



2024 Salmon Season

RETURNS – VALUE - ALLOCATION –FORECAST

Season in a Nutshell



TRIUMPH

FAILURE

FRUSTRATION

Pages 133-193 in book

Season in a Nutshell



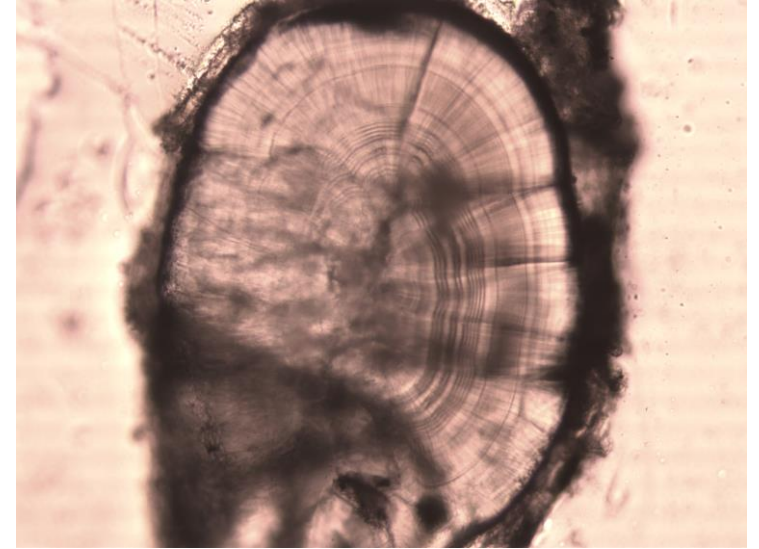
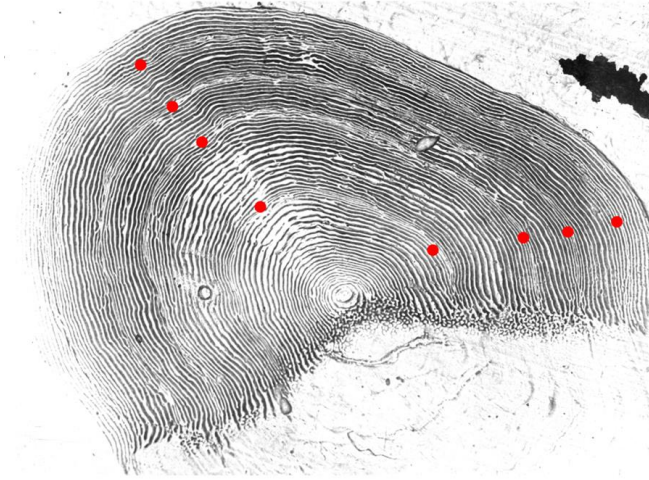
In a cruel twist of irony, NSRAA struggled to achieve cost recovery and enacted extensive time and area closures, despite achieving effectively the highest chum return of all time.

REMINDER: Where we get our information

2024 Sampling:

Over 20,000 fish handled in
sampling

6-months of
collection/analysis





2024 Chum Returns

2024 PRE-SEASON Forecasts

Projected: 6,150,000

(WOULD BE THE 3rd LARGEST CHUM RETURN OF ALL TIME)

Actual: 6,666,497

(WAS THE 3rd LARGEST CHUM RETURN OF ALL TIME)

KIND OF...

2024 TOTAL Return

HOW DO WE MEASURE?

Prior to otolith sampling, NSRAA run totals were calculated using only fish ticket data

- This is a bit of an assumption
- If true, this would include non NSRAA fish landed in our THA's.
 - ~10% of terminal harvest
- Regardless, this would likely not account for additional NSRAA fish in interception and test fisheries
 - ~1% of total NSRAA fish (that have been accounted for)

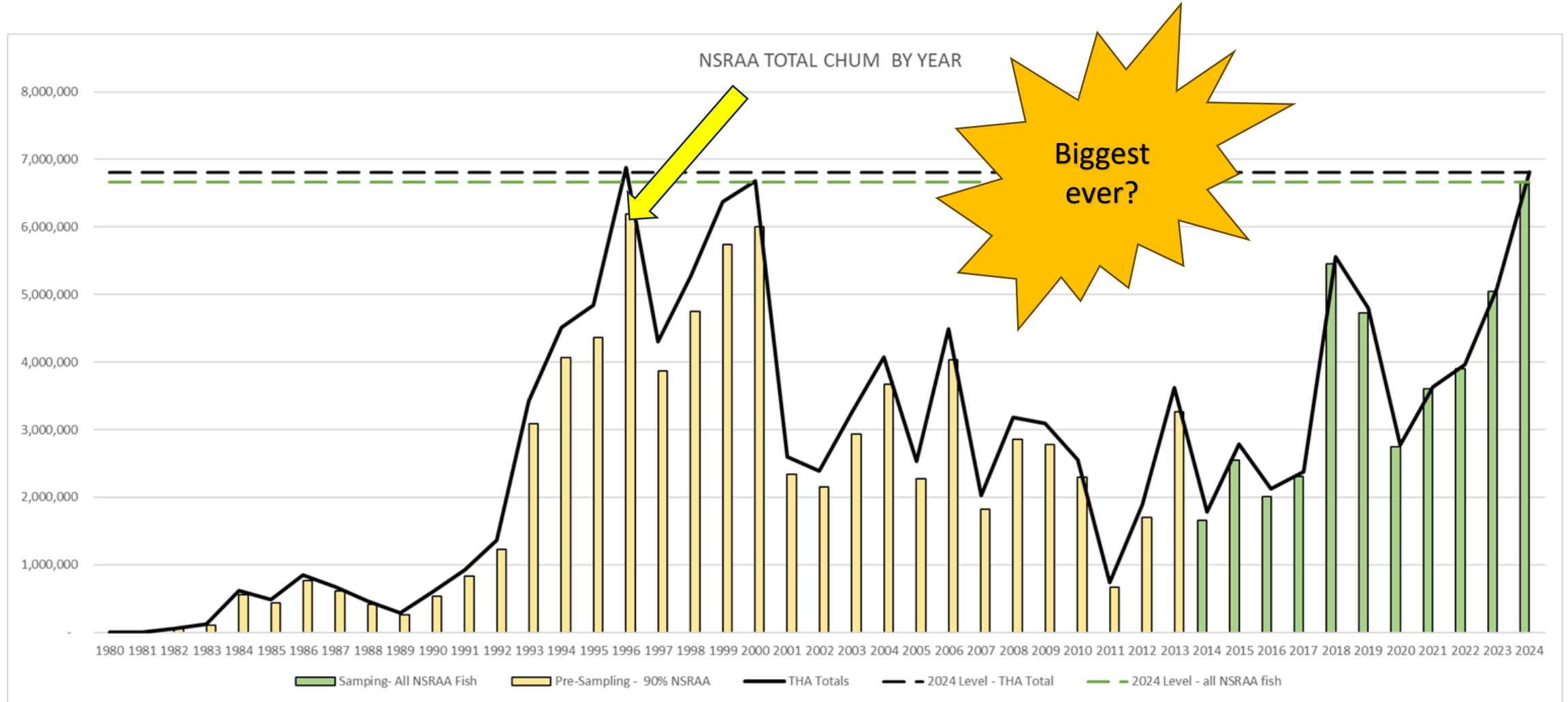
In 2024:

- 6,809,478 – (ALL) Fish caught in our THA's
- 6,543,940 – (NSRAA) Fish caught in our THA's
- 6,666,497 – (NSRAA) Fish accounted for in total
 - 6,543,940 in our THA's, AND 122,558 (accounted for) outside our THA's

**Metric of
choice**

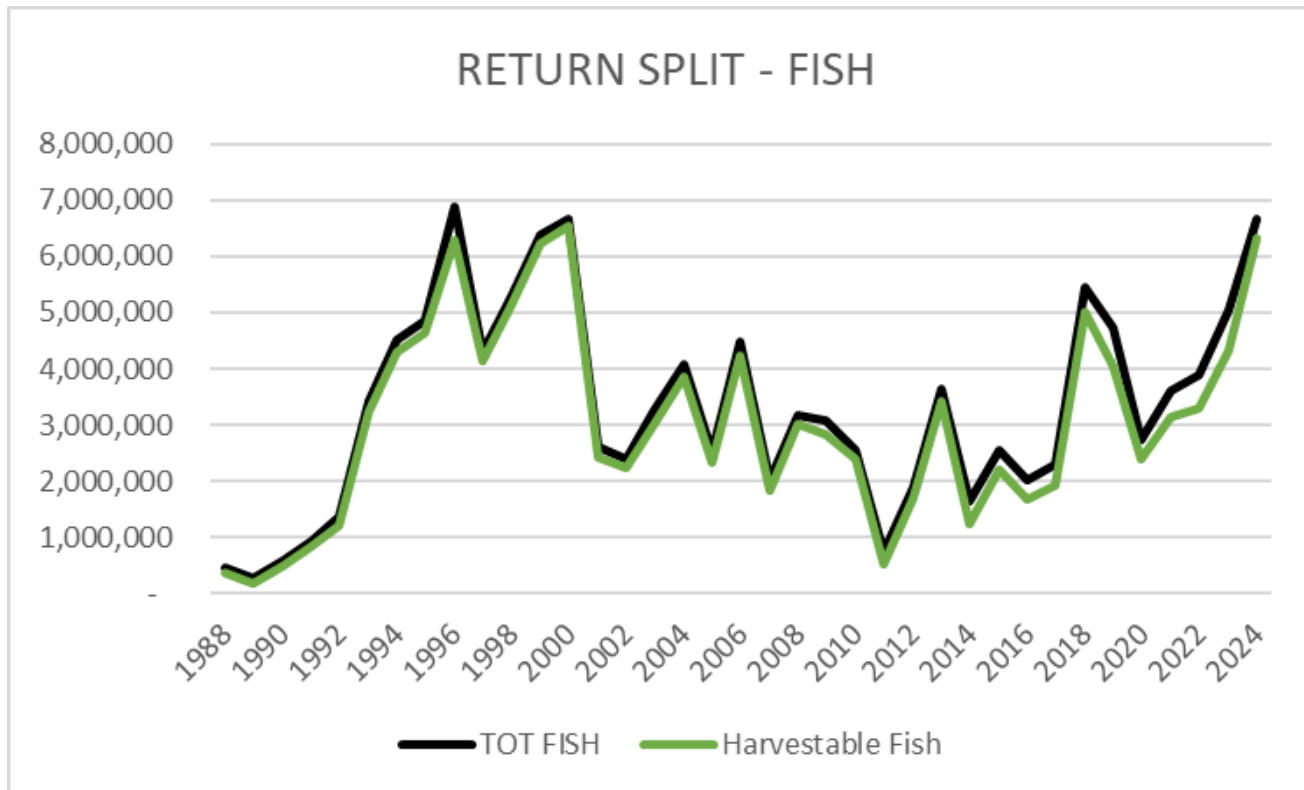


HISTORICAL Returns – COMPARE TOTALS



HISTORICAL Returns – HARVESTABLE PORTION

HOW MUCH IS HARVESTABLE?



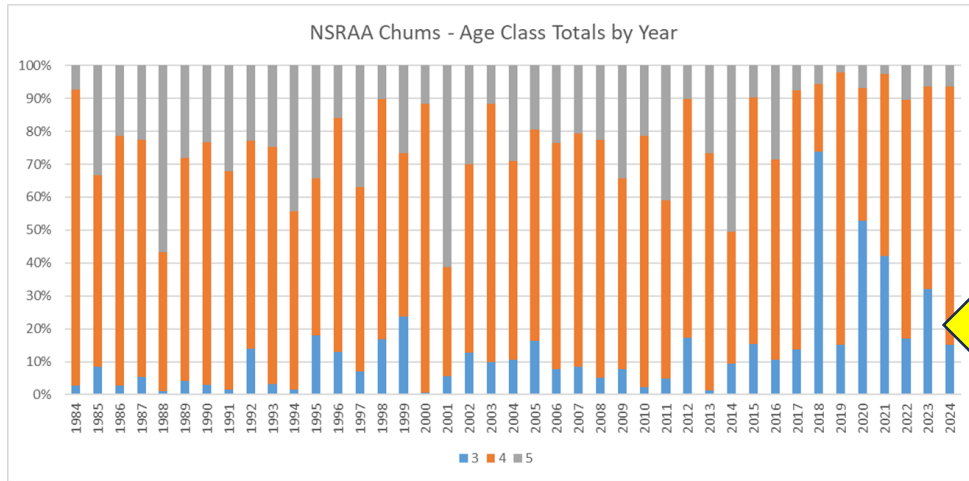
89% on AVG

- 11% to hatchery or otherwise unavailable for harvest
 - Relatively consistent in recent years
- “Harvestable” portion split between CPH and CR

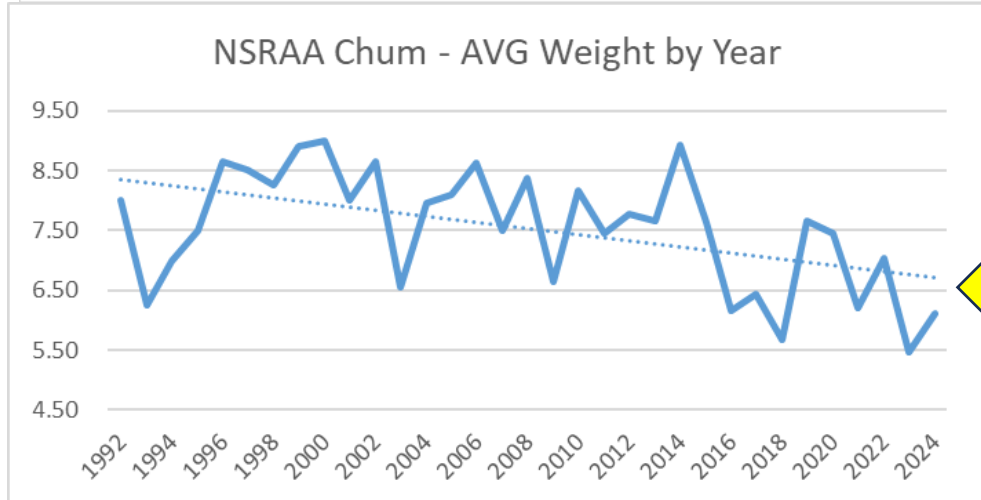
HISTORICAL Returns – HARVESTABLE PORTION

What about pounds?

Fish are returning younger as well as smaller across all cohorts.



Shift to younger ages



Size decrease over time

What is the impact?

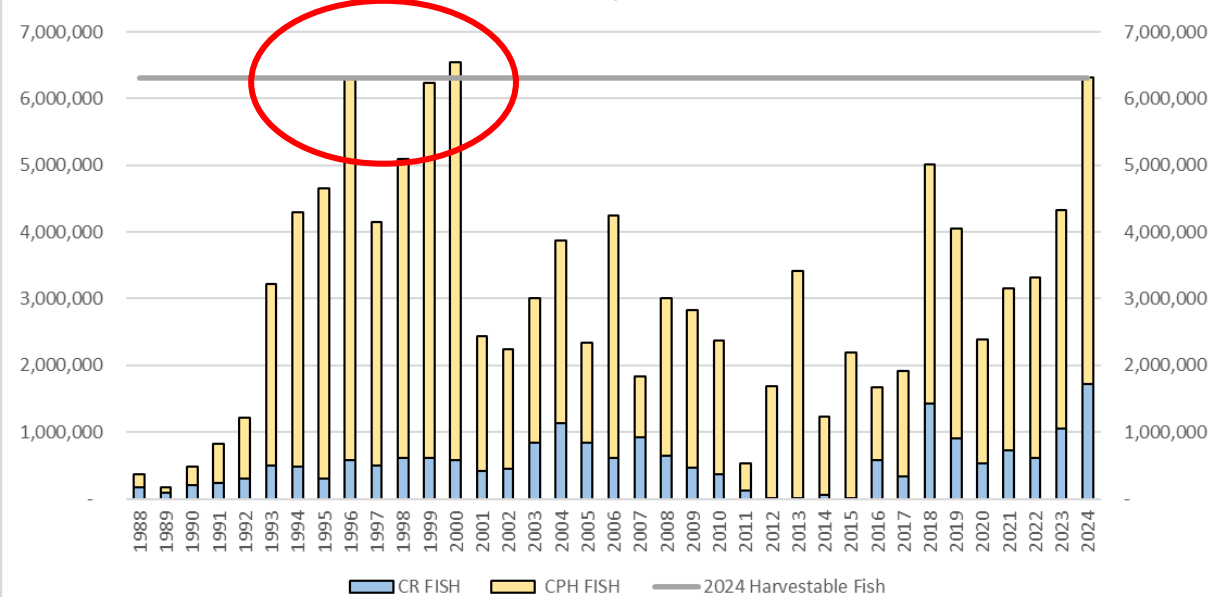
HISTORICAL Return – HARVESTABLE LBS vs FISH

Despite harvestable fish reaching historic high's in recent years, lbs are notably less than in the 1990's

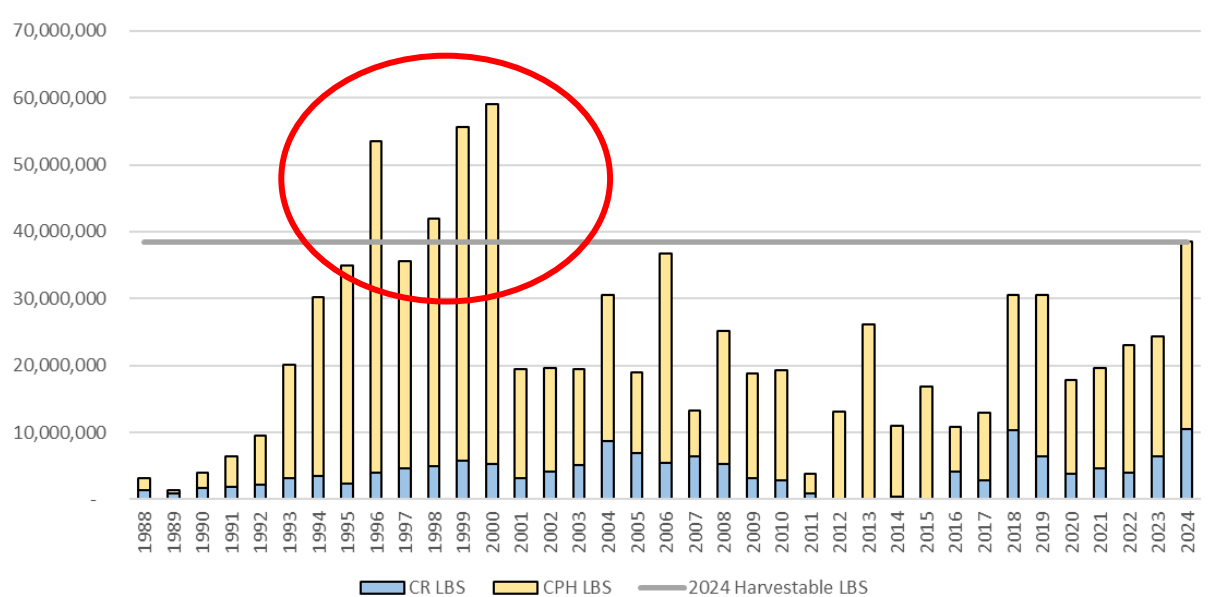
Lower rankings 

	Total	Harvestable	CPH	CR
# Fish	6,666,497	6,308,728	4,585,511	1,723,217
Rank of 37 years	3	2	4	1
# LBS	40,721,792	38,484,240	28,010,245	10,473,995
Rank of 37 years	5	5	8	1

Harvest Split - FISH



Harvest Split - LBS



HISTORICAL Return – CPH : CR SPLIT

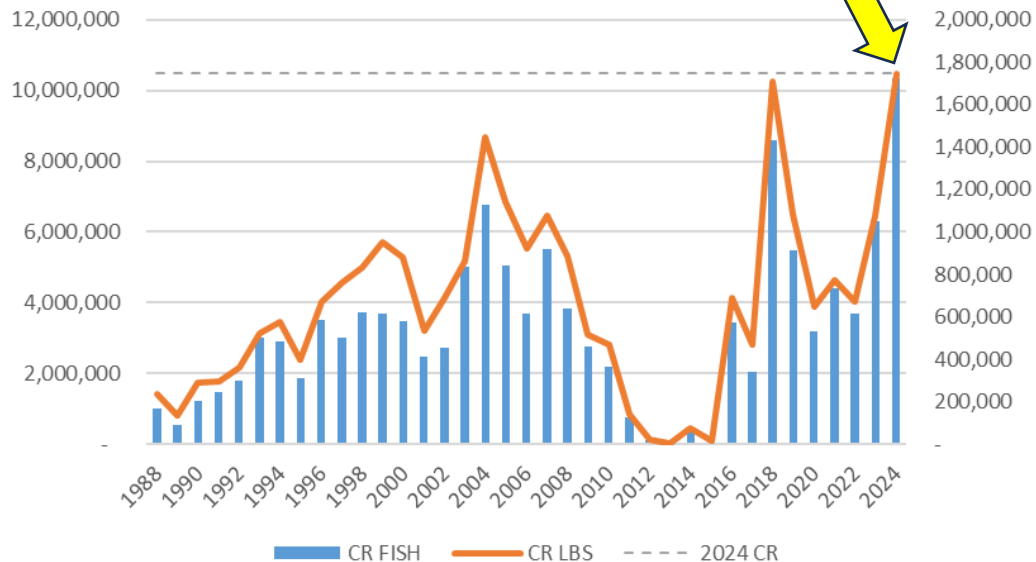
Despite CR taking more fish then ever in recent years, the CPH fraction of harvestable portion is less effected, likely due to better CR prices and larger returns

DIPAC \$ and ASSESSMENT YEARS

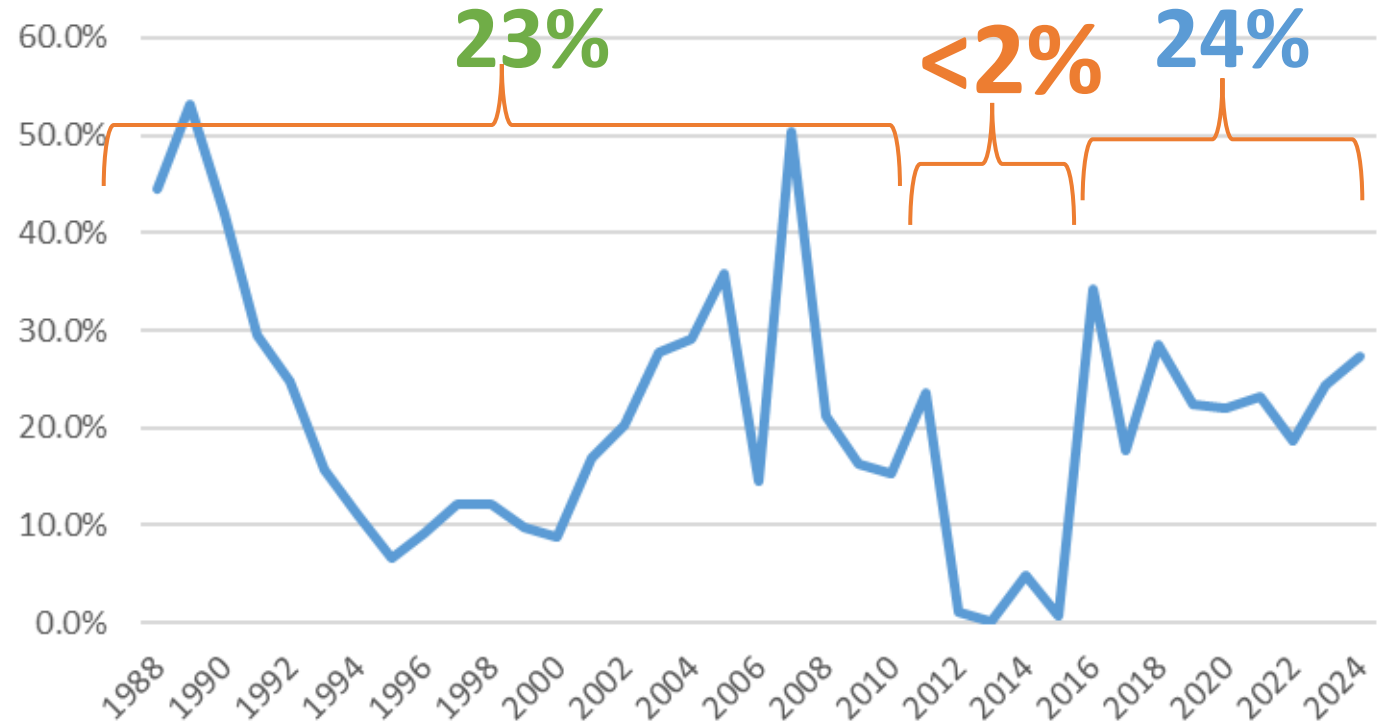
Similar to early years

Record

NSRAA Chum - Cost Recovery by Year

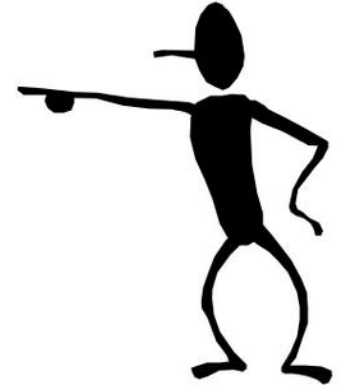


Percent of Harvestable Fish Going to CR



Historical Takeaways:

- There are several ways to measure total returns by year
- This was one of, if not the most, largest chum returns in NSRAA history
- Approximately 90% of NSRAA chum are “harvestable” year over year
- Fish are getting smaller, so LBS is a better metric
 - 2024 was still much smaller than the 1990’s
- Cost Recovery : Common Property ratio remains relatively stable due to better CR prices and is heavily influenced by other revenue sources.



2024 Chum Return – FORECAST TO ACTUAL

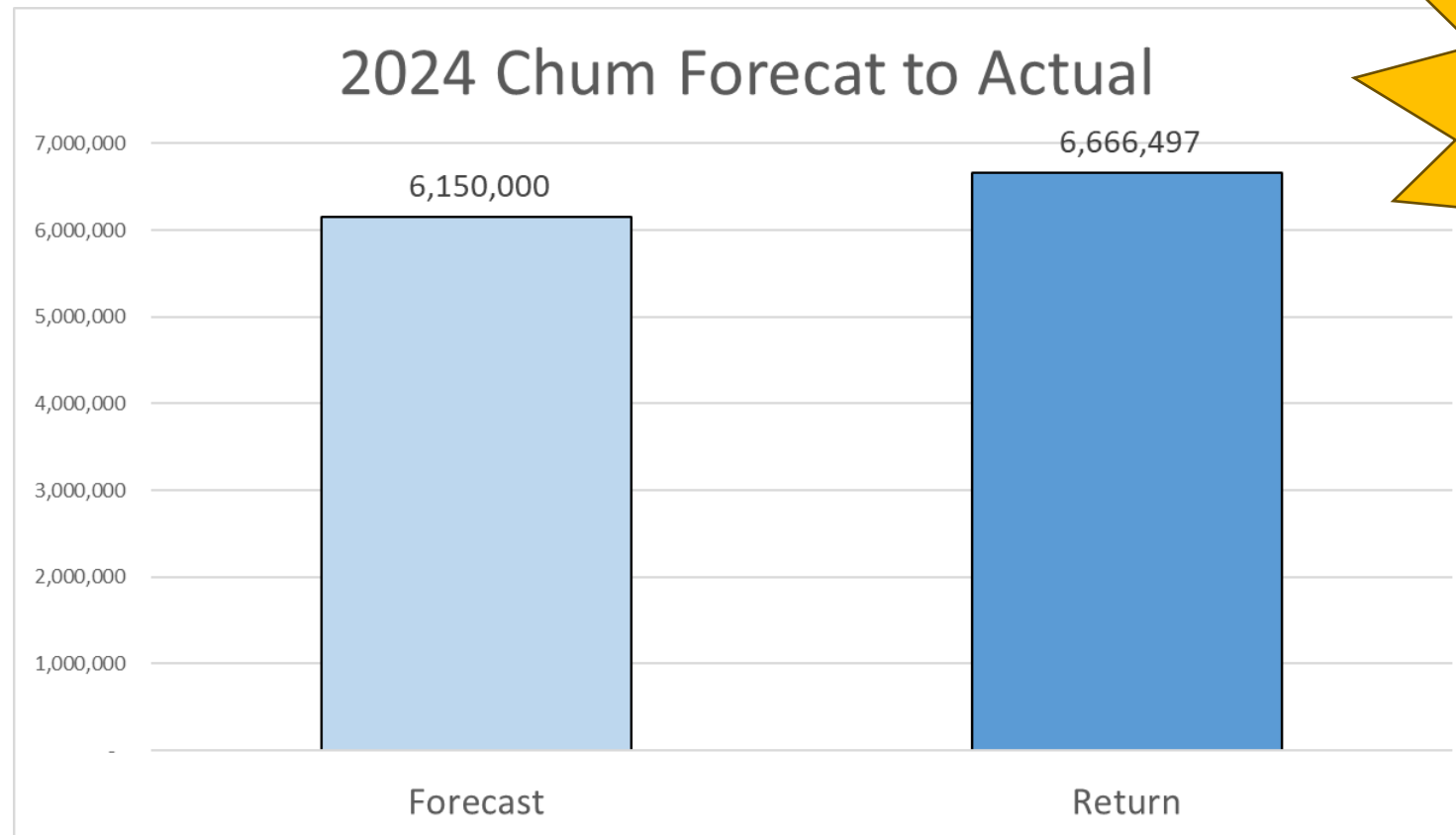
6,666,497

Let's take a closer look...

2024 Chum Return – FORECAST TO ACTUAL

108% of Forecast

Largest Return Ever?

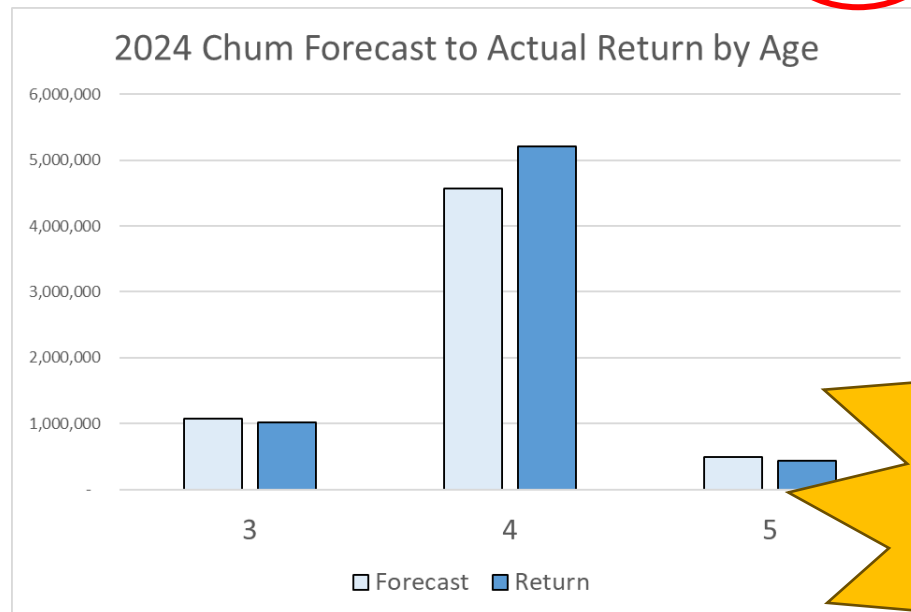


Looks pretty good!

2024 Chum Return – FORECAST TO ACTUAL

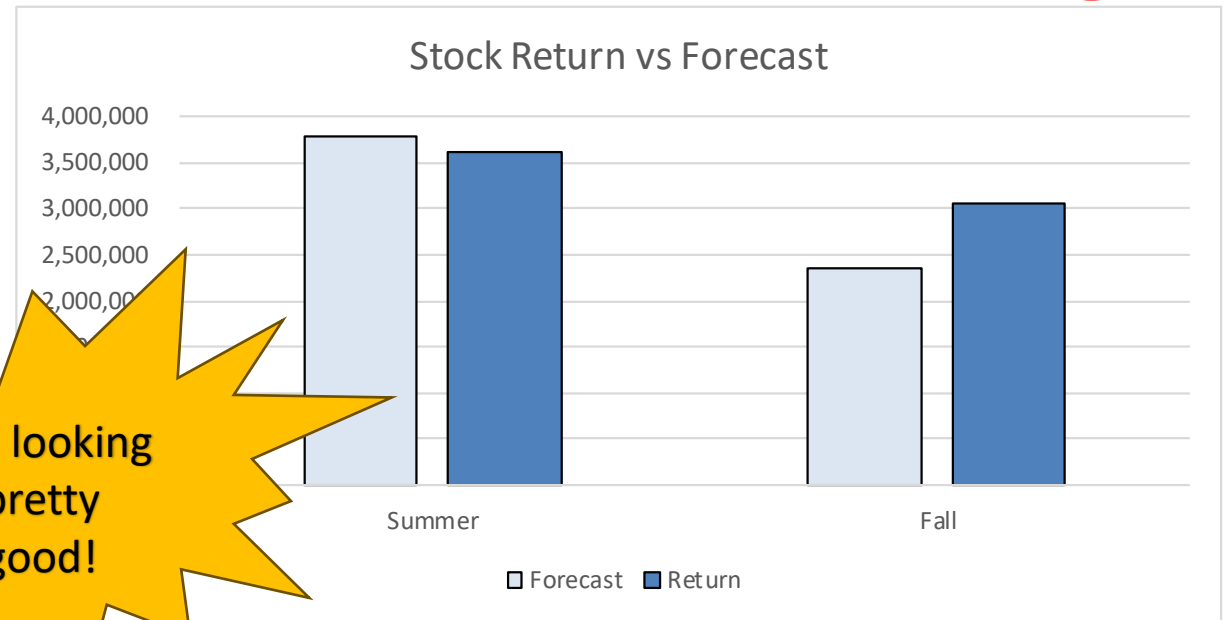
BY AGE

Age	Forecast	Return	% of Forecast
3	1,076,000	1,015,880	94.4%
4	4,572,500	5,214,189	114.0%
5	496,500	428,258	86.3%



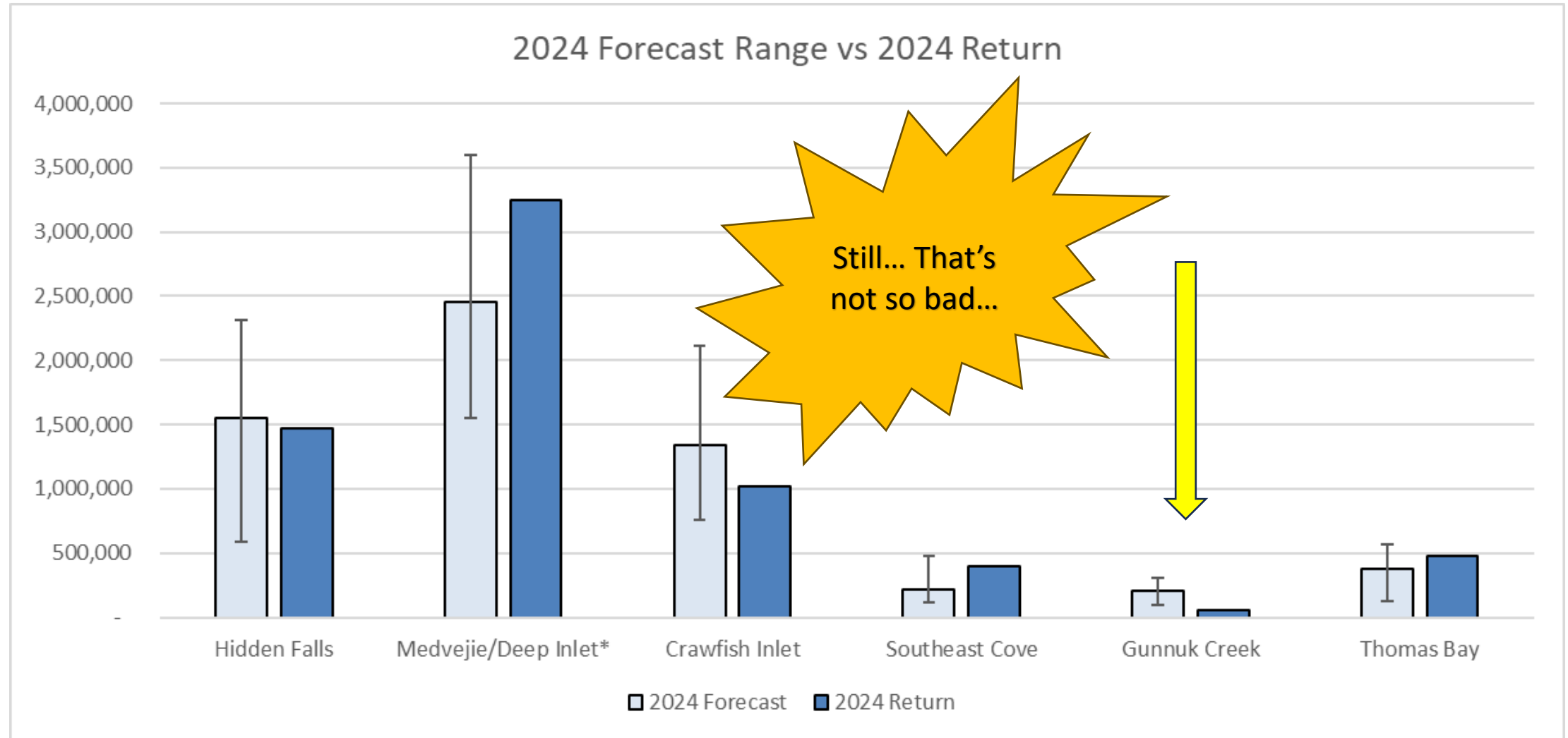
BY STOCK

	Forecast	Return	% of forecast
Summer	3,787,000	3,622,003	96%
Fall	2,363,000	3,044,495	129%
	6,150,000	6,666,498	108%

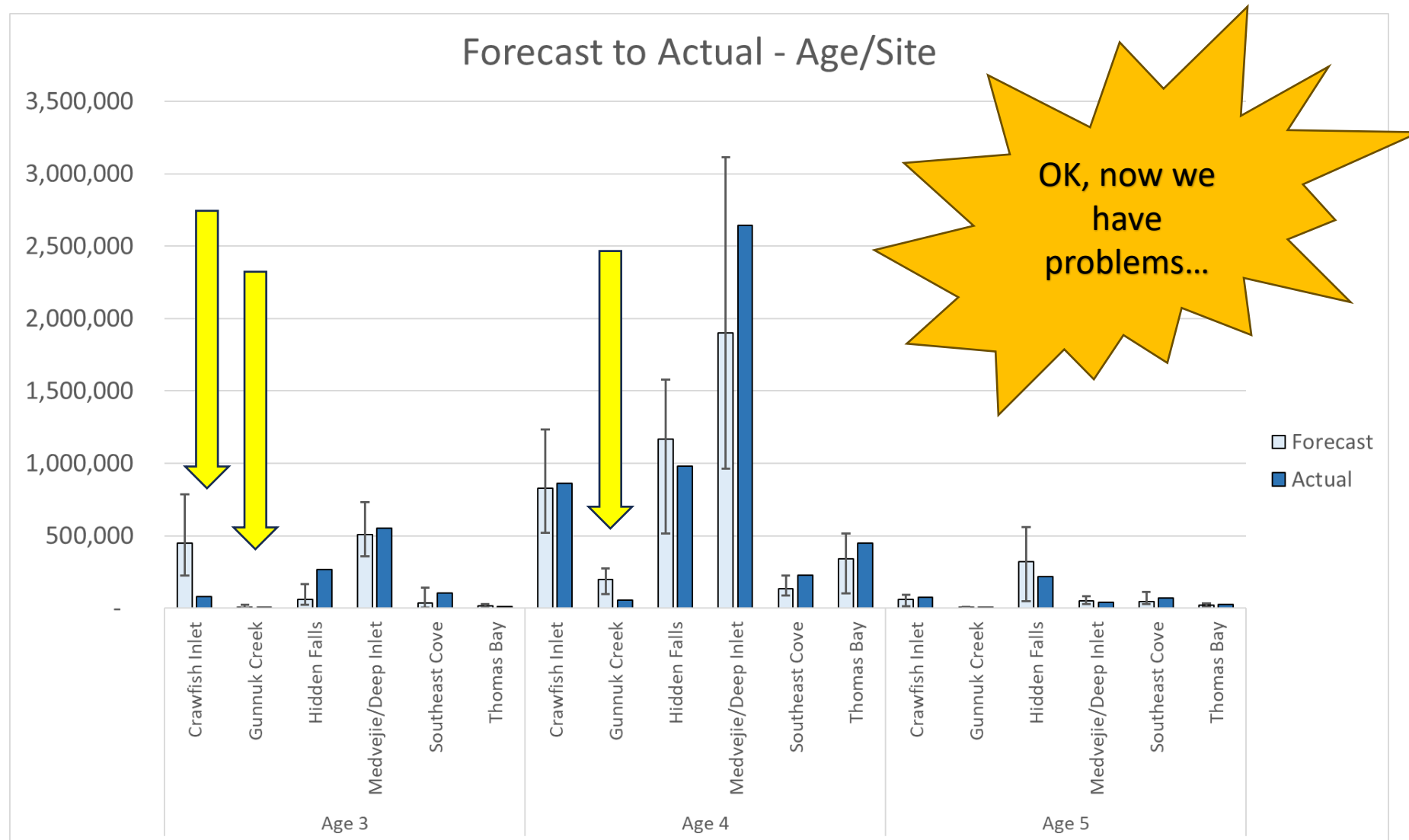


Still looking
pretty
good!

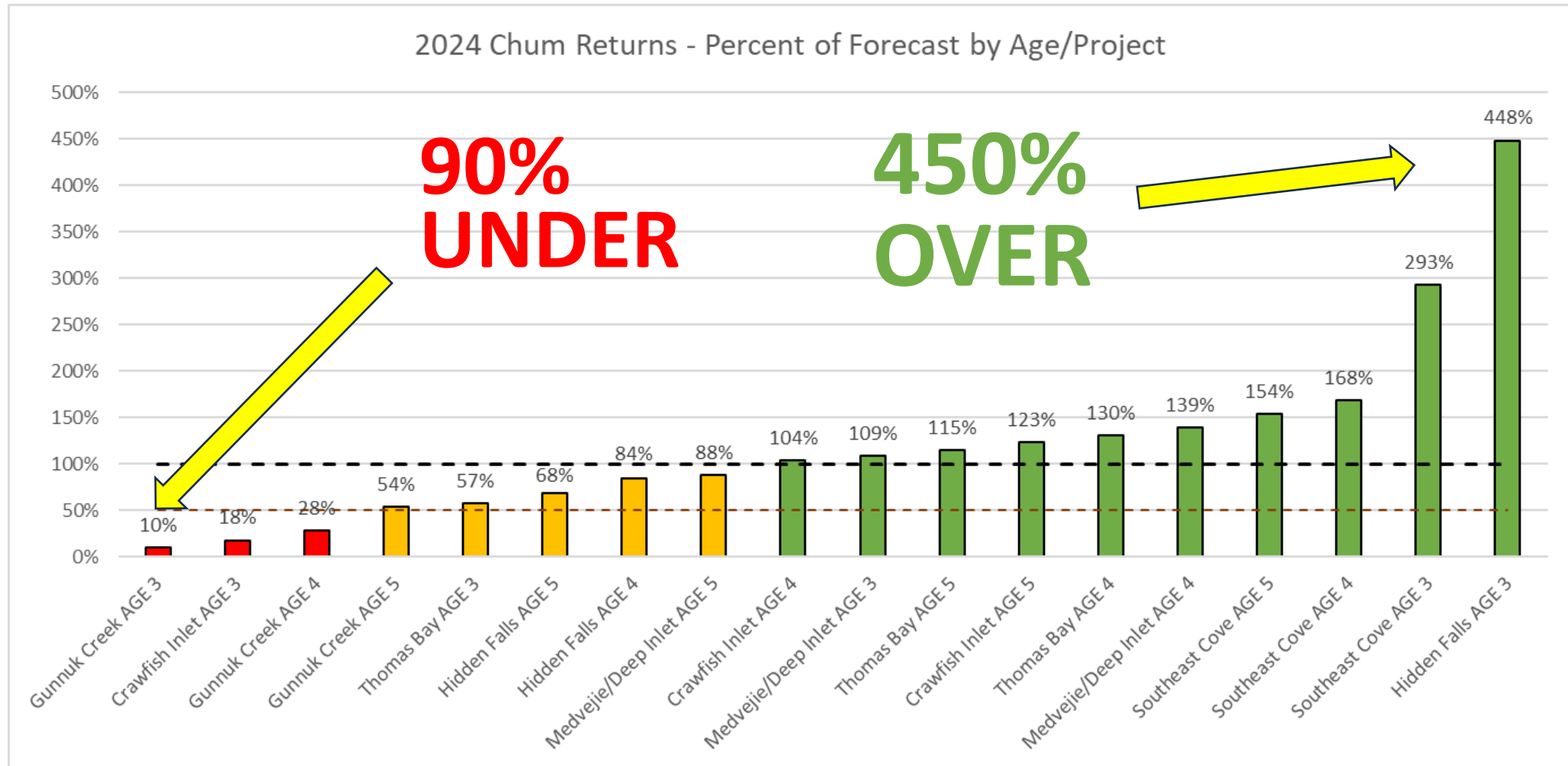
2024 Chum Return – FORECAST TO ACTUAL



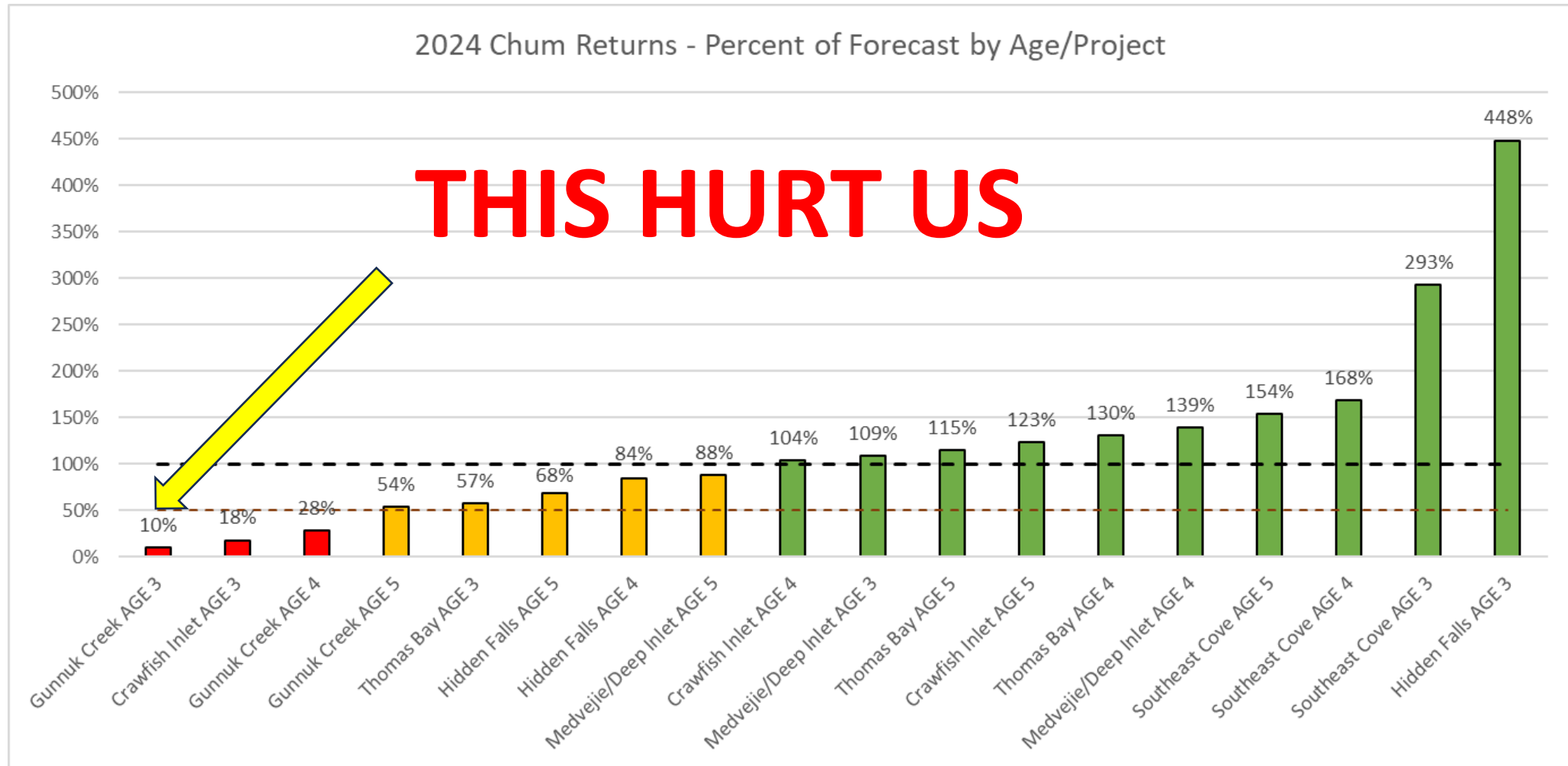
2024 Chum Return – FORECAST TO ACTUAL



2024 Chum Return – FORECAST TO ACTUAL

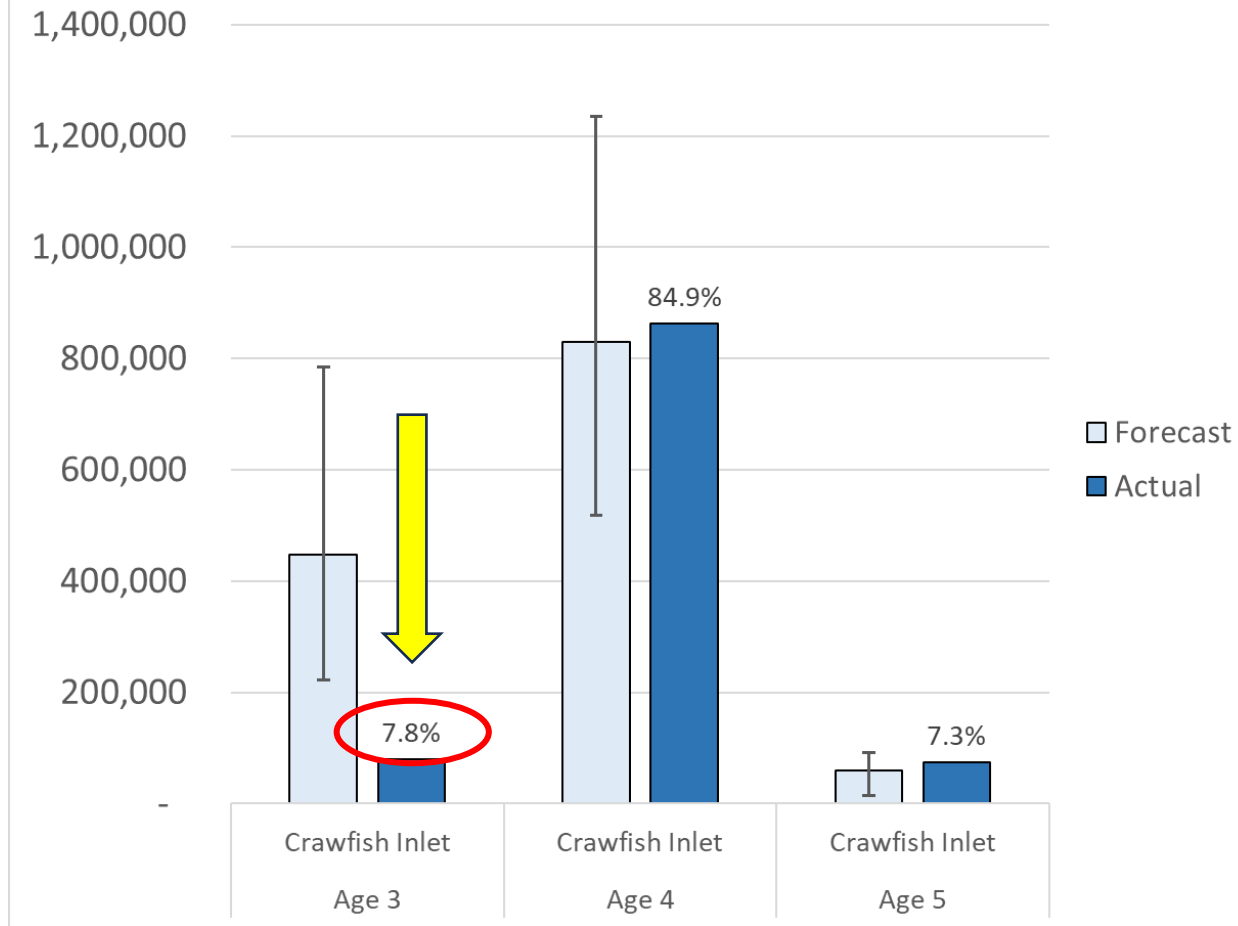


2024 Chum Return – FORECAST TO ACTUAL

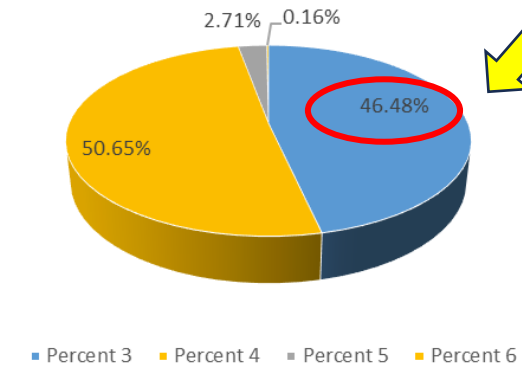


2024 Chum Return – FORECAST TO ACTUAL

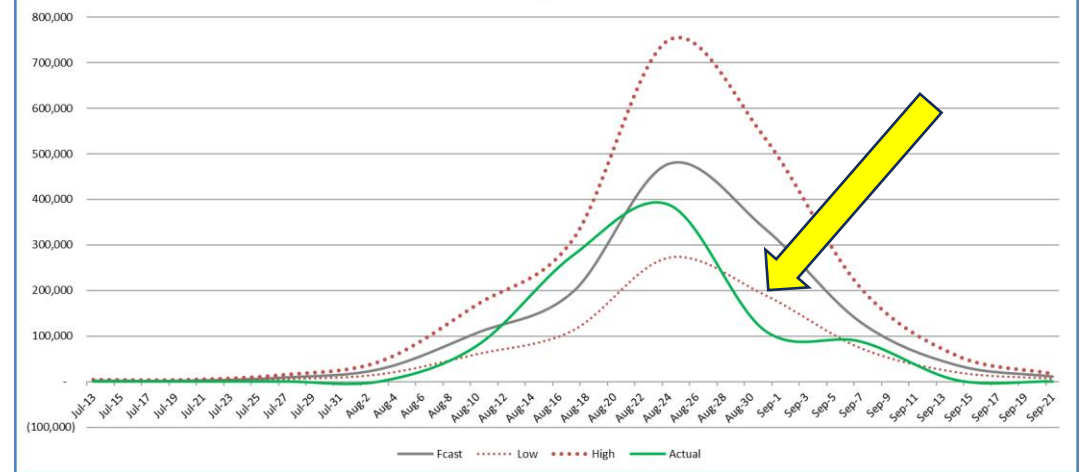
Forecast to Actual - Crawfish



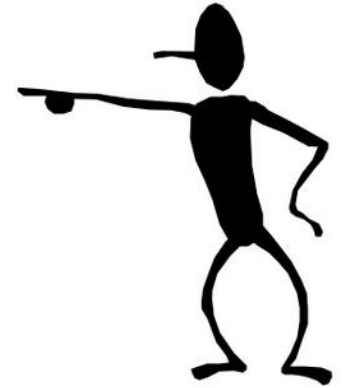
Crawfish Inlet Age Structure - Average



Crawfish Chum 2024 Weekly Return



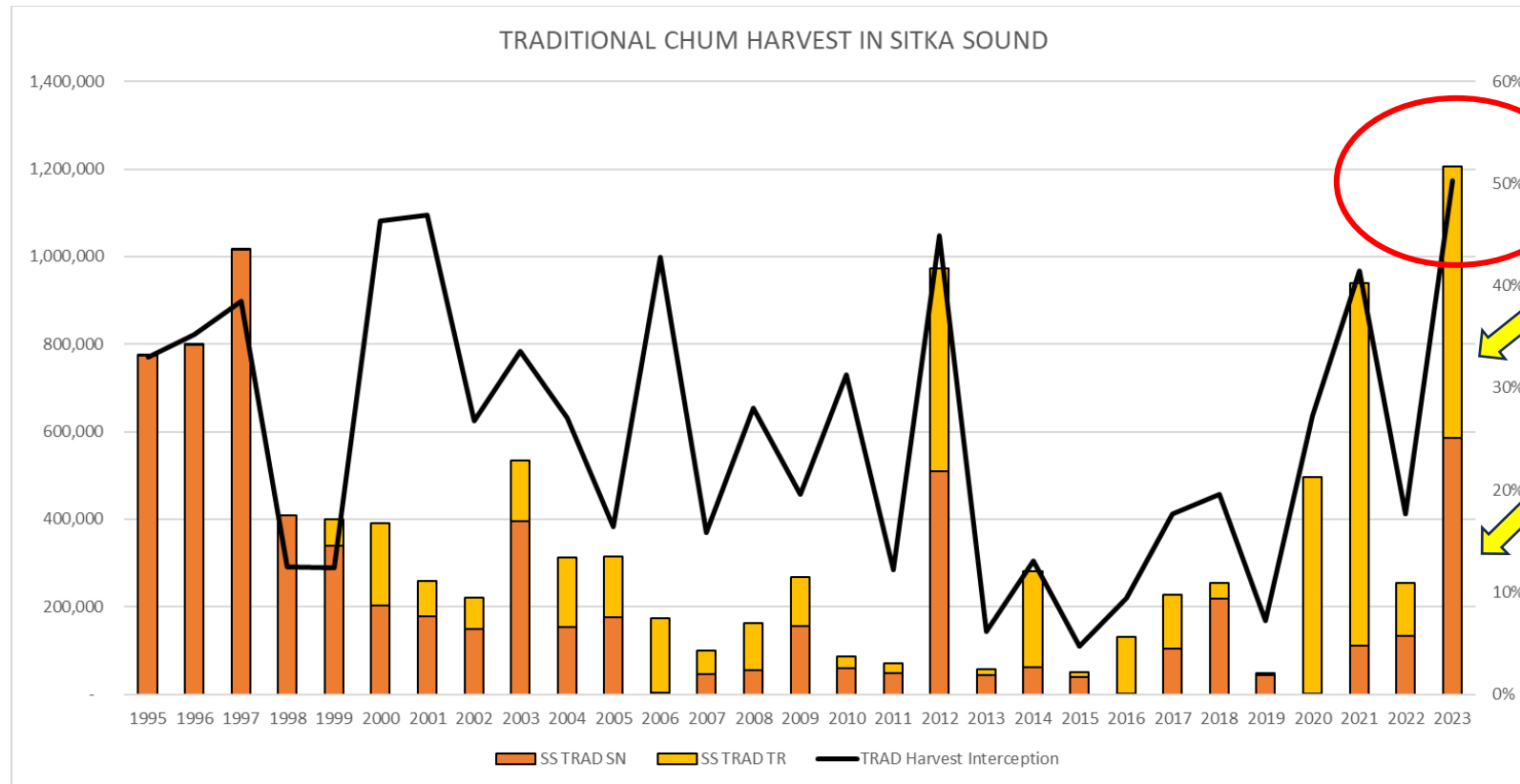
Forecast to Actual Takeaways:



- There are a lot of age/site cohorts to account for across all of NSRAA's programs
- These cohorts can vary wildly relative to forecast despite combined age/site/stock returns being at or near forecast
- Run timing and magnitude can be greatly impacted by even a single age cohort and have dire management consequences
 - **Forecasting the three-year-old age class is the most challenging**
 - **Projects that see higher fractions of three's carry a higher risk of missing forecast**

More on this in a moment...

2024 Chum Return – SITKA SOUND FISHERIES



Highest volume (Chum) on record for Sitka Sound (TRADITIONAL) Harvest

- 2nd highest SS TR (621,000)
 - Record: 2021
- 2nd highest SS SN (586,000)
 - Record: 1998
- 50% of all CPH (Highest)
 - Record: 2024

WHY?



2024 Chum Return – SITKA SOUND FISHERIES

- **WEATHER**

- Below Avg. temp and precip. in August
 - Fish not moving into THA

- **PINK SALMON**

- 7th highest harvest of pinks in Sitka Sound
 - Highest ever stat week 32

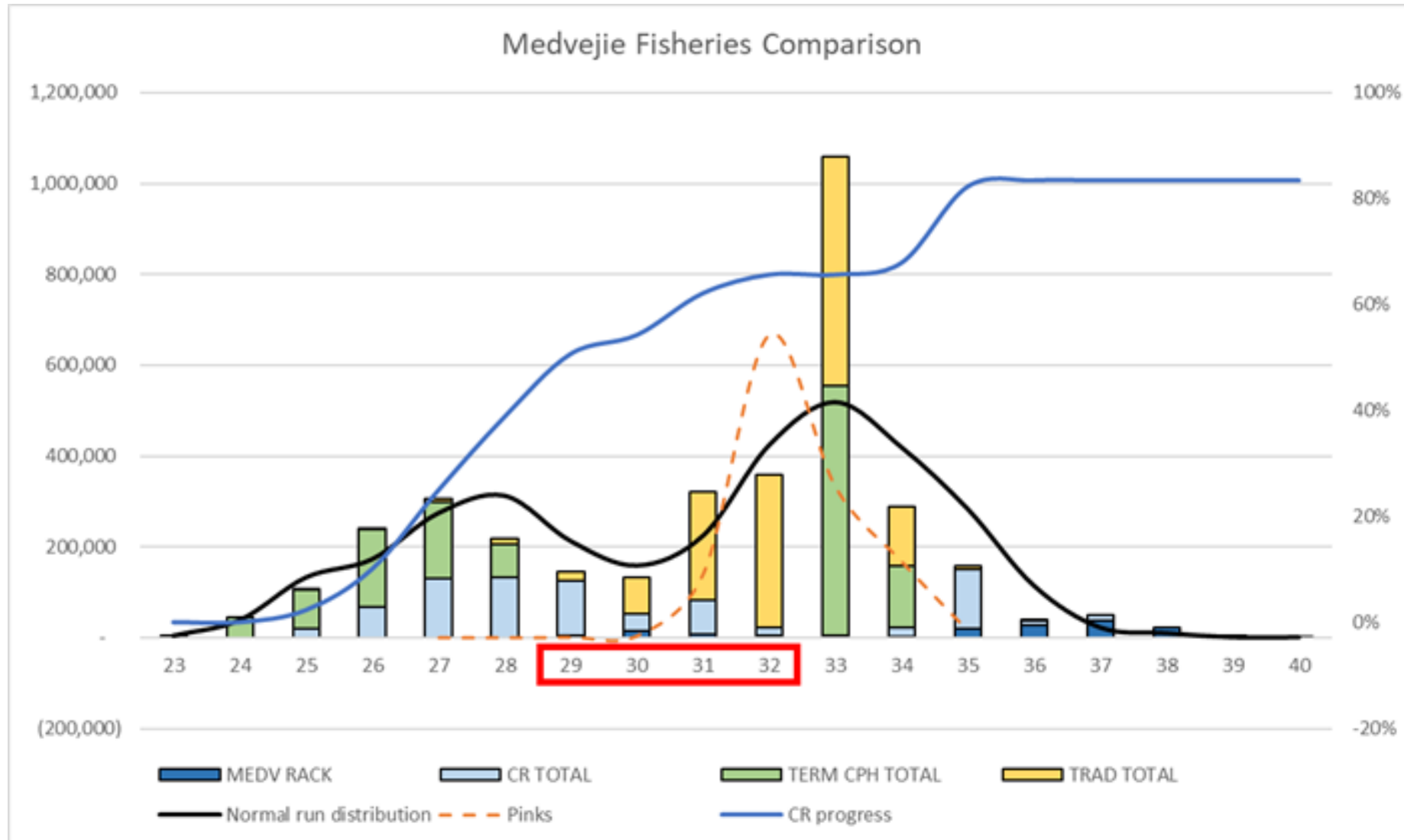
- **SLOW COST RECOVERY**

- Lack of progress during peak weeks

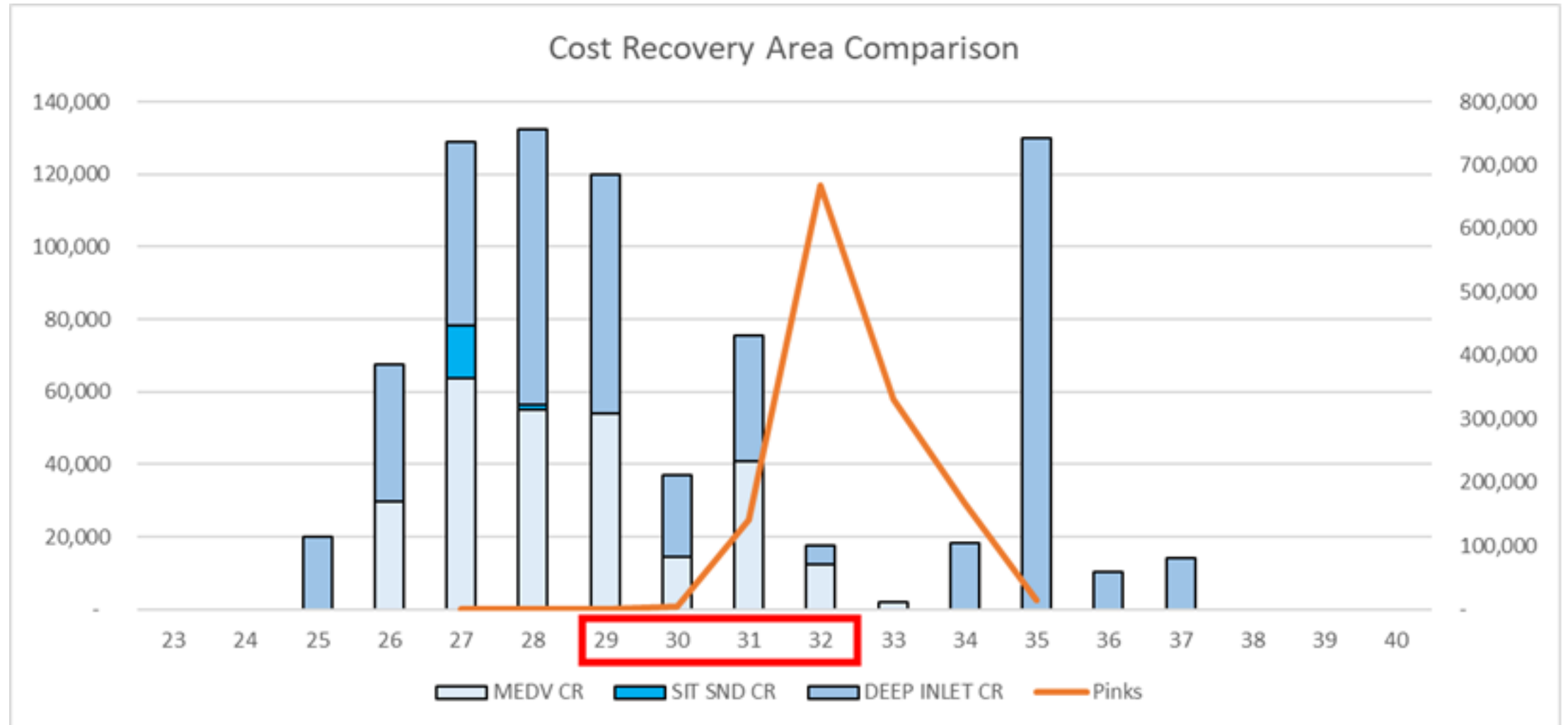
***“Perfect Storm
of Chum
Interception”***



2024 Chum Return – SITKA SOUND FISHERIES



2024 Chum Return – SITKA SOUND FISHERIES





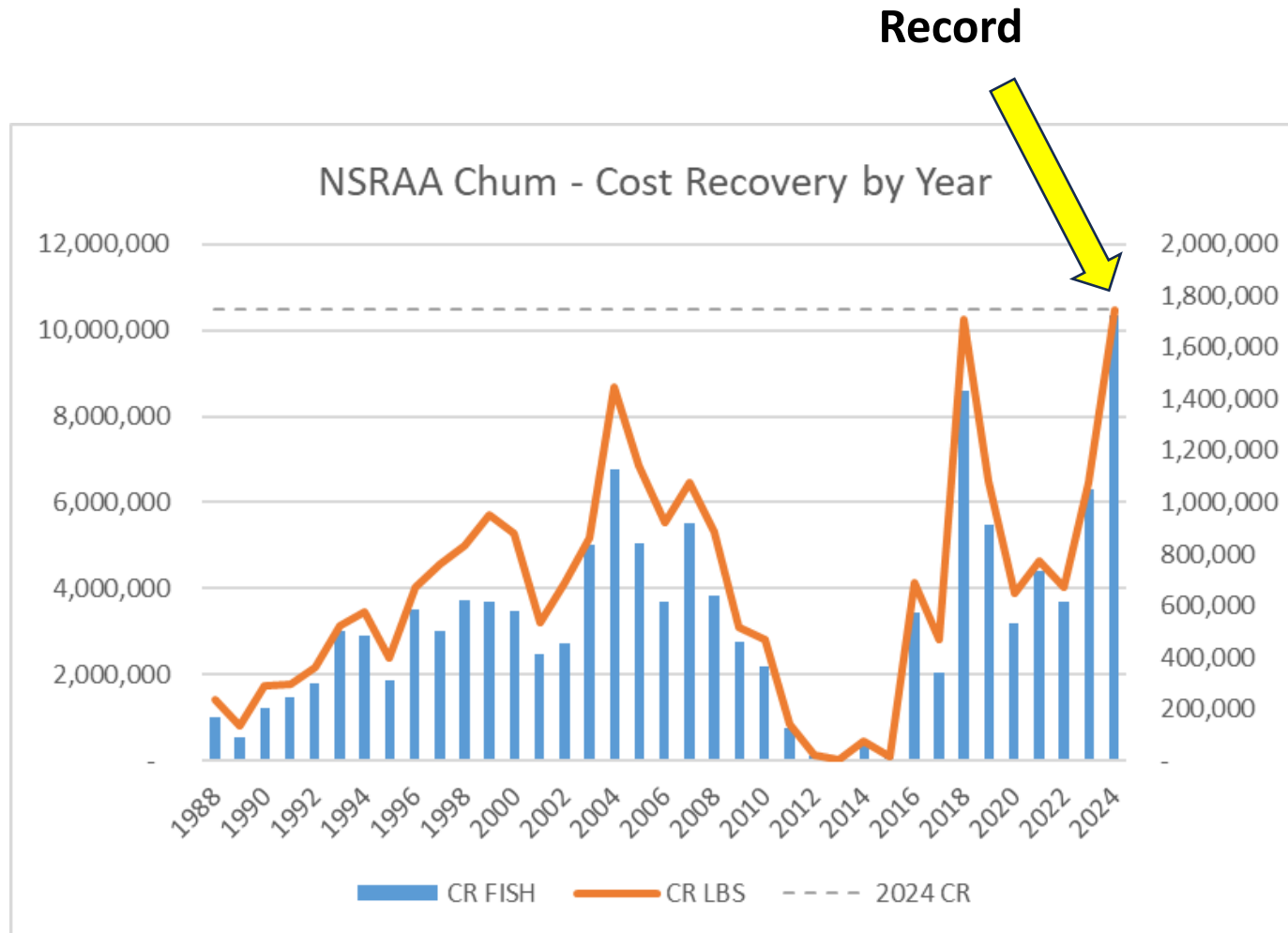
**"There is never any need to get
worked up about things you
can't control."**

Marcus Aurelius

THE 5 MINUTE STOIC

2024 Chum Cost Recovery

2024 Chum Return – COST RECOVERY



Highest volume (Chum) on record for NSRAA cost recovery

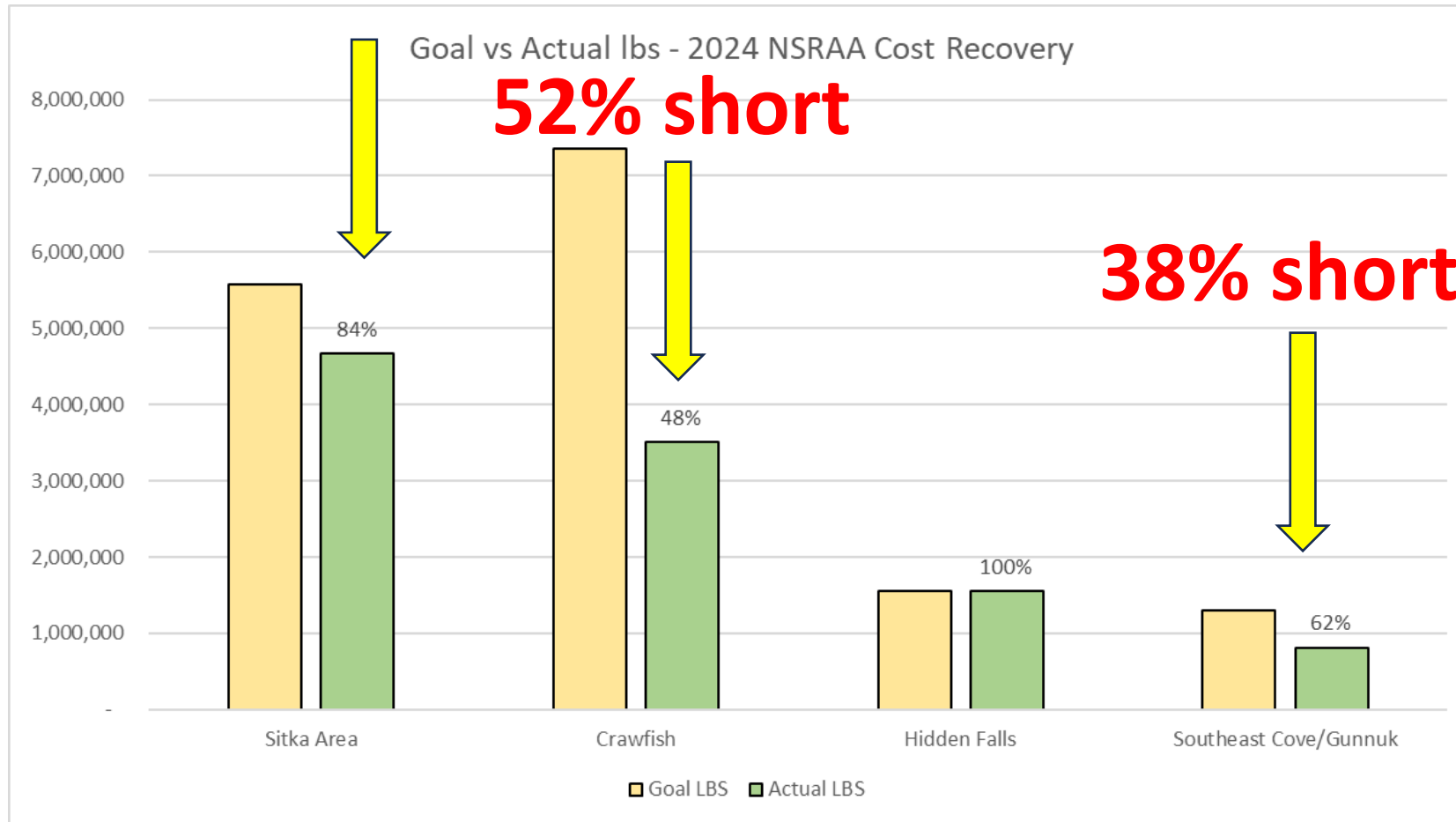
- All sites except Thomas Bay
- All major SEAK processors
- Highly complex by nature

Finished at 67% of goal lbs for the year

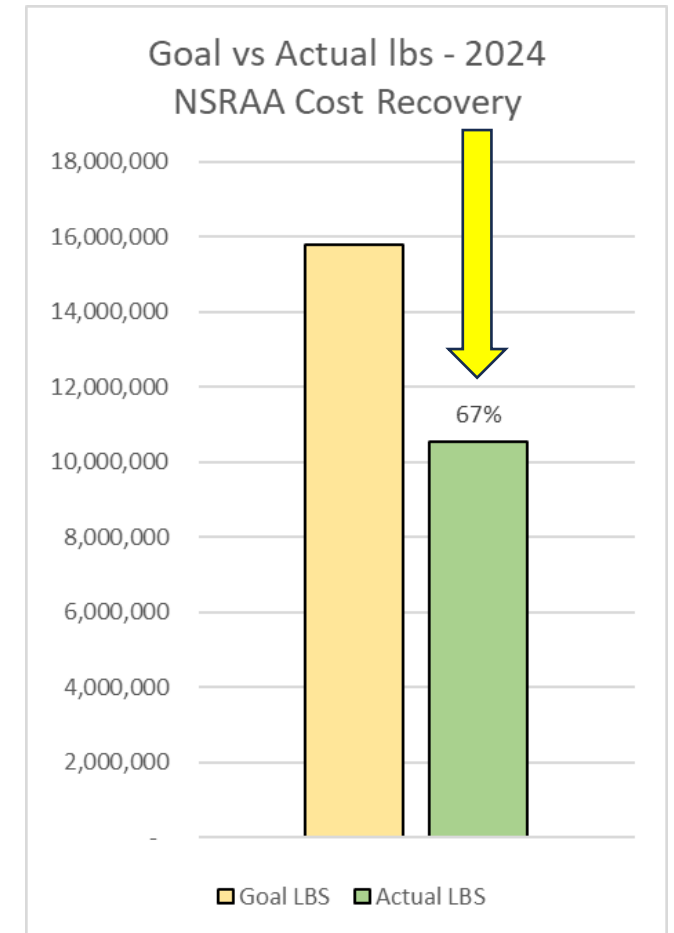
\$3 million in unrealized revenue

2024 Chum Return – COST RECOVERY

16% short



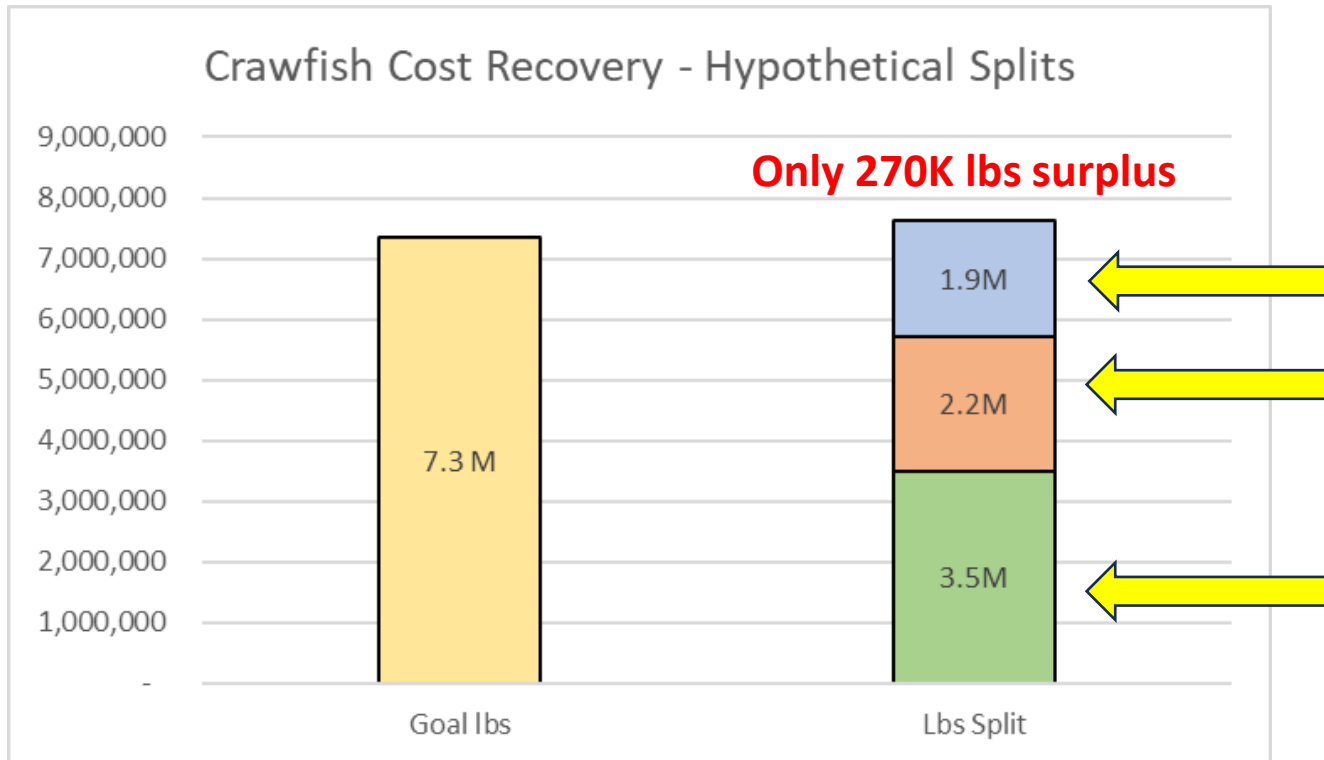
33% short



2024 Chum Return – COST RECOVERY

Likely would not have made the CR goal in Crawfish even if three-year-olds came in at forecast...

NO, it was not a record high WCI Seine harvest



Trad WCI Seine

The rest of the 3's

What we took

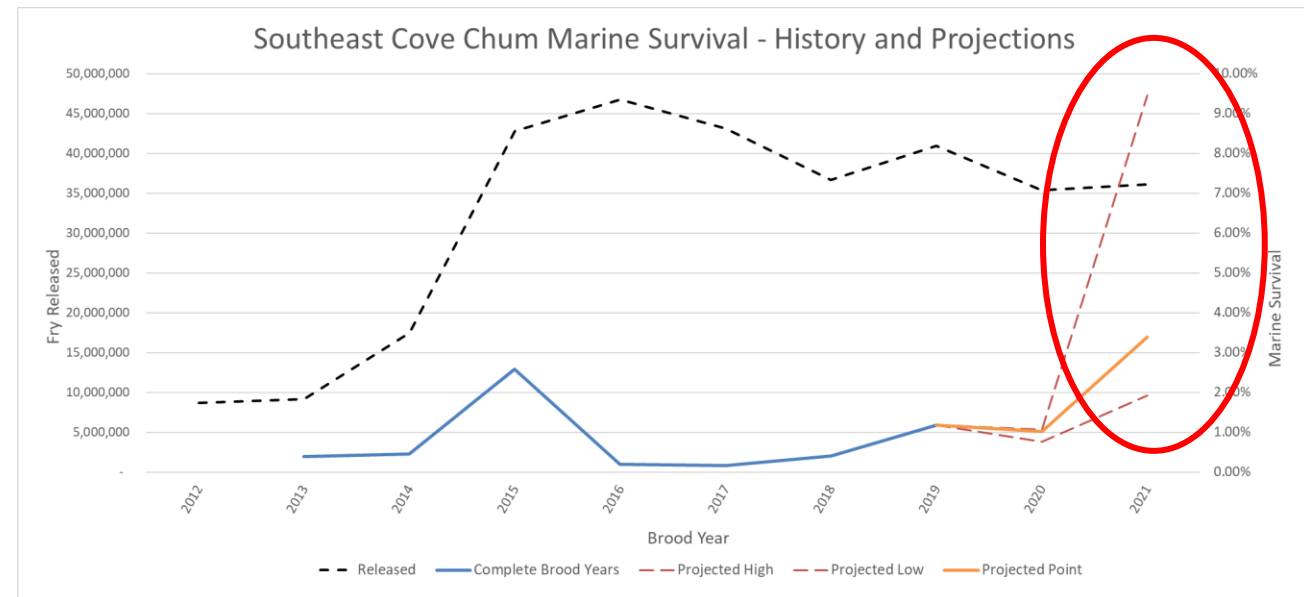
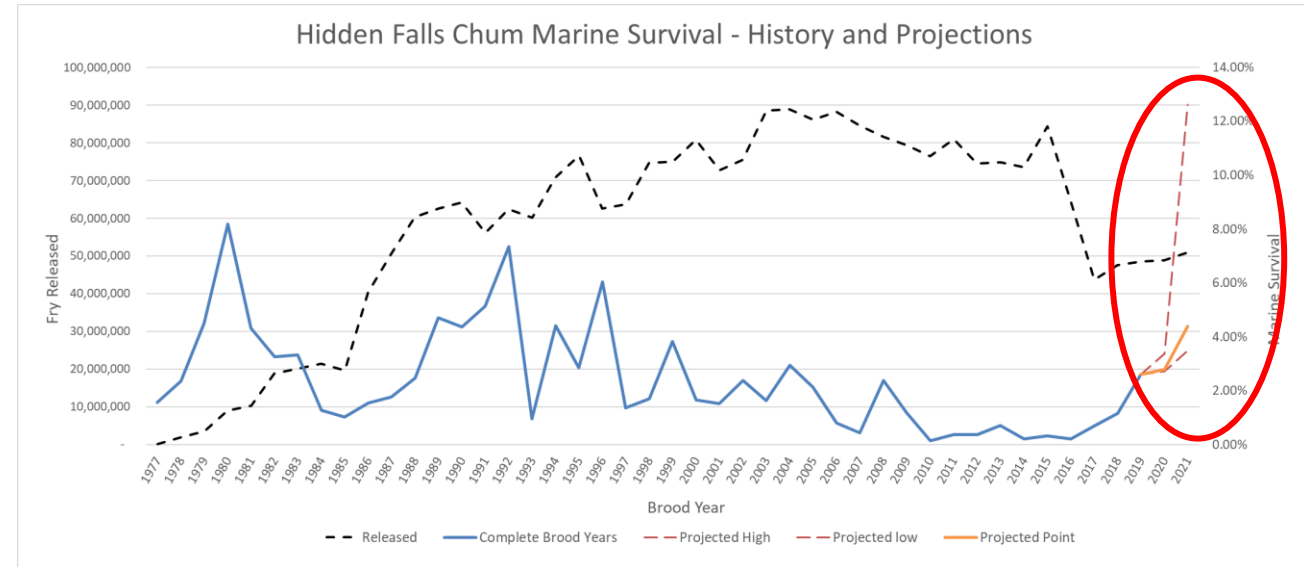


Chum Survival and 2025 Forecasts

Marine Survivals— HIDDEN FALLS & SOUTHEAST COVE

HF and SEC trending up towards historical high's for incomplete BY's

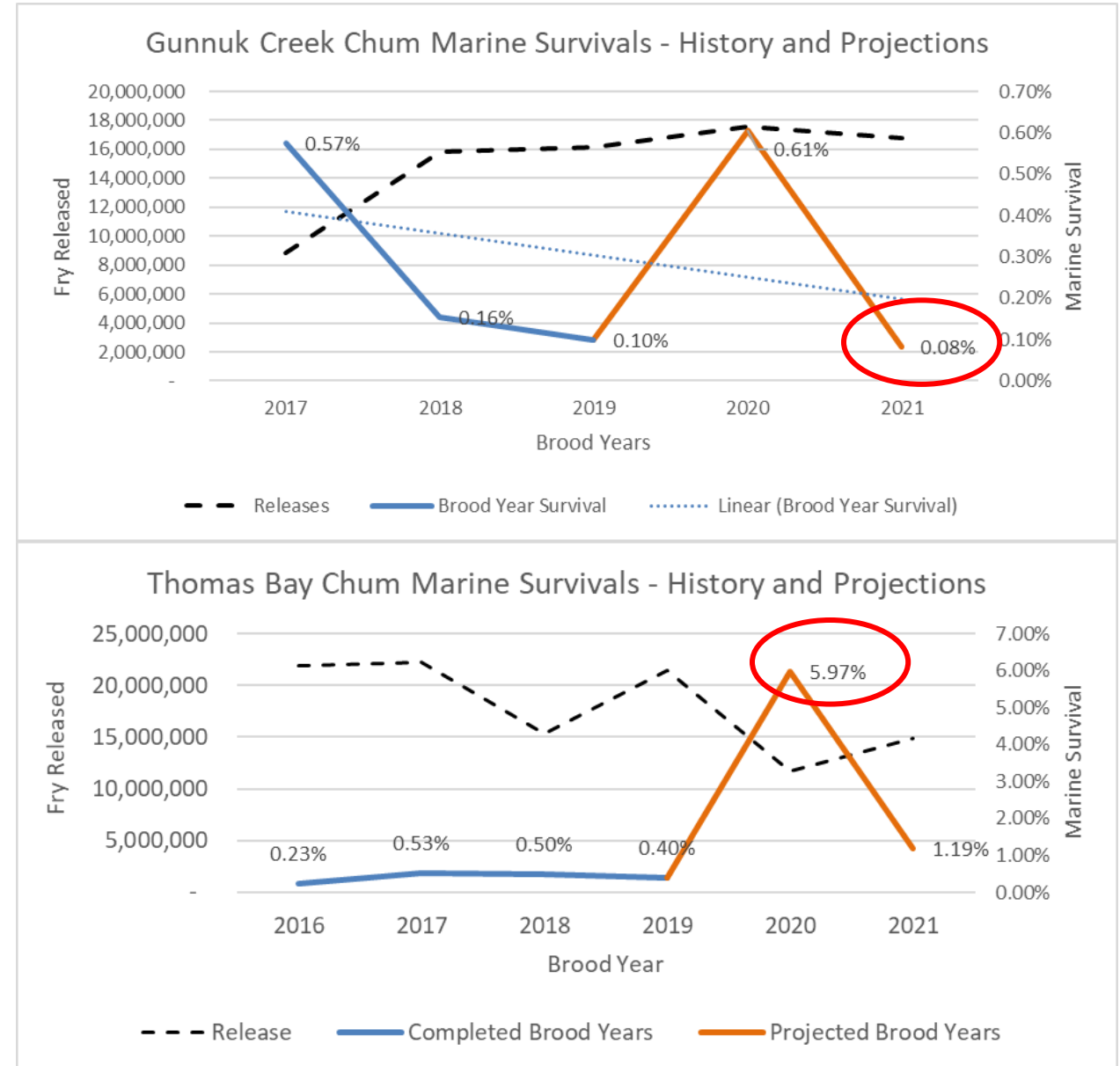
Unrealistically high upper range estimates



Marine Survivals— GUNNUK CREEK & THOMAS BAY

Gunnuk projected to remain below 1% - Avg 0.3%

TB trending up with historical high's for incomplete BY's



Marine Survivals— MEDVEJIE RELEASES

Known juvenile
black cod years



Brood Year	Summer Stock		Fall Stock		Summer Total	Fall Total	Bear Cove Total	Deep Inlet Total	Grand Total
	Bear Cove	Deep Inlet	Bear Cove	Deep Inlet					
2012	NA	1.9%	2.7%	2.4%	1.9%	2.0%	1.5%	2.1%	2.0%
2013	NA	0.9%	1.3%	5.5%	0.9%	3.2%	1.3%	2.9%	2.5%
2014	NA	0.2%	1.1%	1.2%	0.2%	0.9%	1.1%	0.7%	0.8%
2015	NA	2.3%	ND	ND	2.3%	3.4%	ND	ND	3.0%
2016	NA	1.0%	ND	ND	1.0%	0.7%	ND	ND	0.8%
2017	0.8%	0.5%	1.7%	2.5%	0.6%	2.0%	1.4%	1.5%	1.5%
2018	NA	NA	ND	ND	NA	5.1%	ND	ND	5.1%
*2019	0.2%	0.7%	0.2%	1.4%	0.4%	1.0%	ND	ND	0.8%
**2020	4.1%	4.7%	4.2%	2.8%	4.4%	3.6%	4.2%	3.8%	2.3%
***2021	0.2%	0.3%	1.2%	0.7%	0.3%	0.9%	0.8%	0.5%	1.2%

* Missing 6 year-old age class

** Missing 5-6 year-old age classes

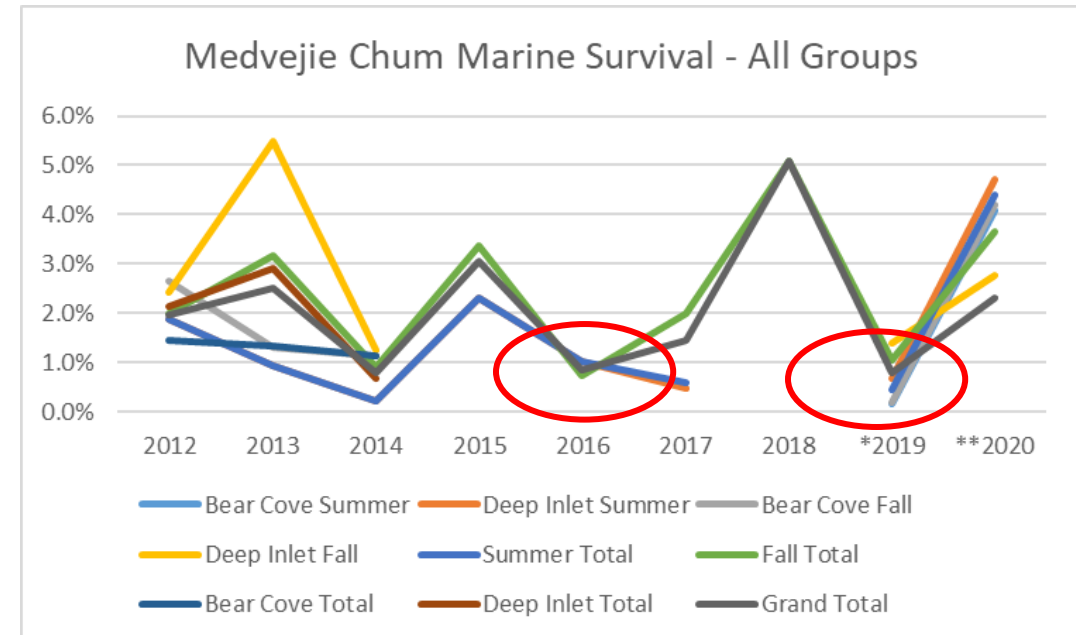
*** Missing 4-6 year-old age classes

NA Does not apply, there were no releases

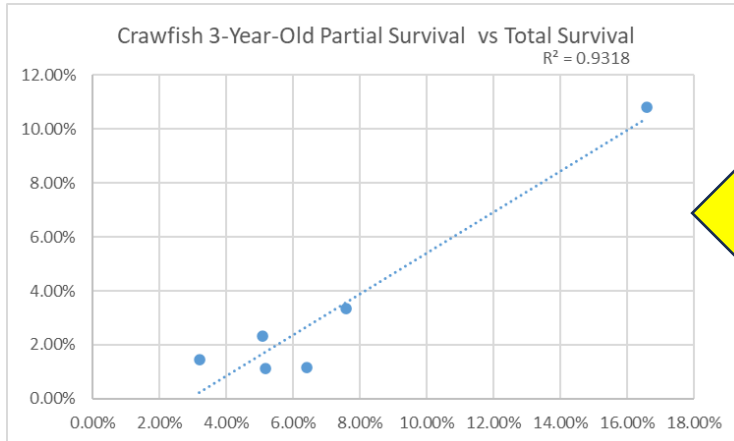
ND Data is omitted due to non-discrete otolith marks by site

Predation Driven?

Highly variable by year
but fairly consistent
across groups.

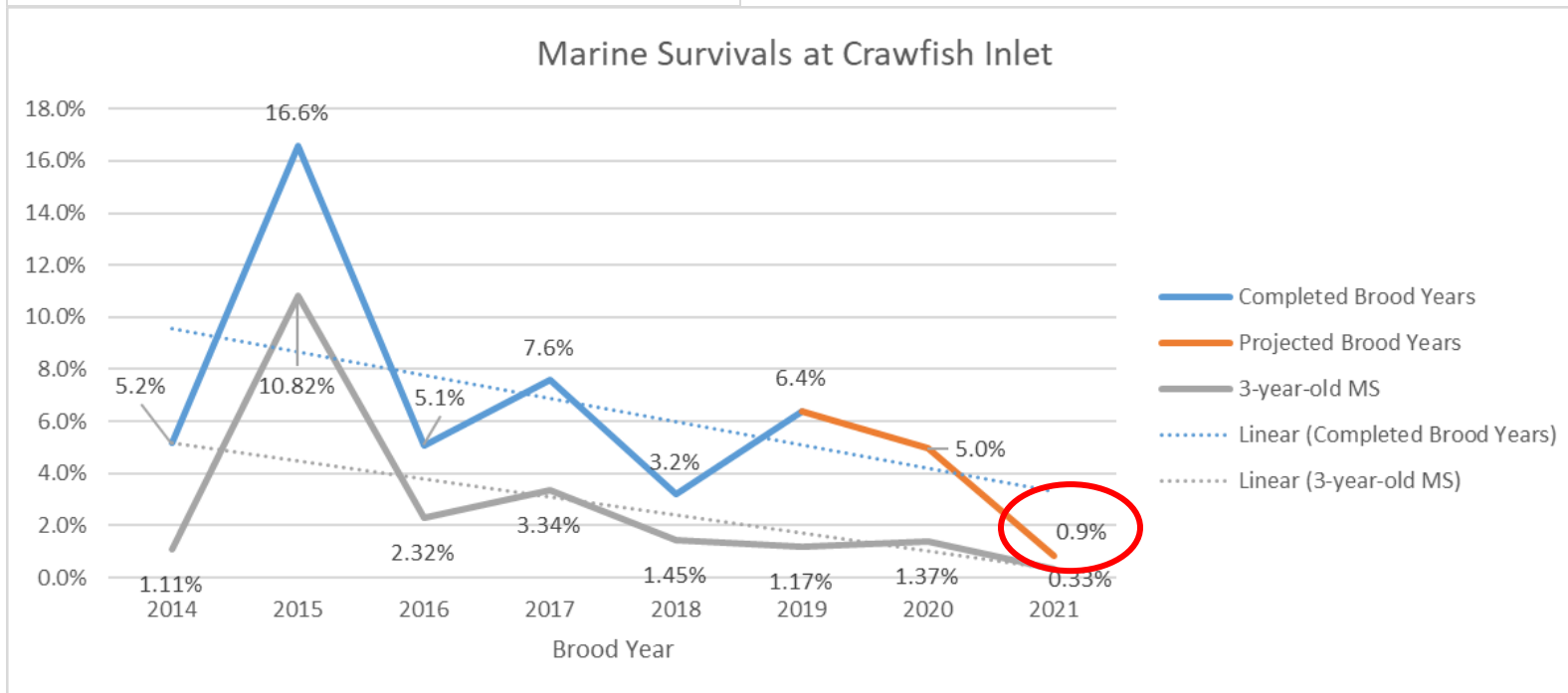


Marine Survivals— CRAWFISH INLET



We have not seen a brood year yet that has bucked this trend

This is BAD!



Projecting under 1% for first time ever

2025 Chum FORECASTS

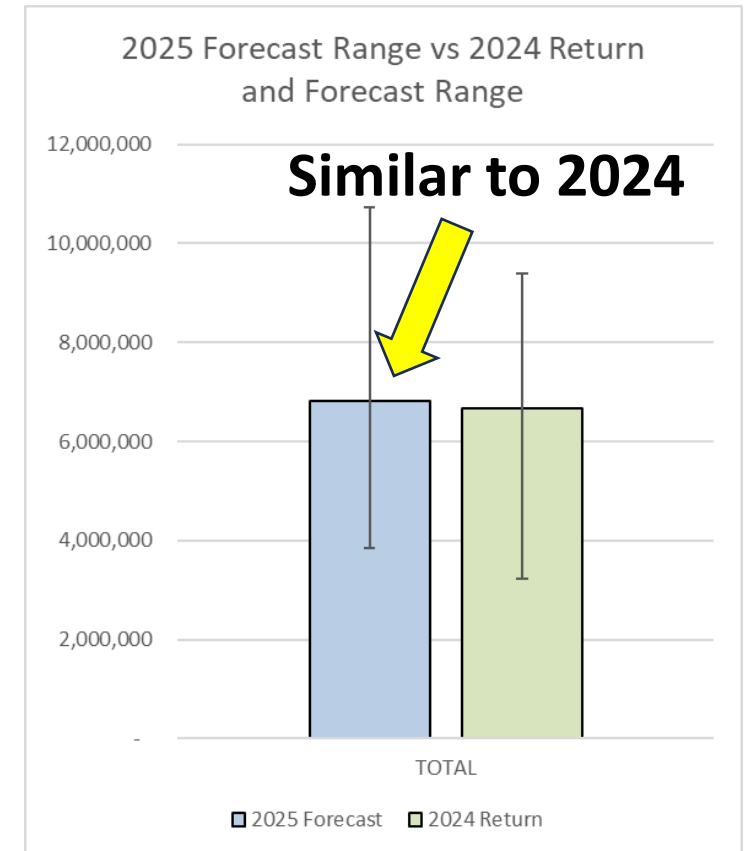
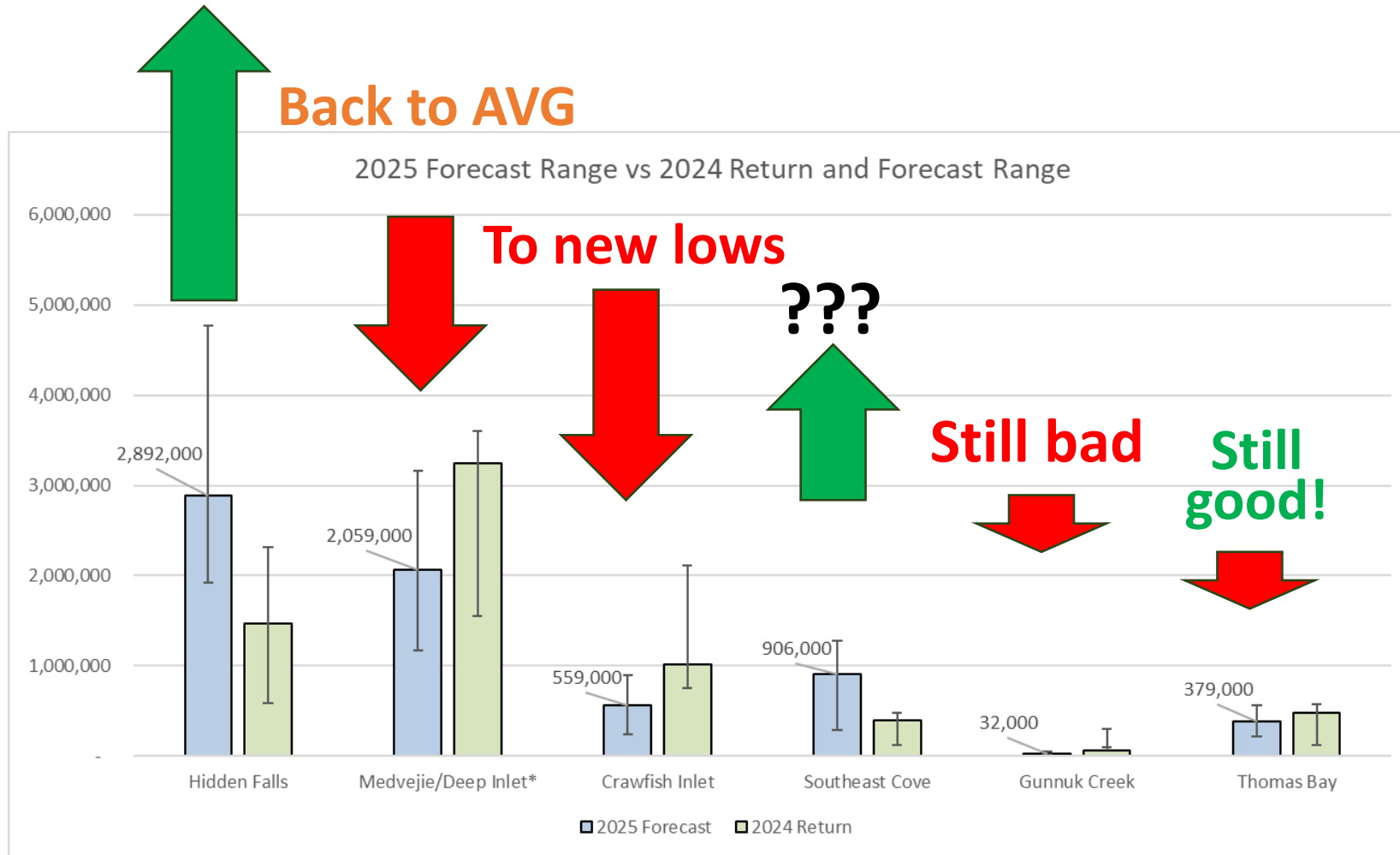
6,824,000

(WOULD BE LARGEST CHUM RETURN OF ALL TIME)

2025 Chum FORECASTS

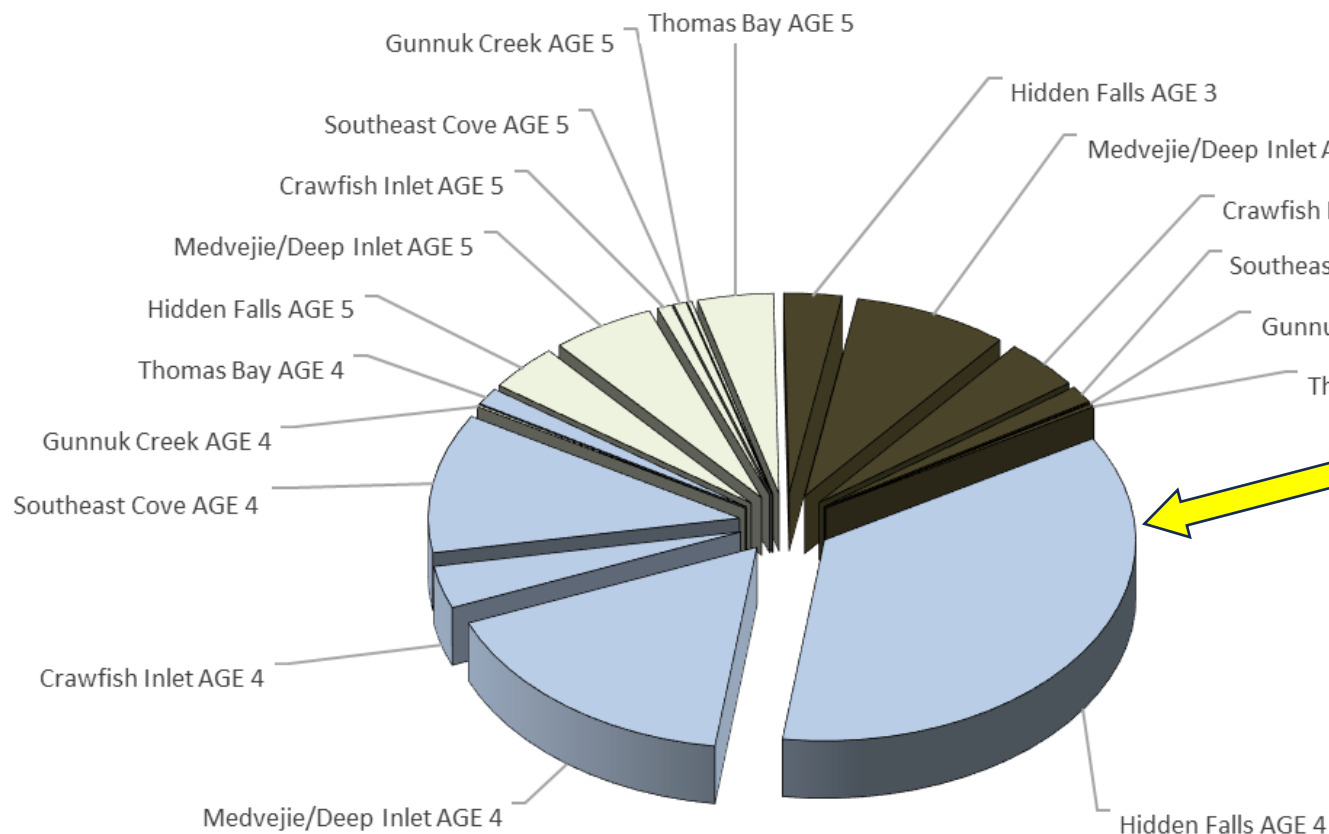
To new heights?

By SITE: 6,824,000

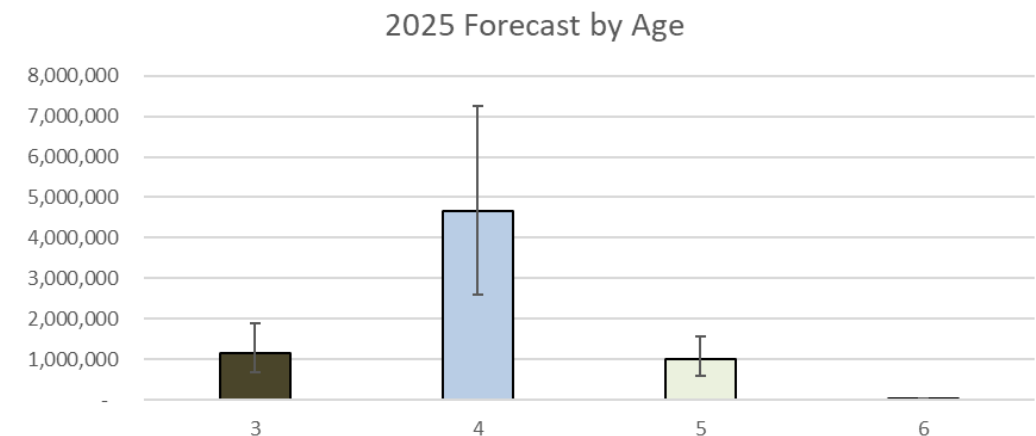


2025 Chum FORECASTS

By AGE: 6,824,000



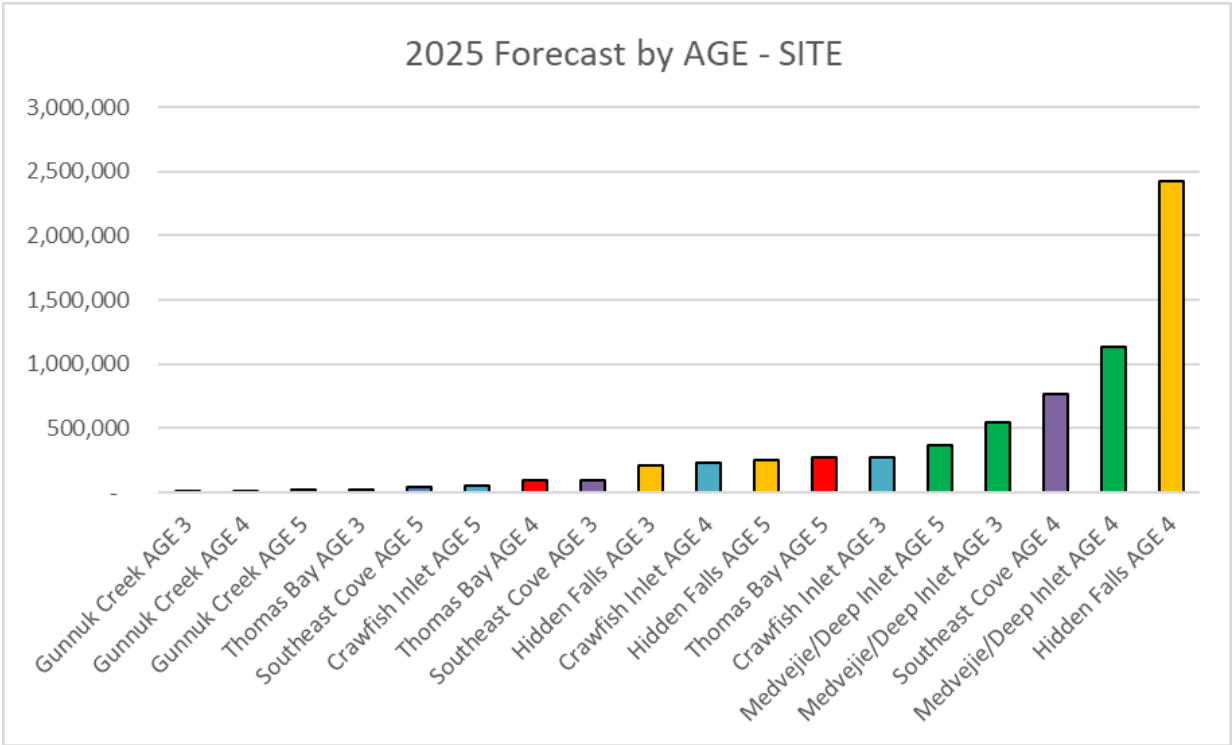
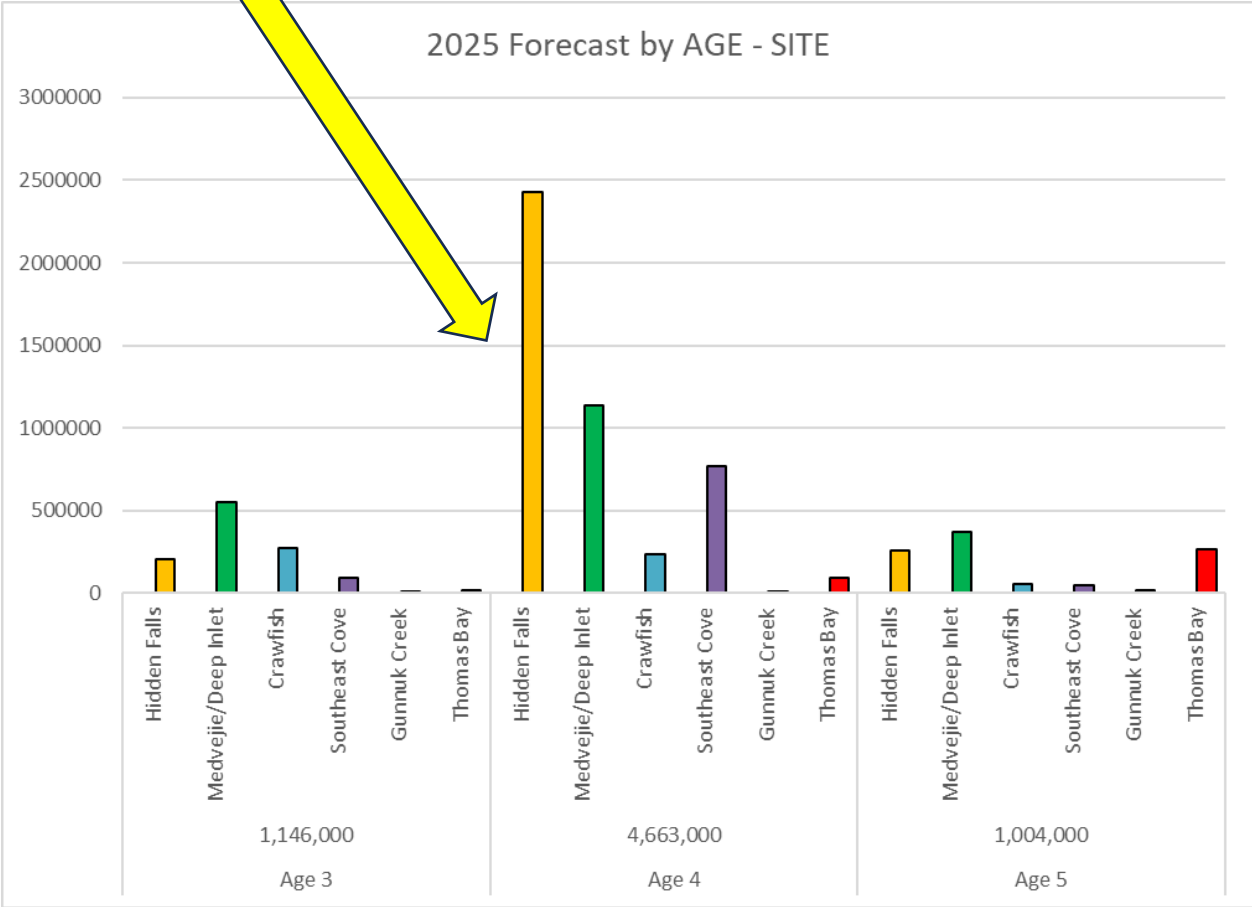
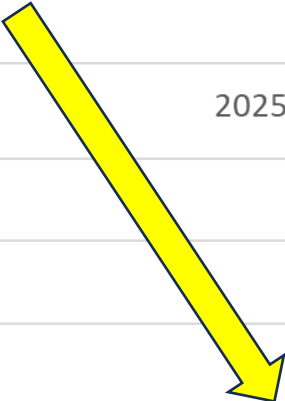
That's a BIG piece



2025 Chum FORECASTS

All Cohorts: 6,824,000

NOTE: The differences in magnitude...

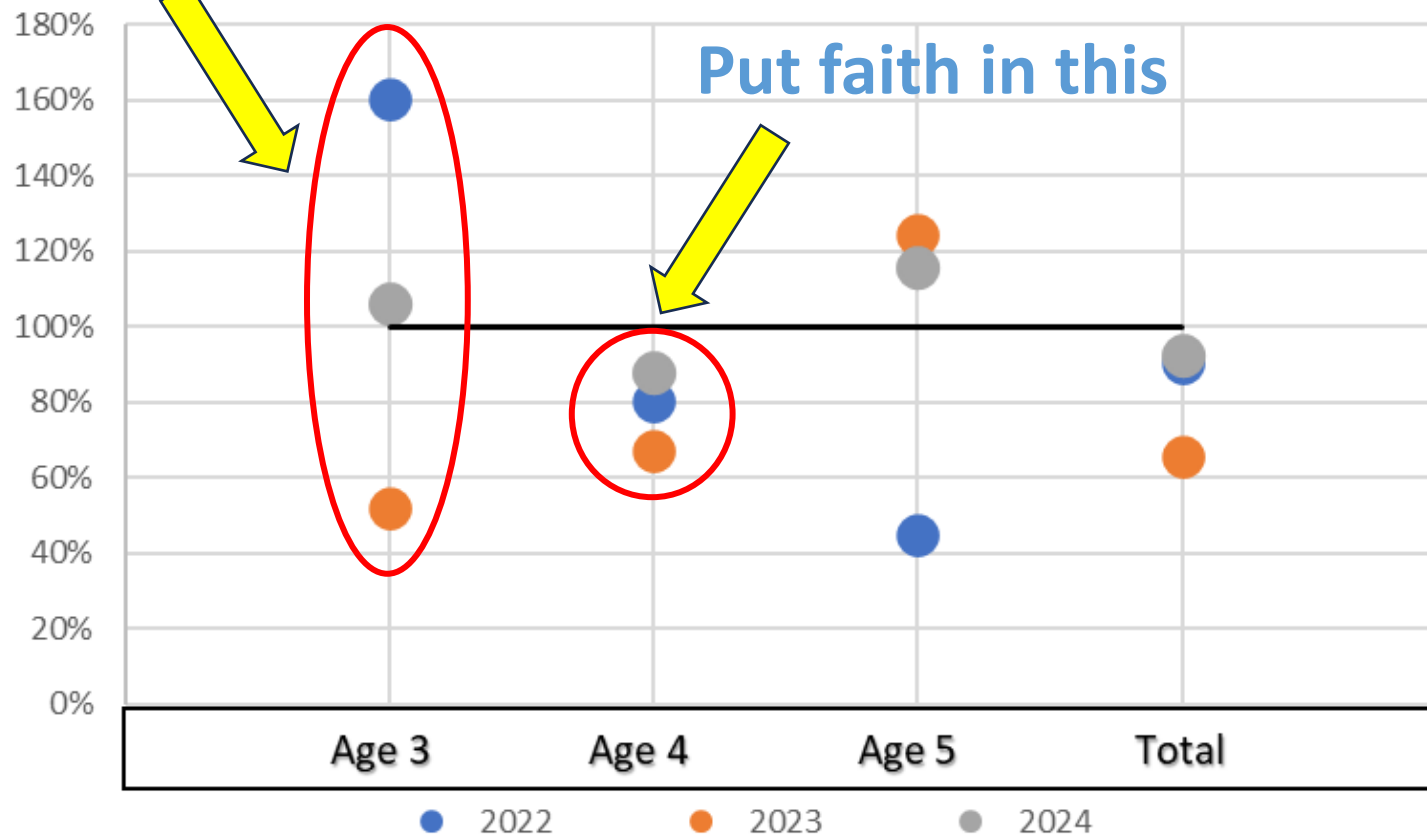


2025 Chum FORECASTS

Projecting Three's...

NOT this

Ben's Forecast to Actual by Age



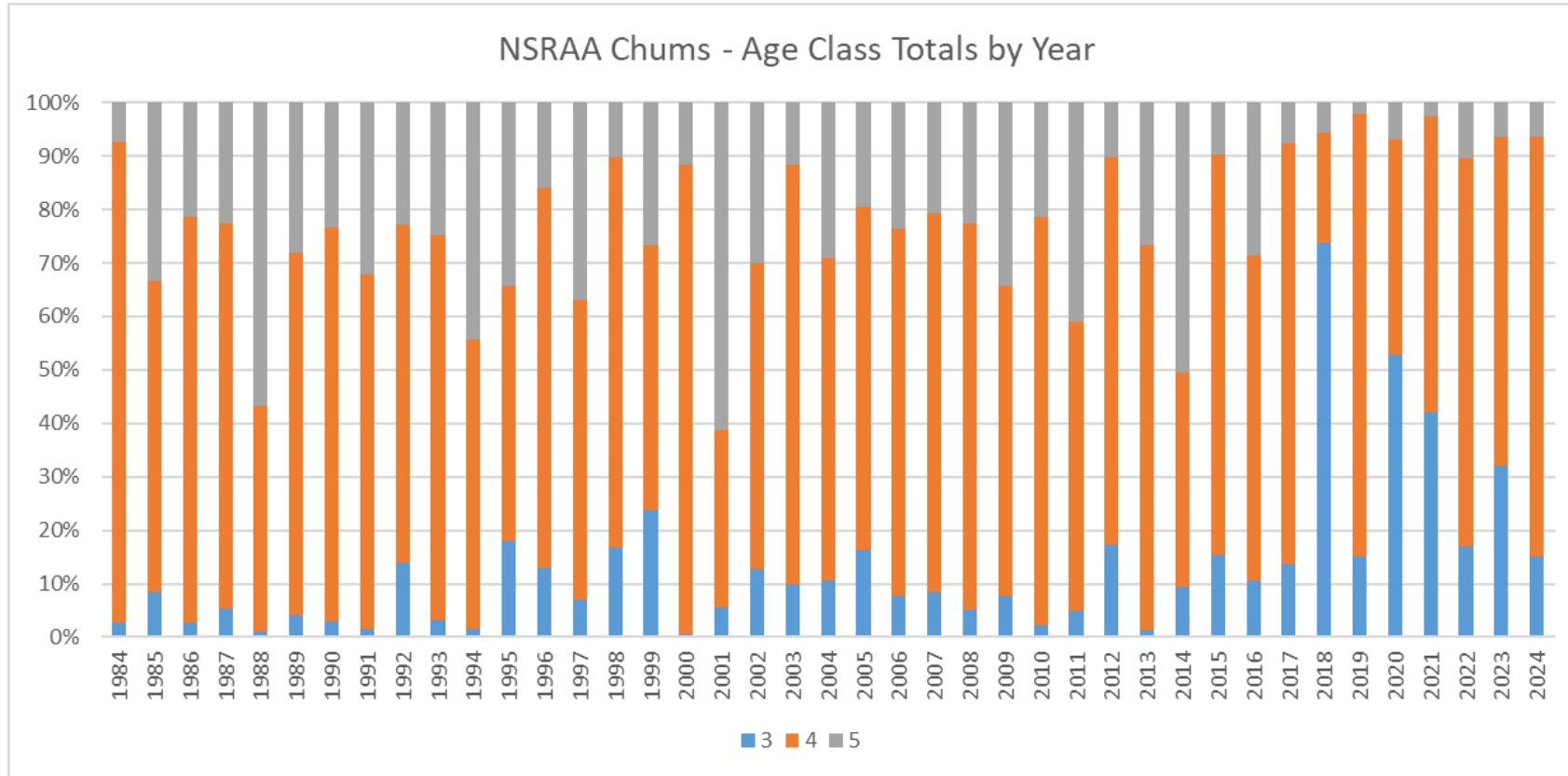
Forecasting the three-year-old age class is the most challenging

Projects that see higher fractions of three's carry a higher risk of missing forecast

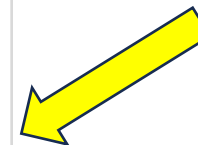
← Ben's Forecasts

2025 Chum FORECASTS

Projecting Three's...



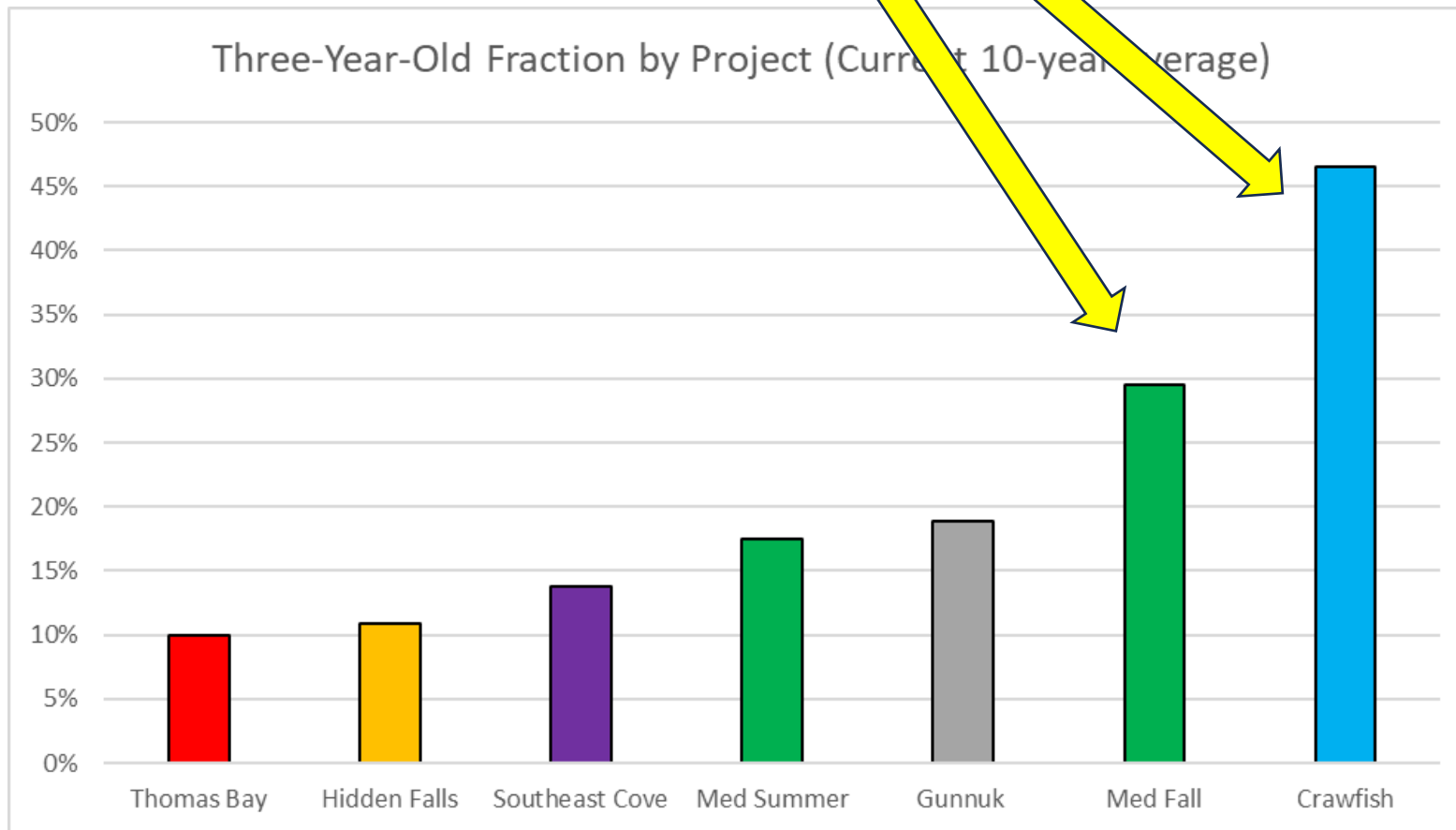
They aren't
going
anywhere...



2025 Chum FORECASTS

Projecting Three's...

Where do we see the most three's?



Forecasting the three-year-old age class is the most challenging

Projects that see higher fractions of three's carry a higher risk of missing forecast

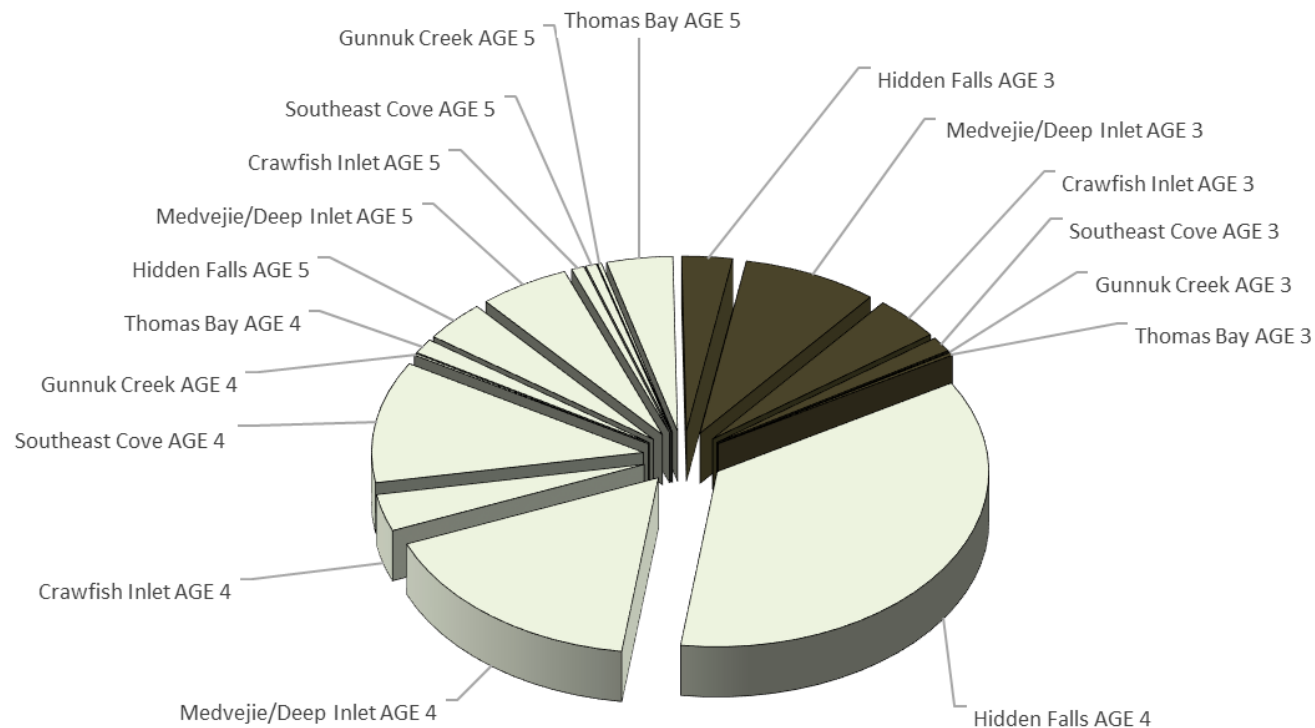
2025 Chum **FORECASTS**

**Fish Health Assessments to try
and better forecast three-year-
olds?**



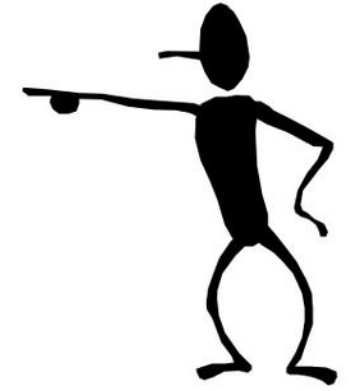
2025 Chum FORECASTS

Let's come back to
this in the Spring



**Consider excluding the more
risky cohorts and accounting
for lower forecast ranges
when making cost recovery
decisions**

2024 Chum Takeaways



HIGH POINTS:

- Effectively largest chum return ever
- Many sites exceeded forecast
- HF 3's doubled previous record
 - Highest survival in 45 years
- Thomas Bay record return
- Record weekly harvest in Deep Inlet/Sitka Sound – first over 1 million fish
- Largest Seine Catch at HF since 2013
- Massive Chum forecast headed into 2025!

LOW POINTS:

- CR fell short of goal at 67%
 - Still largest CR volume ever
- Gunnuk and Crawfish fell significantly short of forecast
- Crawfish 3's at an apocalyptically low survival
 - Terrible Fcast relative to normal
- Deep Inlet never fully opened
- 3rd lowest Deep Inlet harvest share for gillnetters
- Record Interceptions on fall stock
- Brood stock closures and transport



2024 Chinook Returns

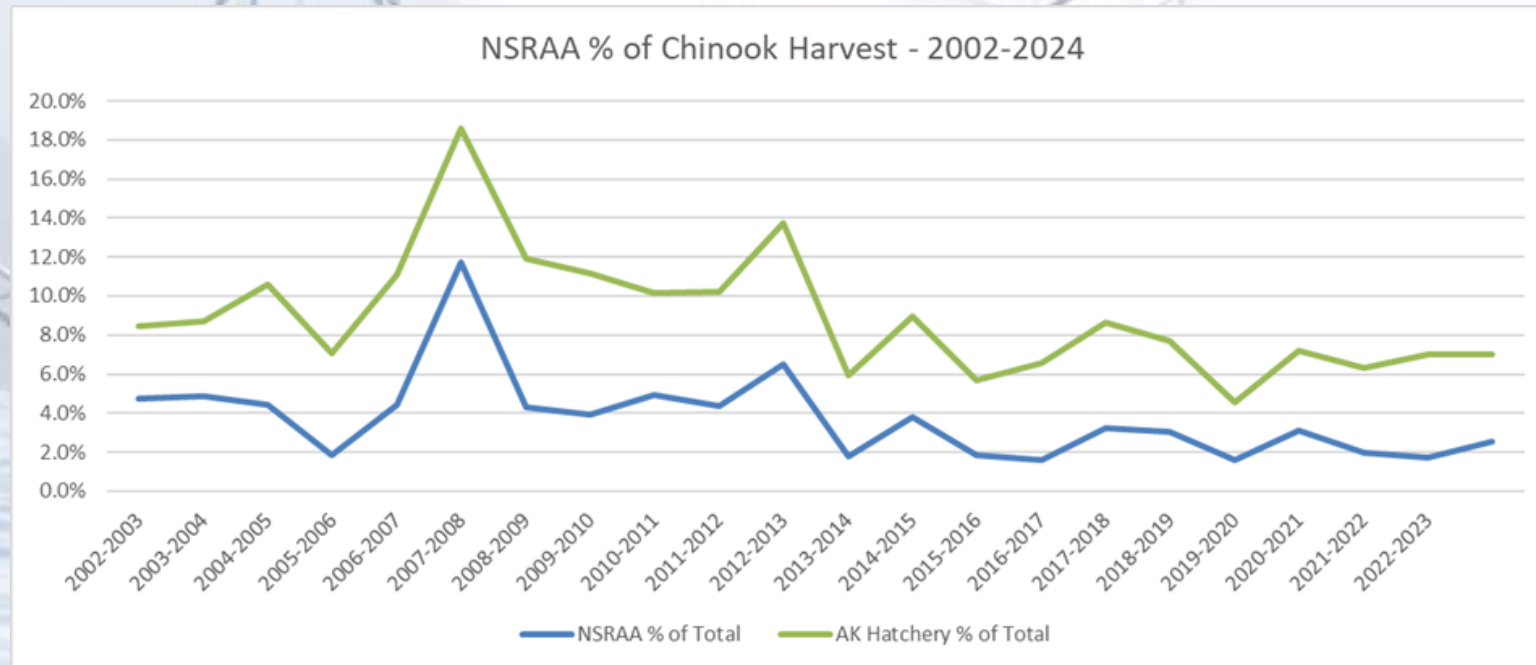
2024 Chinook Returns

- Chinook returns came in above forecast except for Crescent Bay and Gunnuk Creek.
- Medvejie was once again the largest Alaska hatchery contributor to SEAK Troll fisheries.
- Improvements to TOTAL troll contribution from last year, with an estimated 4,949 fish, 3.3% of the SEAK 2024 troll harvest.
- Pre-season concerns for Chinook broodstock at Medvejie warranted sport fishery closures.
- A higher-than-normal proportion of subadult (2-ocean) fish in the rack led to elevated male ratios. Medvejie egg-takes were curtailed despite historically adequate brood numbers captured.
- This was the final return of adult (3-ocean) Andrew Creek returns to Hidden Falls. Due to poor survival and age shifts, no 4-ocean adults are expected in 2025.



2024 Chinook TROLL

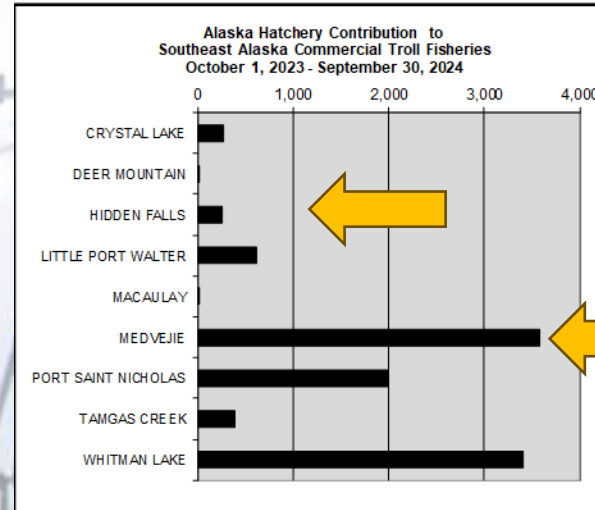
- 2024 SEAK Troll Catch = 151,000
 - Below 10-year avg (192,000)
- 2024 NSRAA % of SEAK Troll catch = 2.5%
 - Ranks 15th out of 22 years
- NSRAA accounted for 36% of AK hatchery troll harvest
 - Medvejie = largest contributor



2024 Chinook TROLL

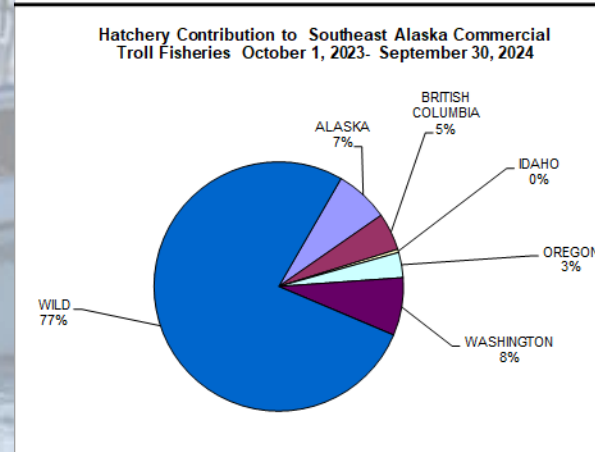
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HATCHERY CHINOOK CONTRIBUTIONS TO COMMERCIAL TROLL FISHERIES



Alaskan Hatcheries	Contribution	Percent
CRYSTAL LAKE	267	3%
DEER MOUNTAIN	7	0%
HIDDEN FALLS	261	2%
LITTLE PORT WALTER	620	6%
MACAULAY	19	0%
MEDVEJIE	3,578	34%
PORT SAINT NICHOLAS	1,981	19%
TAMGAS CREEK	390	4%
WHITMAN LAKE	3,406	32%
	10,529	100%

NSRAA SUBTOTAL 3,839 36%



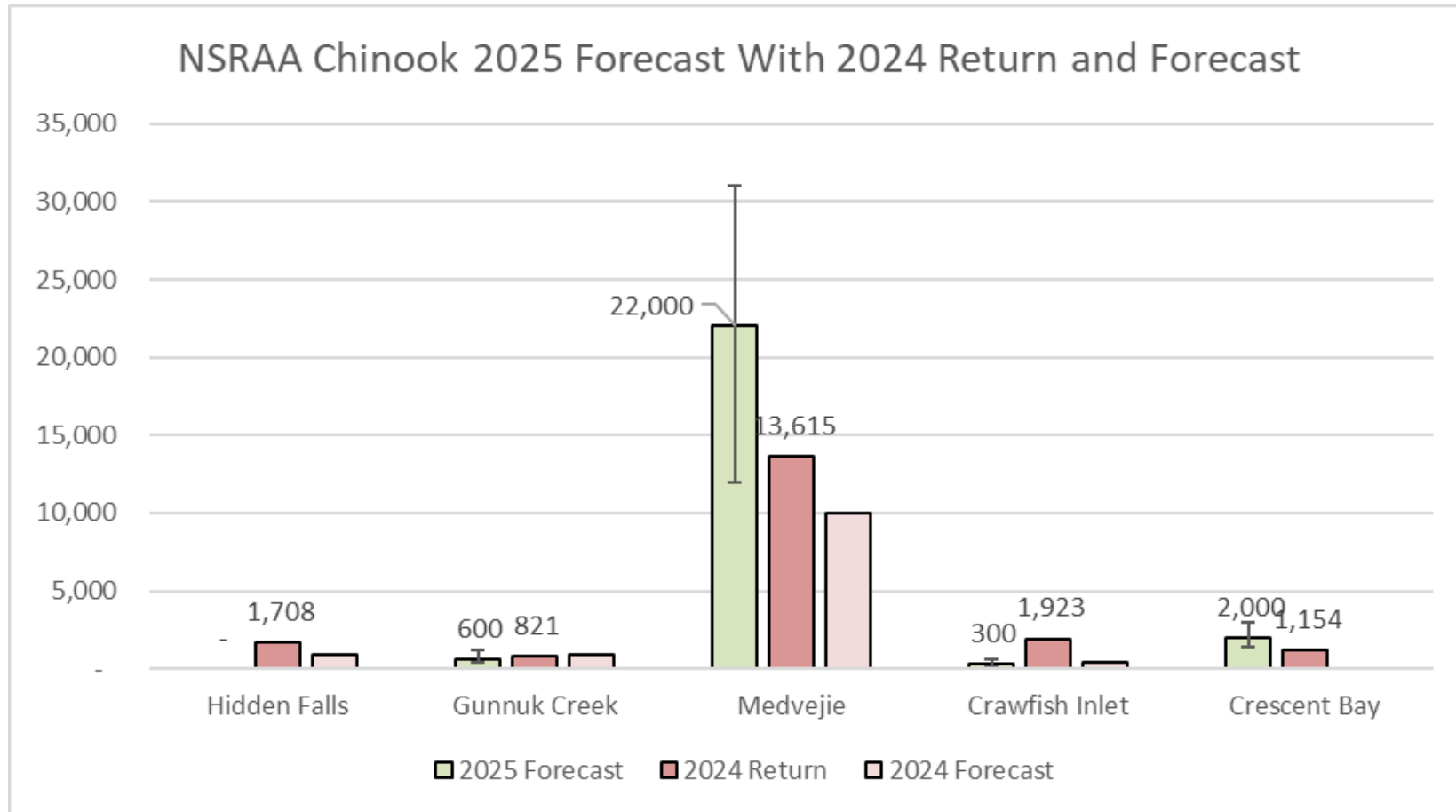
State / Province	Contribution	Percent
ALASKA	10,529	7%
BRITISH COLUMBIA	7,309	5%
IDAHO	649	0%
OREGON	4,942	3%
WASHINGTON	11,313	8%
WILD	116,060	77%
TOTAL	150,801	100%

NSRAA SUBTOTAL 3,839 2.5%

TOTAL TROLL 150,801
CWT 34,741
WILD 116,060

Data from ADF&G Commercial Fisheries Division, Mark Tag and Age Lab Preliminary Estimates, 10/2024.

2024 Chinook Forecasts





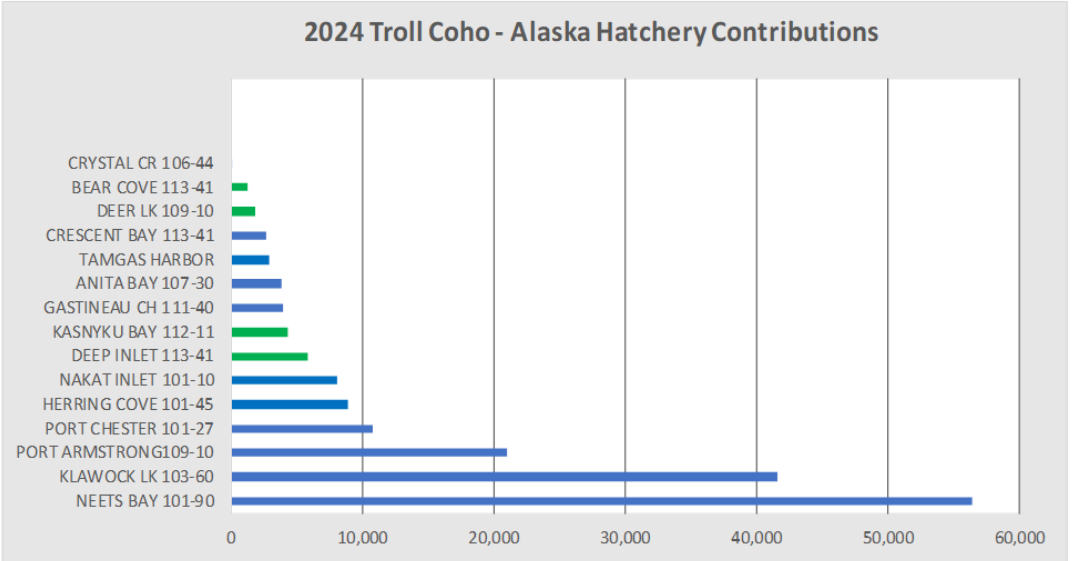
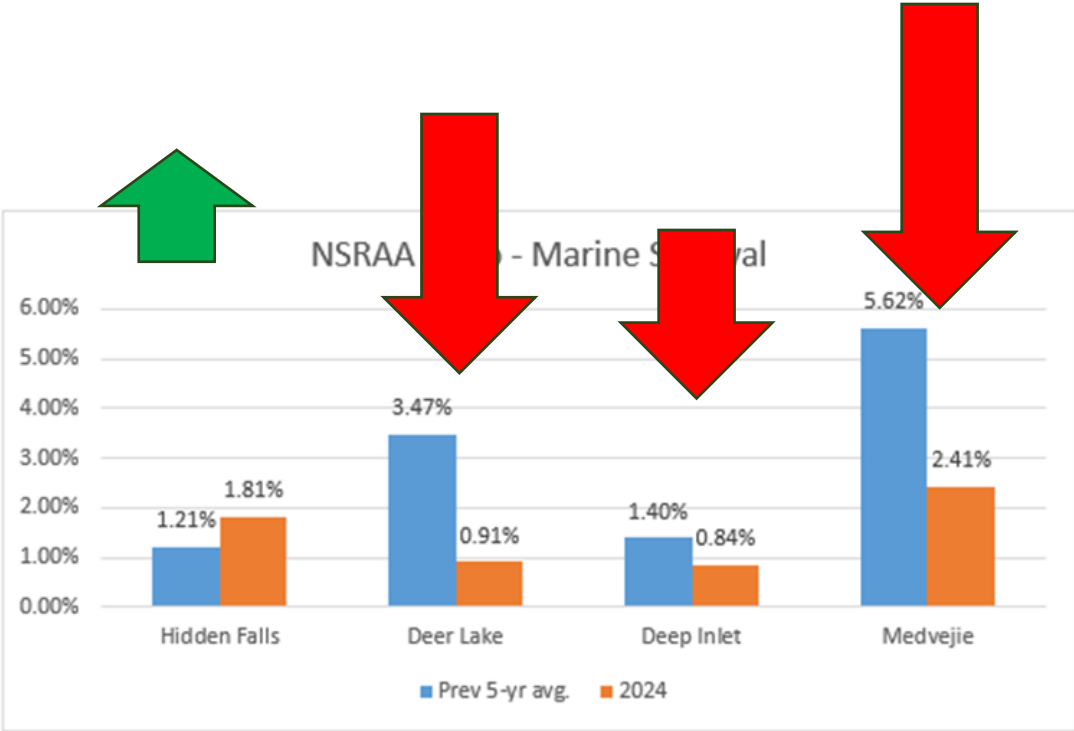
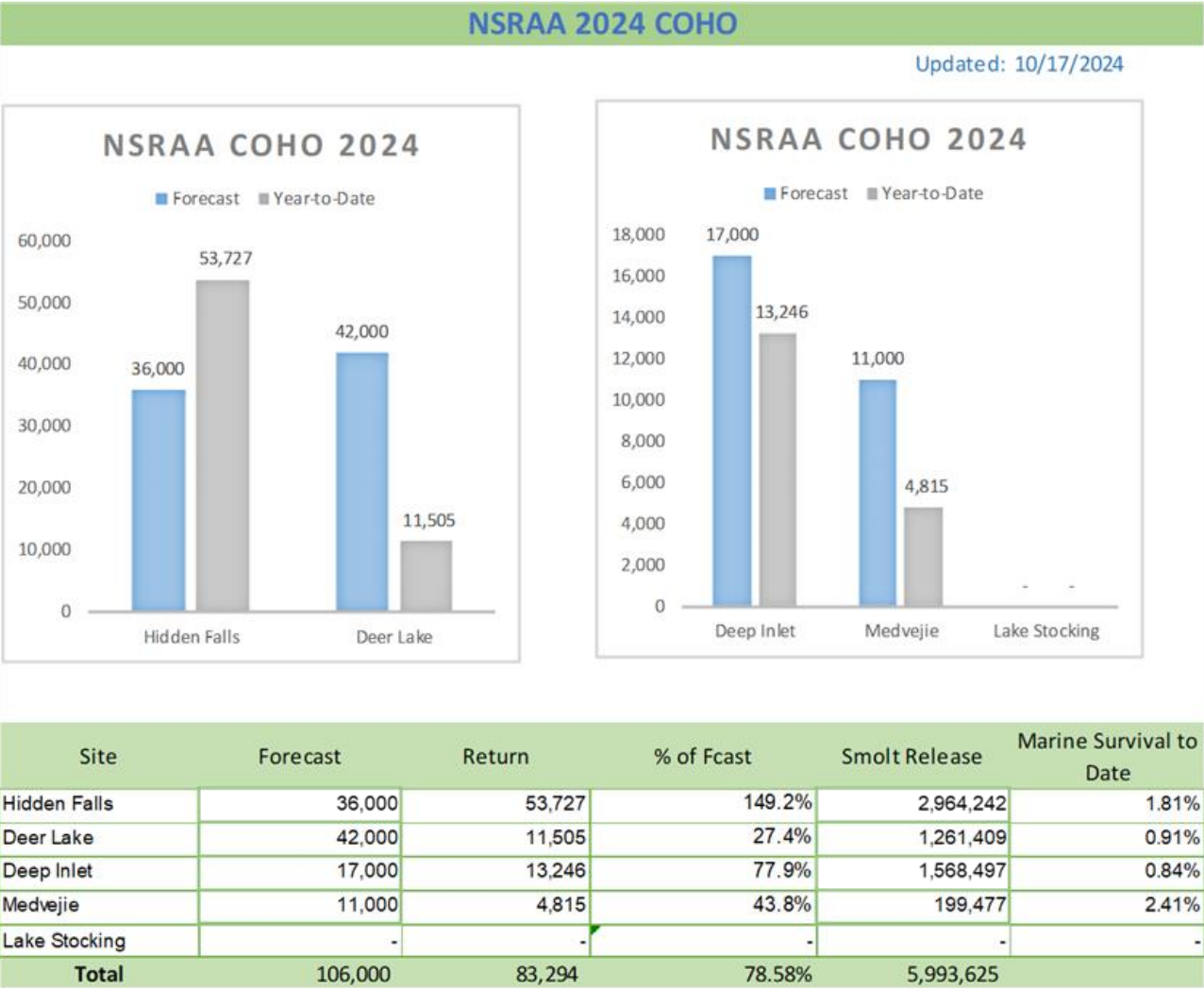
2024 Coho Returns

2024 Coho Returns

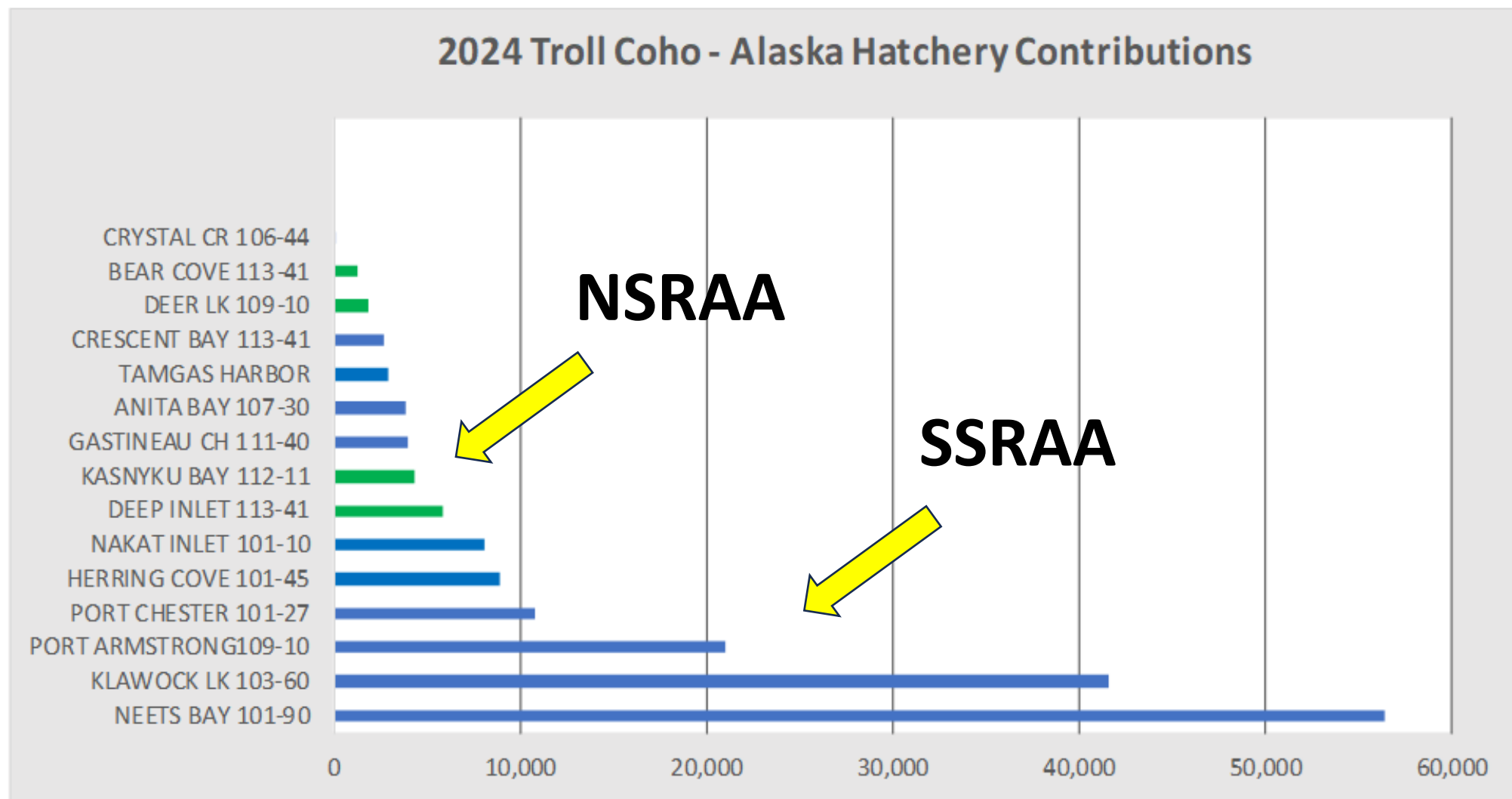
- NSRAA's Coho returns showed poor marine survival at all sites, with 2024 being the first year where all NSRAA projects have a 5-year average marine survival below 5%.
- All projects fell short of forecast except Hidden Falls
- In 2024, NSRAA Coho saw the lowest commercial contributions since 1990, the 5th lowest year in history.
- No supplemental lake stocking returns took place in 2024.
- Returns to Medvejie were poor and meeting brood stock goals required sport closures in Bear Cove as well as brood transport from Deep Inlet.
- Minimal cost recovery was available at Mist Cove compared to normal.



2024 Coho



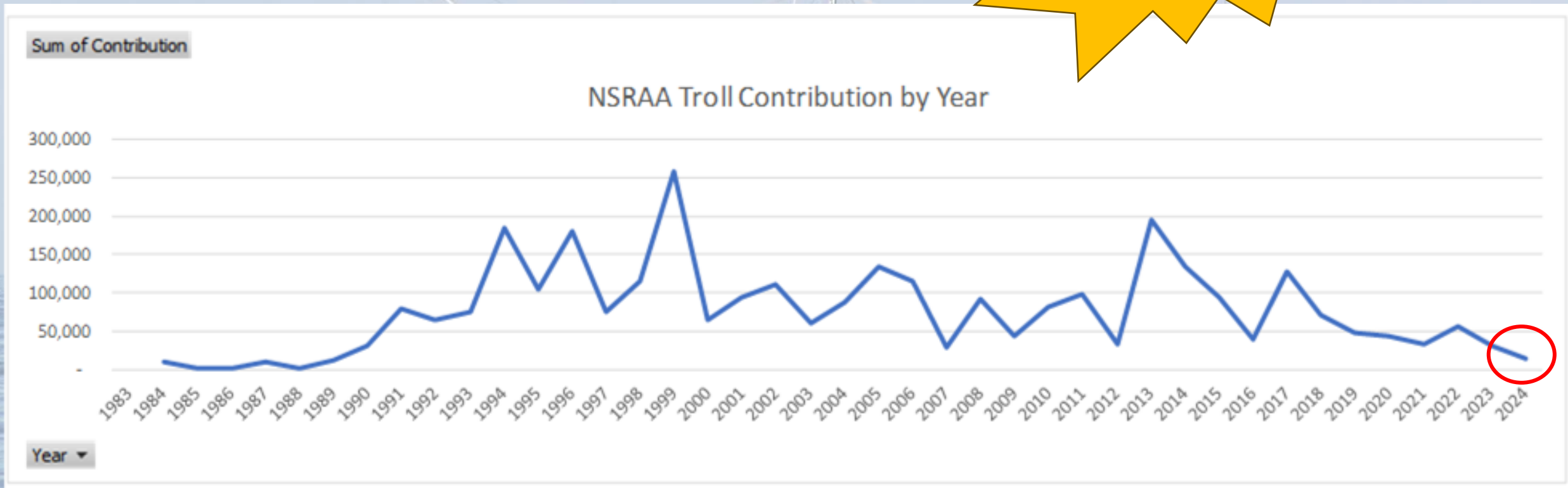
2024 Coho



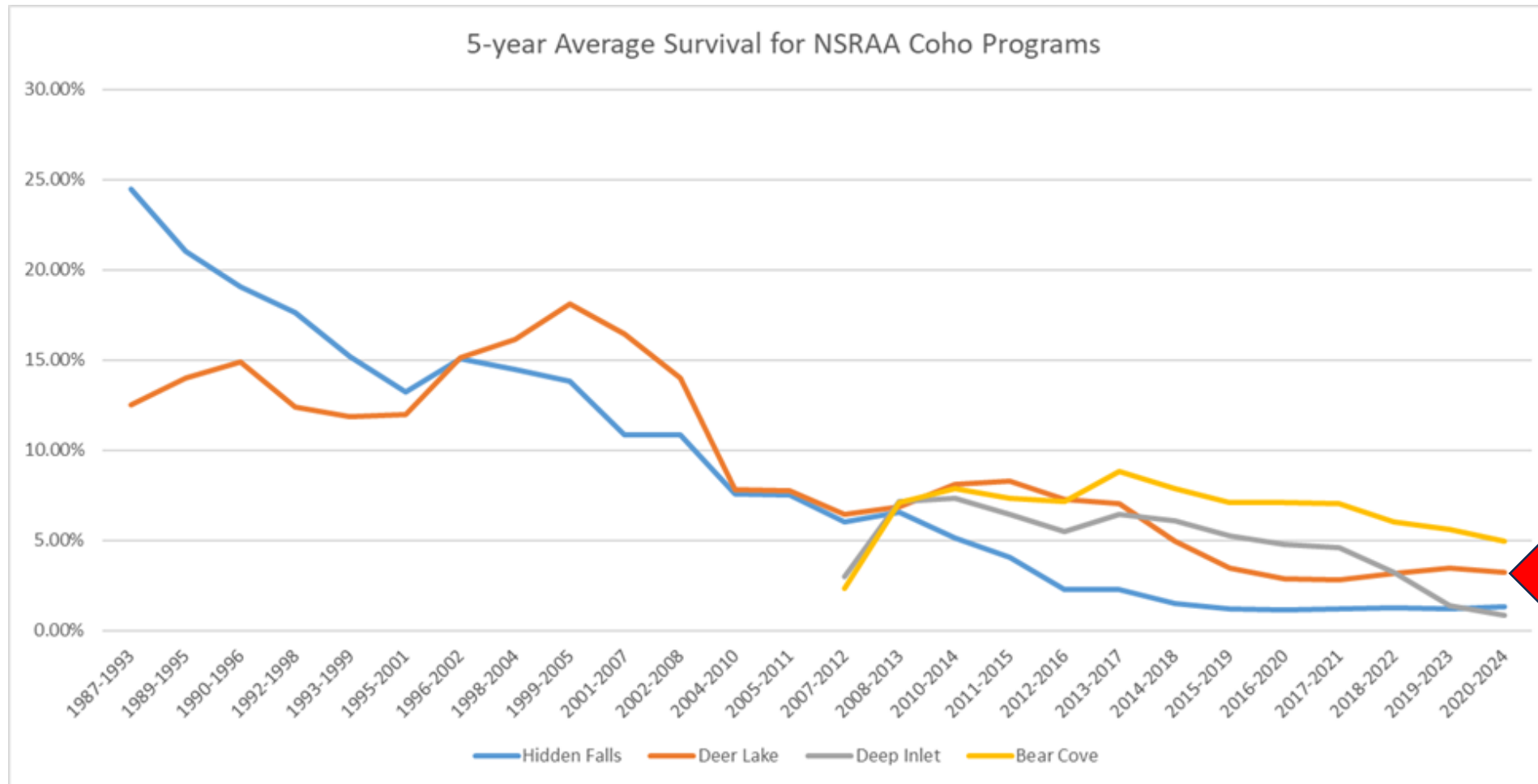
2024 Coho TROLL

- Small total troll contribution ~13,000 NSRAA coho
 - **Lowest since 1989**
- Efforts underway to improve CWT expansion analysis for Deer Lake
- Continued support from ADF&G with port sampling in South Chatham

**This is
BAD!**



COHO SURVIVALS ARE PLUMMETTING



ALL PROJECTS
UNDER 5% 5-yr
AVG

COHO SURVIVALS ARE PLUMMETTING

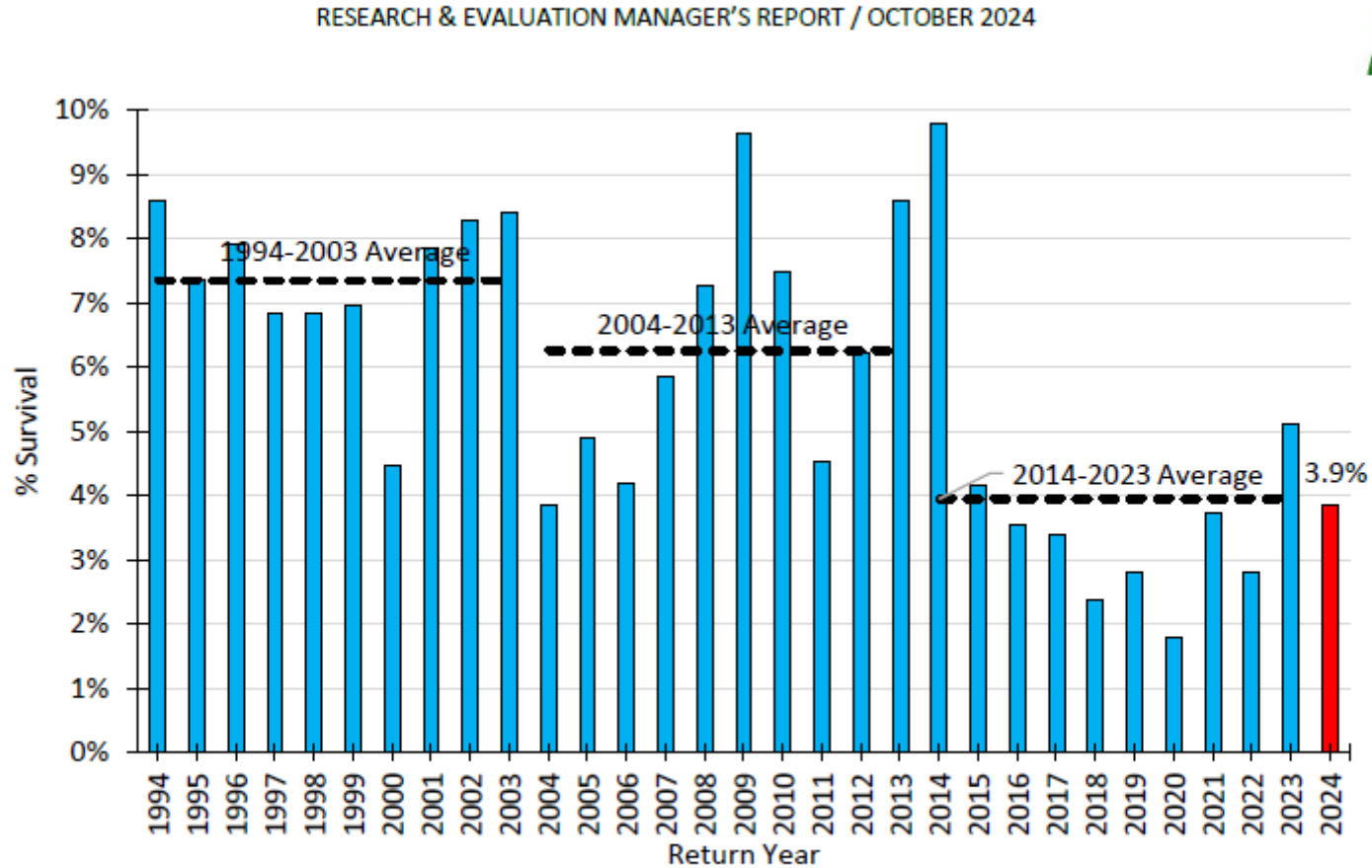


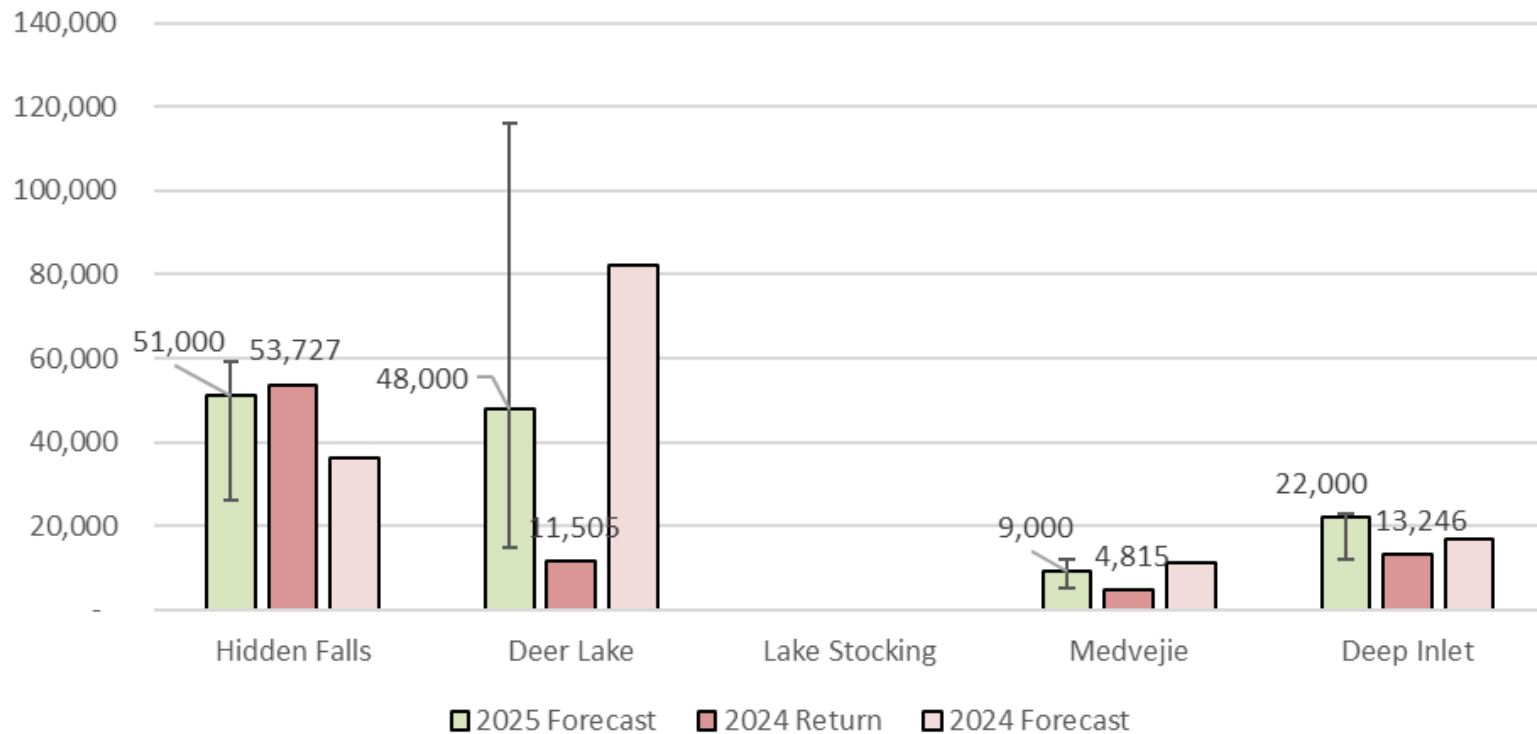
Figure 9. Average SSRAA coho survival by return year. The dashed lines represent the average marine survival in 10-year increments. The 2024 average survival is also shown above the red bar.

Similar pattern but
with higher
production

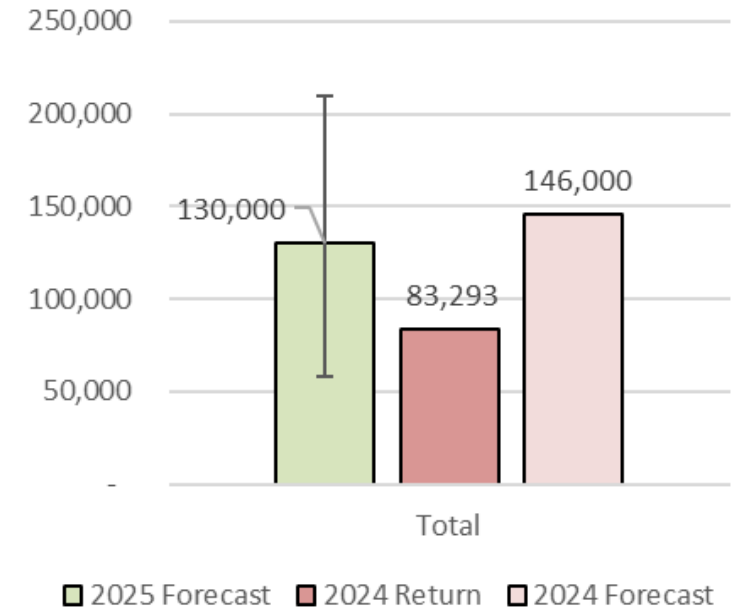


2024 Coho Forecast

NSRAA Coho 2025 Forecast With 2024 Return and Forecast



NSRAA Coho 2025 Forecast With 2024 Return and Forecast



2025 Coho FORECASTS

**Fish Health Assessments to try
and better forecast coho?**





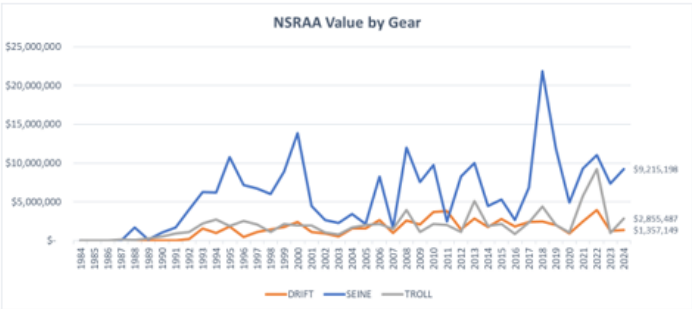
2024 NSRAA Value

2024 Commercial Salmon Value - PRICES

NSRAA Historical Value Summary

This section includes historical references to the figures listed above as well as several other metrics for tracking NSRAA's value over time. Where applicable, adjustments for inflation are made using the Consumer Price Index. Values are ranked within their respective time series for additional context.

NSRAA value by gear and species are shown below, including SSSC production in Deep Inlet:



DATA: SEAK & NSRAA historical value by gear with CPI adj.xlsx

Gear	Chum	Coho	Chinook	Total	Record	Year
Troll	\$ 2,320,223	\$ 145,125	\$ 390,139	\$ 2,855,487	\$ 9,234,536	2022
Seine	\$ 9,144,502	\$ 10,198	\$ 60,498	\$ 9,215,198	\$ 21,881,512	2022
Gillnet	\$ 1,200,728	\$ 8,559	\$ 147,885	\$ 1,357,149	\$ 3,949,647	2022
Total	\$ 12,665,450	\$ 163,881	\$ 598,503	\$ 13,427,834	\$ 28,819,414	2018

DATA: 2024 ~~est~~ salmon Harvest by area 10.15.24.xlsx

The largest driver for NSRAA value is chum. Chum ex-vessel prices in 2024 are currently reported at \$ 47/lb, just \$ 0.01/lb higher than 2023. This is likely to change soon to reflect the improving market conditions. Prices for all species as well as price history are shown below.

	2024 \$/lb	Rank/39 years
Pink	\$0.26	22
Chum	\$0.47	8
Coho	\$1.61	3
Chinook	\$6.42	16
Sockeye	\$1.52	22

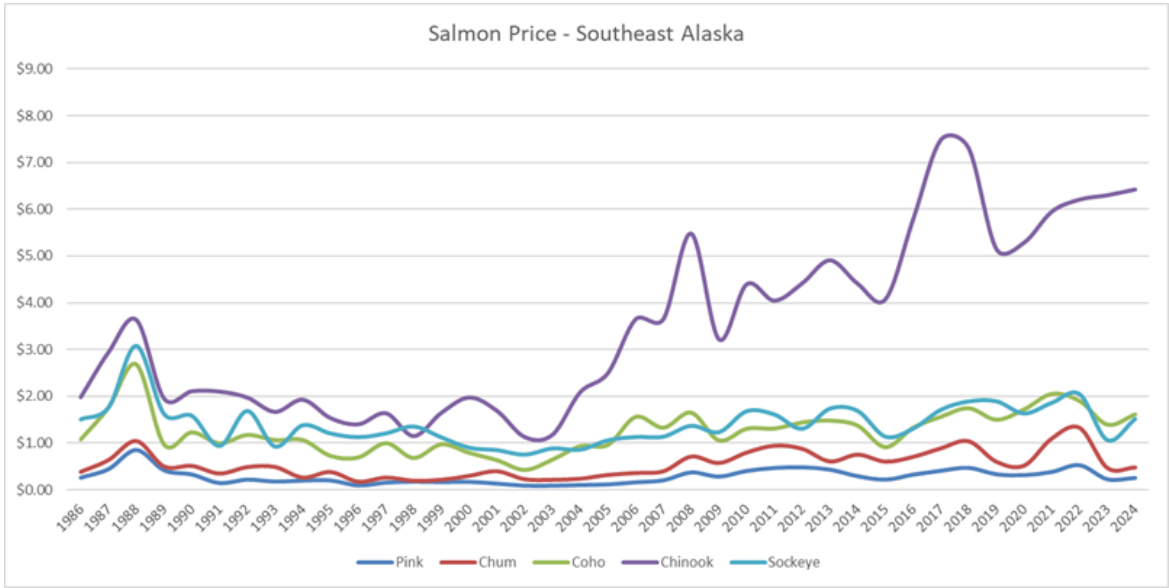
DATA: Price hist CR-CPH.xlsx

TYPO! Page 189

Revised
below

	2024 \$/lb	Rank/39 years
Pink	\$0.26	20
Chum	\$0.47	22
Coho	\$1.61	8
Chinook	\$6.42	3
Sockeye	\$1.52	16

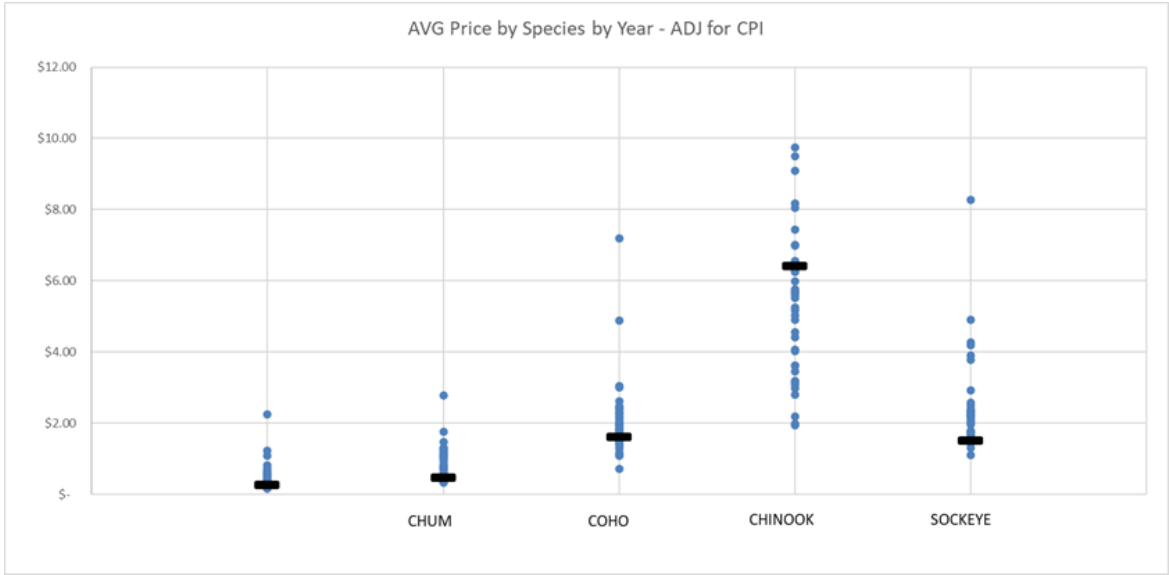
2024 Commercial Salmon Value - PRICES



Chinook doing well

Better but still mostly low!

Retro's?

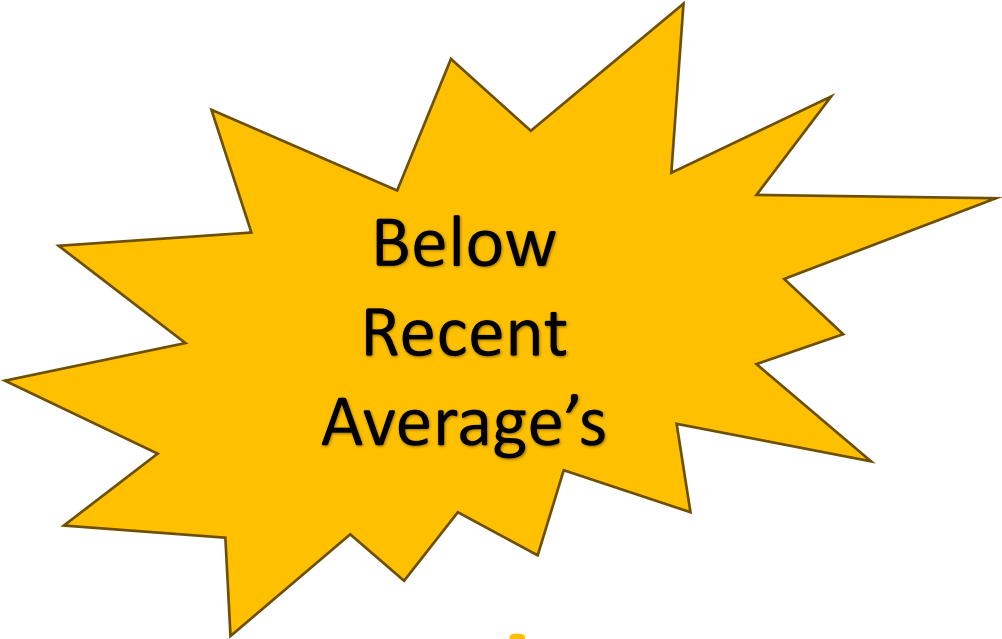


	2024 \$/lb	Rank/39 years
Pink	\$0.26	20
Chum	\$0.47	22
Coho	\$1.61	8
Chinook	\$6.42	3
Sockeye	\$1.52	16

2024 Commercial Salmon Value – SEAK

SOUTHEAST ALASKA SALMON VALUE

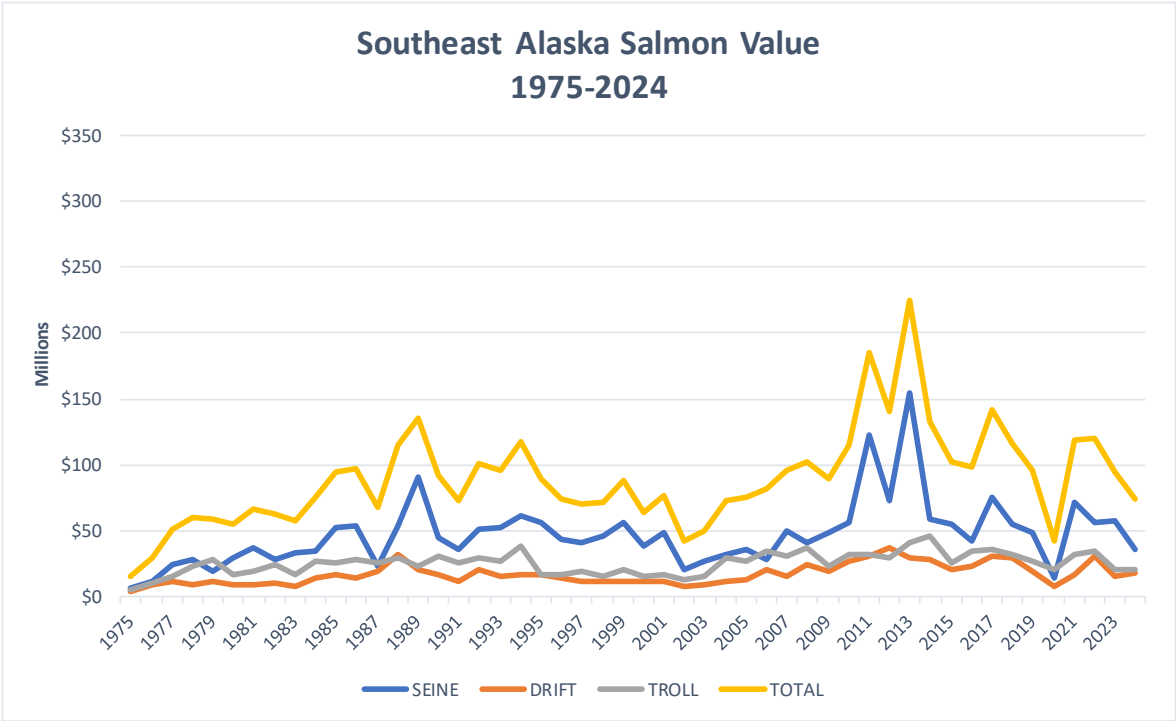
	SEINE				RANK of 50 years			
	SEINE	DRIFT	TROLL	TOTAL	SEINE	DRIFT	TROLL	TOTAL
2024	\$ 36,087,918	\$ 18,341,317	\$ 20,183,630	\$ 74,612,864	33	19	36	31
5-yr-avg	\$ 49,361,576	\$ 17,793,143	\$ 27,075,089	\$ 94,229,808				
% of 5-yr-avg	73%	103%	75%	79%				
10-yr-avg	\$ 53,271,173	\$ 22,052,917	\$ 30,986,687	\$ 106,310,777				
% of 10-yr-avg	68%	83%	65%	70%				



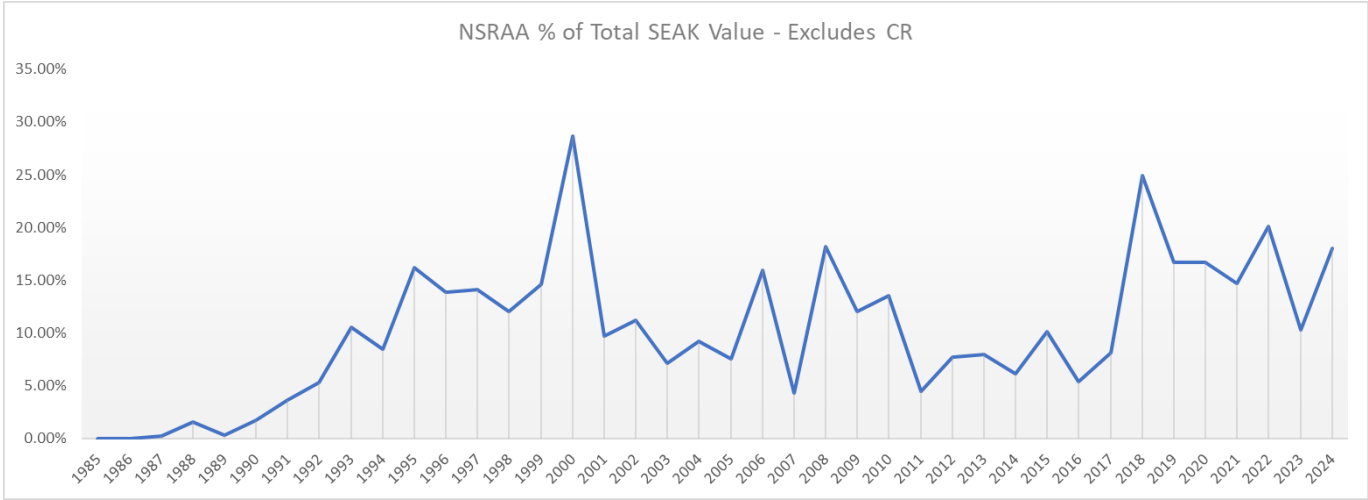
\$ 74.6 M



31st in 50 years

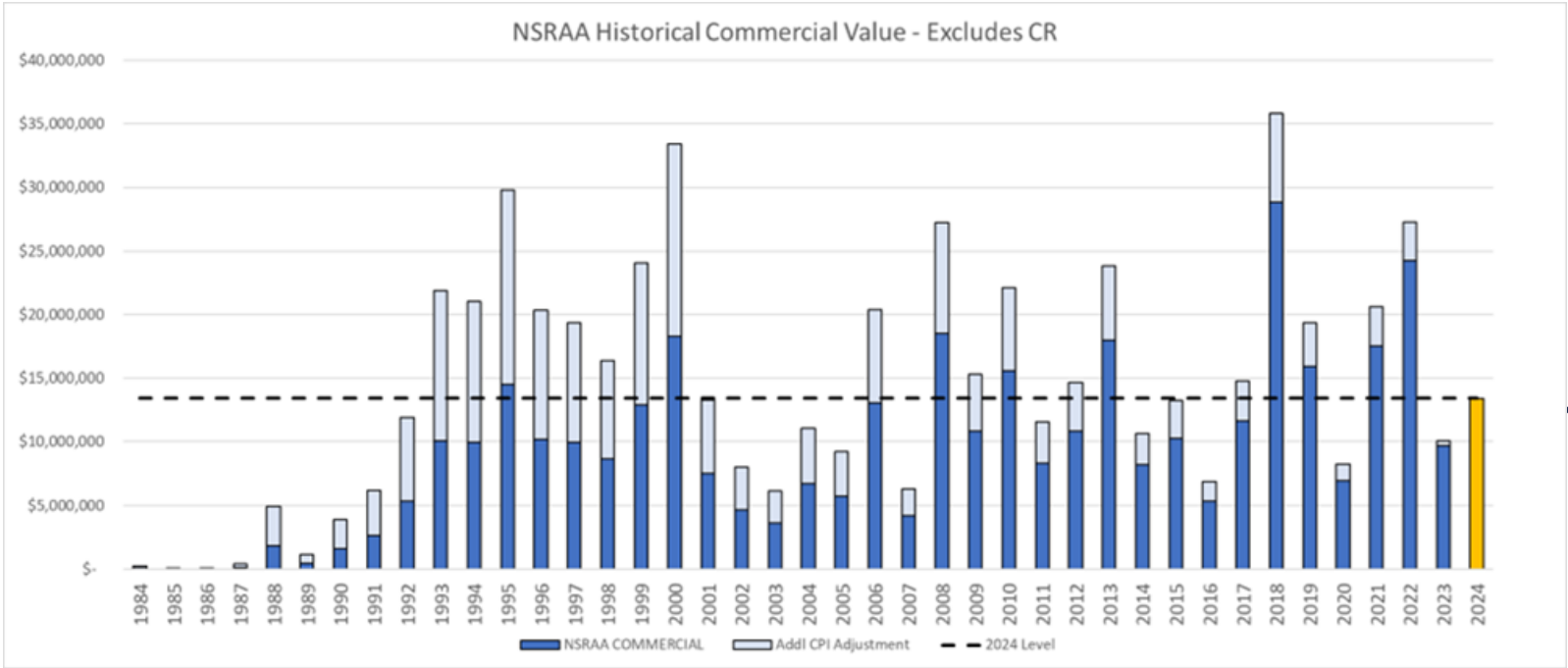


2024 Commercial Salmon Value – NSRAA



NSRAA % of all SEAK Commercial Value

- 2024 = 18%
- Ranks 5th in 41 years
- Nearly doubled from 2023

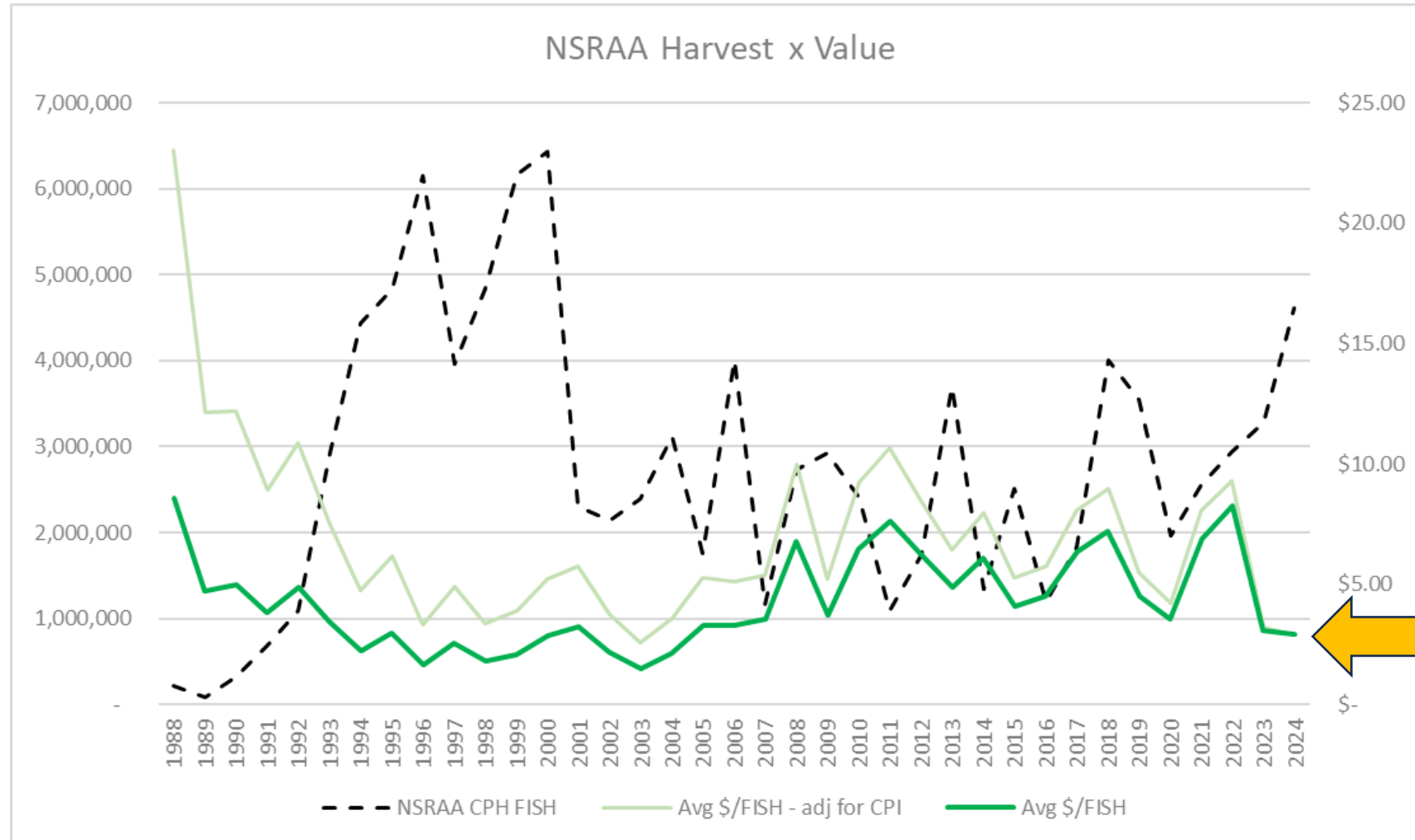


\$ 13.4 M

10th in 41 years

2024 Commercial Salmon Value – NSRAA

\$/FISH = \$2.91



30th in 39 years

**38th in 39 years
(with CPI ADJ)**

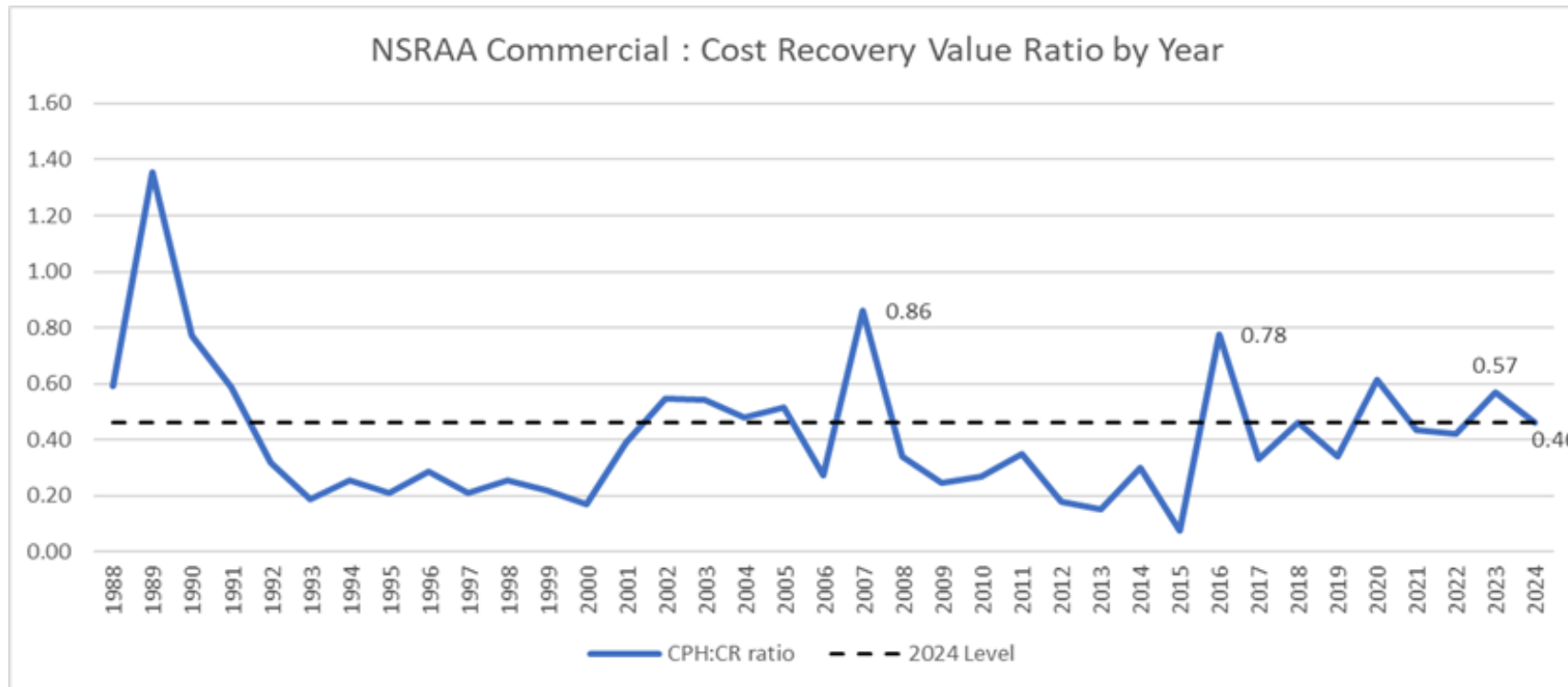


2024 Commercial Salmon Value – NSRAA

CPH : CR Ratio = 0.46

(\$0.46 to CR for every \$1.00 to fleet)

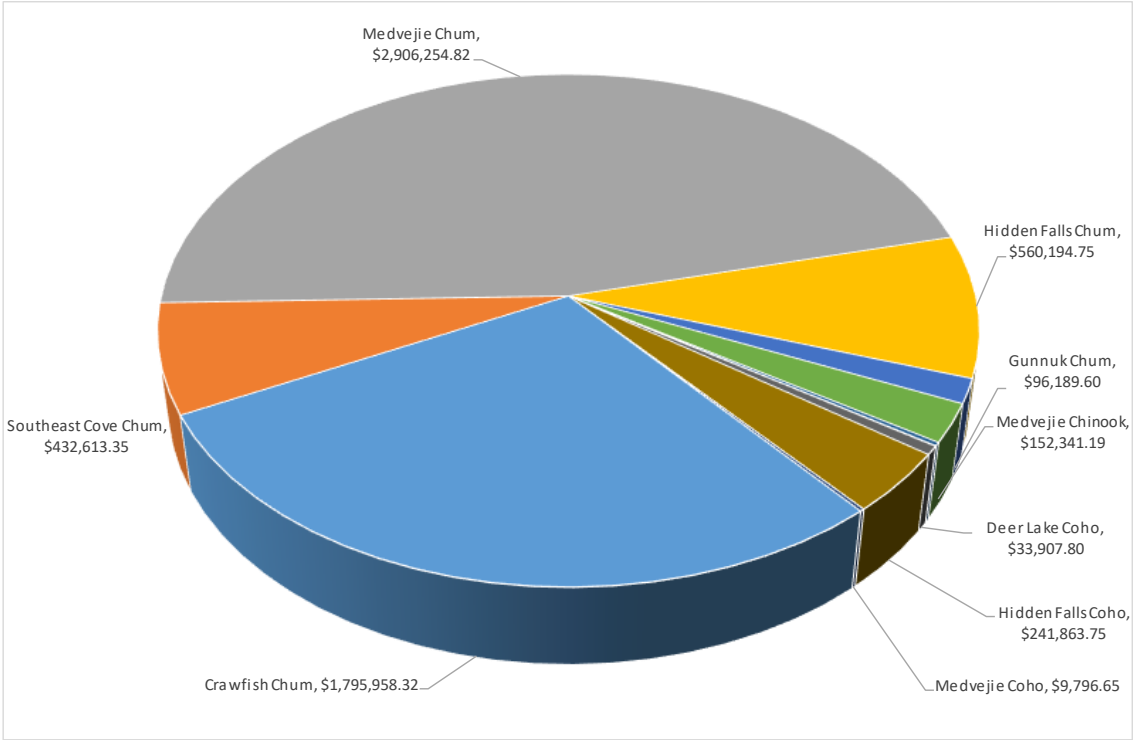
5th highest since 1988



2024 Cost Recovery Value – NSRAA

2024 Cost Recovery

Project	CR-FISH	CR-INCID	CR-CARC	CR-EGG	Cost Rec Subtotal
Crawfish Chum	\$1,794,362.67	\$1,595.65			\$1,795,958.32
Southeast Cove Chum	\$432,613.35	\$0.00			\$432,613.35
Medvejie Chum	\$2,882,567.87	\$10,401.20	\$0.00	\$13,285.75	\$2,906,254.82
Hidden Falls Chum	\$560,028.00	\$166.75	\$0.00		\$560,194.75
Gunnuk Chum	\$96,189.60	\$0.00	\$0.00		\$96,189.60
Medvejie Chinook	\$152,341.19				\$152,341.19
Hidden Falls Chinook	\$13,433.00				\$13,433.00
Southeast Cove Chinook	\$1,787.25				\$1,787.25
Deer Lake Coho	\$32,620.80	\$1,287.00			\$33,907.80
Hidden Falls Coho	\$238,640.00	\$3,223.75			\$241,863.75
Medvejie Coho	\$9,796.65				\$9,796.65
Grand Total	\$6,214,380.38	\$16,674.35	\$0.00	\$13,285.75	\$6,244,340.48



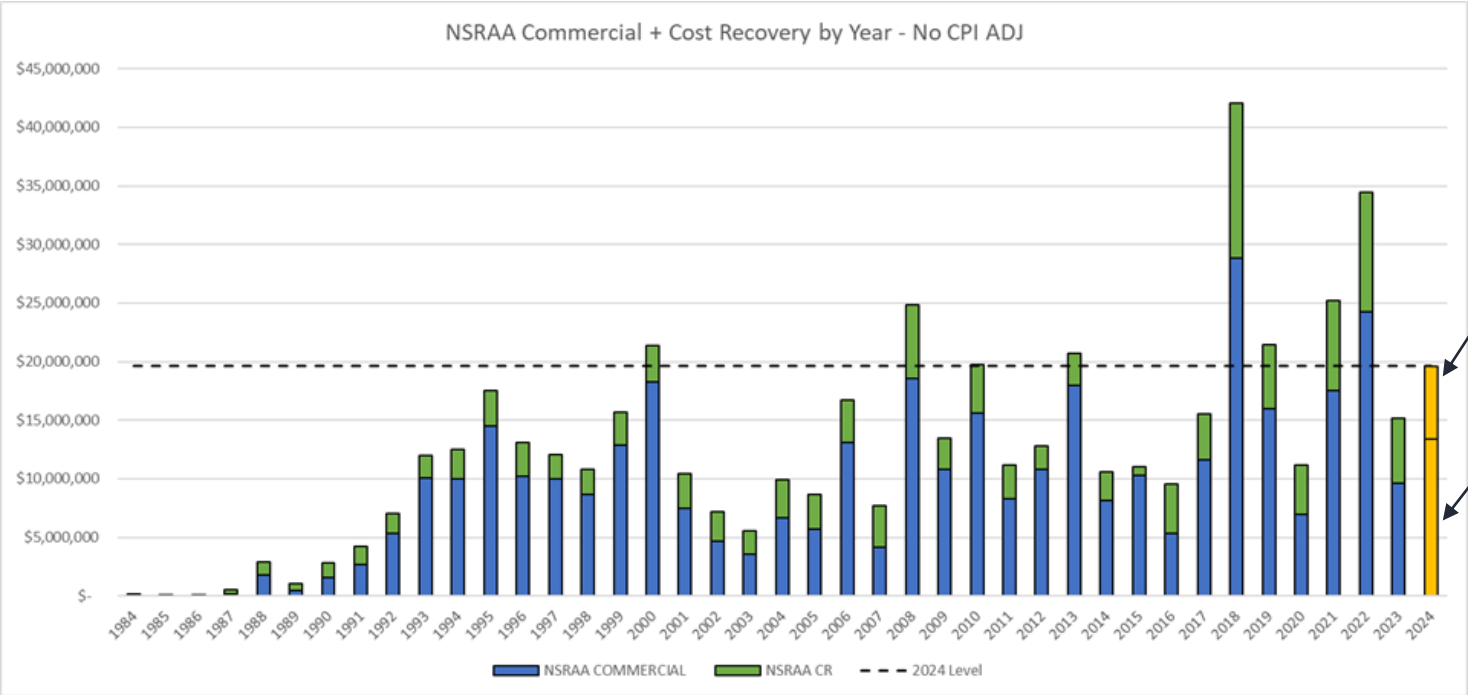
\$3 million
unrealized
revenue

\$ 6.24 M

\$783,000
reimburse to SSS

(\$ 5.46 M)

2024 TOTAL Salmon Value – NSRAA



\$ 6,244,340

\$ 13,427,834

\$ 19,672,174



9th in 41 years



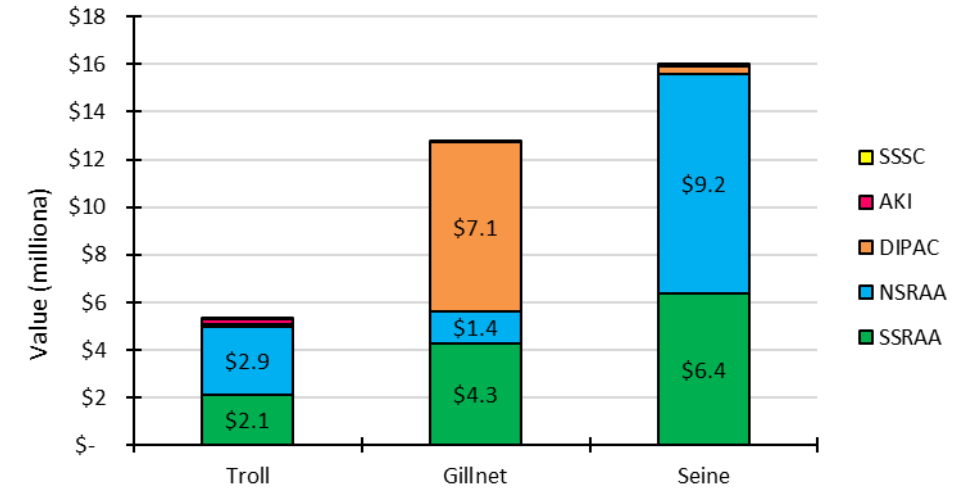
2024 Enhanced Allocation

2024 Allocation Estimates

2024 Preliminary Enhanced Value by Species & Gear

	Troll	Gillnet	Seine	Total	Species %
Coho	\$ 1,792,000	\$ 792,000	\$ 131,000	\$ 2,715,000	8%
Chinook	\$ 856,000	\$ 467,000	\$ 319,000	\$ 1,642,000	5%
Chum	\$ 2,694,000	\$ 11,121,000	\$ 15,557,000	\$ 29,372,000	86%
Sockeye	\$ -	\$ 353,000	\$ 1,000	\$ 354,000	1%
Total	\$ 5,342,000	\$ 12,733,000	\$ 16,008,000	\$ 34,083,000	
Gear %	16%	37%	47%		

Enhanced Value by Agency
2024 Preliminary Estimates



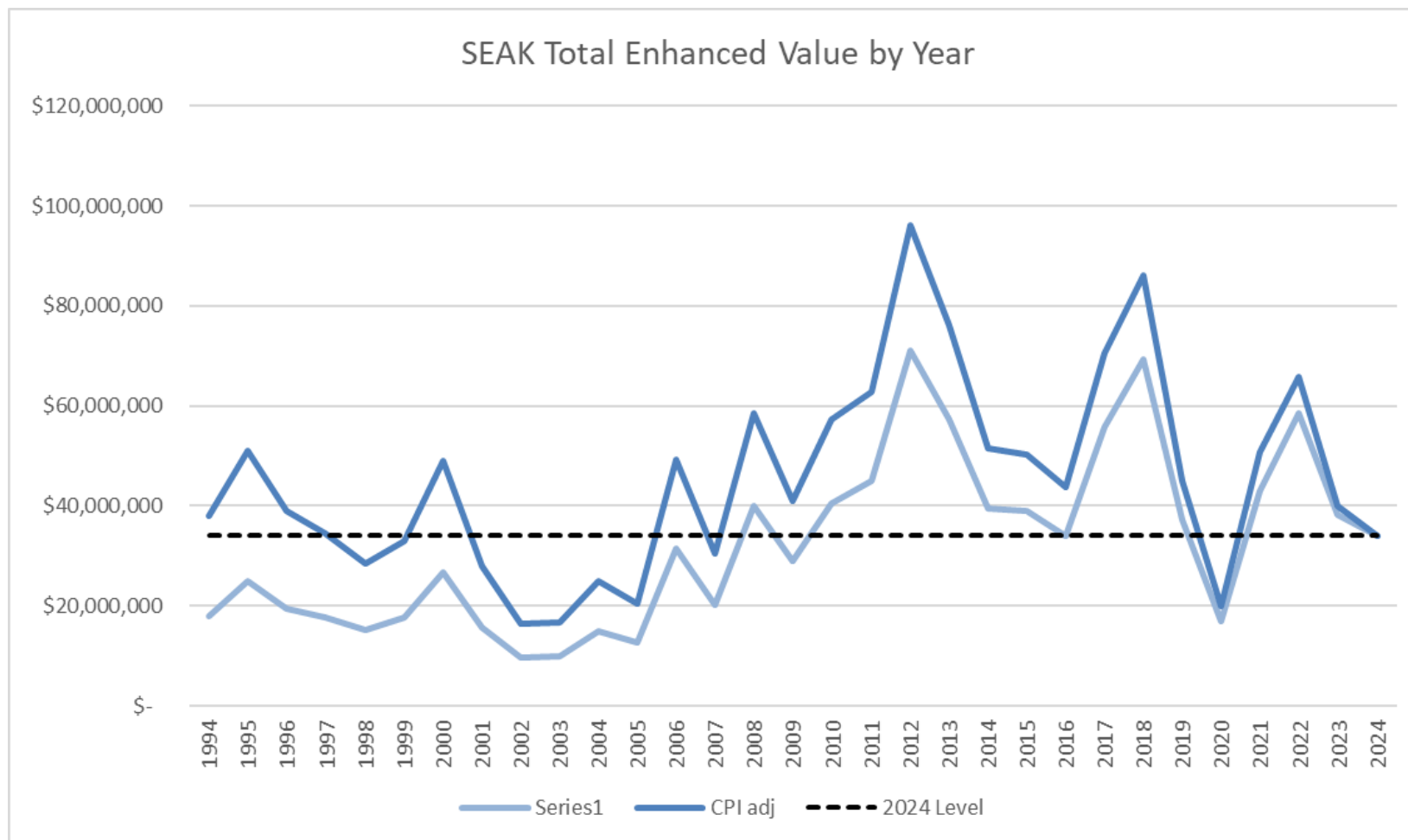
2024 Enhanced Value

Gear	Value	% of Enhanced Value
Troll	\$ 5,341,000	16%
Seine	\$ 16,008,000	47%
Gillnet	\$ 12,734,000	37%
Total	\$ 34,083,000	100%

2024 Total Value

Total Value - Wild & Enhanced	% Enhanced
\$ 20,184,000	26%
\$ 36,088,000	44%
\$ 18,341,000	69%
\$ 74,613,000	46%

2024 Allocation Estimates



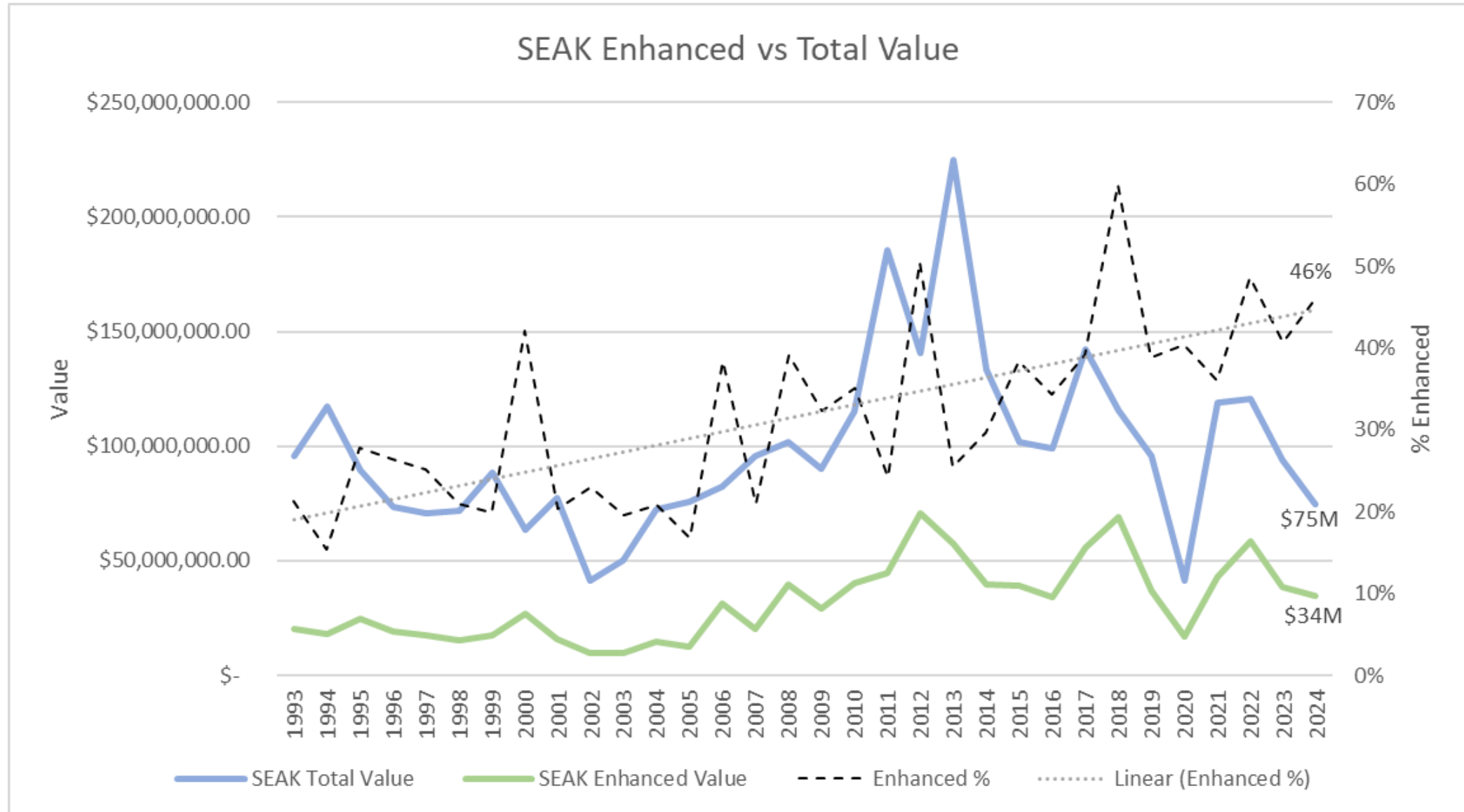
\$ 34 M

14th in 31 years

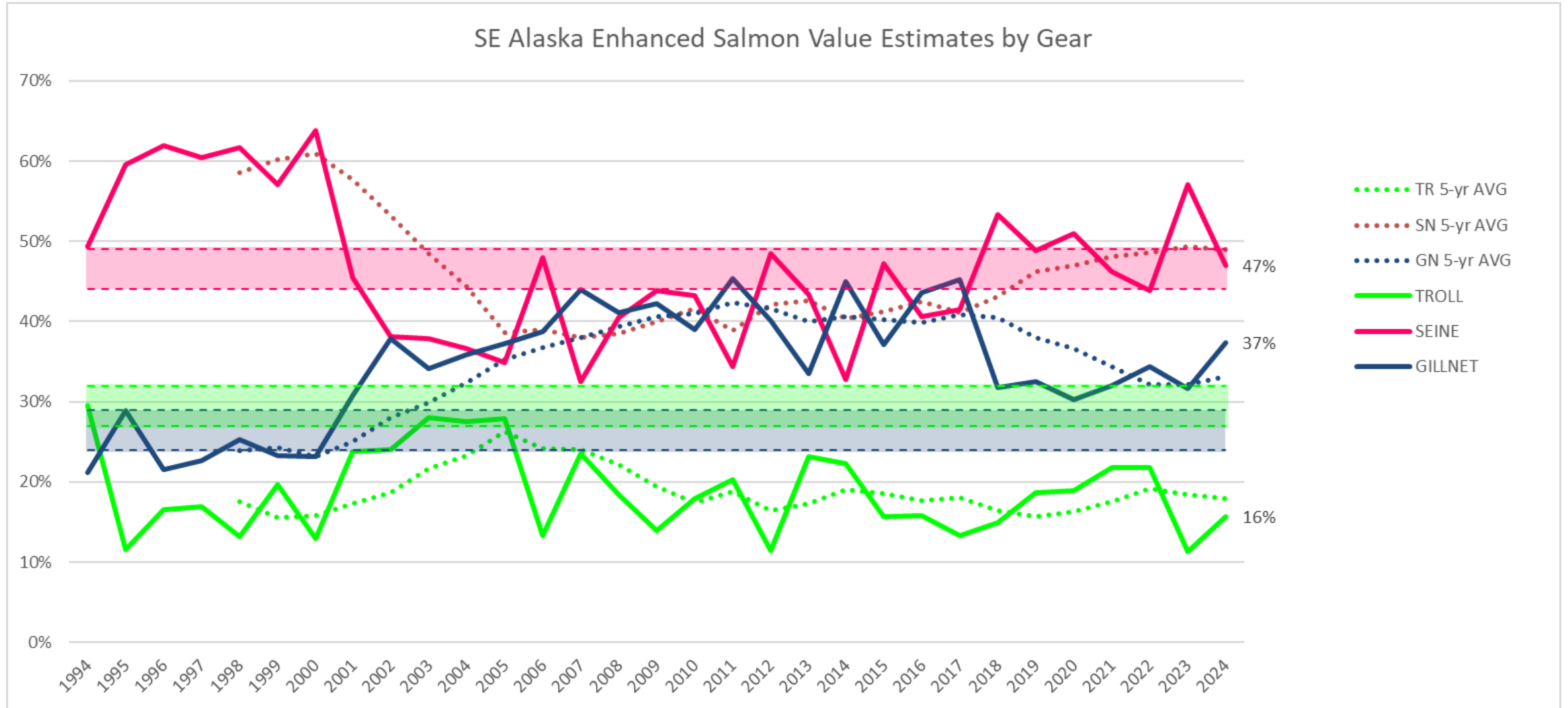
**22nd in 31 years
(with CPI ADJ)**



2024 Allocation Estimates



2024 Allocation Estimates





SSRAA



***THANK
YOU!***



Ben



Annie



2024 Research & Evaluation Team

Ben

Annie

Taylor

Chelsea

Sam

Kelcey

Lauren

Flo

& Taggers

Kelcey



Taylor



Chelsea



Sam



Flo



Lauren

