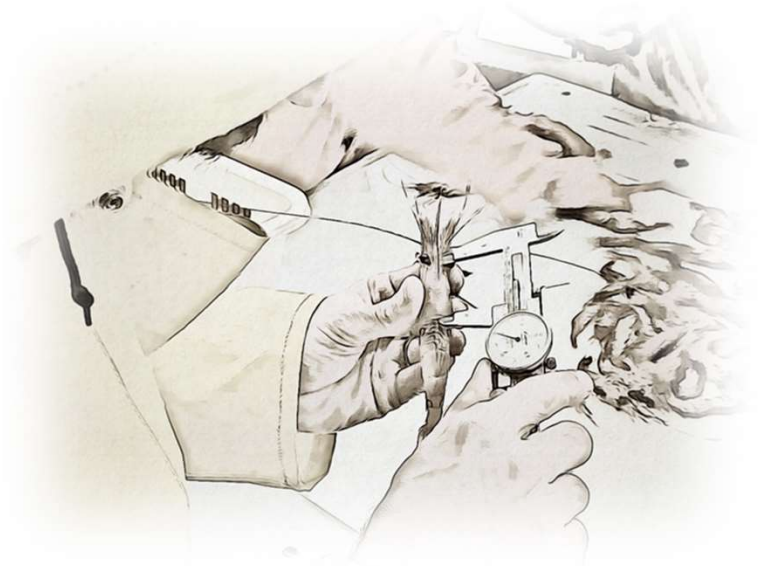


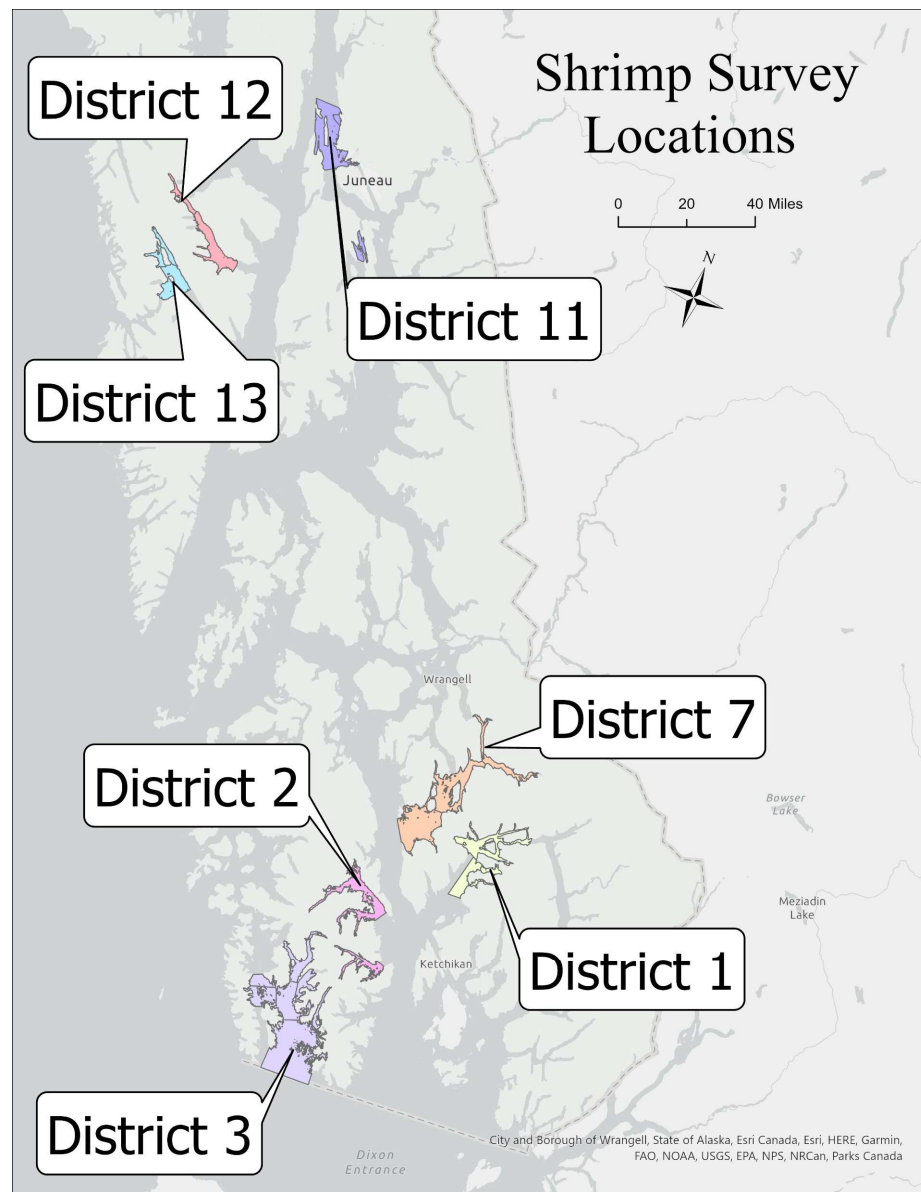
# Southeast Shrimp Surveys

1. Survey Overview
2. Data and Calculations
3. 2022 Survey Summary
4. 2023 Plans



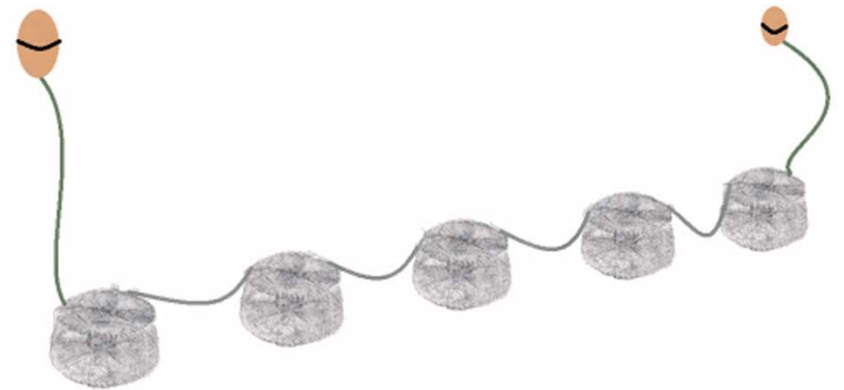
# Shrimp Survey Overview

- Survey Locations:
  - D1: Back Behm & West Behm
  - D2: Kasaan & Chomondelay
  - D3: Hetta & Nutkwa, Cordova
  - D7: Bradfield & Ernest Sound
  - D11: Alternating Seymour & Juneau
  - D12: West Tenakee
  - D13: Hoonah Sound



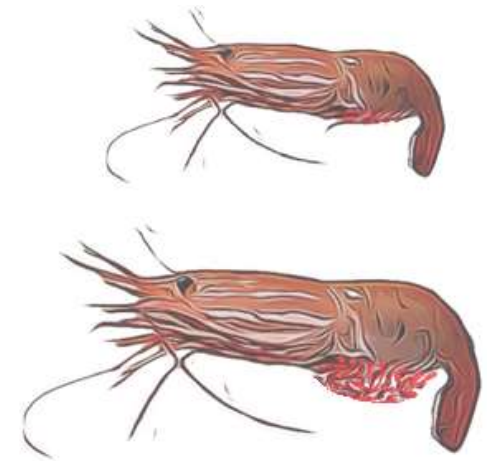
# Shrimp Survey Overview

- Set 9 strings of 5 pots per day
- 16-22 hour soak
- Reduced mesh size
- Bycatch
- Measure
- Record



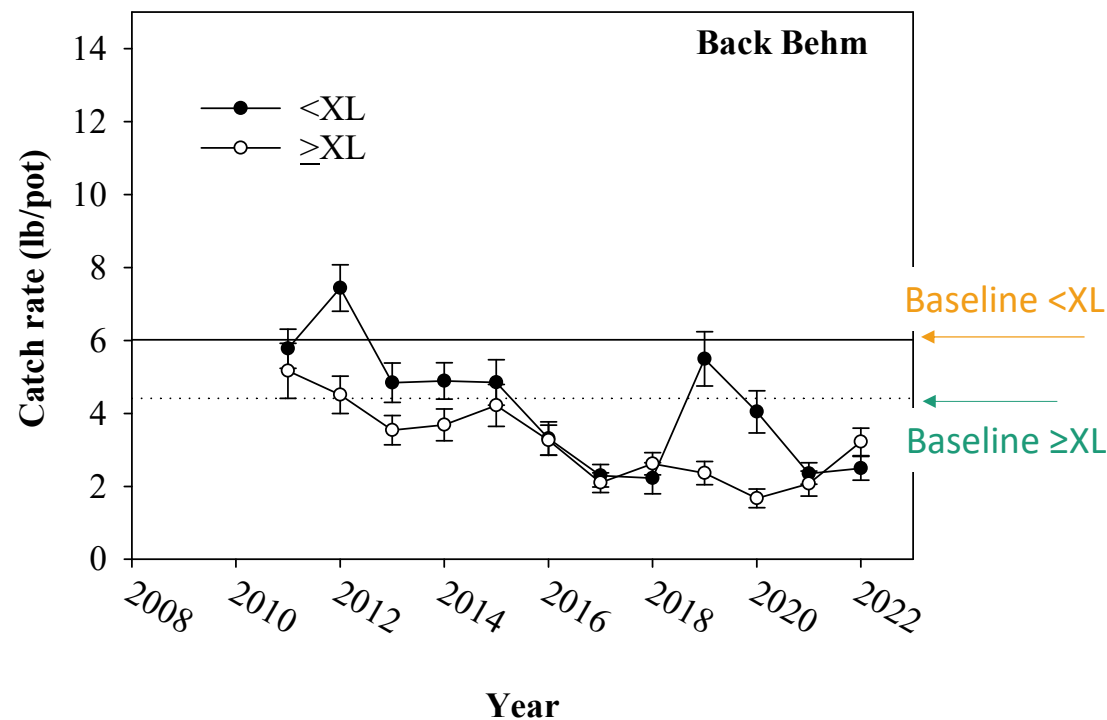
# Shrimp Survey Overview

- Mean Carapace Length (CL)
- Use CL to determine Catch Rate (CR) by class
  - Individual weight
  - Average pounds per pot
- Size at Sex = L50
  - Larger size females  $\approx$  Higher Fecundity



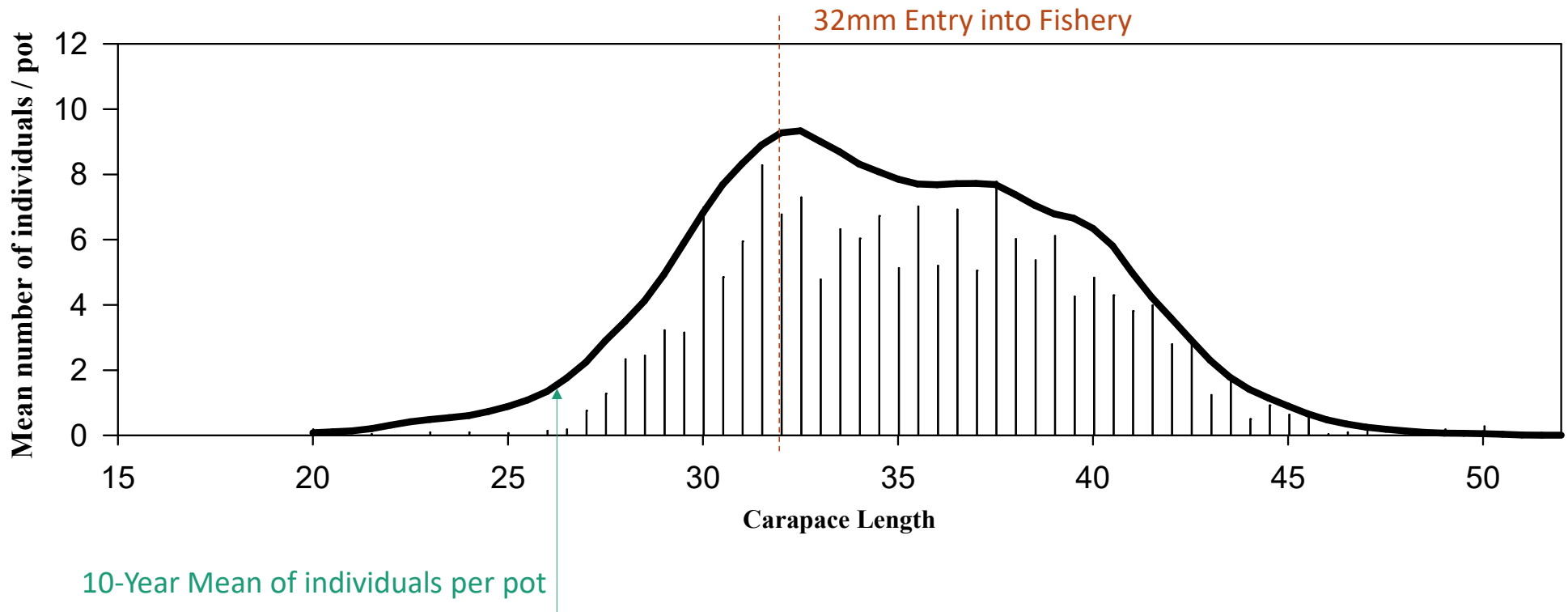
# Catch Rates(CR)

- Split into size classes
  - <XL (19.5g - 40g)
  - $\geq$ XL (greater than 40.5g)
  - Shown through Survey Years
- Baseline for <XL and  $\geq$ XL
- Tested against baseline & 4-year trends



# Carapace Length Frequency Histograms

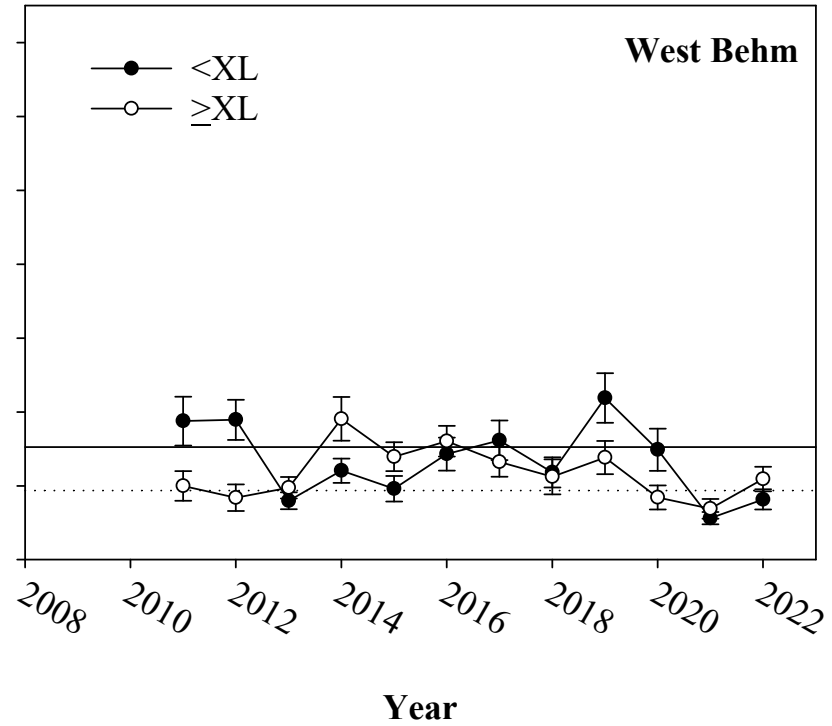
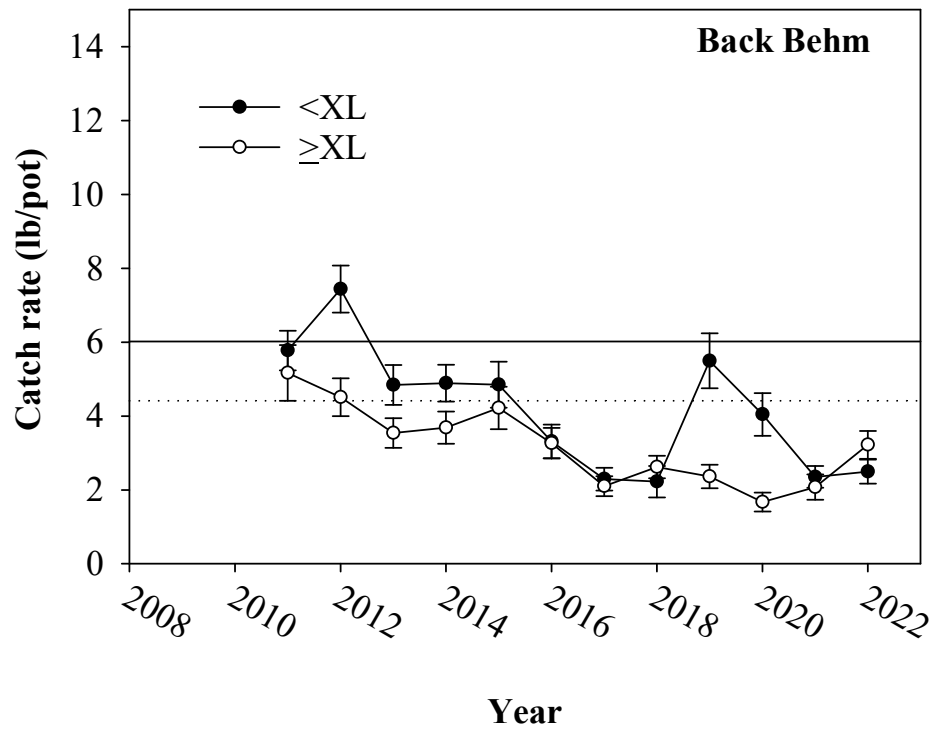
- Giving the best look at population structure



# Ketchikan

## District 1: Behm Canal

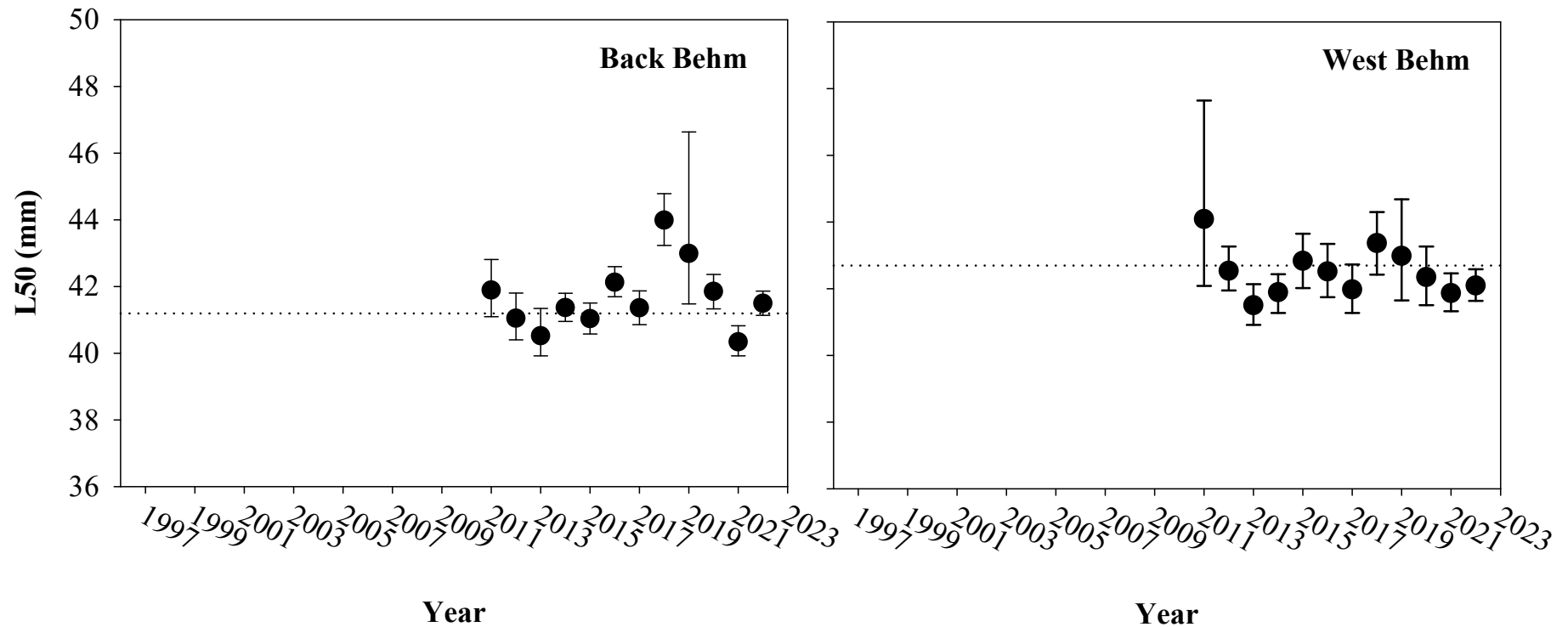
- Back Behm Catch Rates **below** baseline



# Ketchikan

## District 1: Behm Canal

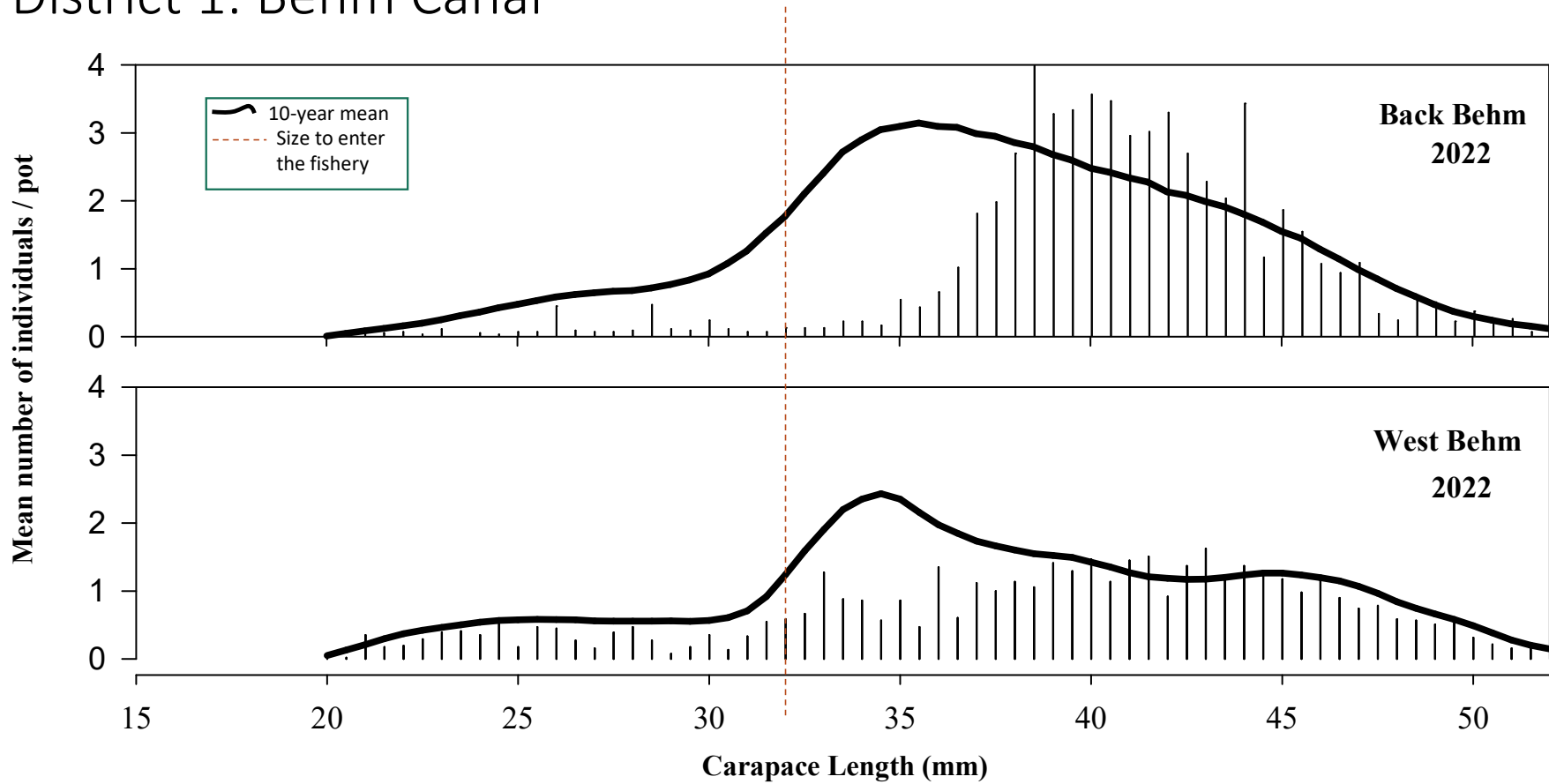
- West Behm L50 **below** baseline





# Ketchikan

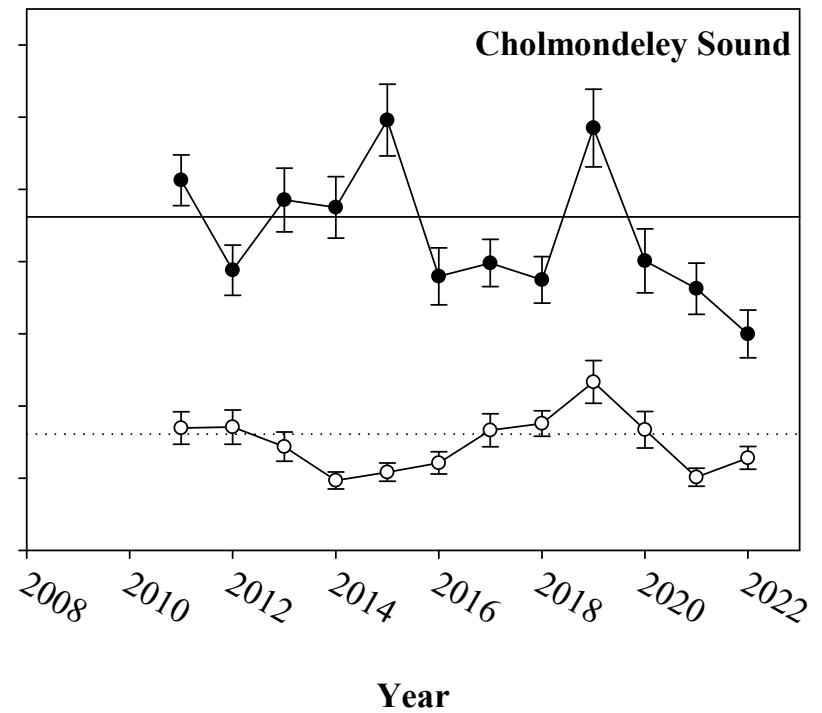
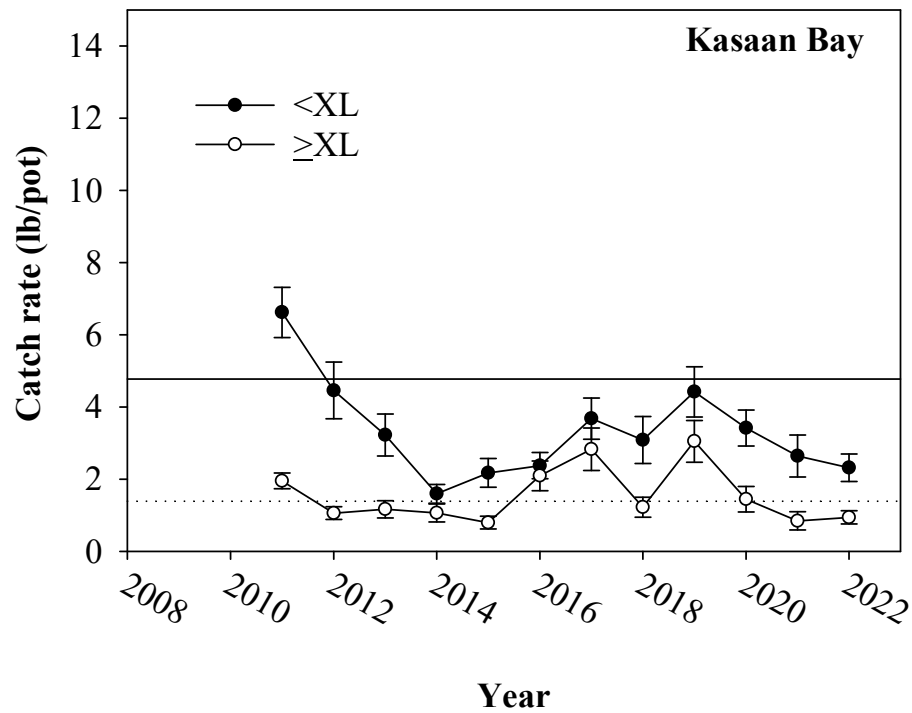
## District 1: Behm Canal



# Ketchikan

## District 2: Cholmondeley Sound & Kasaan Bay

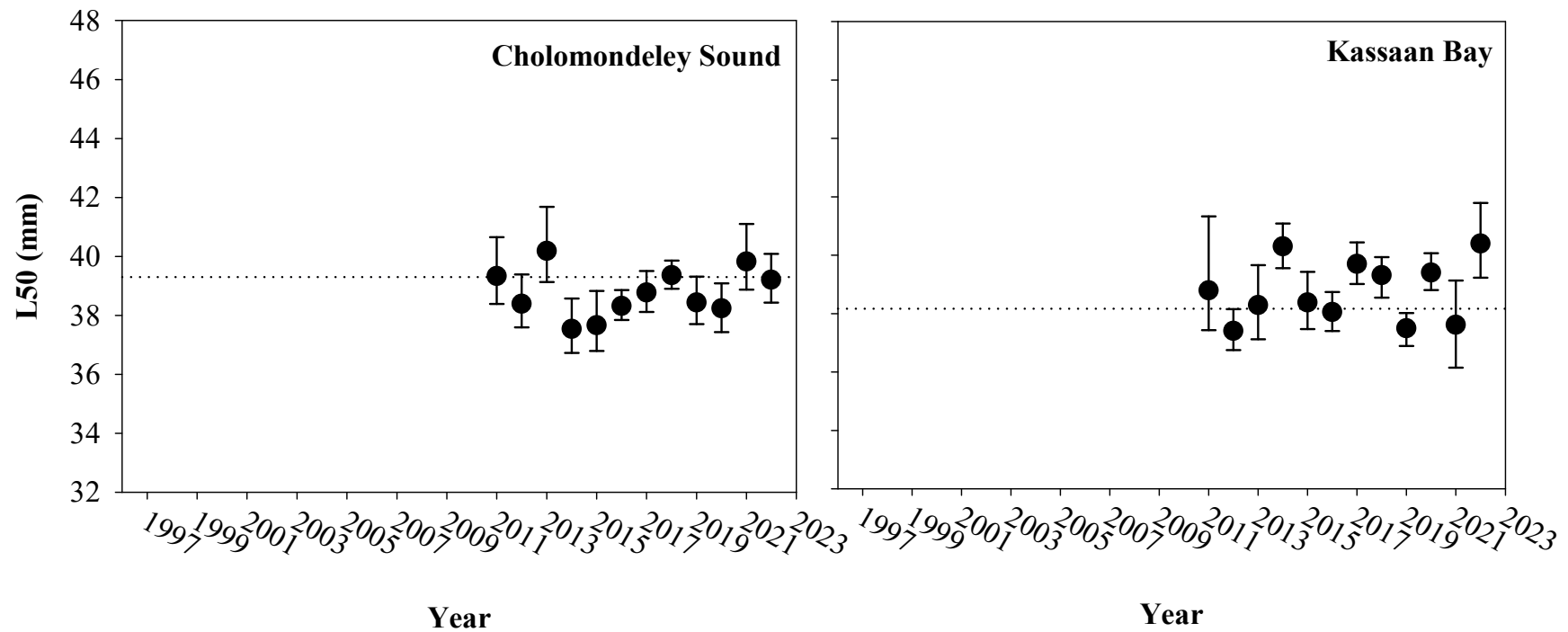
- Catch rates **below** baseline
  - 4-year trend **declining**



# Ketchikan

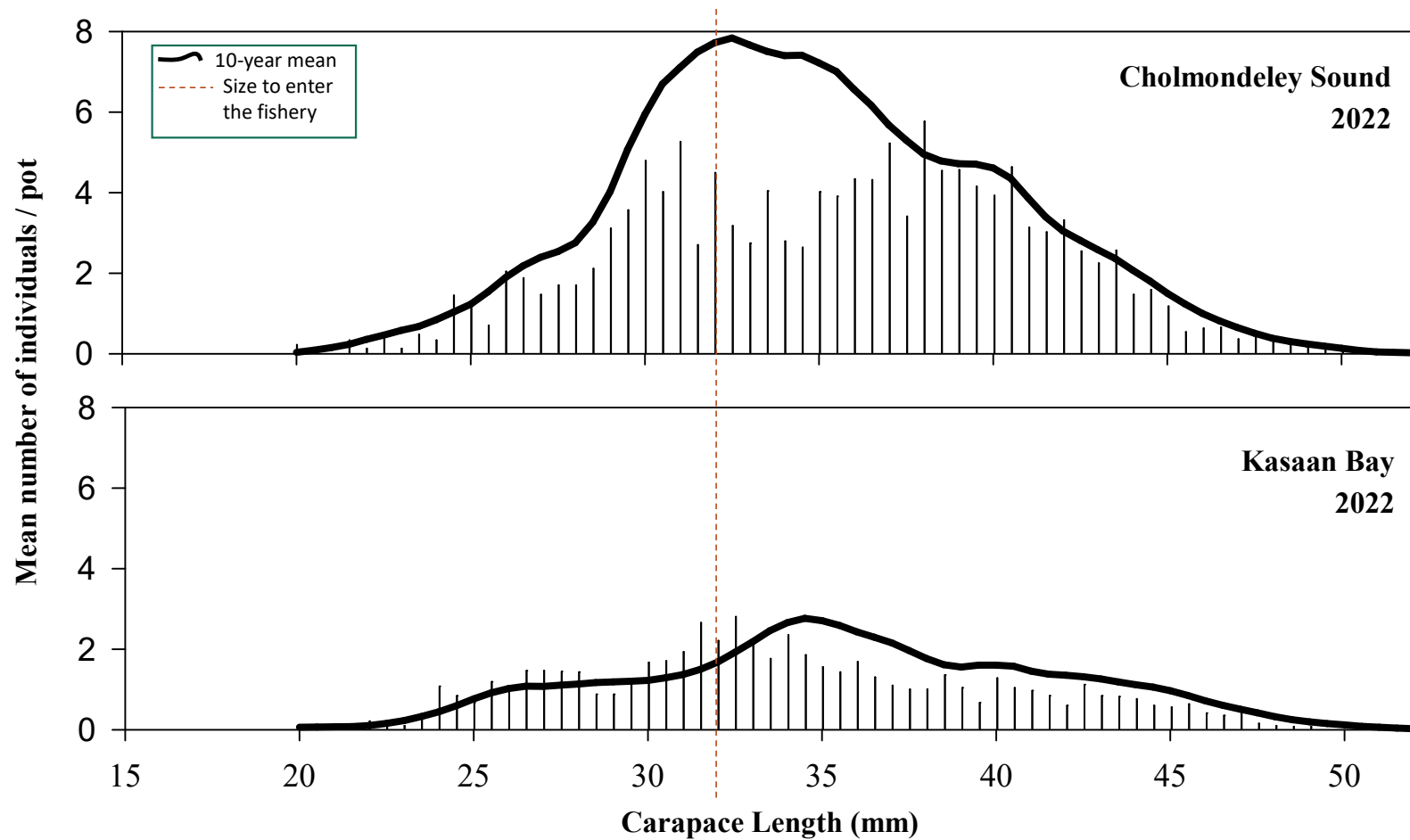
District 2: Cholmondeley and Kasaan

- L50 above baseline in Kasaan



# Ketchikan

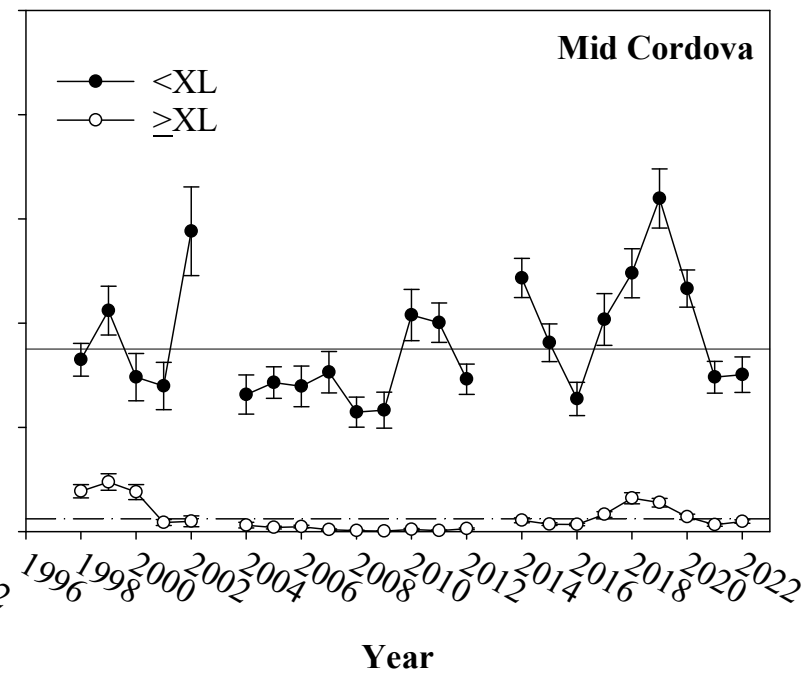
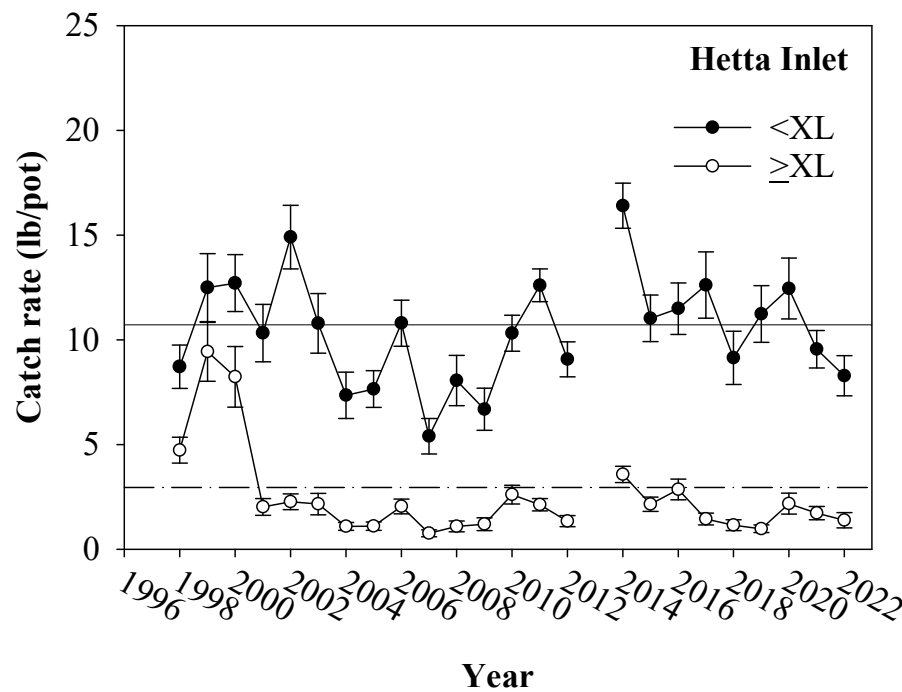
District 2: Cholmondeley and Kasaan



# Ketchikan

District 3: Hetta Inlet &  
Mid Cordova Bay

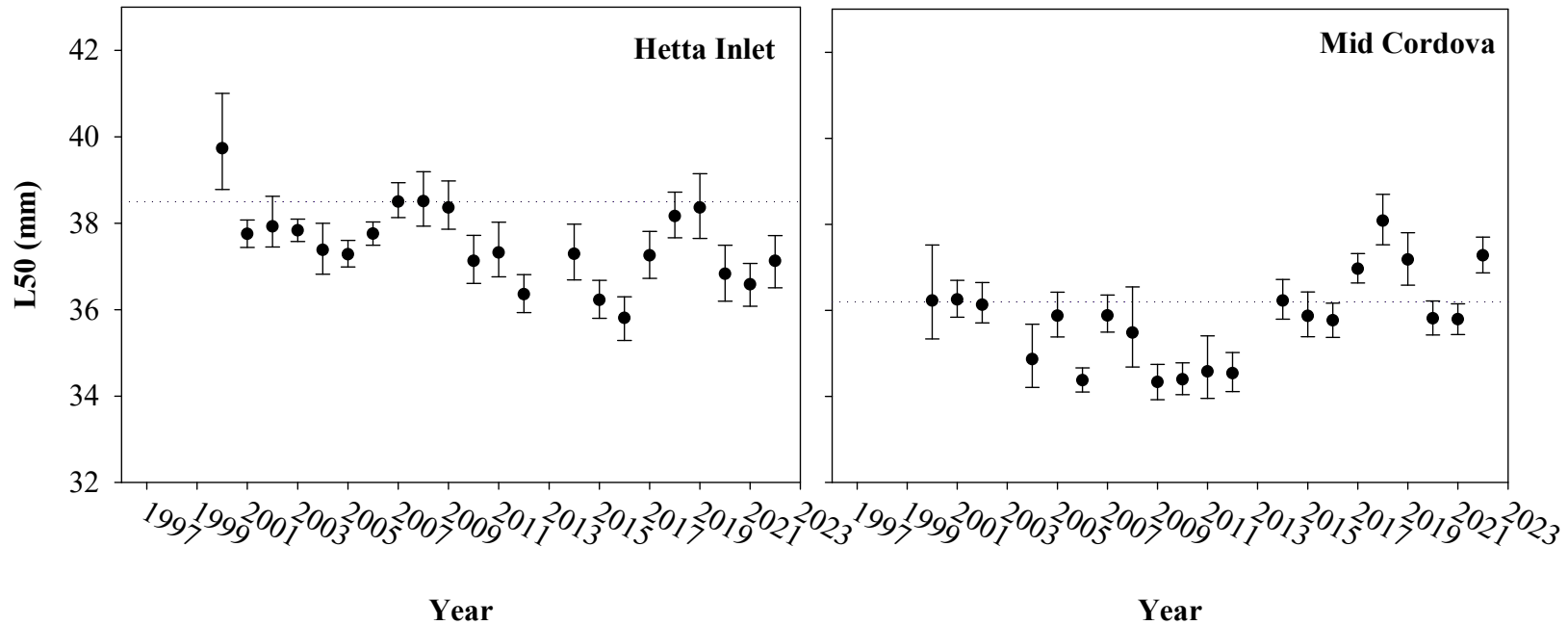
- **Below** baseline in Catch Rates in both areas
  - 4-year trend **decline** Mid Cordova



# Ketchikan

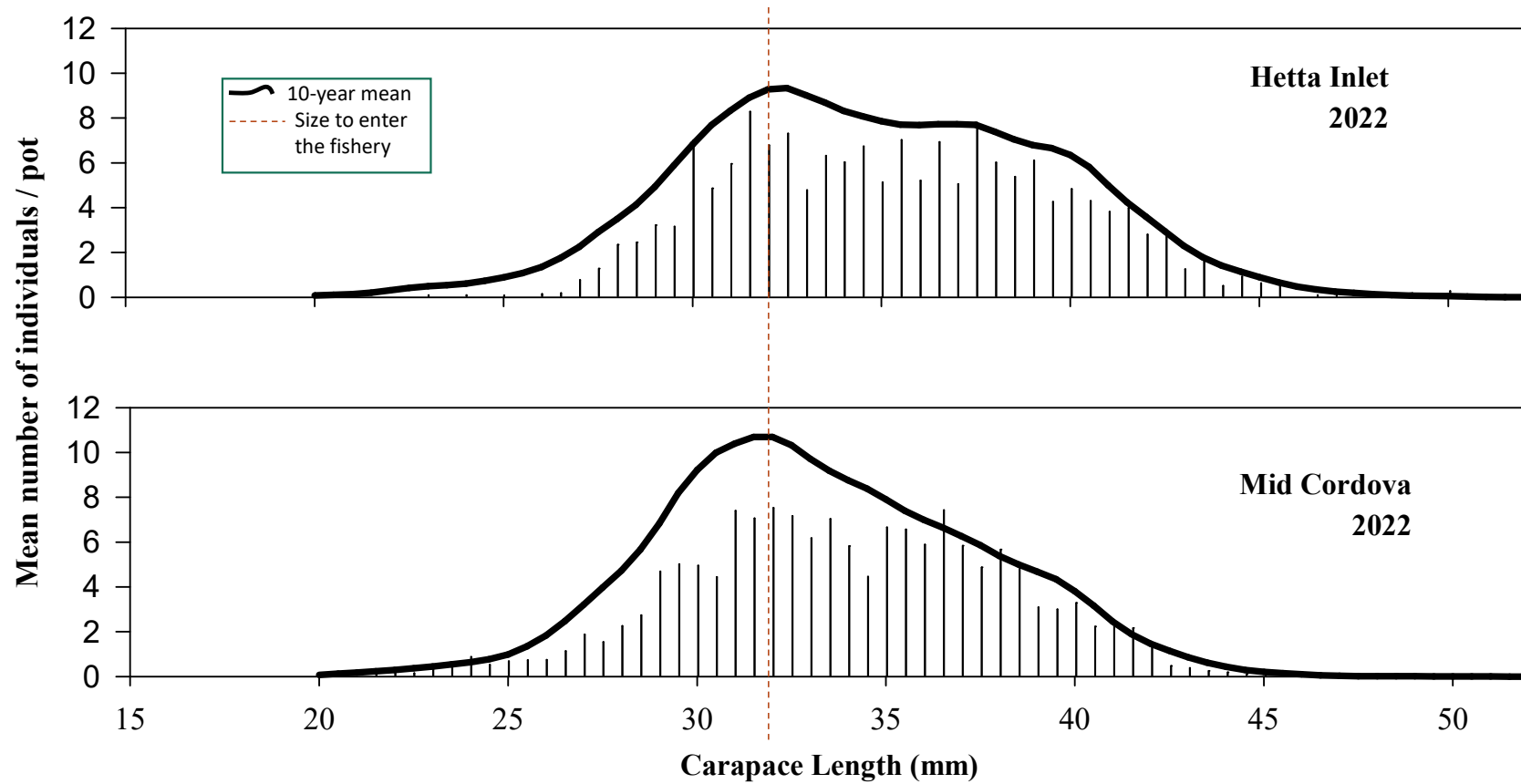
## District 3: Hetta & Mid Cordova

- L50 **below** baseline Hetta Inlet
- L50 **above** baseline Mid Cordova



# Ketchikan

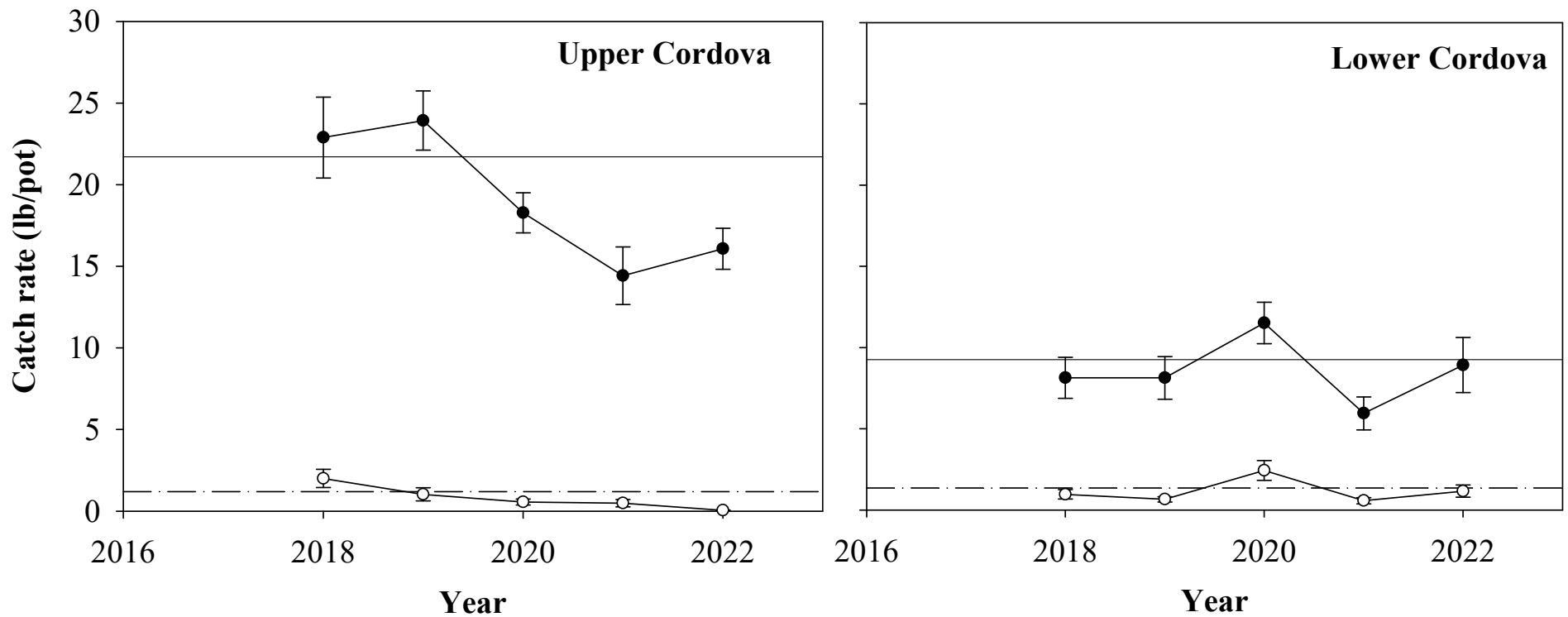
## District 3: Hetta & Mid Cordova



# Ketchikan

District 3: Lower & Upper  
Cordova Bay

- Below baseline CR Upper Cordova
  - Declining 4-year trend
- L50 at baseline
- Only 5 years of data

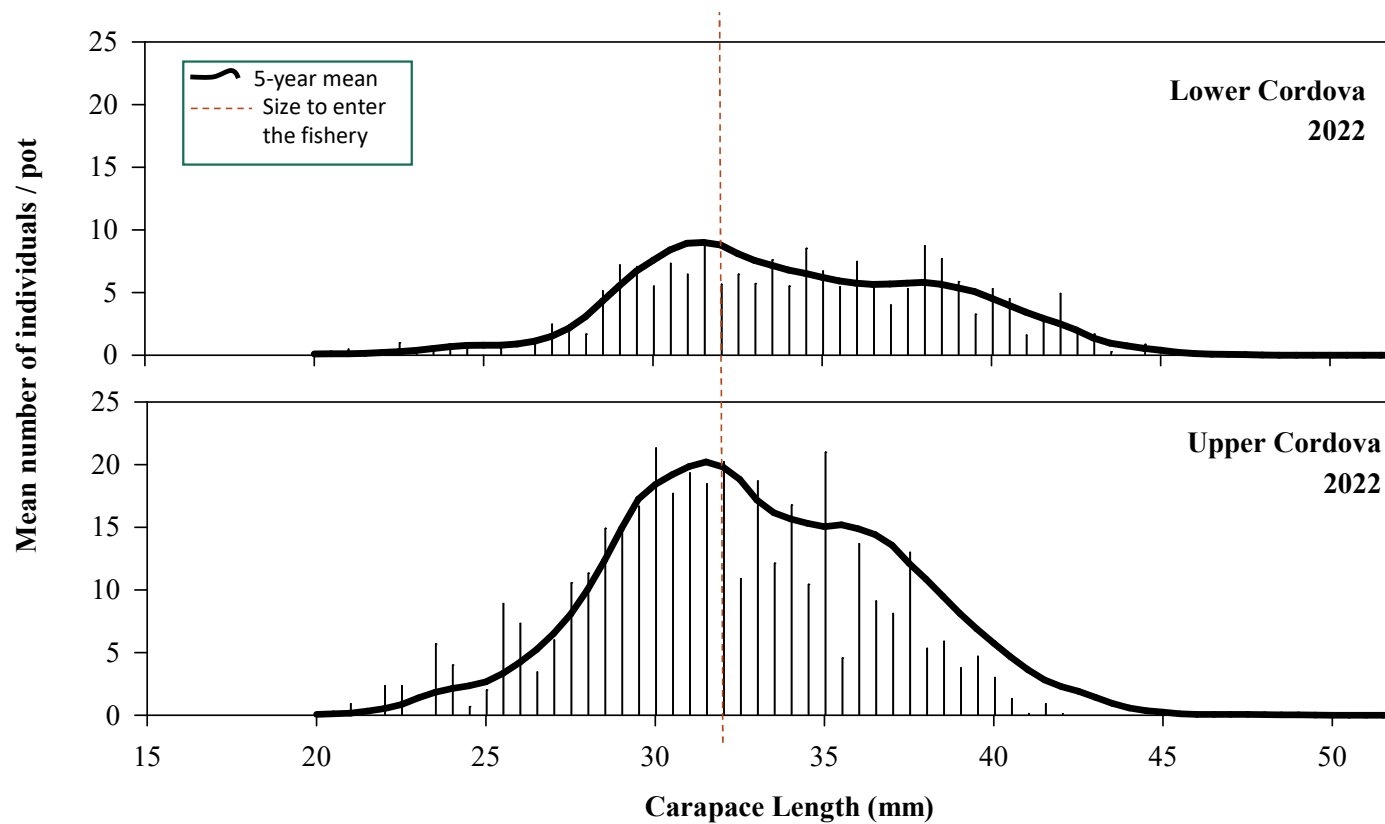




# Ketchikan

## District 3: Lower & Upper Cordova

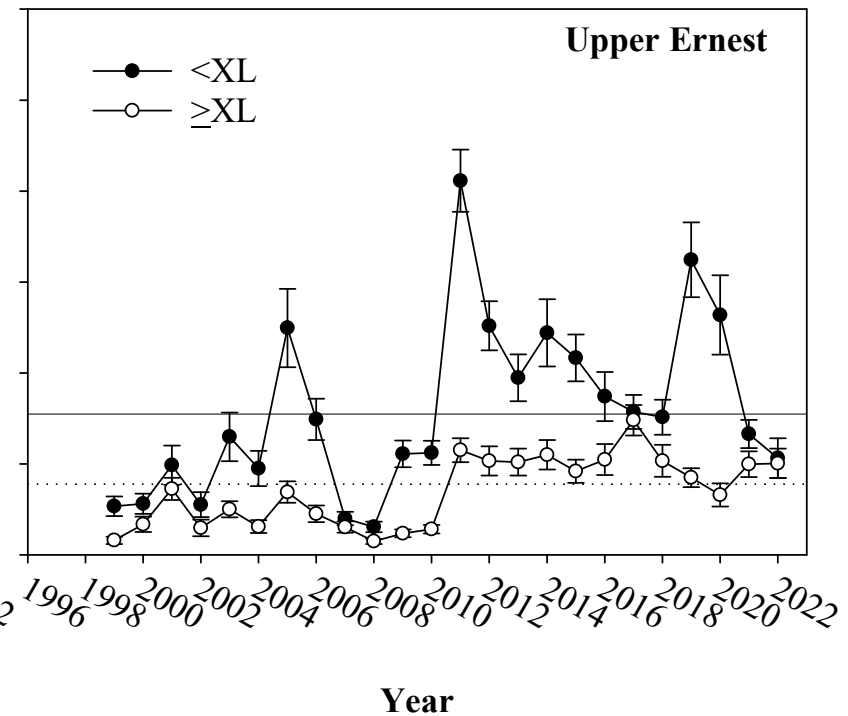
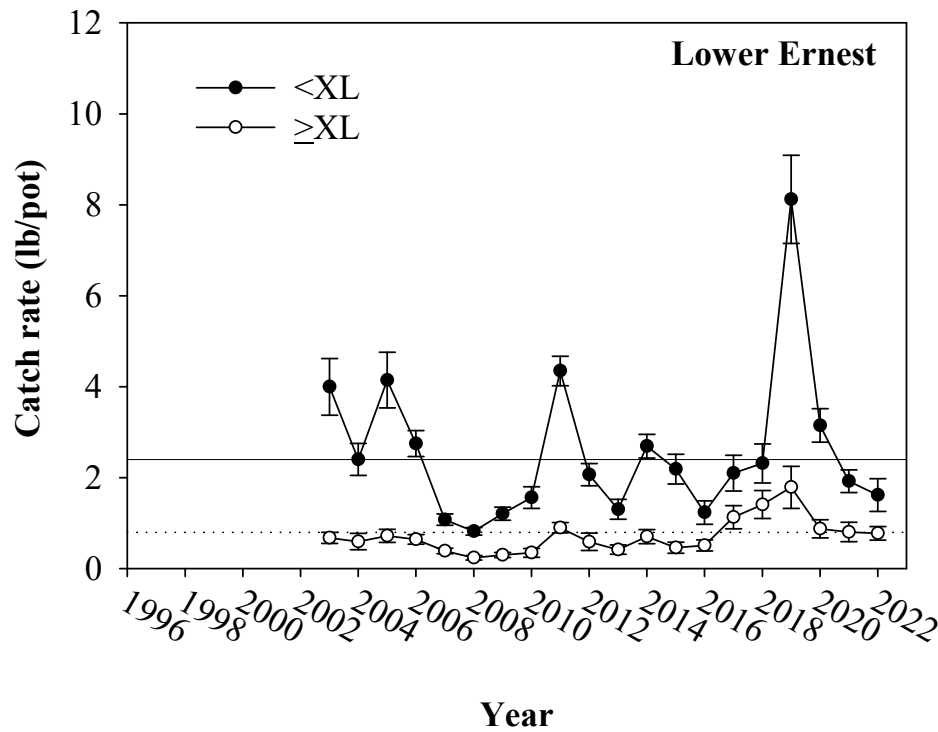
These are Mean lines from the last **5 years** of data **not** 10 years



# Petersburg

District 7: Ernest Sound

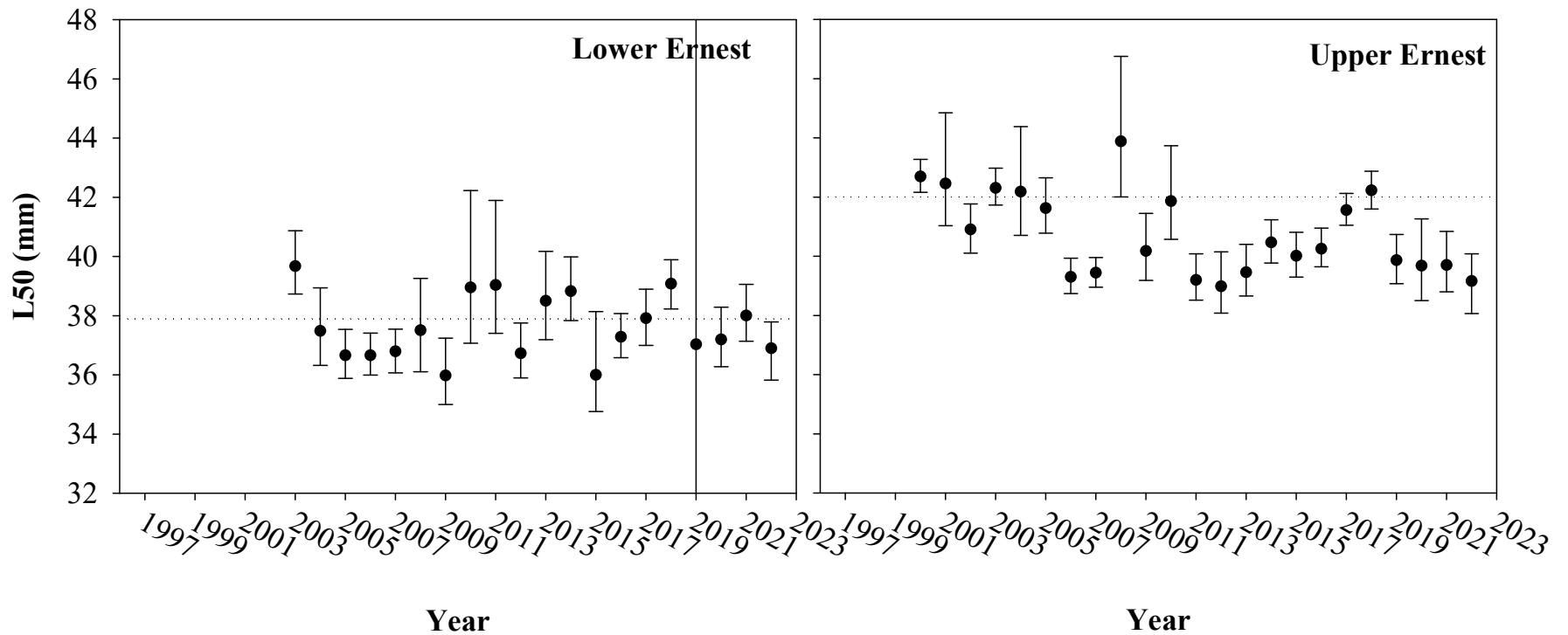
- Catch Rates **at** baseline
  - LES decreasing 4-year trend



# Petersburg

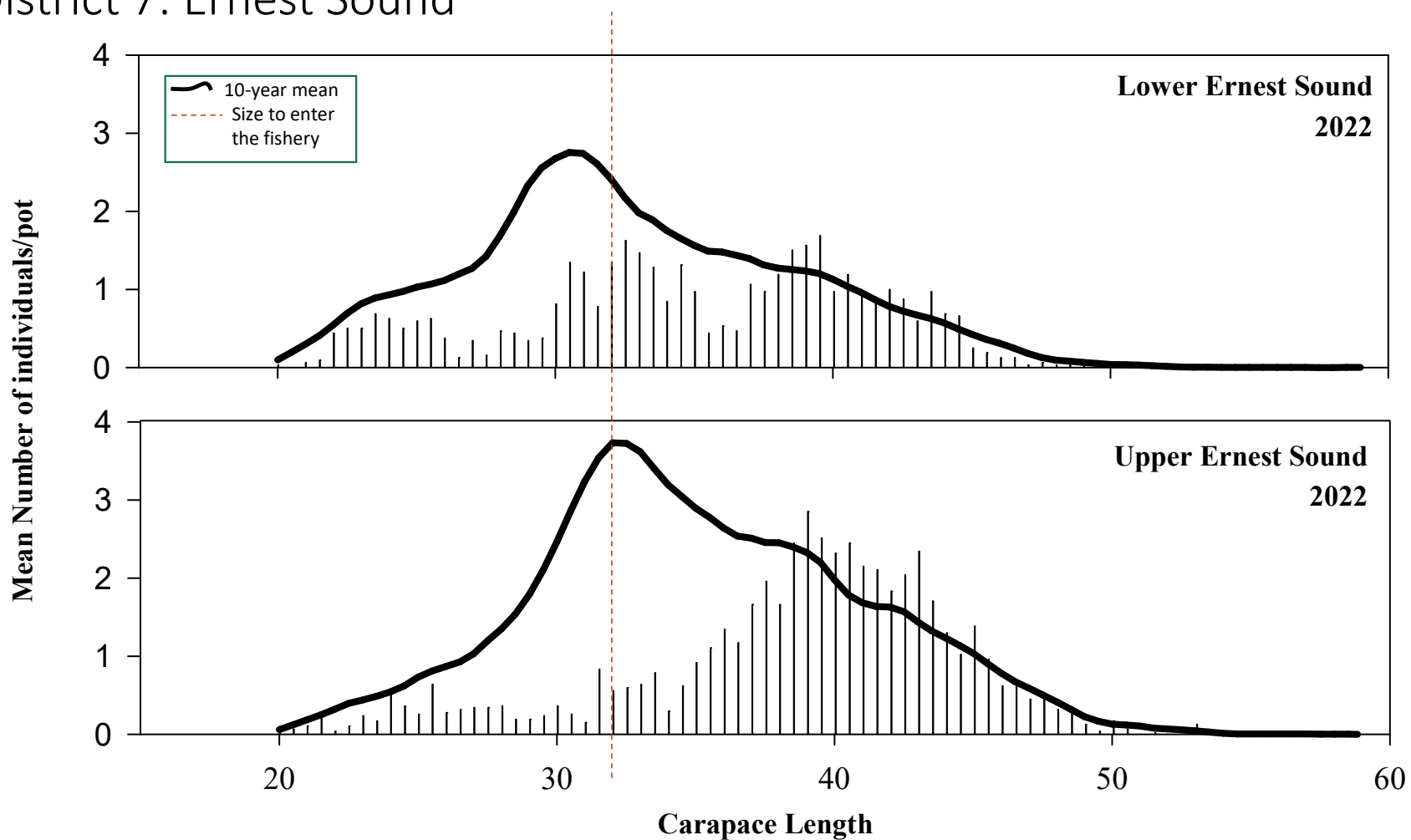
District 7: Ernest Sound

- L50 **below** baseline



# Petersburg

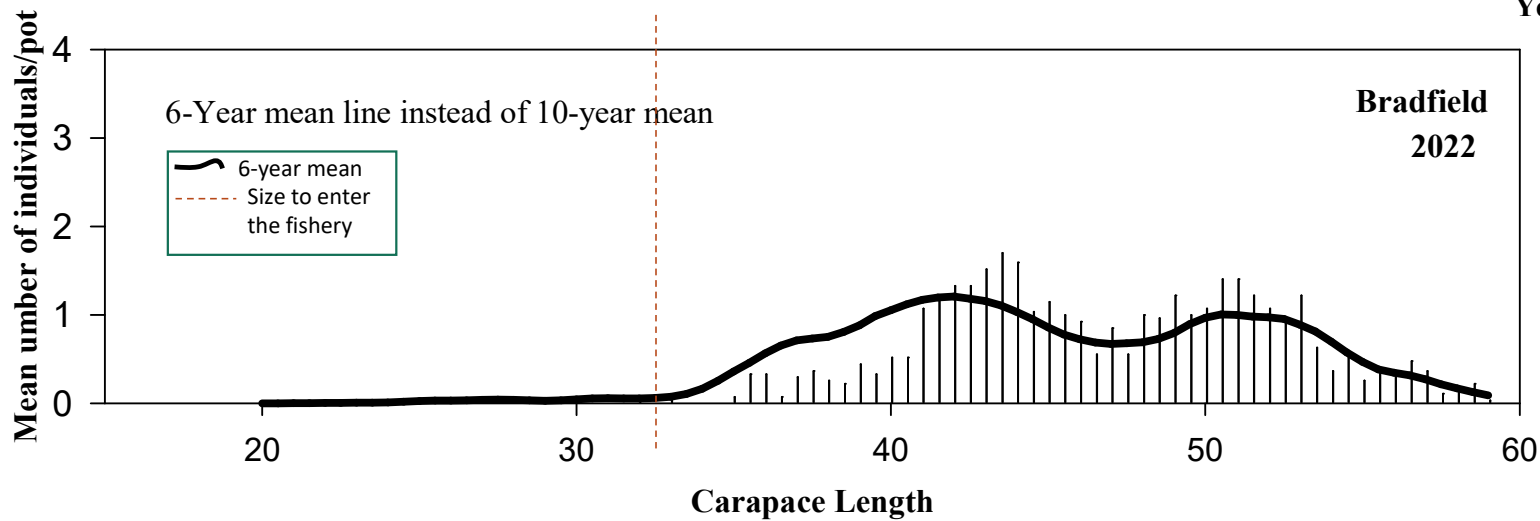
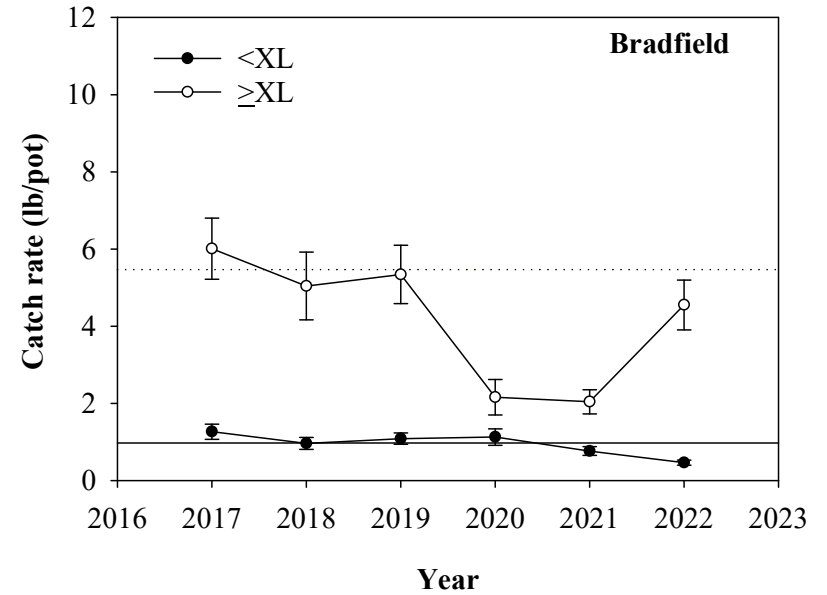
## District 7: Ernest Sound



# Petersburg

## District 7: Bradfield

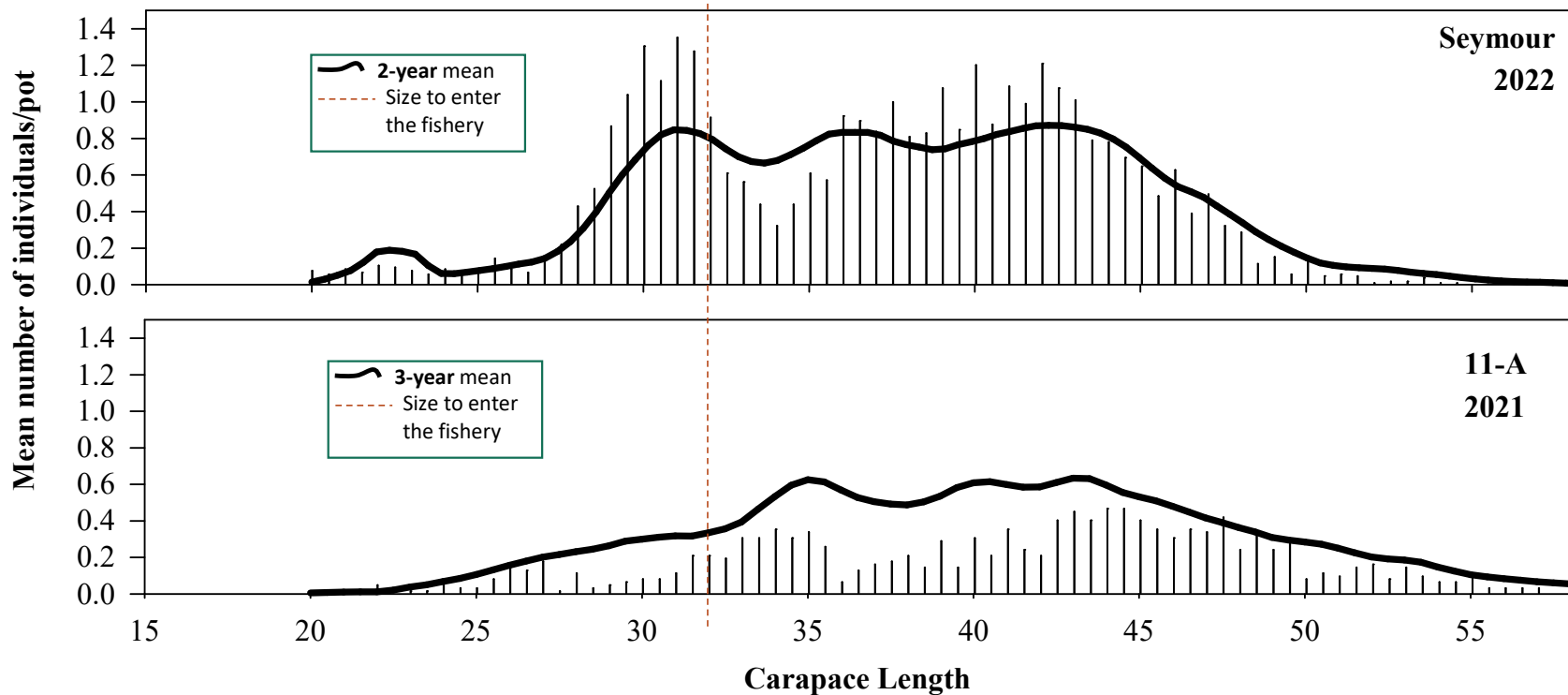
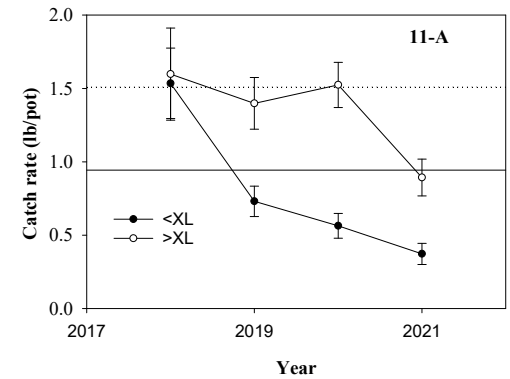
- 6 years of survey data
- Catch increased to baseline
- L50 **above** baseline



# Juneau

## District 11: Seymour Canal and Juneau Area

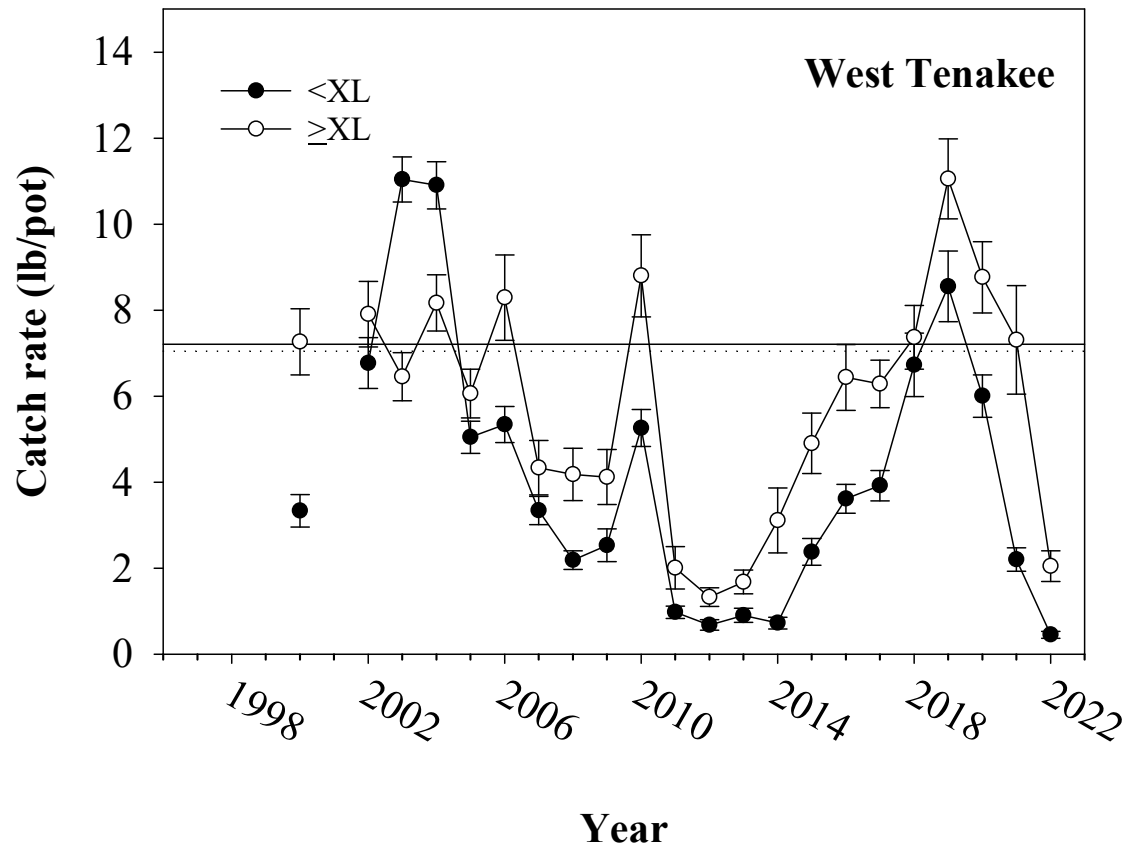
- 2021 Juneau Area (11A)
  - Declining catch rate >XL, below baseline
- Collecting Baseline Data in Seymour...



# Juneau

District 12: Tenakee Inlet

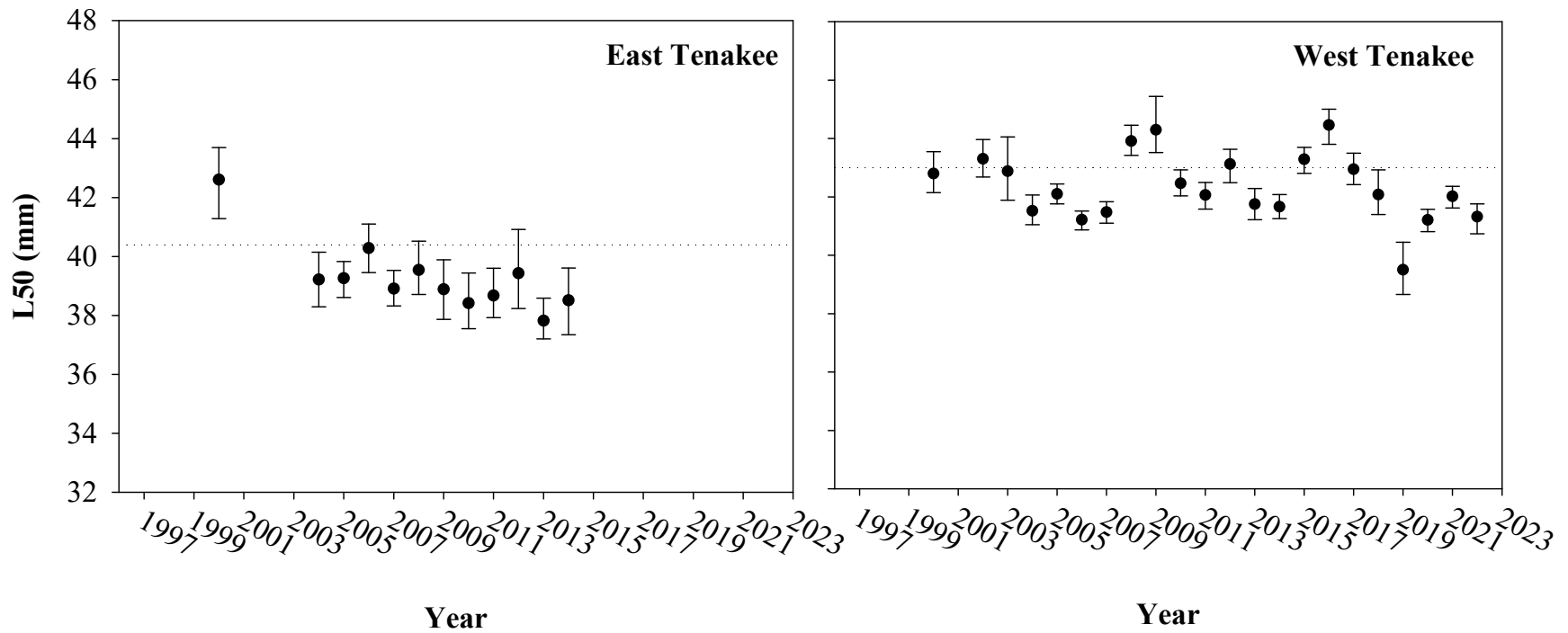
- Catch Rate **below** baseline
- 4-year trend decreasing



# Juneau

District 12: Tenakee

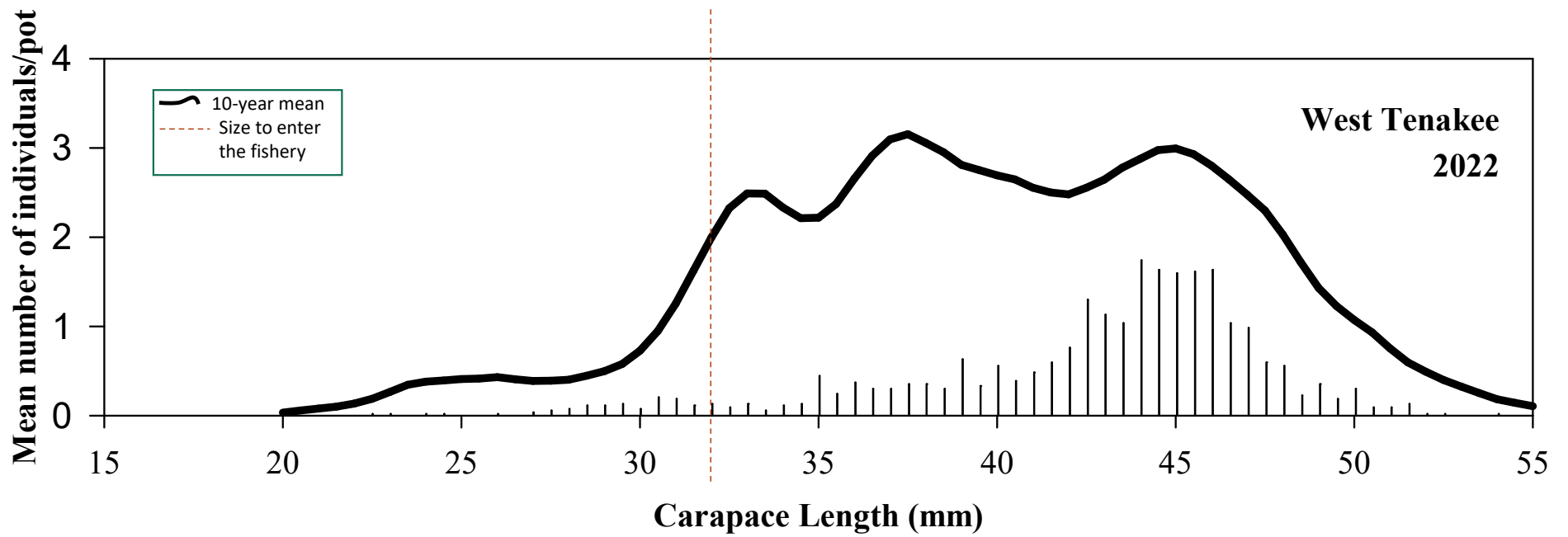
- L50 **below** baseline





# Juneau

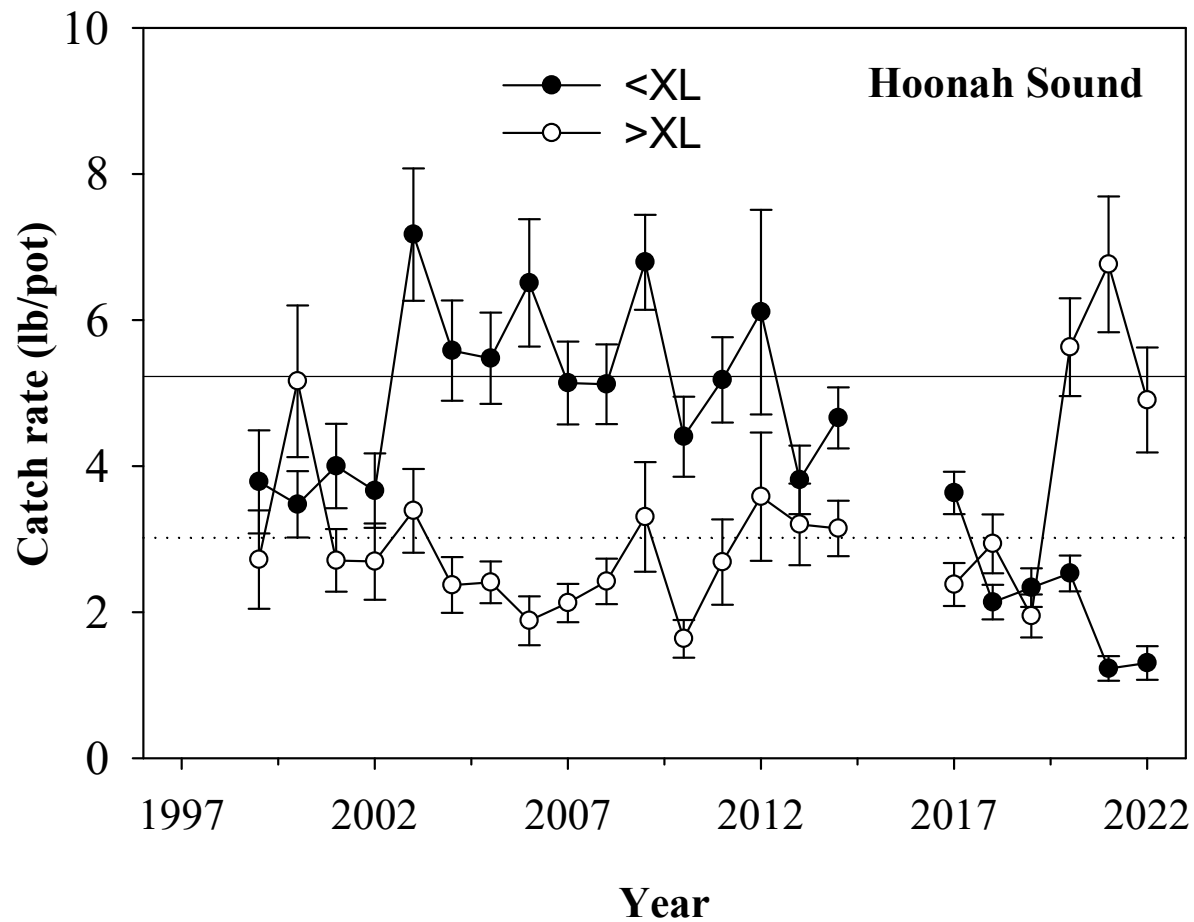
District 12: Tenakee



# Sitka

District 13: Hoonah Sound

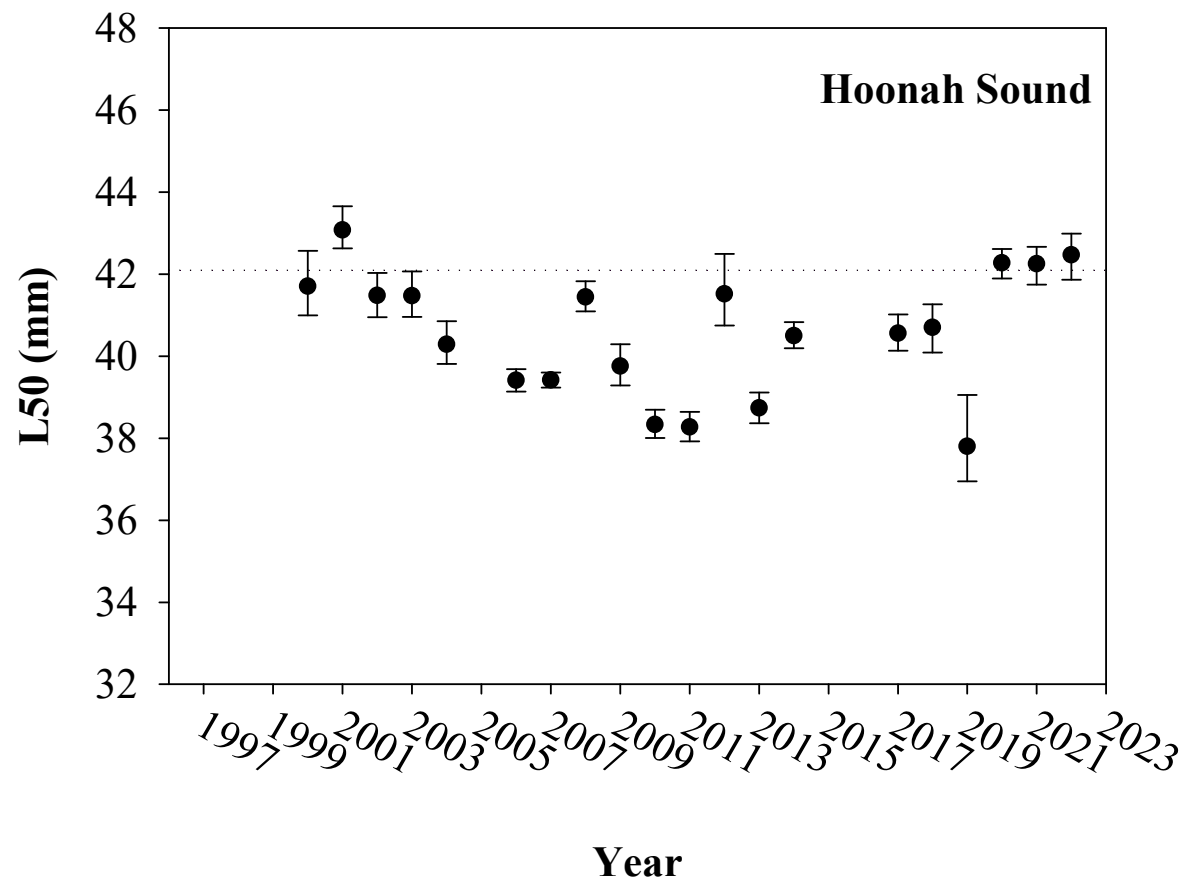
- Catch Rates >XL well **above** baseline
- CR of <XL extremely **low**



# Sitka

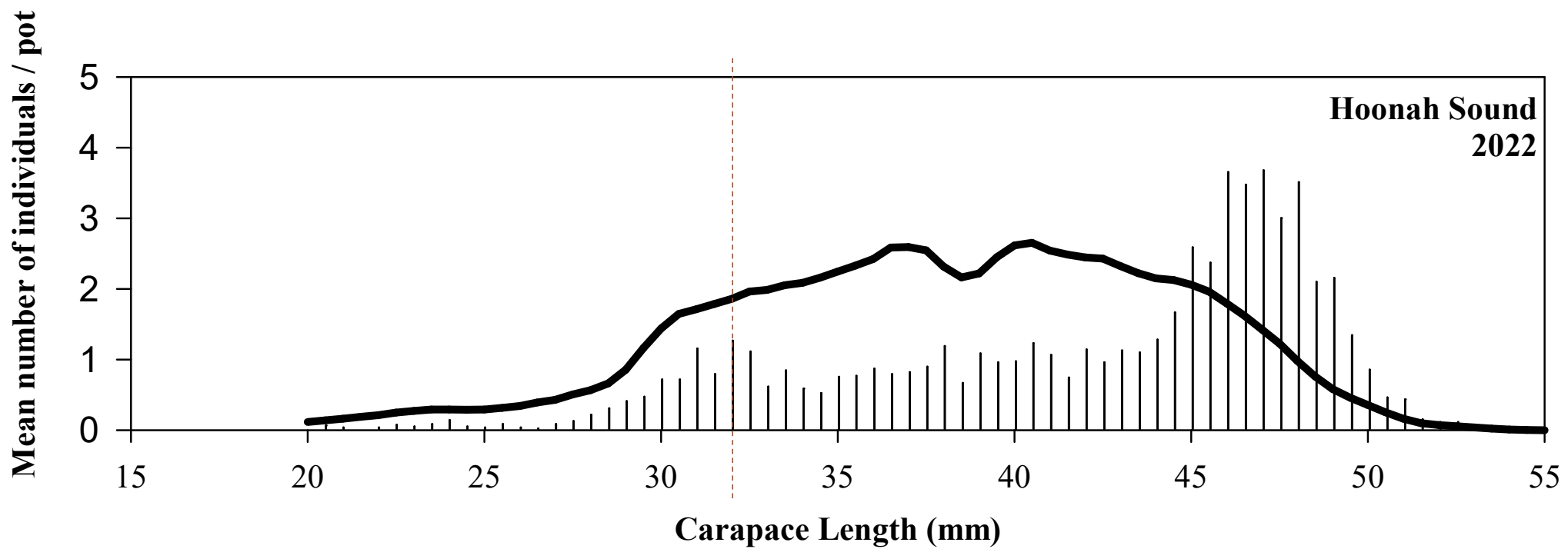
District 13: Hoonah Sound

- L50 at baseline



# Sitka

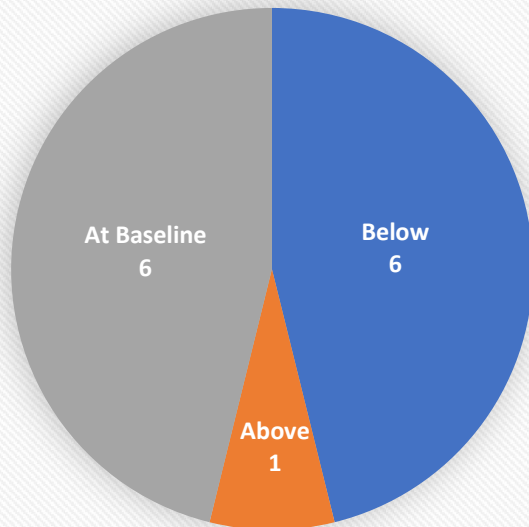
District 13: Hoonah Sound



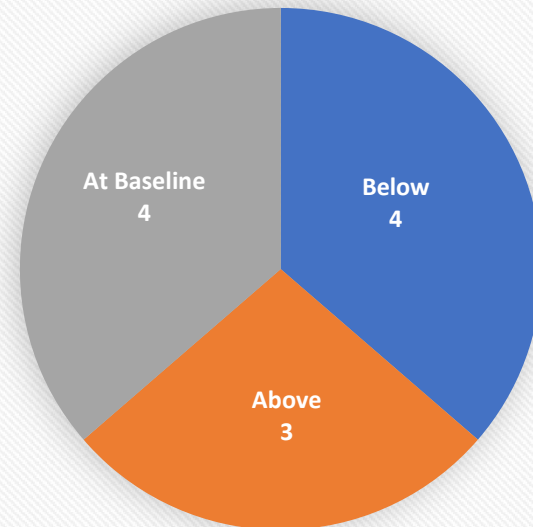
# Survey Summary

Analysis Areas Compared to Baselines in 2022.  
(Not Weighted)

**≥XL Catch Rate by # of Analysis Areas**



**L50 by # of Analysis Areas**



# Spring Shrimp Survey

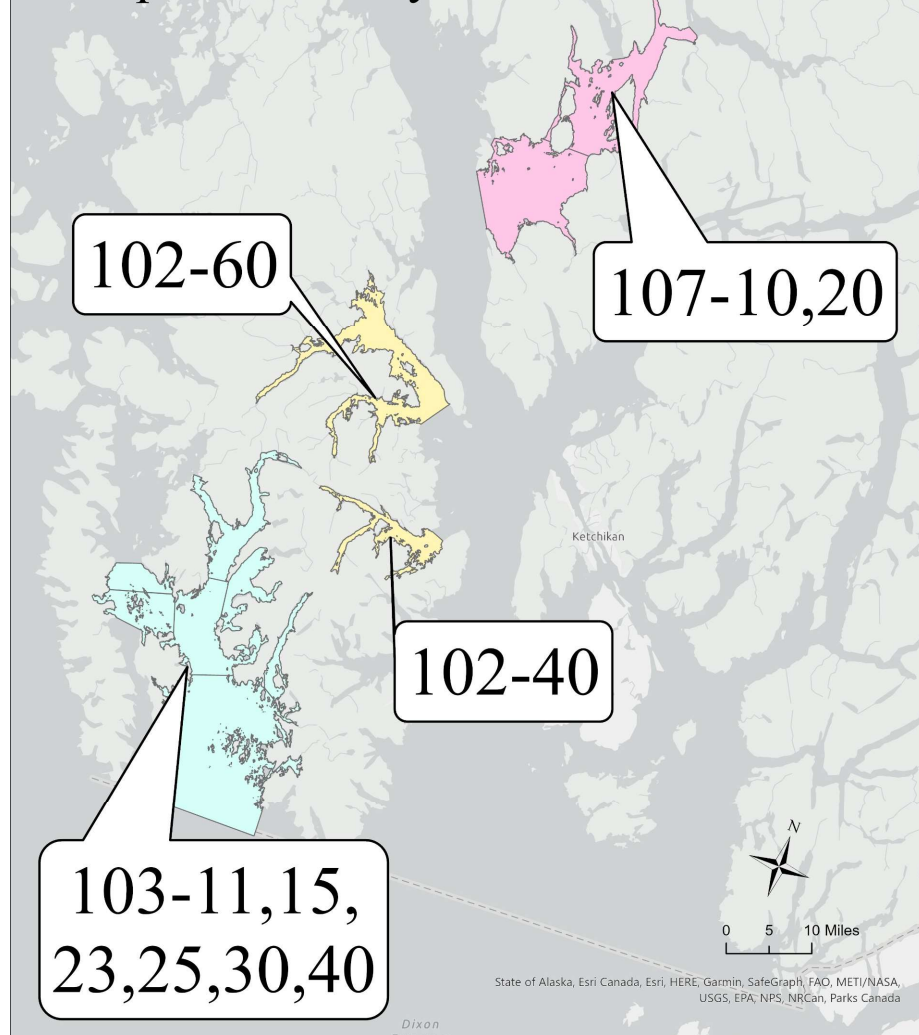
May 1 -14

A one-time comparison study between fall and spring in select areas

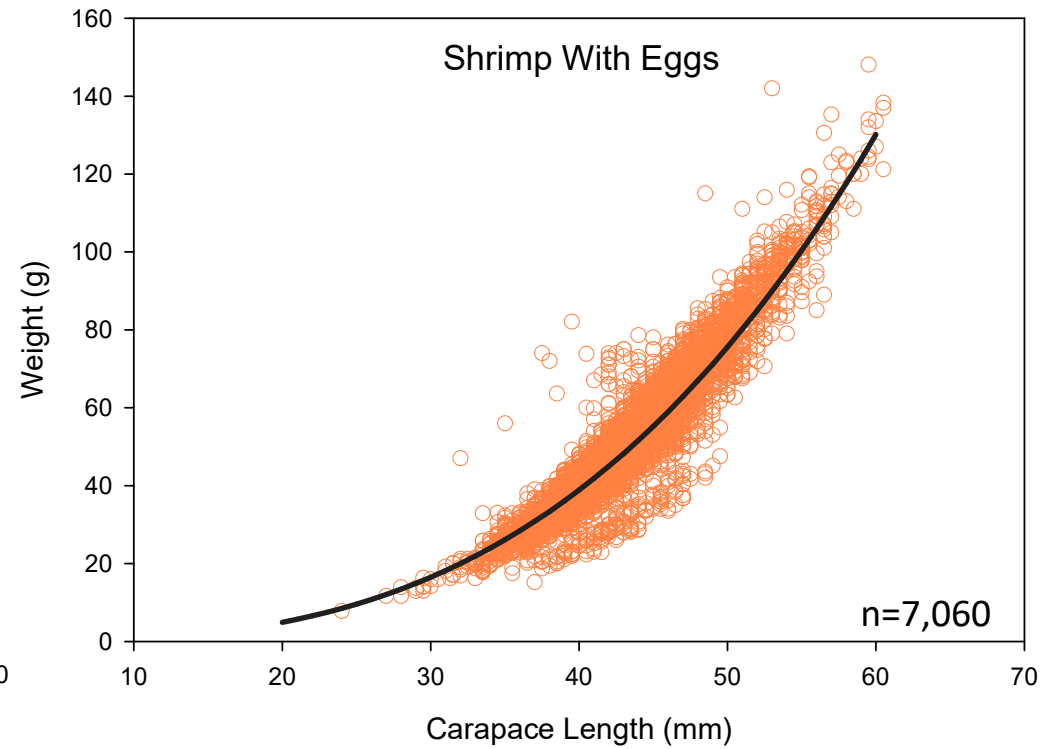
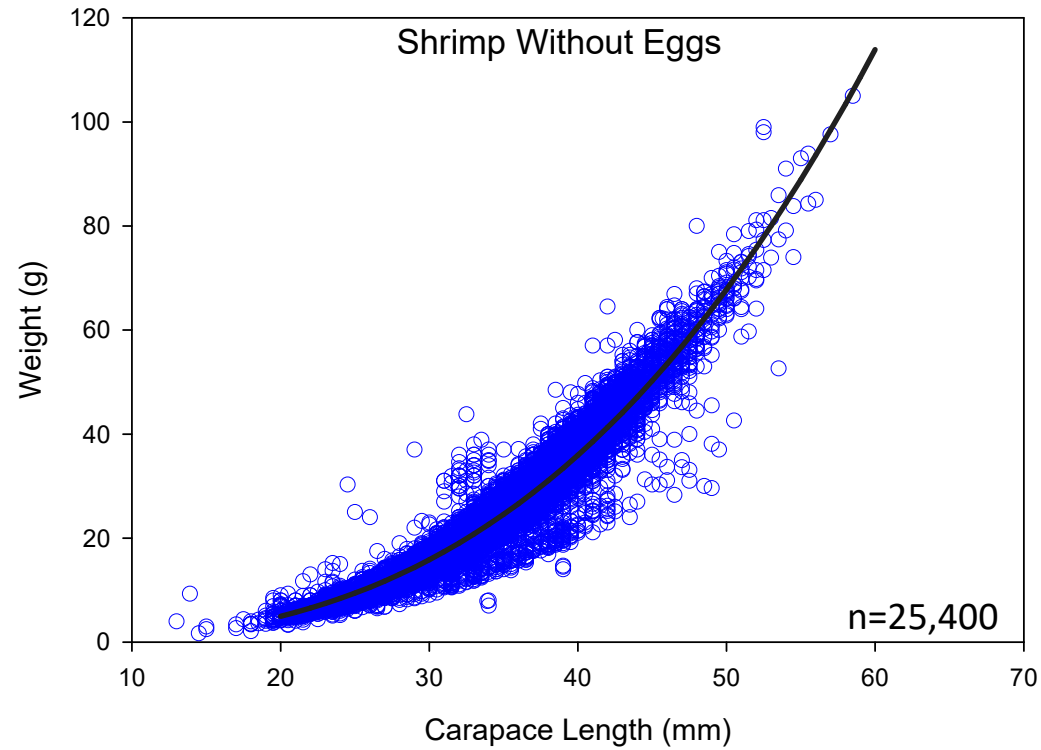
Spring Locations:

- D2: Kasaan Bay & Chomondelay Sound
- D3: Hetta Inlet, Nutkwa Inlet & Skowl Arm
- D7: Onslow, Deer & Niblack Islands

## Anticipated Spring 2023 Comparison Study Locations



# Spot shrimp weight with and without eggs



# Mean decrease in catch weight without eggs

Data Source	N	Mean Decrease	SE
District & Year - all years	116	3.60%	0.12%
District & Year - last 5 year	30	3.80%	0.27%
Pot - all years	8927	3.29%	0.02%
Pot - last 5 years	2922	3.29%	0.04%
District - all years	6	3.40%	0.05%
District - last 5 year	6	3.56%	0.10%
By Year - all years	25	2.55%	0.09%
By Year - last 5 years	5	2.60%	0.17%
Mean		3.26%	



# Mean decrease in catch weight without eggs

District	N	Mean Decrease	SE
101	1167	3.62%	0.07%
102	1211	2.71%	0.05%
103	2322	2.20%	0.03%
107	1638	3.86%	0.05%
112	1165	4.50%	0.06%
113	1535	3.52%	0.05%
Mean		3.40%	