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# CP CHINOOK AND CHUM SALMON BYCATCH REDUCTION INCENTIVE PLAN AGREEMENT ANNUAL REPORT 2023 & C-2 ALTERNATIVE 4 PROPOSAL

April 2024  
NPFMC

Austin Estabrooks  
At-sea Processors Association



# PRIMARY IPA COMPONENTS

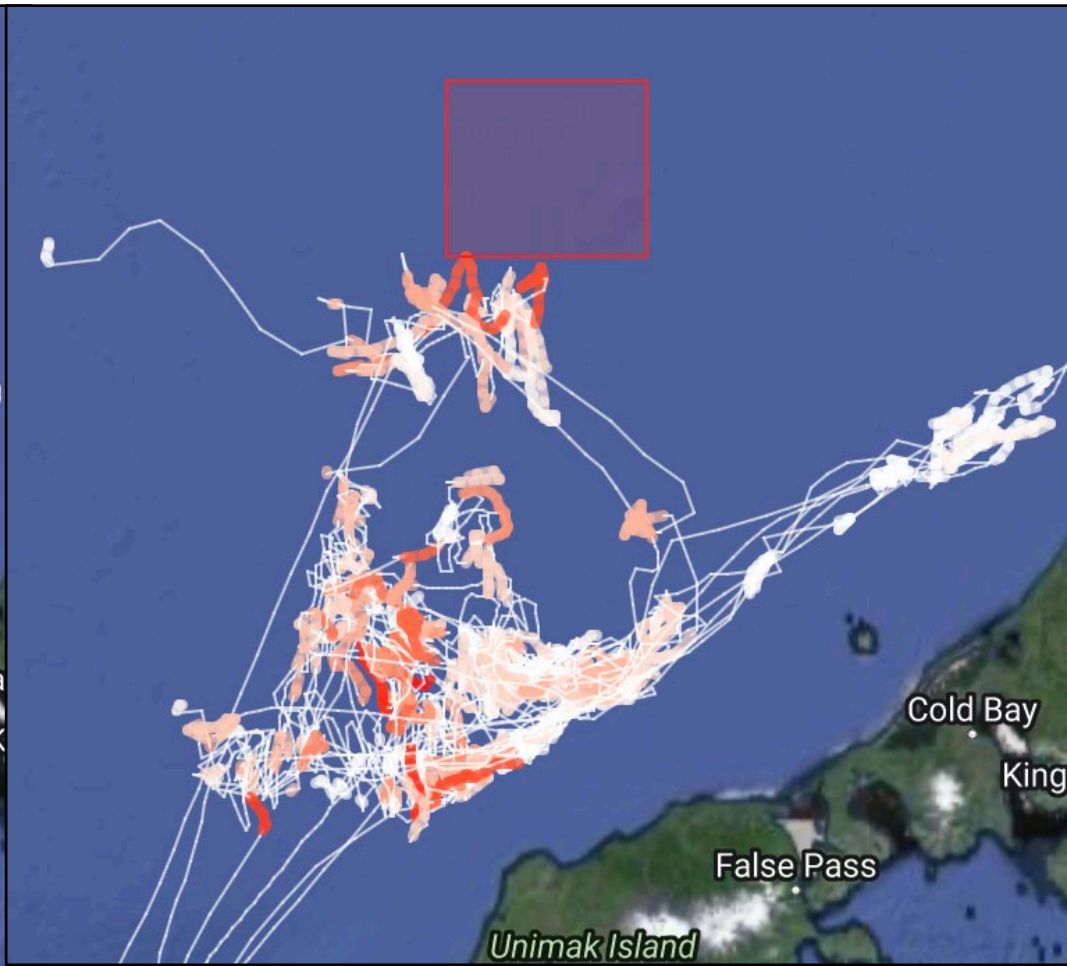
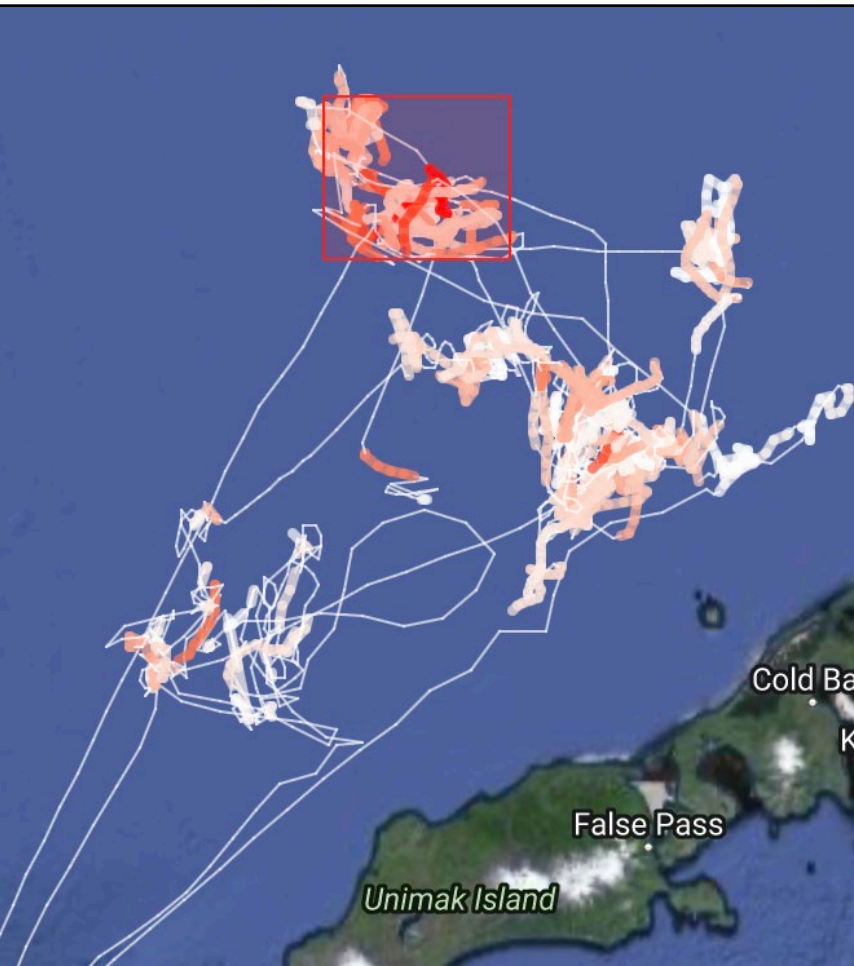
- Data gathering, monitoring, reporting, information sharing.
- Identification of bycatch avoidance areas (Rolling Hot Spot Closures).
- Fishing area prohibitions for vessels with poor bycatch performance.
- Fixed Closures: A-season closed area & conditional B-season closed areas.
- Performance criteria to ensure Chinook PSC rates in October are not significantly higher than prior months
- Penalties for vessels with consistently higher Chinook salmon bycatch rates relative to the fleet.
- Requires the use of Salmon Excluder Devices



# THE ROLLING HOT SPOT PROGRAM DEMONSTRATED A-SEASON CHINOOK

AFA CP EFFORT 1/31-2/2/23,  
Closure 2/3/23-2/10/23

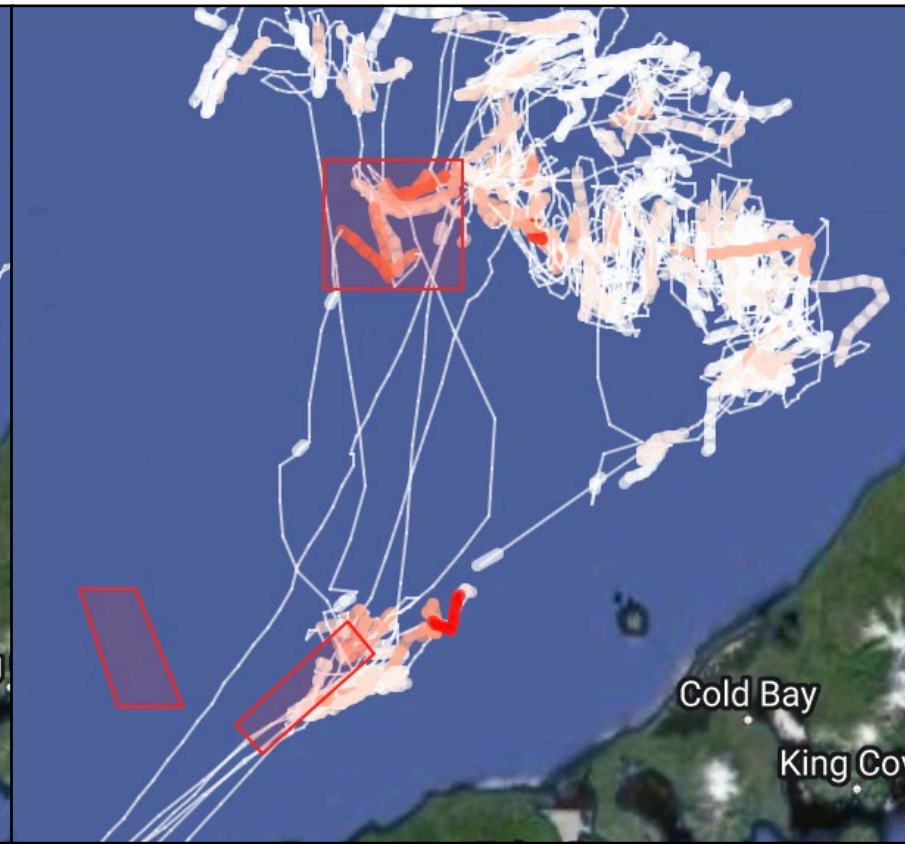
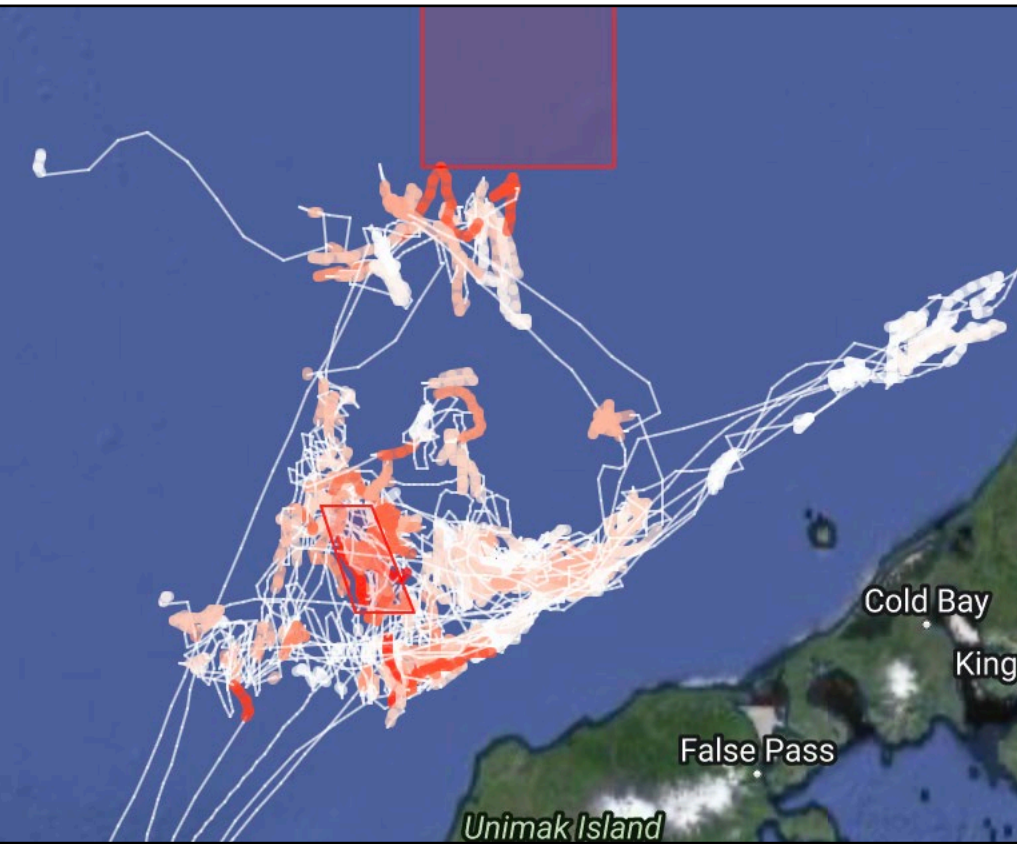
AFA CP EFFORT 2/3/23-2/9/23,  
Closure 2/3/23-2/10/23



# THE ROLLING HOT SPOT PROGRAM DEMONSTRATED A-SEASON CHINOOK

AFA CP EFFORT 2/3/23-2/9/23,  
Old Closure 2/3-2/10/23,  
New Closure 2/10/23-2/17/23

AFA CP EFFORT 2/10/23-2/16/23,  
Old Closure 2/10/23-2/17/23,  
New Closures 2/17/23-2/24/23

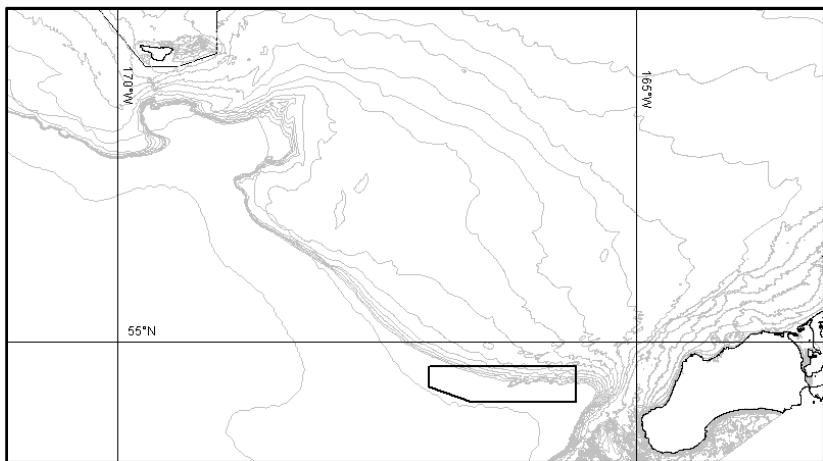


# THE ROLLING HOT SPOT PROGRAM

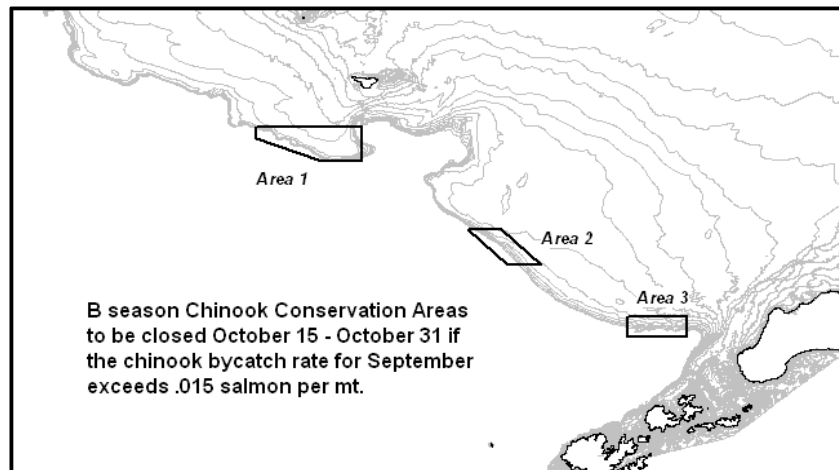
1. Calculate Base Rates-Pollock Fishery Wide 3-week rolling average bycatch rate
2. Calculate Weekly ADFG Stat Area bycatch rates
3. ADFG Stat Areas Above Base Rate qualify for Rolling Hot Spot Bycatch Avoidance Areas
4. Calculate 2 Week Vessel Bycatch Rates (Performance)
5. If Vessel Bycatch Rate  $>$  75% of Base Rate, then vessel excluded from Bycatch Avoidance Areas.

# CHINOOK CONSERVATION AREAS

735 square mile area closed to all pollock fishing 100% of the time during A- season



Areas totaling 1,295 square miles closed to CP pollock fishing Oct 15-Oct 31 if the Chinook bycatch rate for September exceeds 1.5 Chinook per 100 tons pollock.



# CHINOOK PROHIBITED SPECIES CATCH LIMITS

Pollock Sector	Performance Standard limit (Low Abundance)	Absolute Limit (Low Abundance)
CDQ	2,732	3,690
CP	9,462	12,780
Totals	12,194	16,470
Average Vessel Limit (with buffers)	903	1,267
Chinook rate (Number/mt pollock)*	0.015	0.022

\* Based on 2023 pollock harvest levels



# CHINOOK & CHUM PSC AND POLLOCK CATCH

## A season

Pollock (mt)	Chinook (n)	Chum (n)
259,997	5,520	219
Rate (n/mt)	0.021	0.0008

## B season

Pollock (mt)	Chinook (n)	Chum (n)
323,474	181	25,840
Rate (n/mt)	0.001	0.080

Catch totals include all IPA participants (PCC, HSCC, OP, CDQ)





# WESTERN ALASKA CHINOOK & CHUM PSC

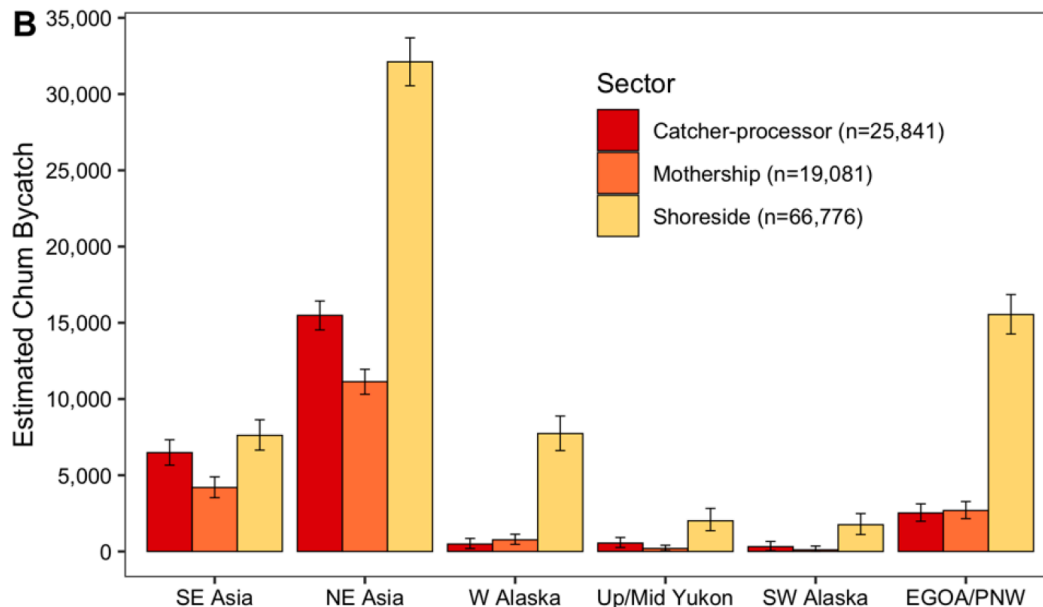
## Chinook

Total Chinook (n)	WAK + Up/Mid Yukon (n)
5,701	2,708*

## Chum

Total Chum (n)	WAK + Up/Mid Yukon (n)
25,840	1,034

\*estimated by applying the combined A/B stock proportions to the CP total catch



# CHINOOK & CHUM PSC RATES TRANSLATED

## CHINOOK

- In 2023 the AFA CP fleet landed 102 tons of pollock, equivalent to nearly **80,832 pounds of frozen product\*** for every **one Chinook salmon** encountered.

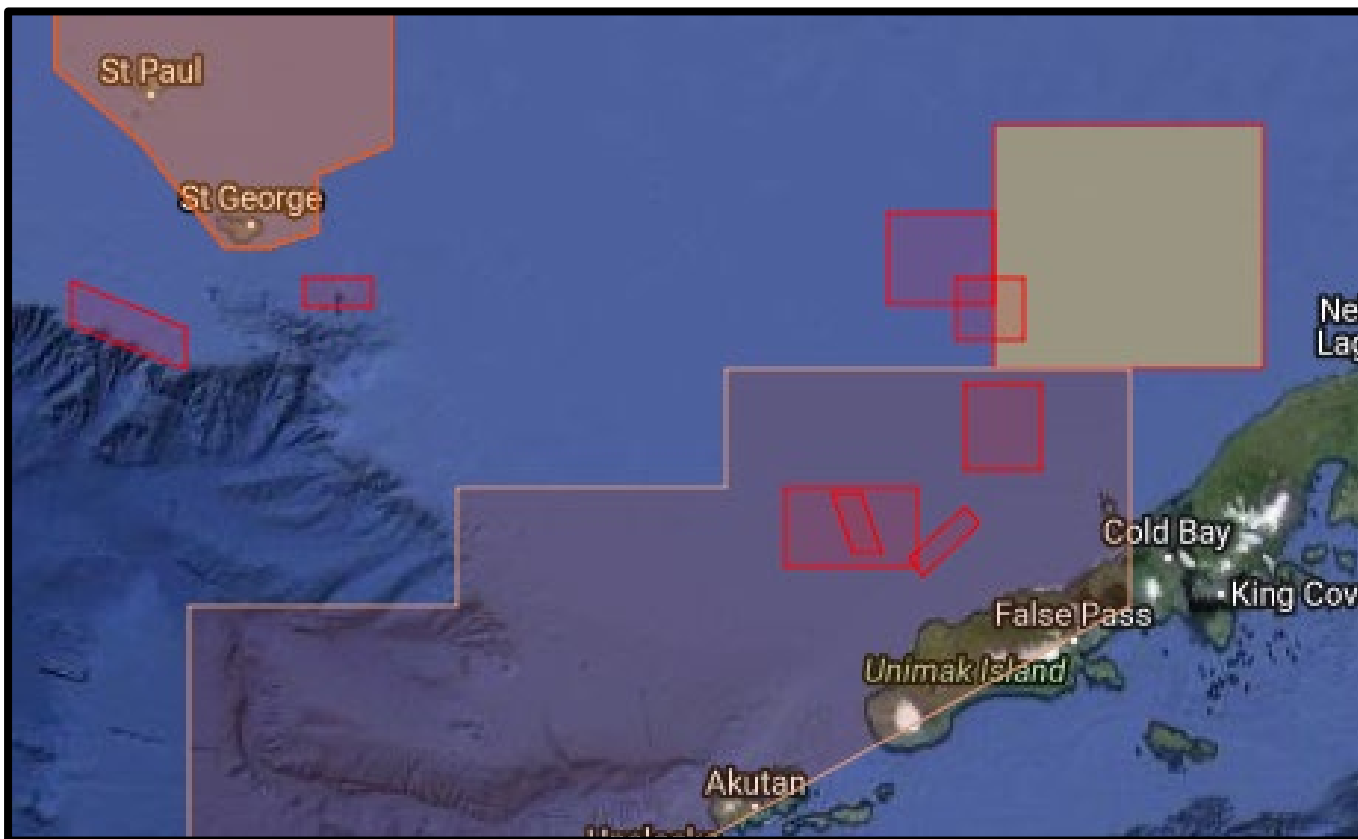
## CHUM

- In 2023 the AFA CP fleet landed 564 tons of pollock, equivalent to nearly **490,363 pounds of frozen product\*** for every **one Western Alaska chum salmon** encountered.

\*Assumes 35.9% product  
Recovery rate



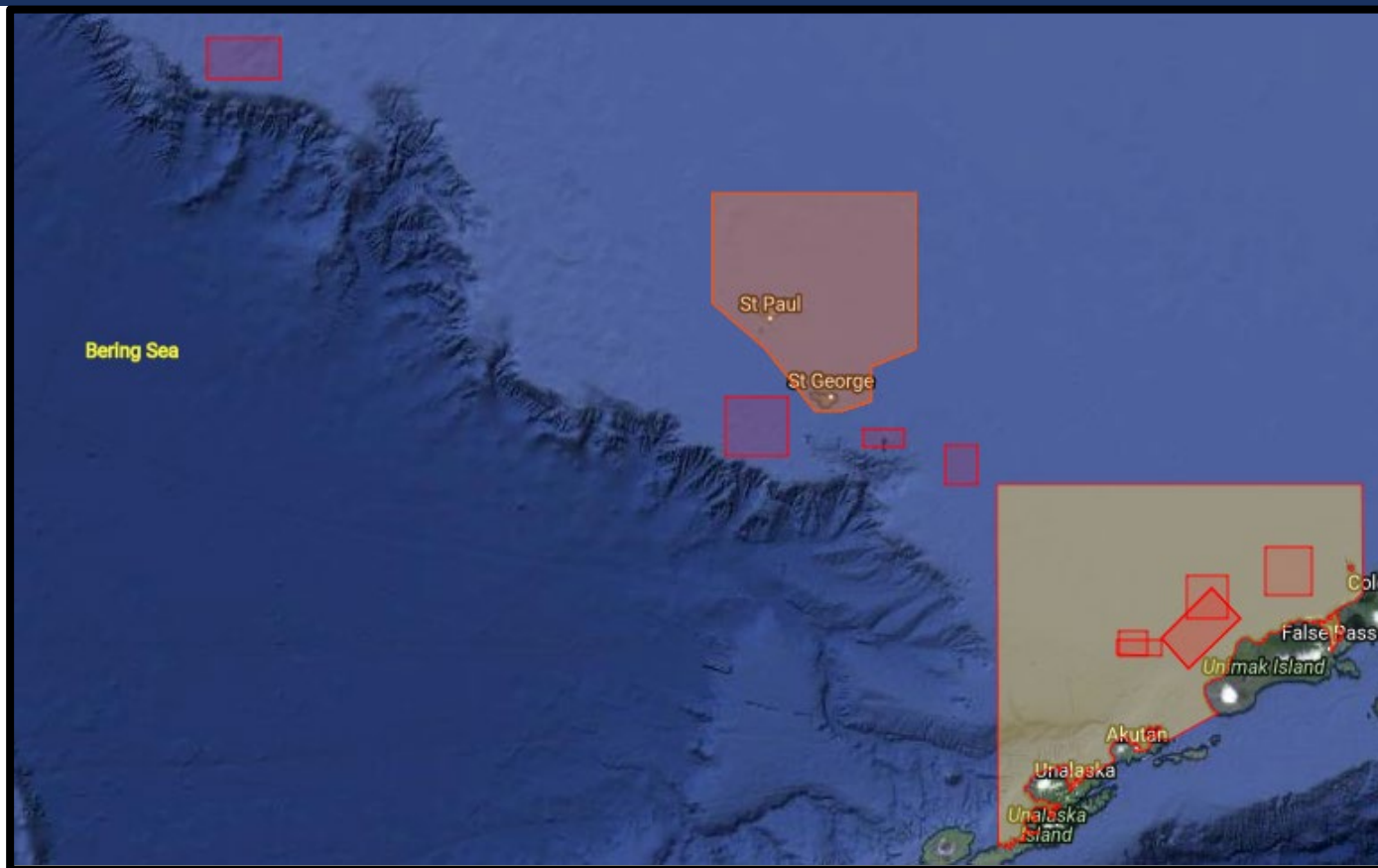
# CHINOOK BYCATCH AVOIDANCE AREAS, CP SECTOR 2023



Week	2/3	2/10	2/17	2/24	3/3	3/17
Number of CPs excluded from BAAs	6	8	6	0	5	0



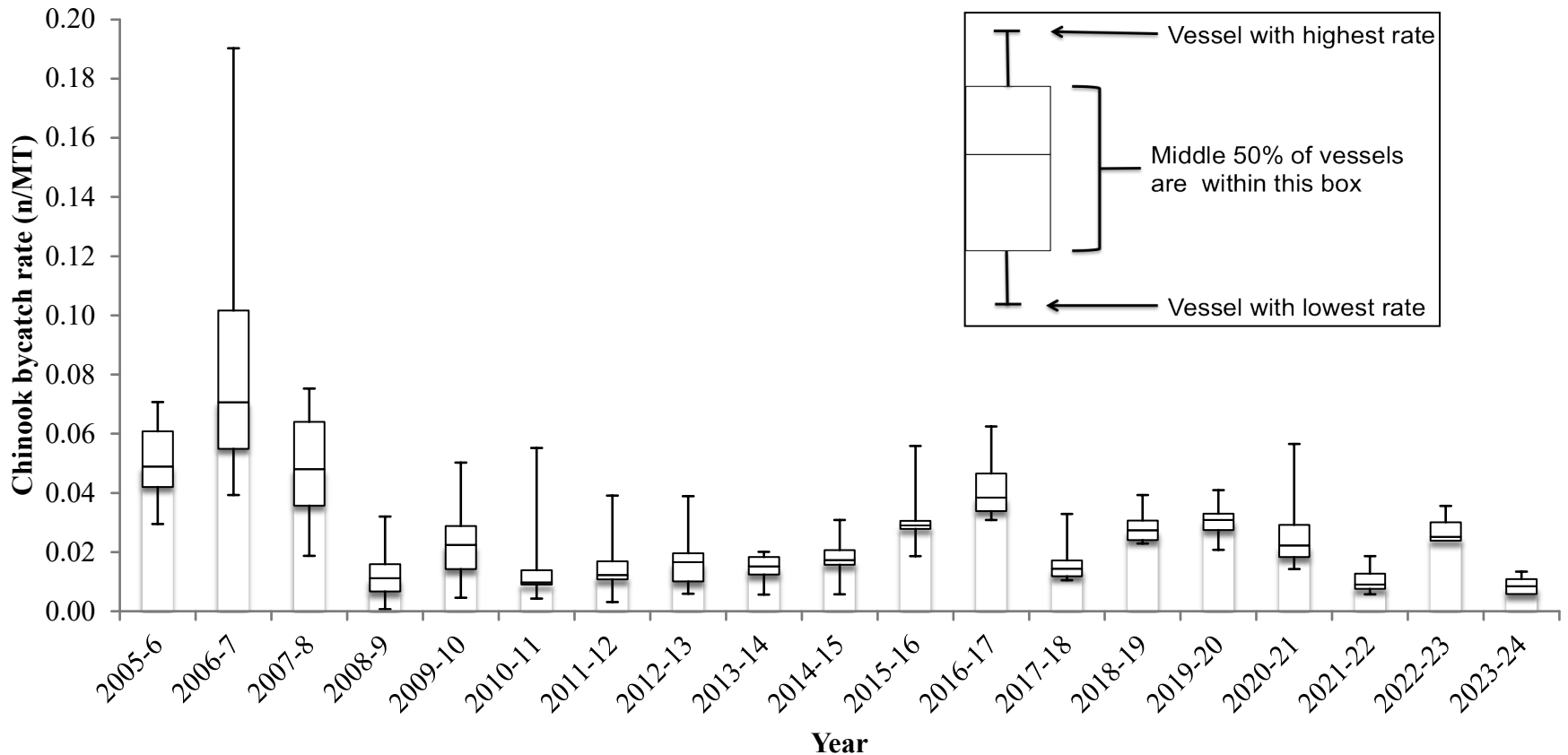
# CHUM BYCATCH AVOIDANCE AREAS, CP SECTOR 2023



Week	7/7	7/21	7/28	8/25	9/1
Number of CPs excluded from BAAs	2	0	2	4	1



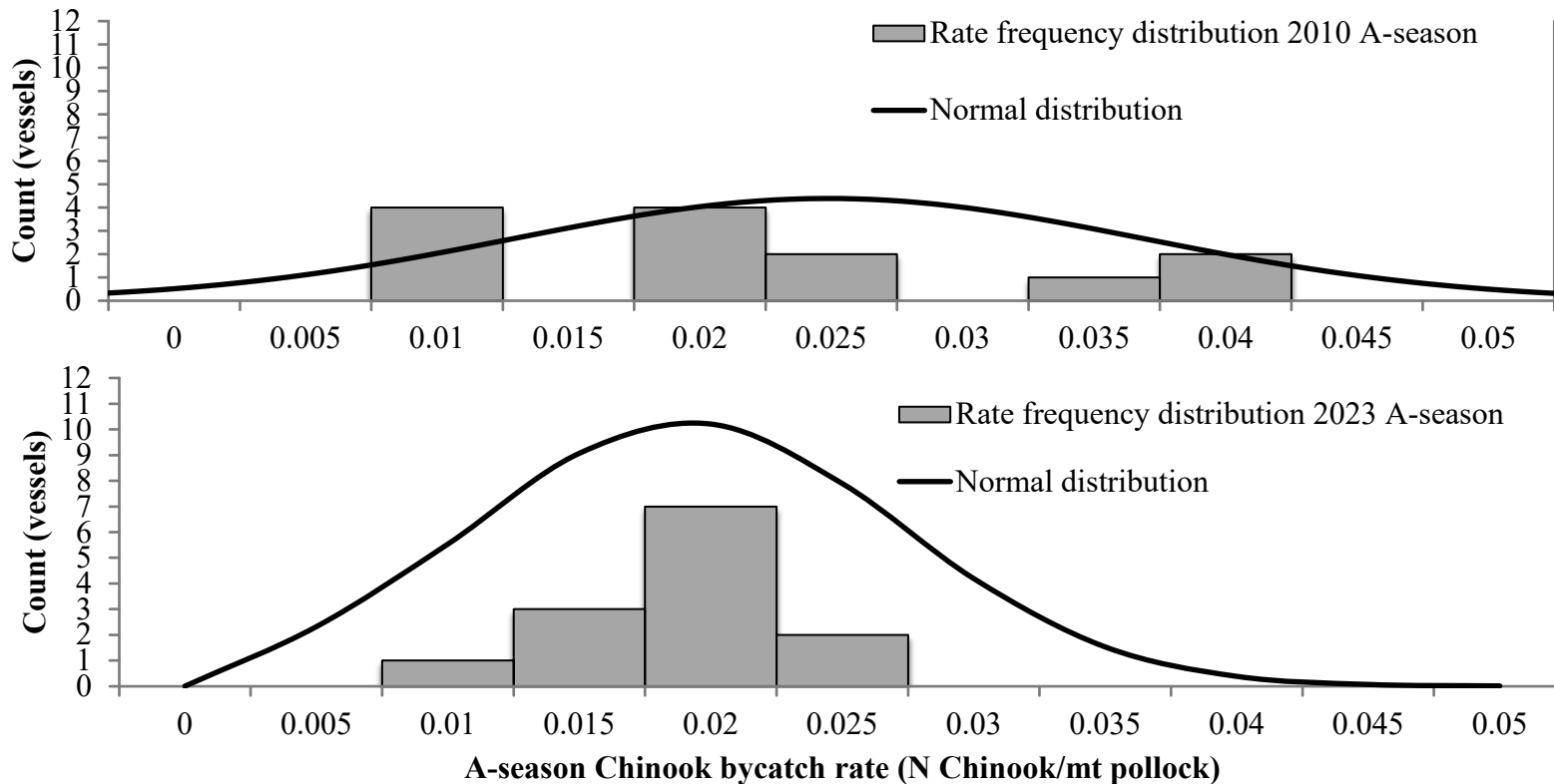
# EFFECTS OF INCENTIVE PLAN AGREEMENT



CP Vessel Chinook bycatch rate distribution by year for 1 Sept-1 March.



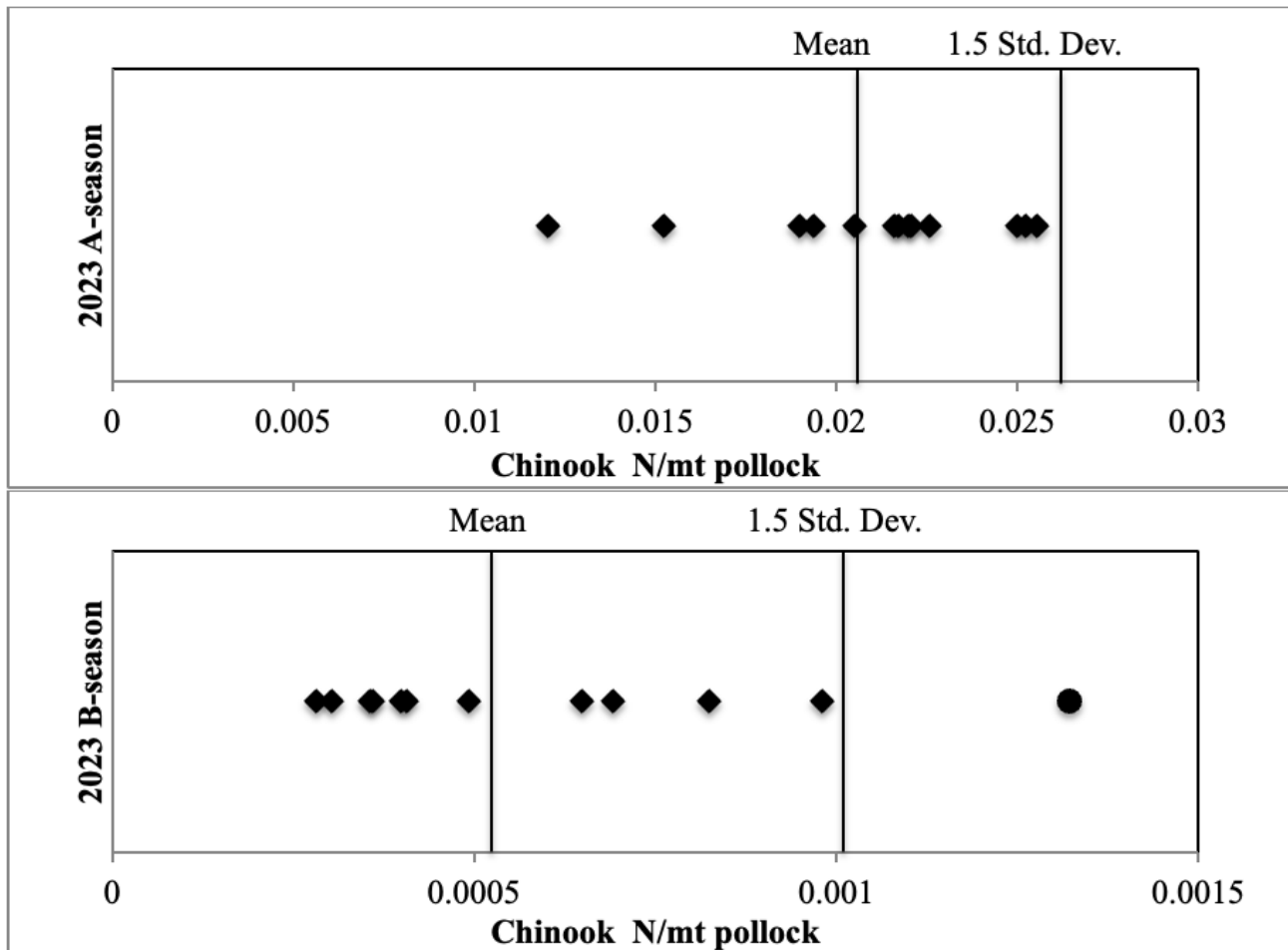
# EFFECTS OF INCENTIVE PLAN AGREEMENT



**Upper panel: A-Season CP Vessel Chinook Bycatch Rate Frequency Distribution for 2010 with a variance pre-Amendment 91 of 0.0014 and Lower panel: Distribution for 2023 with variance equal to 0.0002.**



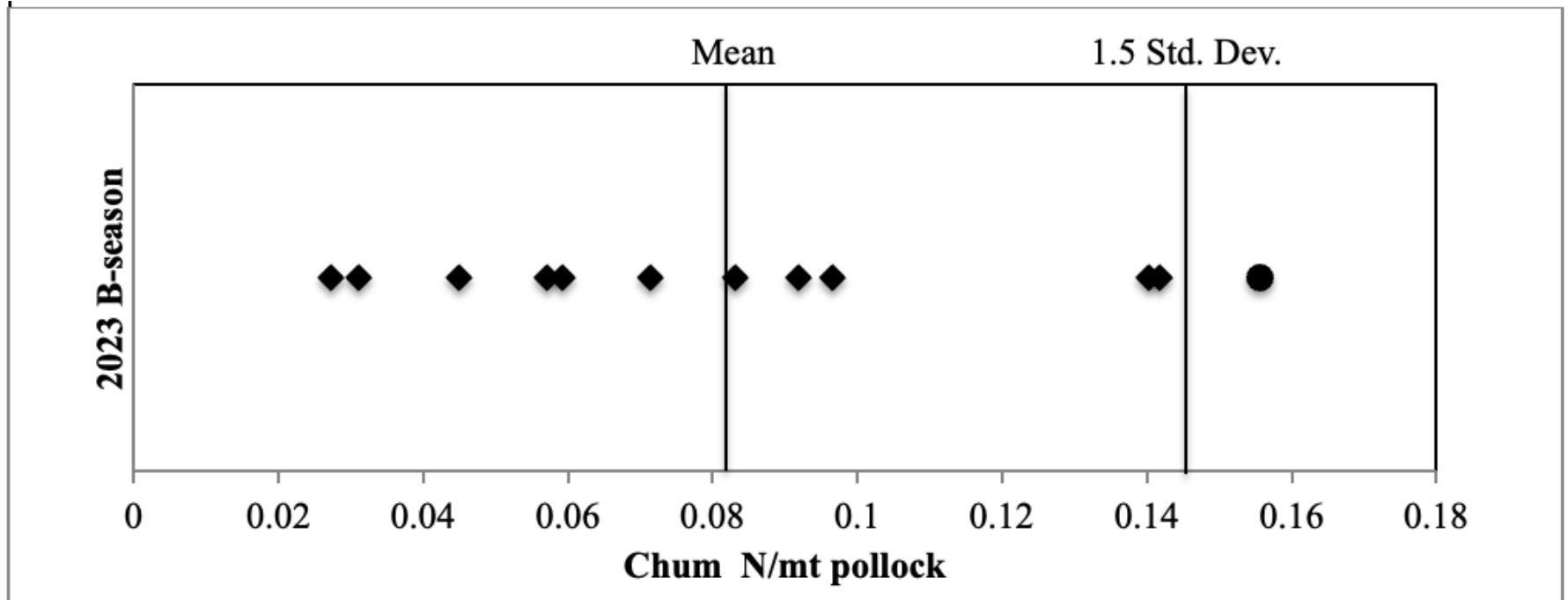
# EFFECTS OF INCENTIVE PLAN AGREEMENT



**Fleetwide Chinook bycatch ratio distribution for 2023 fishing seasons. Circles denote outlier vessels.**



## EFFECTS OF INCENTIVE PLAN AGREEMENT



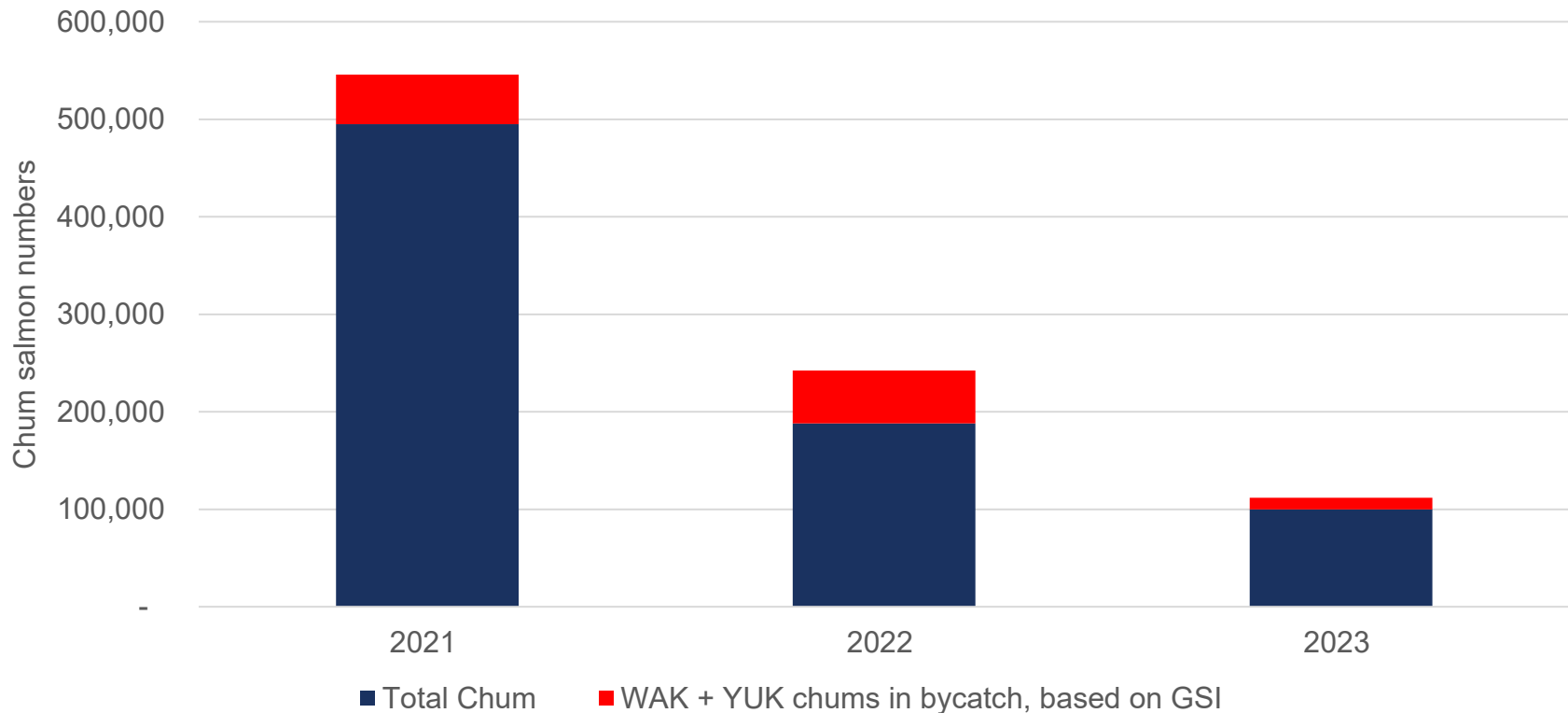
**Fleetwide chum bycatch ratio distribution for the 2023 B season. Circle denotes outlier vessel.**

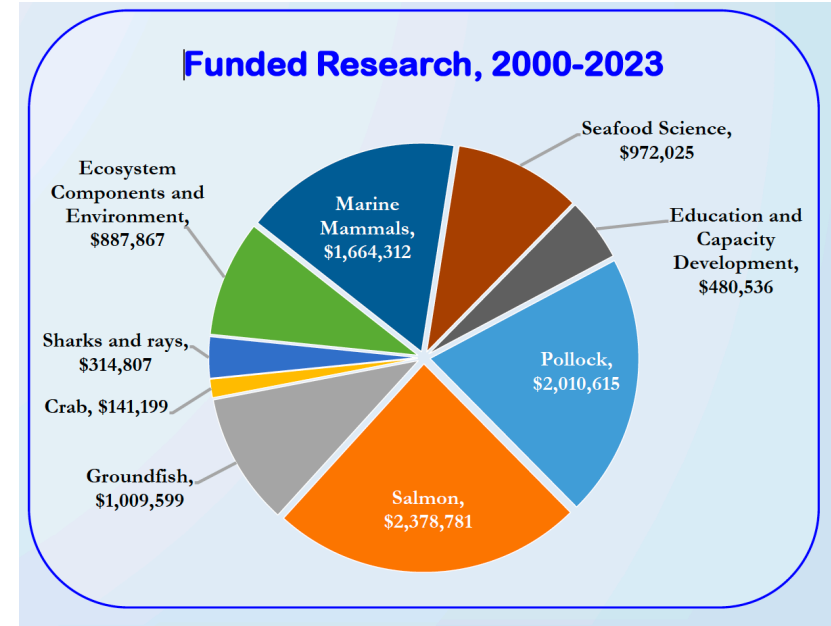




# NEW 2022 CP IPA AMENDMENTS-RESPONDING TO COUNCIL REQUEST

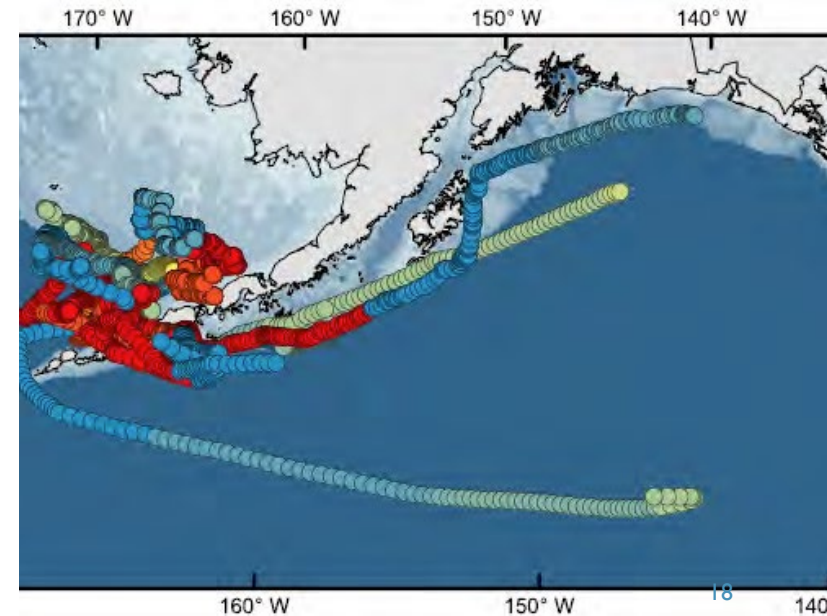
- Bi-weekly Bycatch Avoidance Area identification
- “Extremely” high chum bycatch areas (defined as 5 chum/mt pollock) restrict all vessels
- Include chum salmon to the “outlier provision”





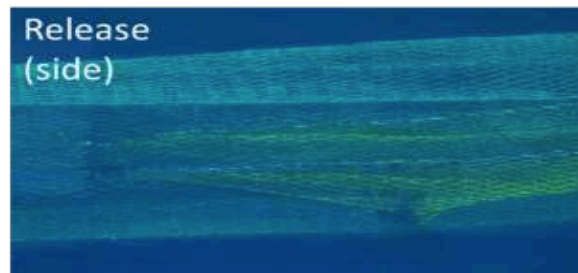
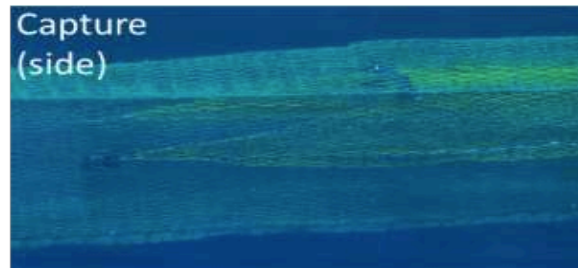
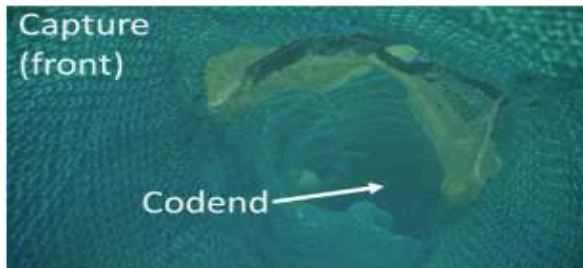
## ONGOING SALMON RESEARCH

- Species Distribution Modeling Chinook salmon (Seitz/Garcia)
- Yukon River and Norton Sound chum salmon marine ecology (Pinchuk et al.)
- Yukon chum salmon early life history (McPhee et al.)
- Marine drivers of *ichthyophonous* infection in Western Alaskan salmon (Clinton et al.)

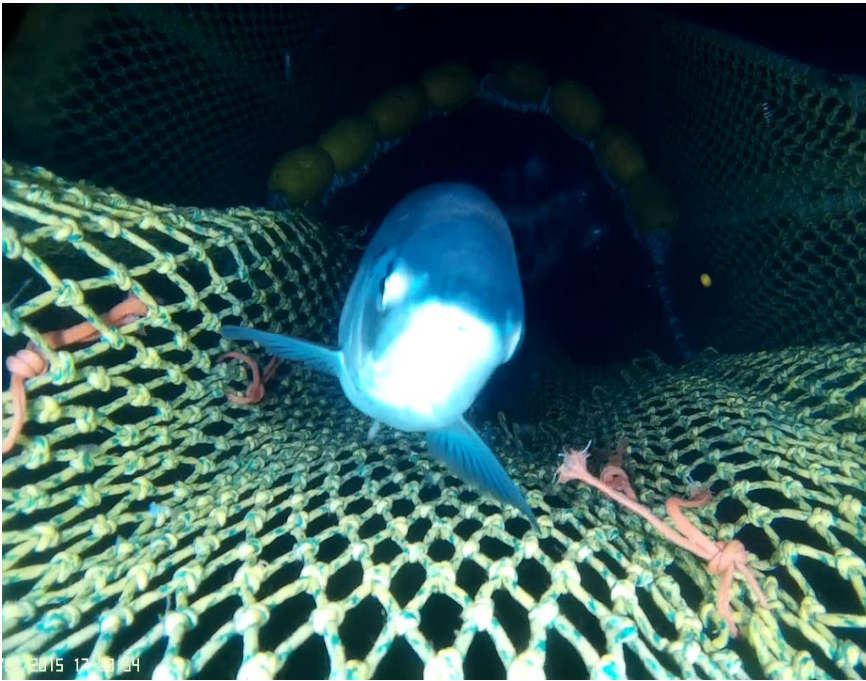


## GEAR RESEARCH AND DEVELOPMENT

- All vessels continue to utilize a salmon excluder device in accordance with Amendment 110 regulations
- Most CP vessels operate with a live-feed camera system allowing them to view catch composition in real time helping mitigate lightning strike events
- Continuing work with Craig Rose through NOAA BREP project to develop an Active Excluder
- NEW chum salmon excluder EFP development (North Pacific Fisheries Research Foundation)

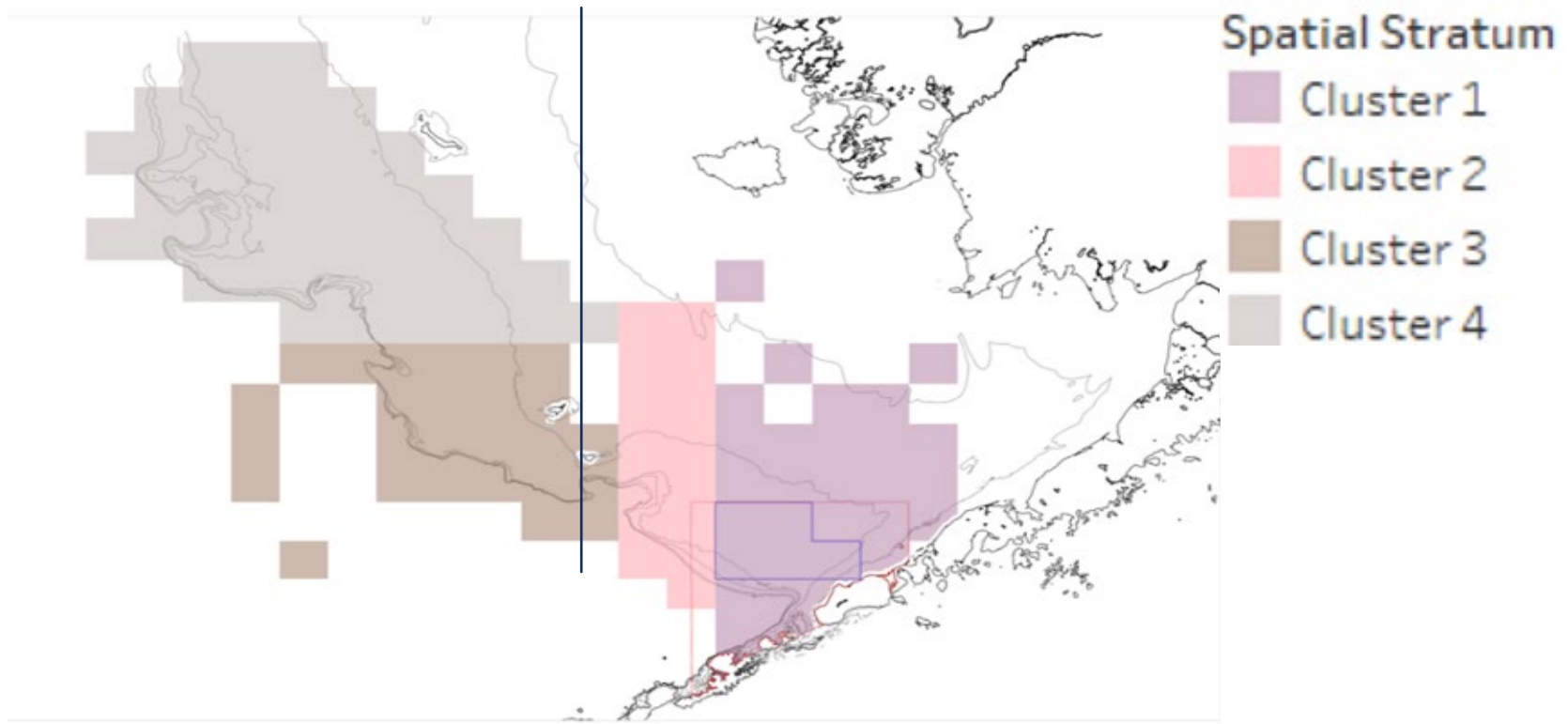


# QUESTIONS- IPA ANNUAL REPORT



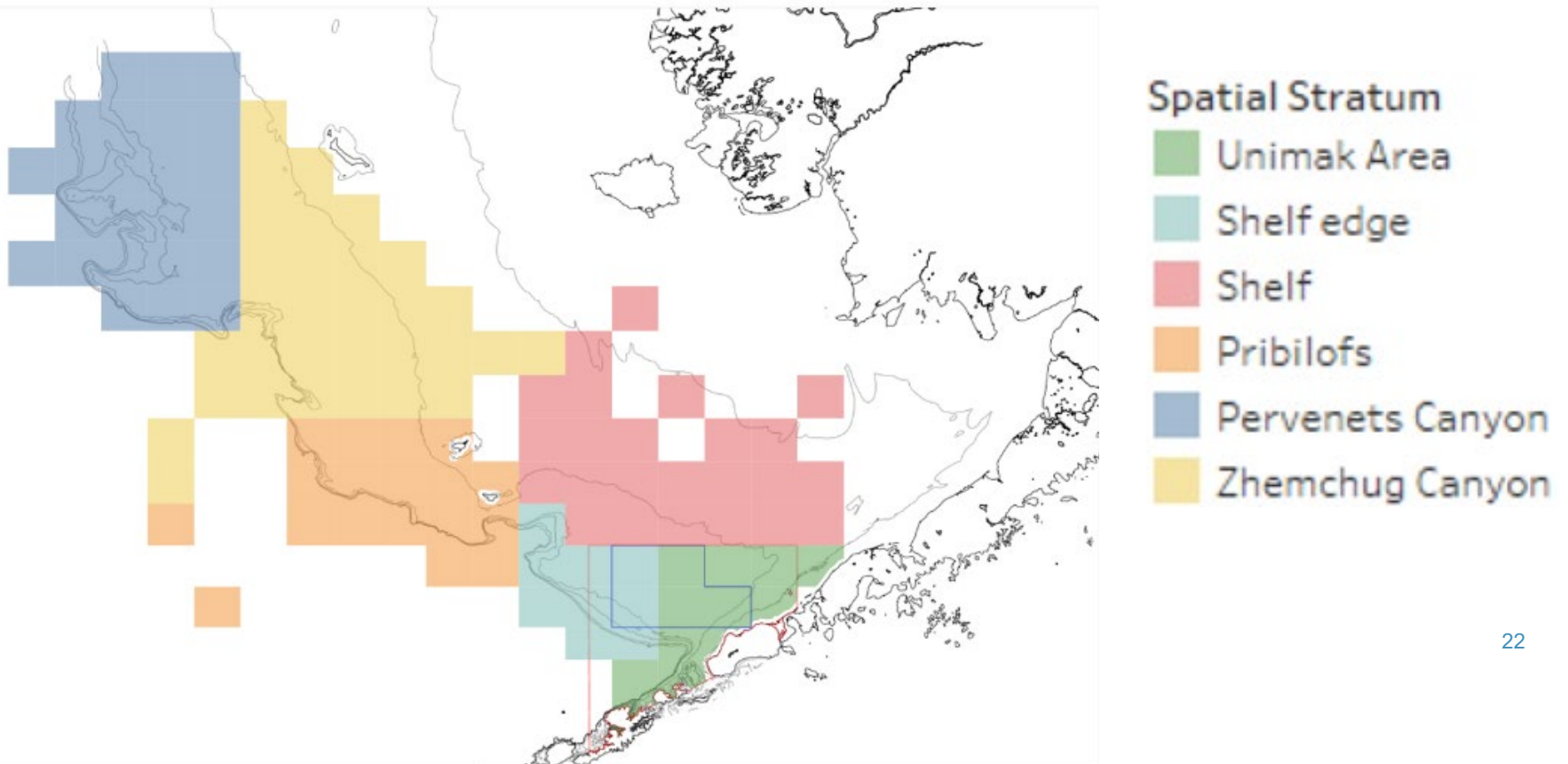
# ALTERNATIVE 4 PROPOSAL- CP OPERATIONAL DIFFERENCES

- Catcher Vessel Operational Area (B season)
- Since 2008, 81% of AFA CP pollock catch has occurred in genetic clusters 3 and 4
- Operations west of 170° West have significantly lower proportions of WAK chum salmon

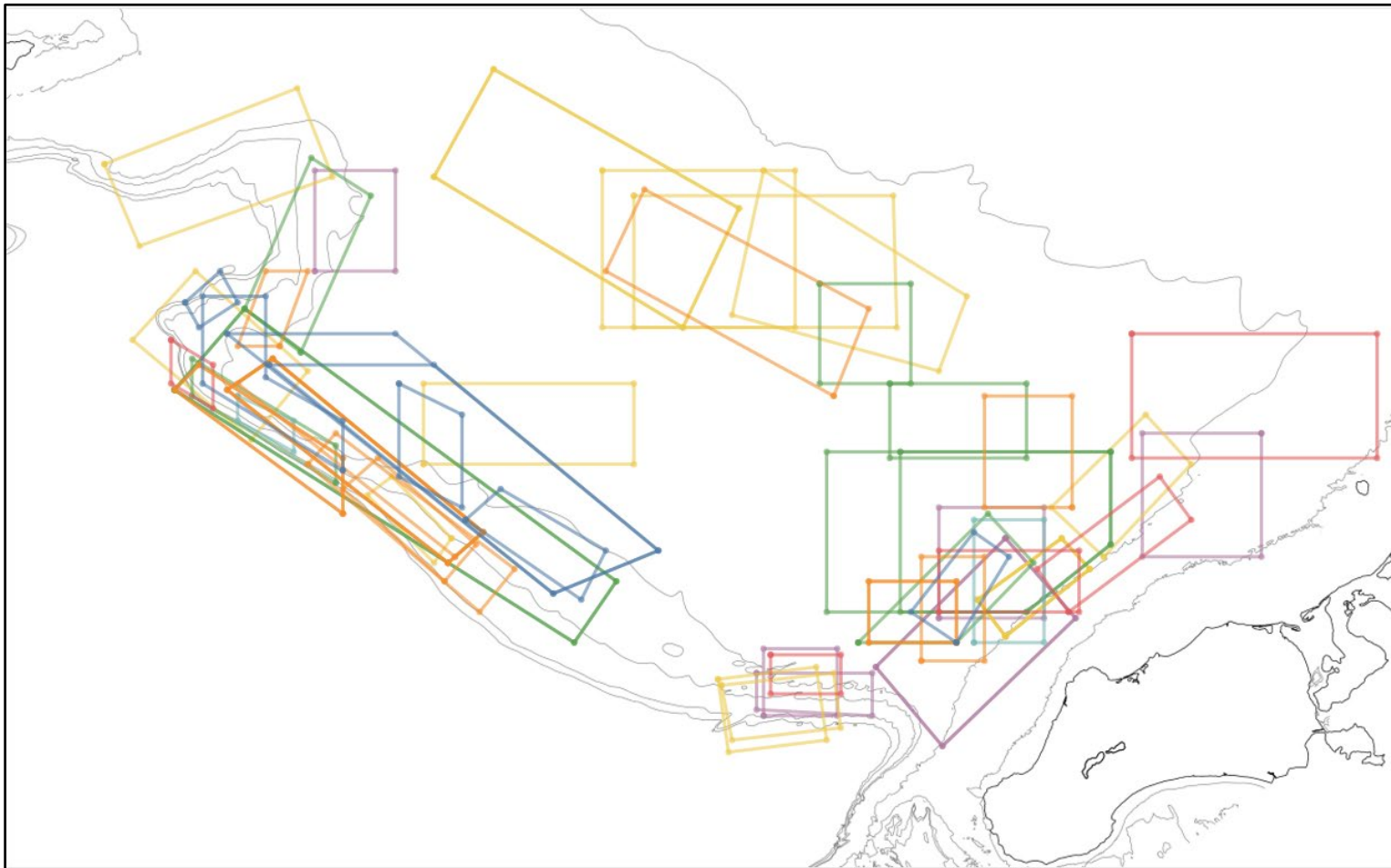


# ALTERNATIVE 4 PROPOSAL-UNIMAK AREA AND SHELF EDGE

- From 2019-2022 the Unimak area has recorded the highest number of WAK chum salmon bycatch (n=101,924)
- From 2019-2022 the Shelf Edge has recorded the second highest number of WAK chum salmon bycatch (n=56,716)



# ALL 2017-2023 CP BYCATCH AVOIDANCE AREAS WITHIN CLUSTER 1 AND 2



Year of Begin Date Time

- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023

# ALTERNATIVE 4 PROPOSAL-MODELED SCENARIOS

## Lower Base Rate Floors (Clusters 1 & 2)

Increased Chinook salmon  
catch and No WAK chum  
salmon savings in all years

## Larger closures (Clusters 1 & 2)

Increased Chinook salmon  
catch and No WAK chum  
salmon savings in all years

## Spatiotemporal closures

Highlighted shelf edge  
fishing area in July-August as  
optimal WAK chum salmon  
savings in some years

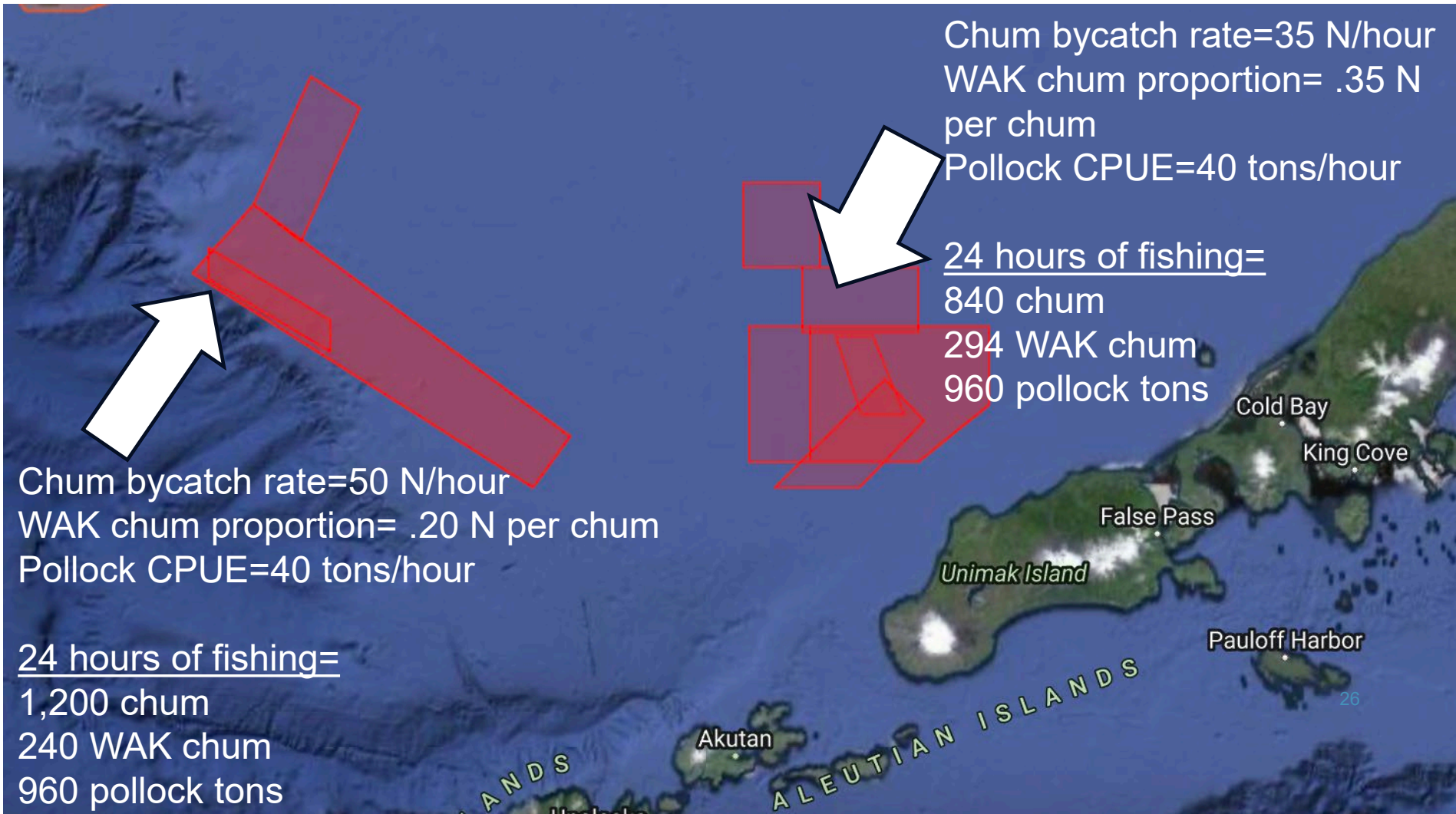


# CP SECTOR ALTERNATIVE 4 PROPOSAL- REGULATORY RECOMMENDATIONS

- 1) Require IPAs to use the latest chum salmon genetics information, together with in-season chum bycatch rate information, and pollock catch per unit effort information to **optimize** prioritization of bycatch avoidance areas.
- 2) Require IPAs to prohibit fishing in bycatch avoidance areas for all vessels regardless of performance when ADFG weekly stat area bycatch rates exceed 5 chum per ton of pollock.
- 3) Require IPAs to develop and implement chum salmon vessel outlier provisions.
- 4) Require IPAs to monitor for new candidate chum bycatch avoidance areas on a no less than bi-weekly basis.
- 5) Require IPA member vessels to utilize salmon excluder devices during the pollock B season.
- 6) Require IPAs to provide weekly salmon bycatch reports to Western and Interior Alaska salmon users to allow for more transparency in reporting.



# OPTIMIZING THE ROLLING HOT SPOT PROGRAM-EXAMPLE OF SHELF EDGE VS. UNIMAK TRADEOFFS



Chum bycatch rate=35 N/hour  
WAK chum proportion= .35 N per chum  
Pollock CPUE=40 tons/hour

24 hours of fishing=  
840 chum  
294 WAK chum  
960 pollock tons

Chum bycatch rate=50 N/hour  
WAK chum proportion= .20 N per chum  
Pollock CPUE=40 tons/hour

24 hours of fishing=  
1,200 chum  
240 WAK chum  
960 pollock tons

# ALTERNATIVE 4 SUMMARY

## IPAs achieve the best management outcome for WAK chum specifically:

- Continuous improvement of WAK chum salmon spatial distribution understanding
- Unpredictability of chum and pollock distributions and inter-annual overlap, largely explained by temperature (cold pool extent)
- Ability to target avoidance of WAK chum vs. Asian origin chum salmon in real time in season
- Adaptable to uncertain future hatchery release and climate change