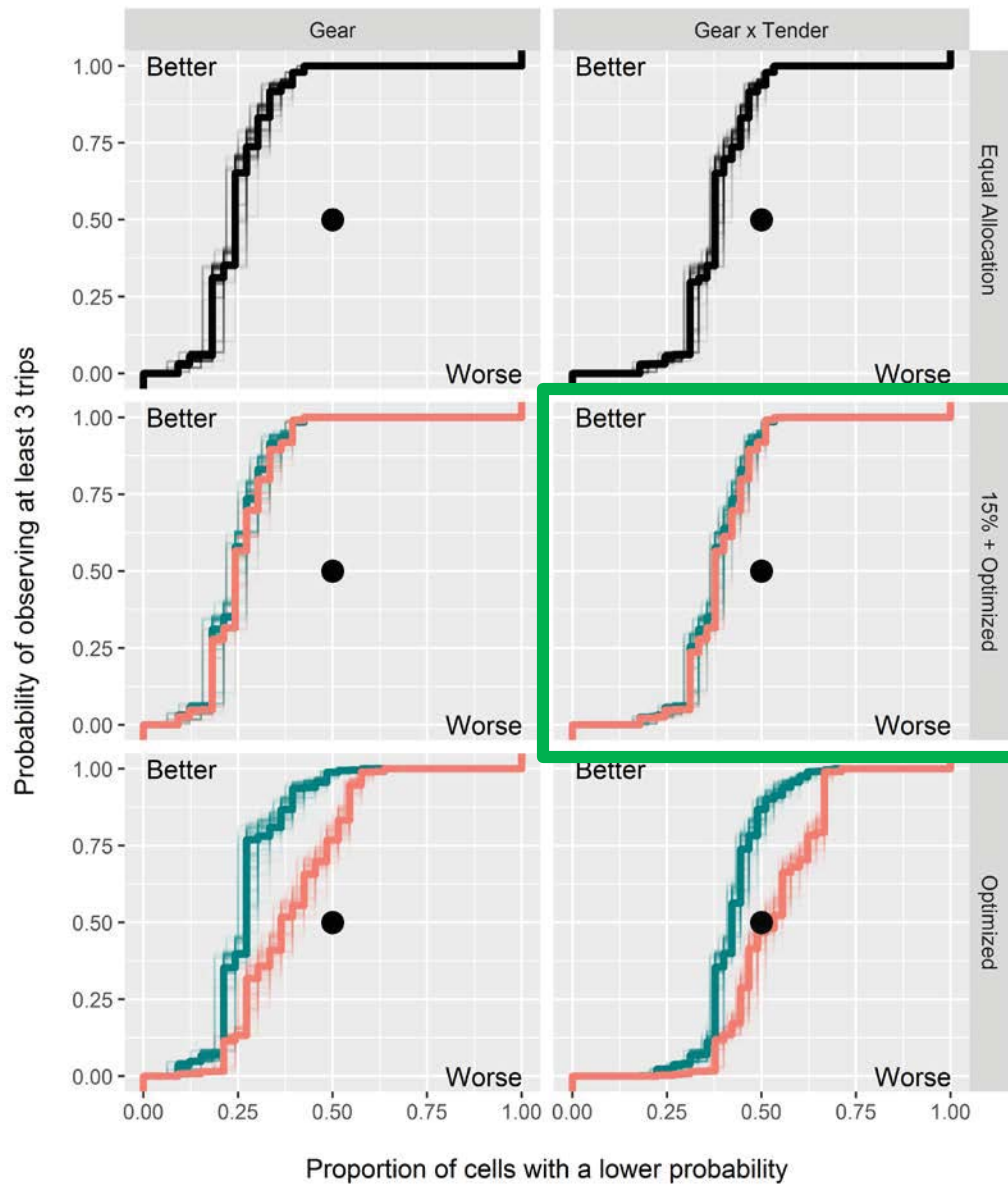


Photo credit: the International Pacific Halibut Commission, NOAA Fisheries – Alaska Fisheries Science Center, and Pacific States Marine Fisheries Commission (IPHC/NMFS, AFSC/PSMFC)

What about observer coverage rates?







— 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

Updated multi-year outlook

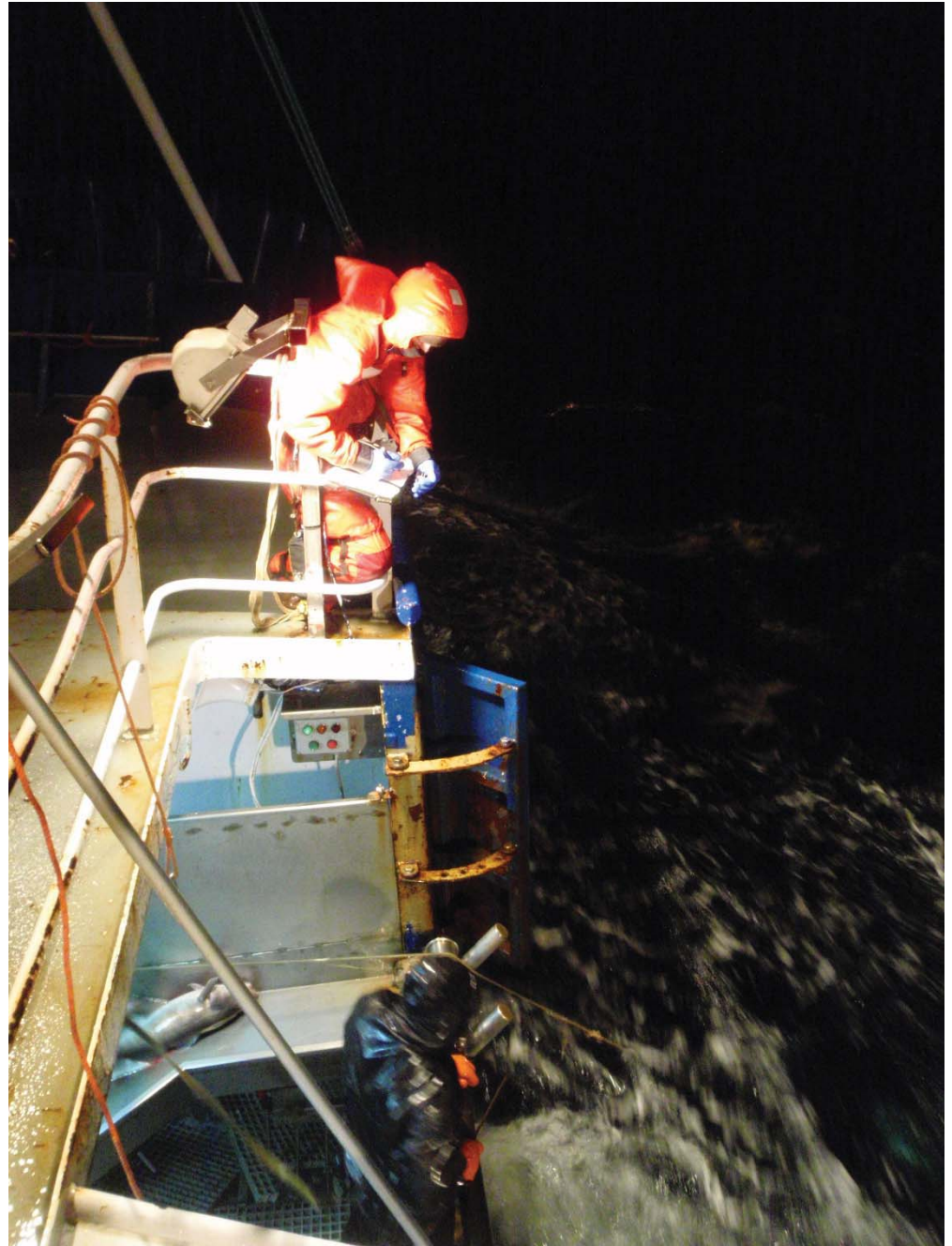
Observer Program is employing optimized allocation while balancing its ability to fill gaps for in-season management of quotas and focusing on core role of at-sea deployment (discards) and the Council's focus on PSC.

Year	Days afforded (last year)	Days afforded (new estimates)	% change from average
2013	3,533	3,533	
2014	4,573	4,573	
2015	5,318	5,318	
2016	4,900	4,677	
2017	3,505	3,059	
2013 – 2017 Average		4,232	
2018, 2019		4,062	-4

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)

1. With Final EM and Voluntary 100% BSAI vessel lists:
2. Recalculate expected costs for EM and the number of new vessels that can be admitted.
3. Vet the list of new EM vessels participating if necessary.
4. Adjust anticipated fishing effort if warranted given trends seen in fishery Jan-Oct of each year (*incl. 2017*)
5. Simulate sampling of '2018' fishery given optimal weightings for each stratum from this draft ADP,
6. iterate with increasing sample size,
7. stop when proportion of outcomes over:under budget reaches 0.90.
8. Present results as 2017 Final ADP and program resulting selection rates into ODDS.



Special thanks

Jane Sullivan



FOR MORE INFORMATION

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

