

INTERNATIONAL PACIFIC



HALIBUT COMMISSION

# 2024 FISS Design Evaluation

Agenda item: 5.2.2

IPHC-2023-RAB024-08

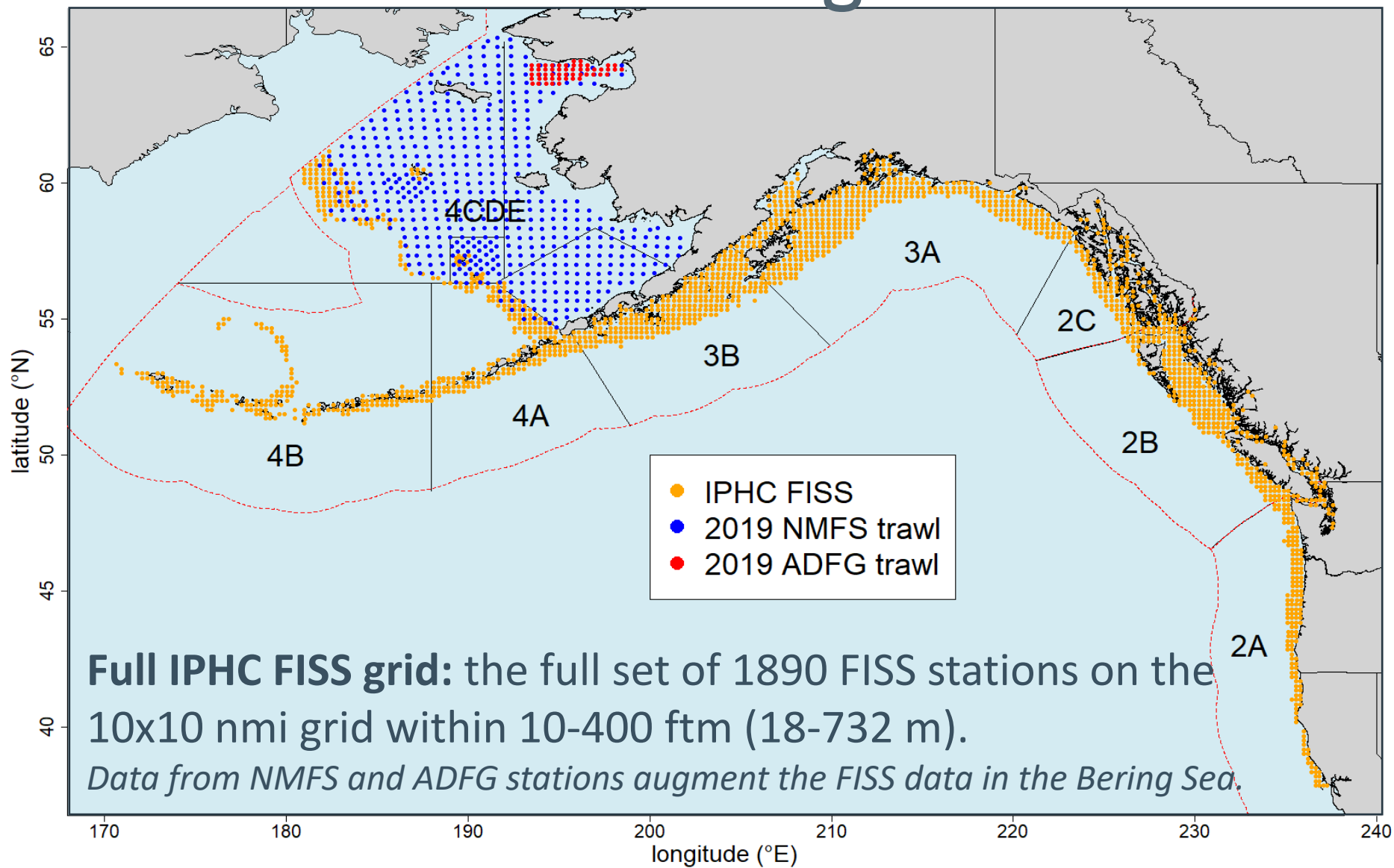
(R. Webster, I. Stewart, K. Ualesi, D. Wilson)



# IPHC FISS

- Our most important source of data on Pacific halibut
- Provides data for estimating weight and numbers per unit effort (WPUE and NPUE) indices of density and abundance of Pacific halibut
  - Used to estimate stock trends
  - Used to estimate stock distribution
  - Important input in the IPHC stock assessment
- Provides biological data for use in the stock assessment
- An annual FISS has been undertaken since 1993
  - Design expanded during 2011-2019 period

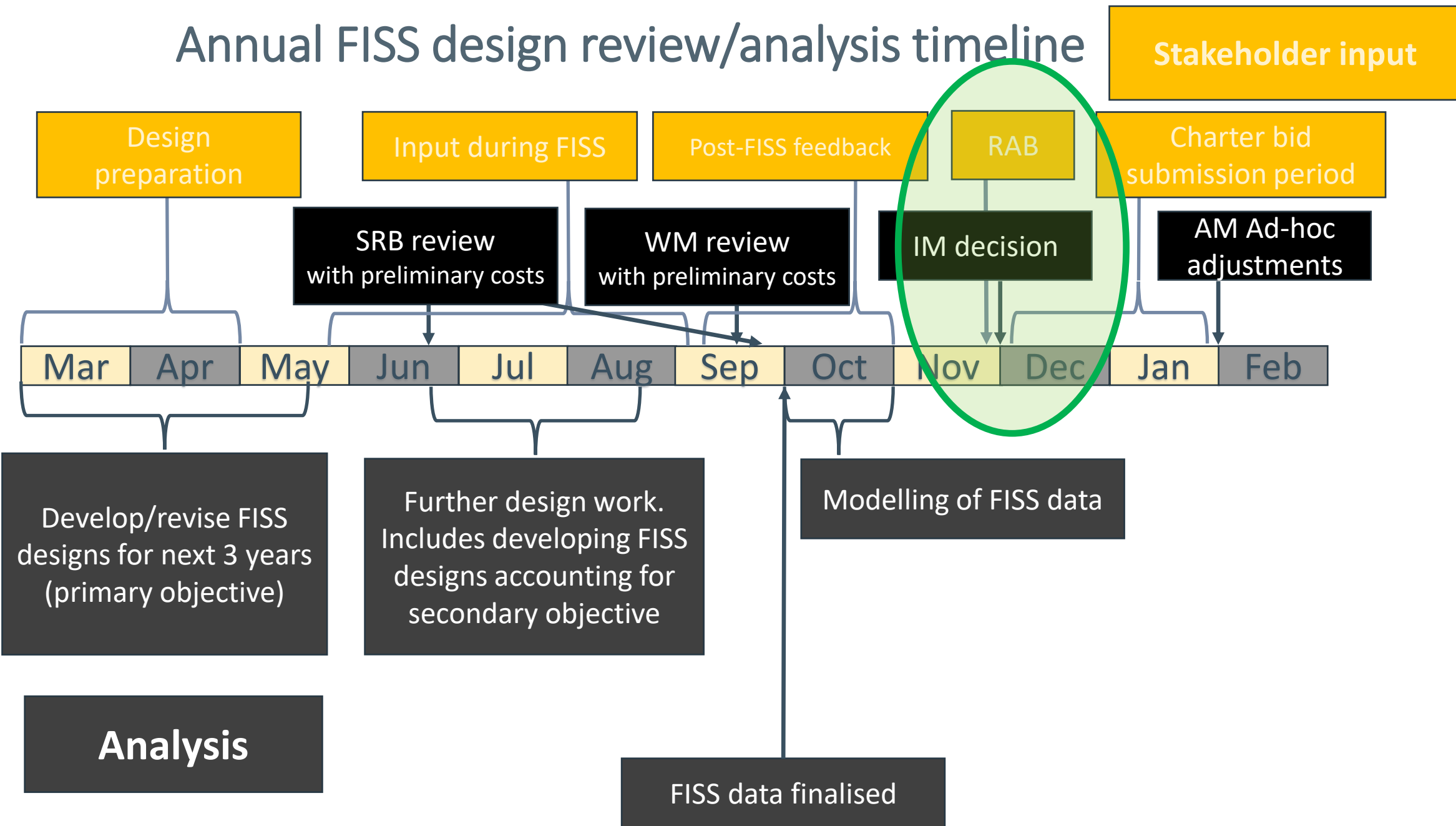
# Full FISS grid



# FISS objectives and design layers

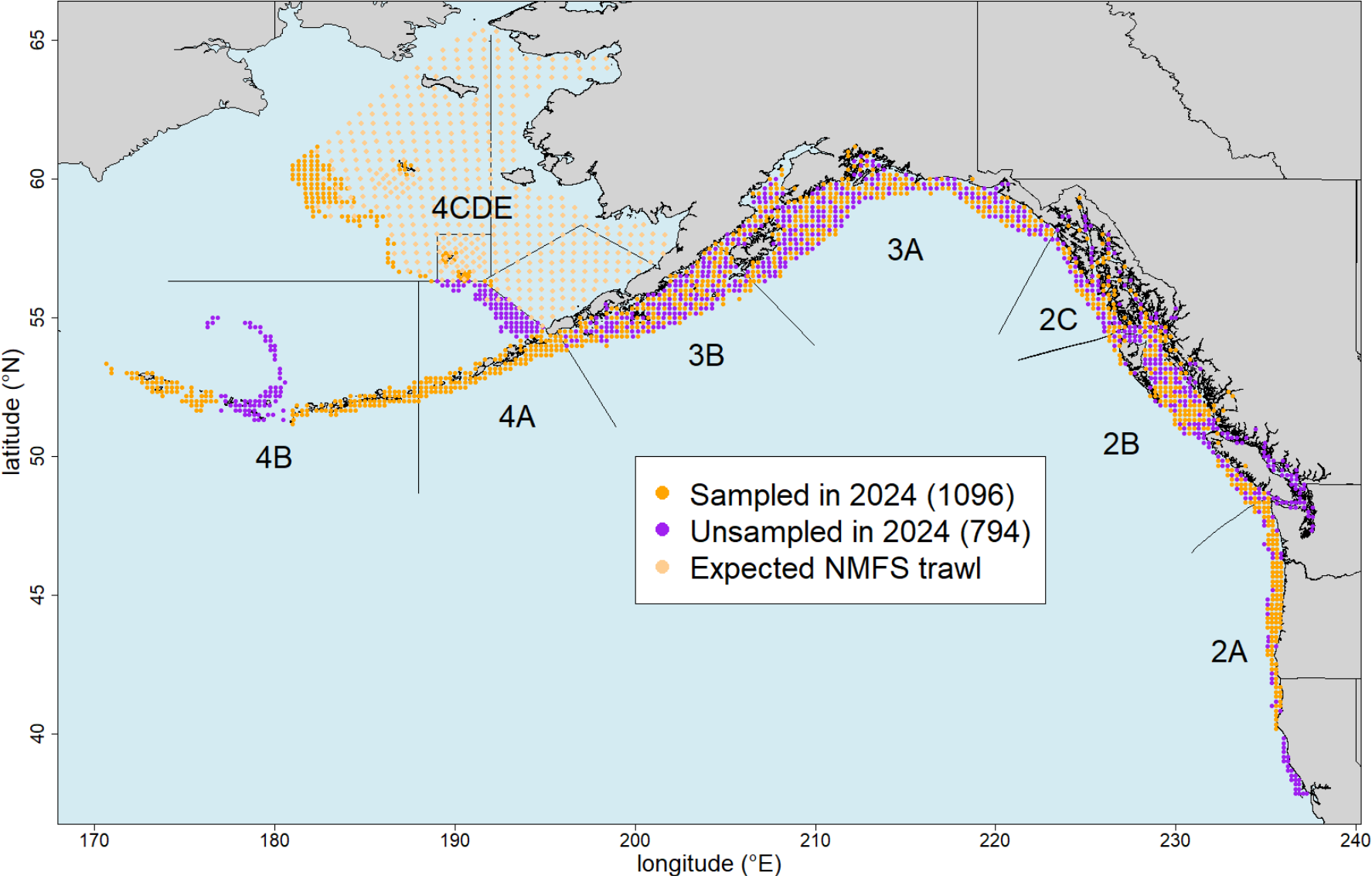
Priority	Objective	Design Layer
Primary	Sample <u>Pacific halibut</u> for stock assessment and stock distribution estimation	Minimum sampling requirements in terms of: <ul style="list-style-type: none"> <li>• Station distribution</li> <li>• Station count</li> <li>• Skates per station</li> </ul>
Secondary	Long term <u>revenue neutrality</u>	Logistics and cost: operational feasibility and cost/revenue neutrality
Tertiary	<u>Minimize removals</u> , and <u>assist others where feasible</u> on a cost-recovery basis.	Removals: minimize impact on the stock while meeting primary priority  Assist: assist others to collect data on a cost-recovery basis  IPHC policies: ad-hoc decisions of the Commission regarding the FISS design

# Annual FISS design review/analysis timeline

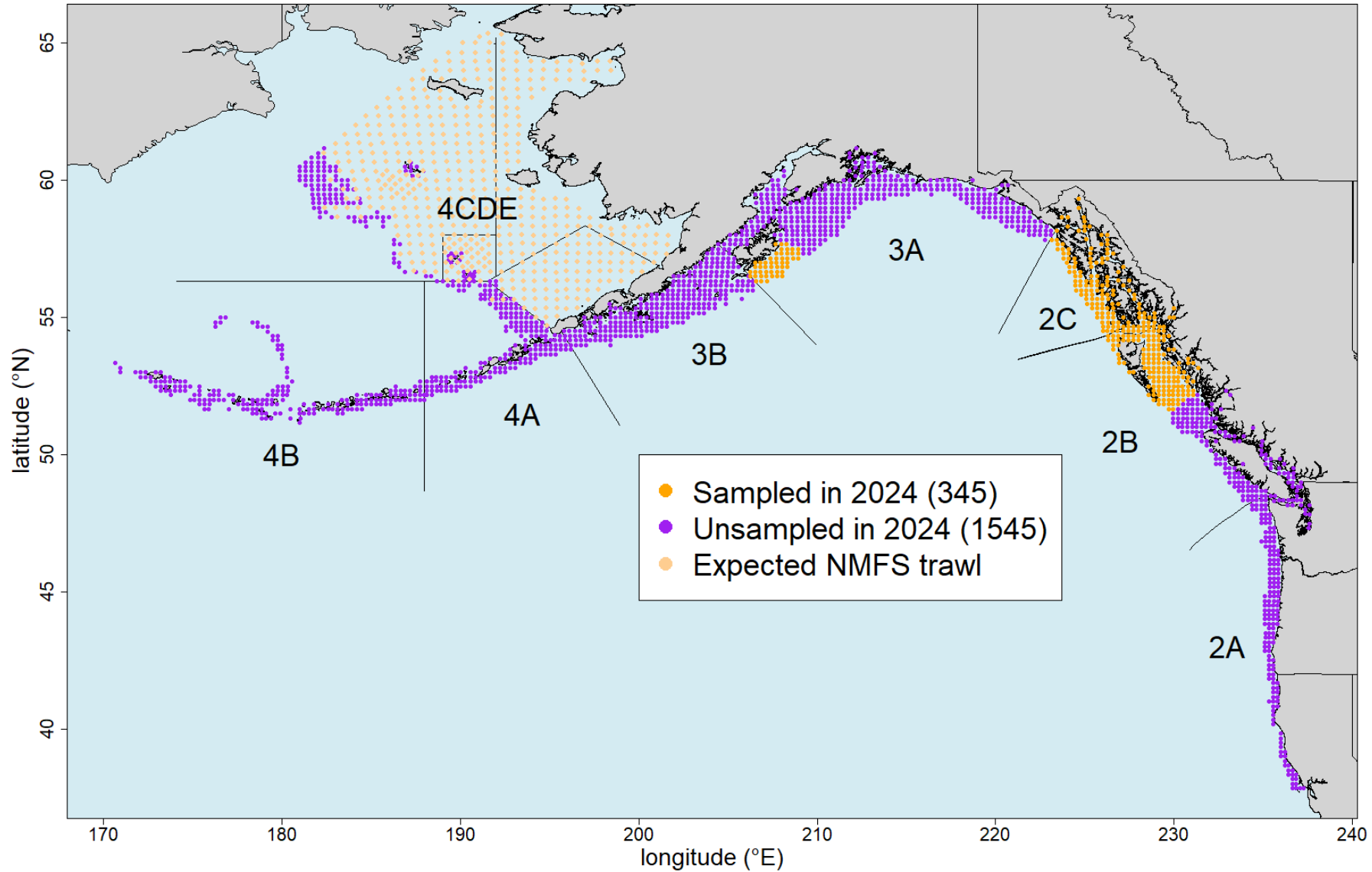




# Design 1: Presented to SRB in June (primary objective)



# Design 2: Revenue positive (with added efficiencies)



# Design 2: added efficiencies

Several aspects of the standard FISS procedures were removed to achieve a revenue-positive design:

- No oceanographic monitoring will take place;
- NOAA Fisheries trawl surveys will not be staffed by IPHC;
- All FISS training will be conducted virtually;
- Reduce field staff on each vessel from two to one in two charter regions; only basic biological information (length, weight and sex) would be collected.



# Design 2: added efficiencies

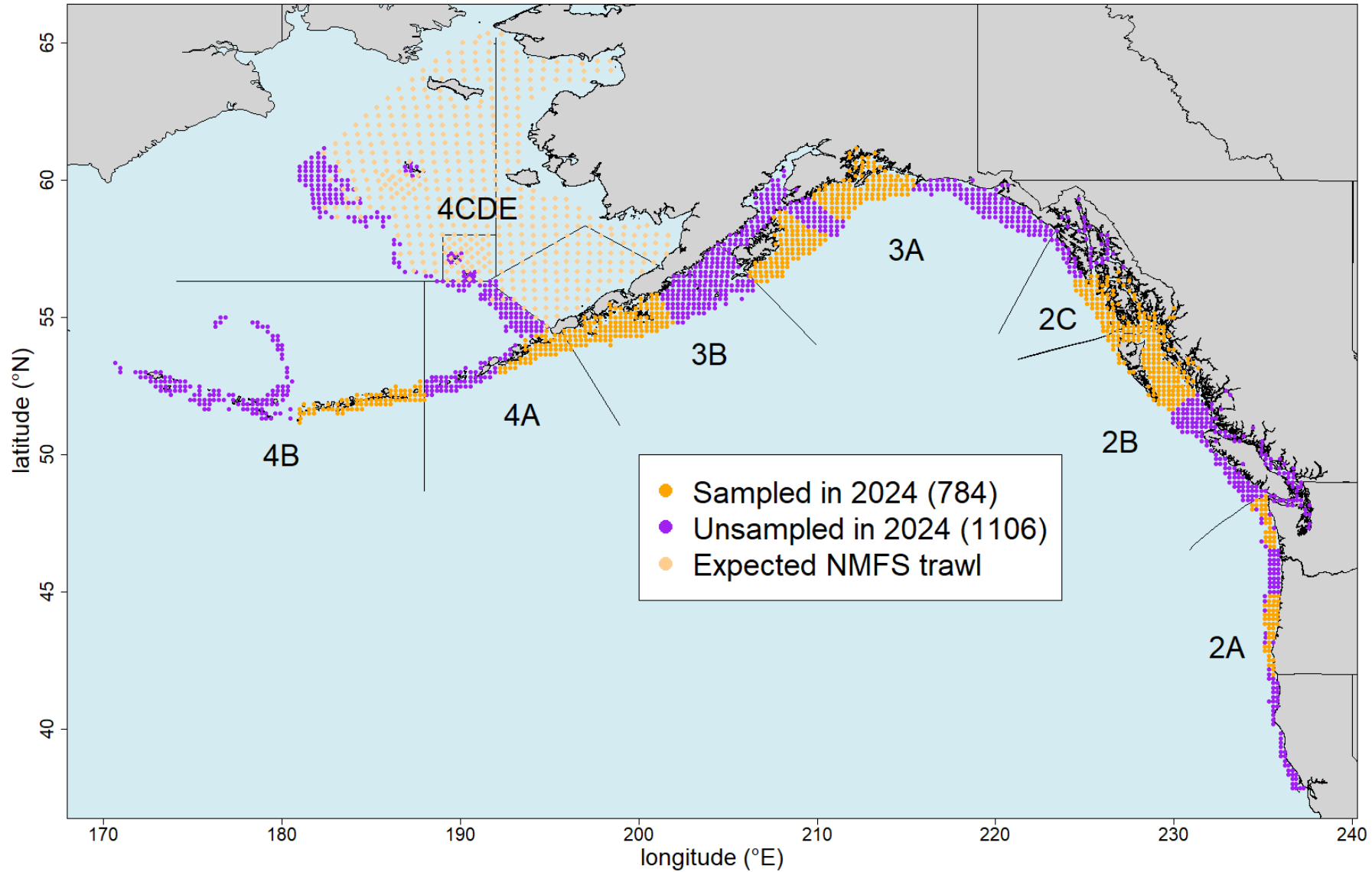
Additional changes were required to the standard FISS design in sampled areas:

- Allow for “vessel captain stations”, in which vessel captains can choose to fish up to one third of their sets at a location that is optimal in terms of catch rates or revenue. It is assumed that these stations will achieve 120% of the average catch rate of the usual fixed-station design stations
- Use pink salmon baits on 50% of sets

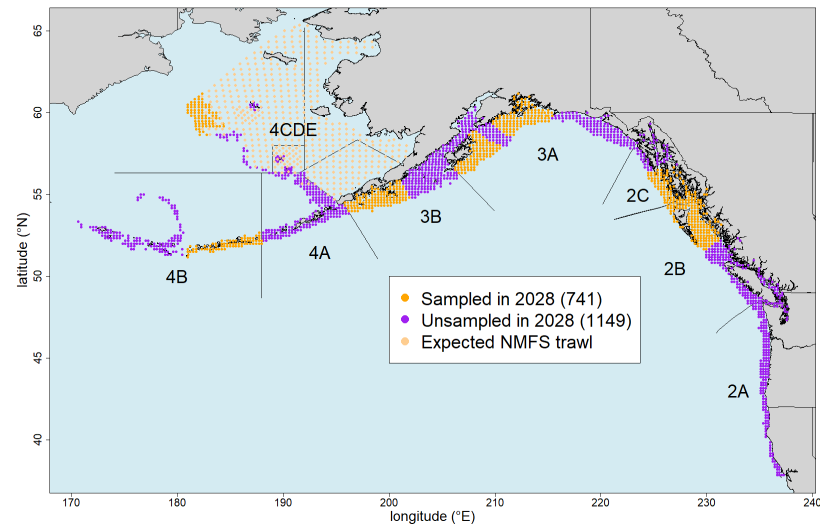
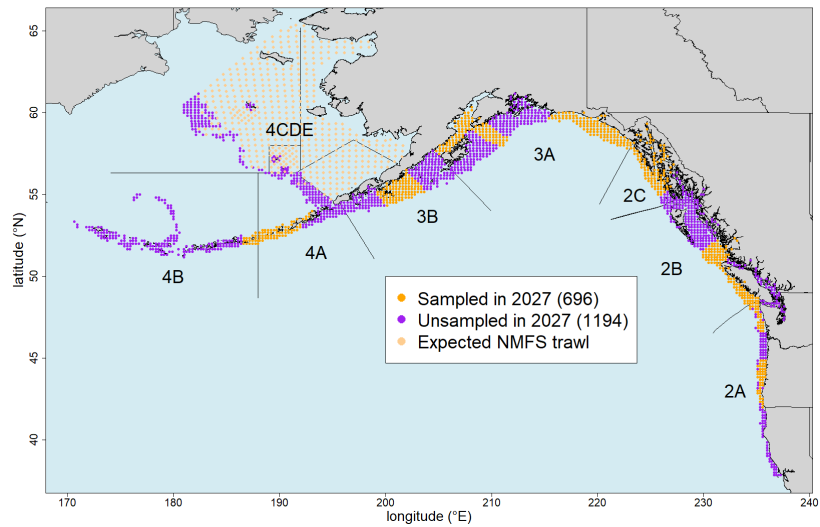
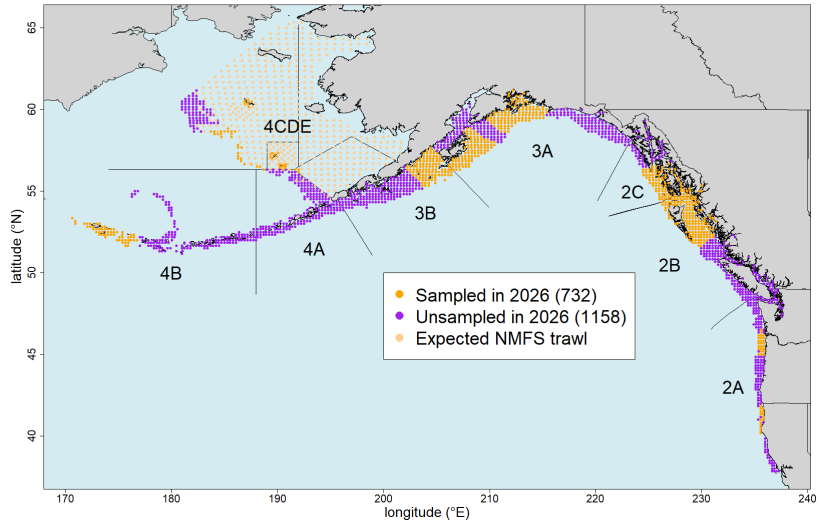
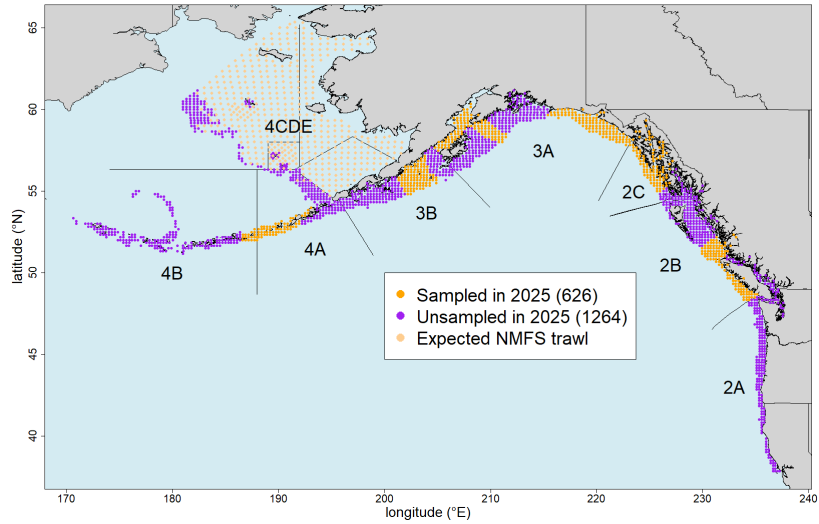
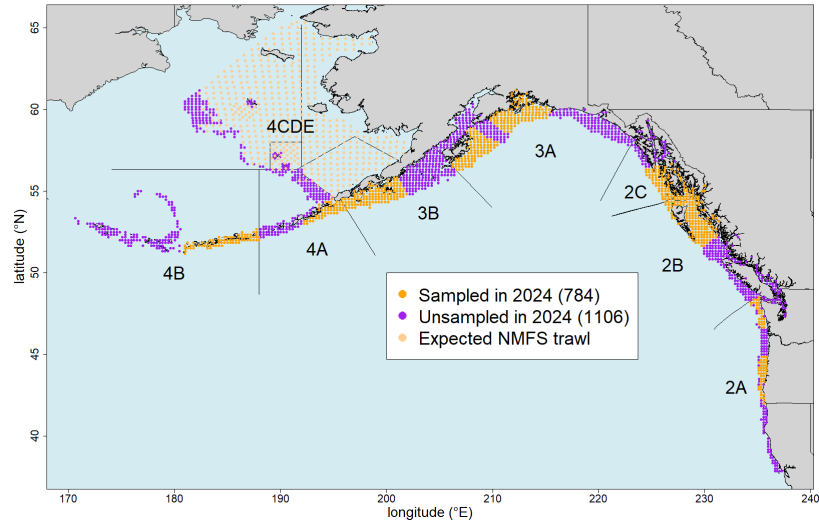
# Potential add-on options

Option	Design	IPHC Regulatory Areas sampled (charter regions)	Additional net cost
1	Revenue neutral with efficiencies	2B (2), 2C (3), 3A (1)	--
2	Add additional 3A to Option 1	2B (2), 2C (3), 3A (2)	(\$47,000)
3	Add 3B to Option 1	2B (2), 2C (3), 3A (1), <b>3B (1)</b>	(\$62,000)
4	Add 4A/4B to Option 1	2B (2), 2C (3), 3A (1), <b>4A+4B (1)</b>	(\$245,000)
5	Add 2A to Option 1	2B (2), 2C (3), 3A (1), <b>2A (1)</b>	(\$134,000)
6	Add additional 2B to Option 1	2B ( <b>3</b> ), 2C (3), 3A (1)	(\$68,000)
7	Add oceanographic monitoring to Option 1	2B (2), 2C (3), 3A (1)	(\$55,000)
8	Add trawl survey staffing to Option 1	2B (2), 2C (3), 3A (1)	(\$120,000)

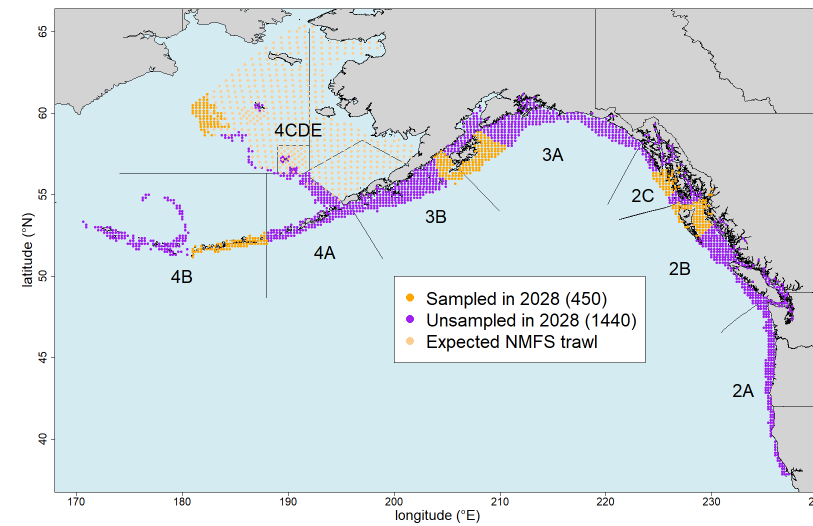
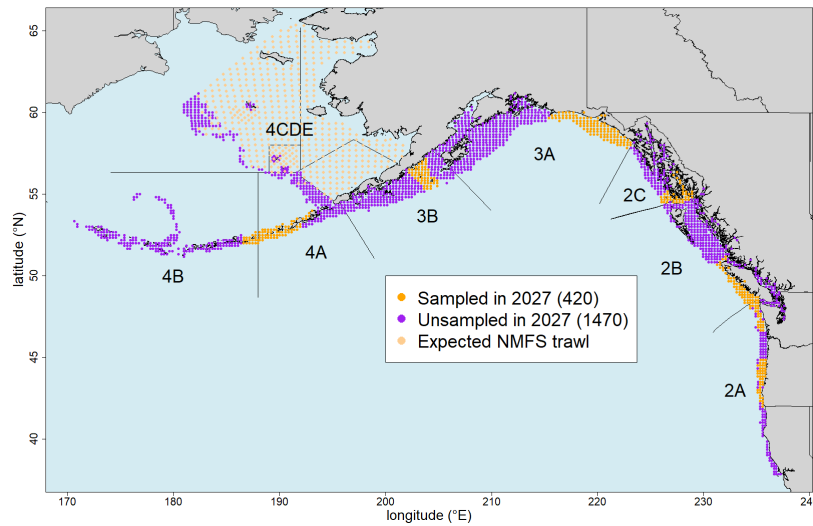
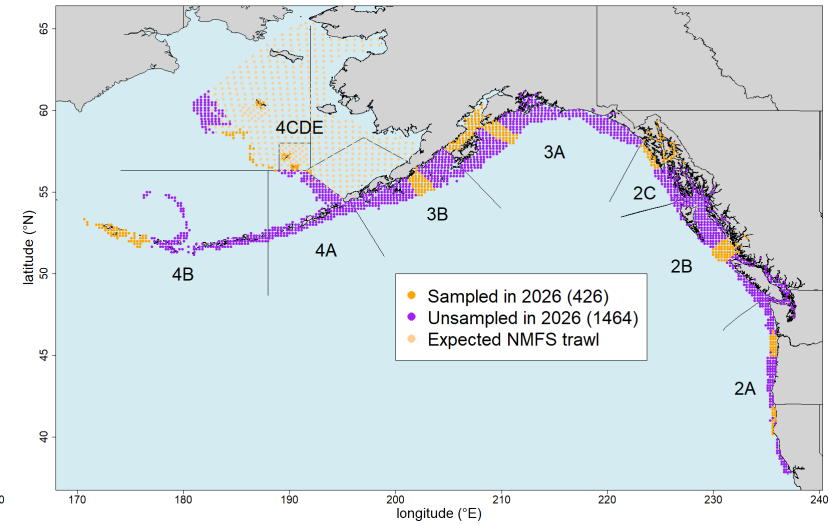
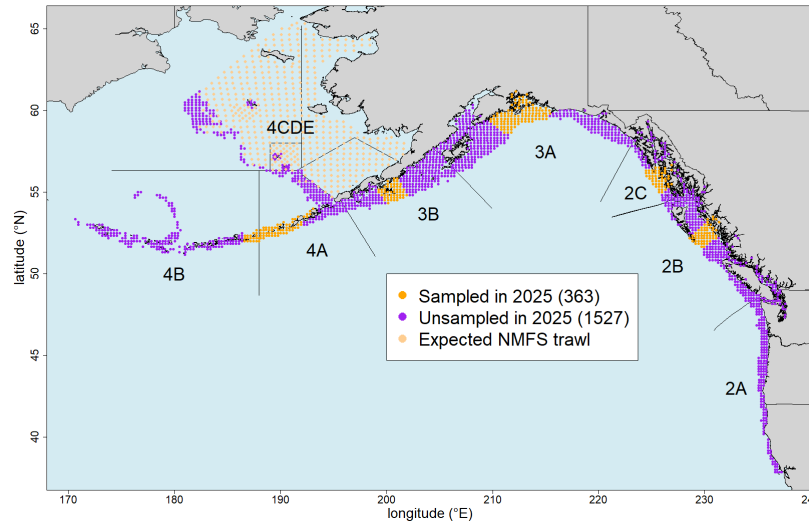
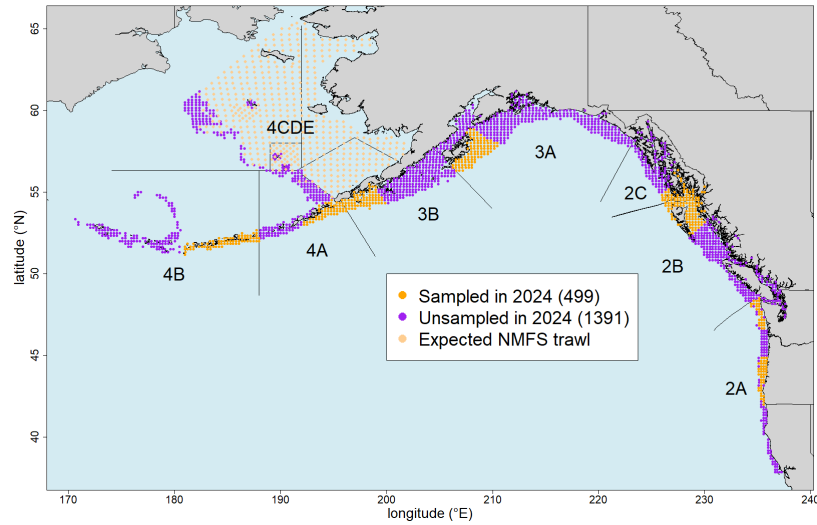
# Block designs: base block design 2024



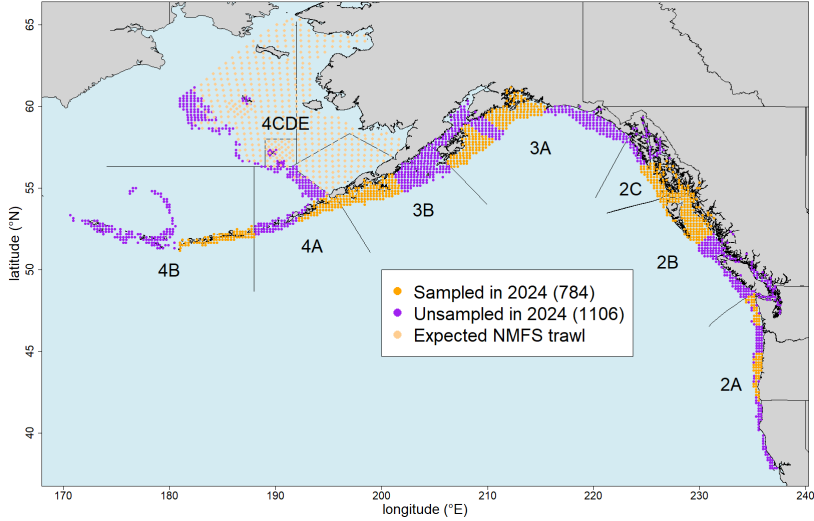
# Base block designs 2024-28



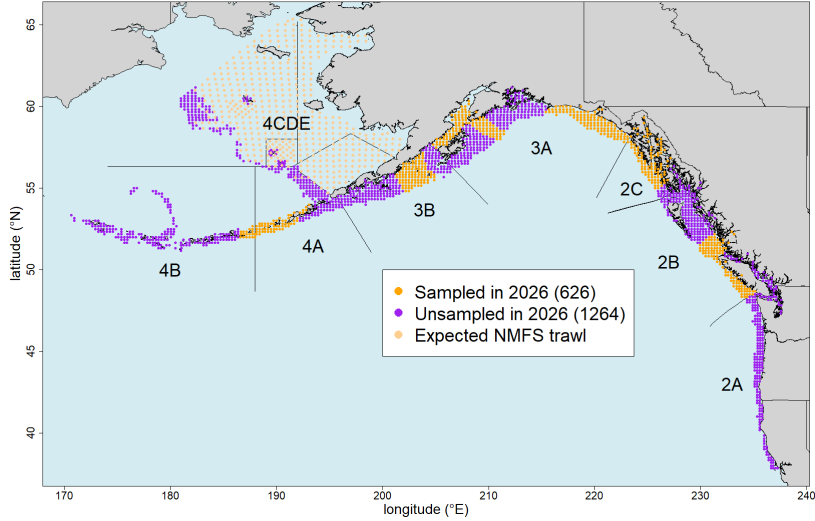
# Reduced block designs 2024-28



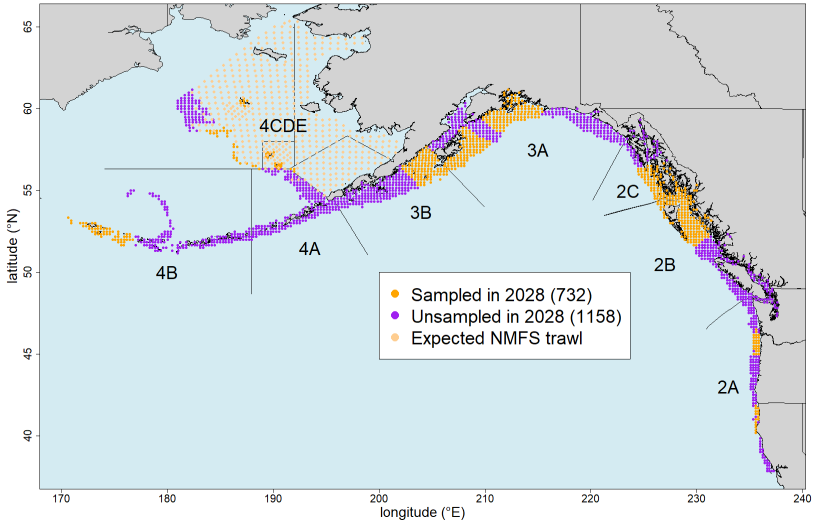
# Alternating year designs 2024-28



2025: No FISS sampling



2027: No FISS sampling





# Comments on block designs

- The base block designs provides high spatial coverage over a two to three-year period, resulting in high precision and low bias for estimates obtained from the data (e.g. stock trends & distribution).
- Reduced block designs have poorer annual coverage and therefore greater bias risk and reduced precision.
- Poorer precision and greater bias risk are expected in unsampled years of the alternating year designs.
- In both reduced block and alternating year designs, reduced spatial coverage of the FISS makes it more difficult for the assessment to detect a major change in year class abundance, either up or down.

# RECOMMENDATION

That the Research Advisory Board:

**NOTE** paper IPHC-2023-RAB024-08 that presents potential FISS designs for 2024-26.

Looking for comments on FISS design options:

- Logistically, are block designs preferable to randomized designs?
- Do any of the added efficiencies for 2024 raise concerns? E.g. pink salmon bait, vessel captain stations, use of single FISS team member on some trips.

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