Agenda Item G.3.- ESA Mitigation Measures for Salmon

Groundfish Management Team

GMT Report 1, Supplemental GMT Report 2

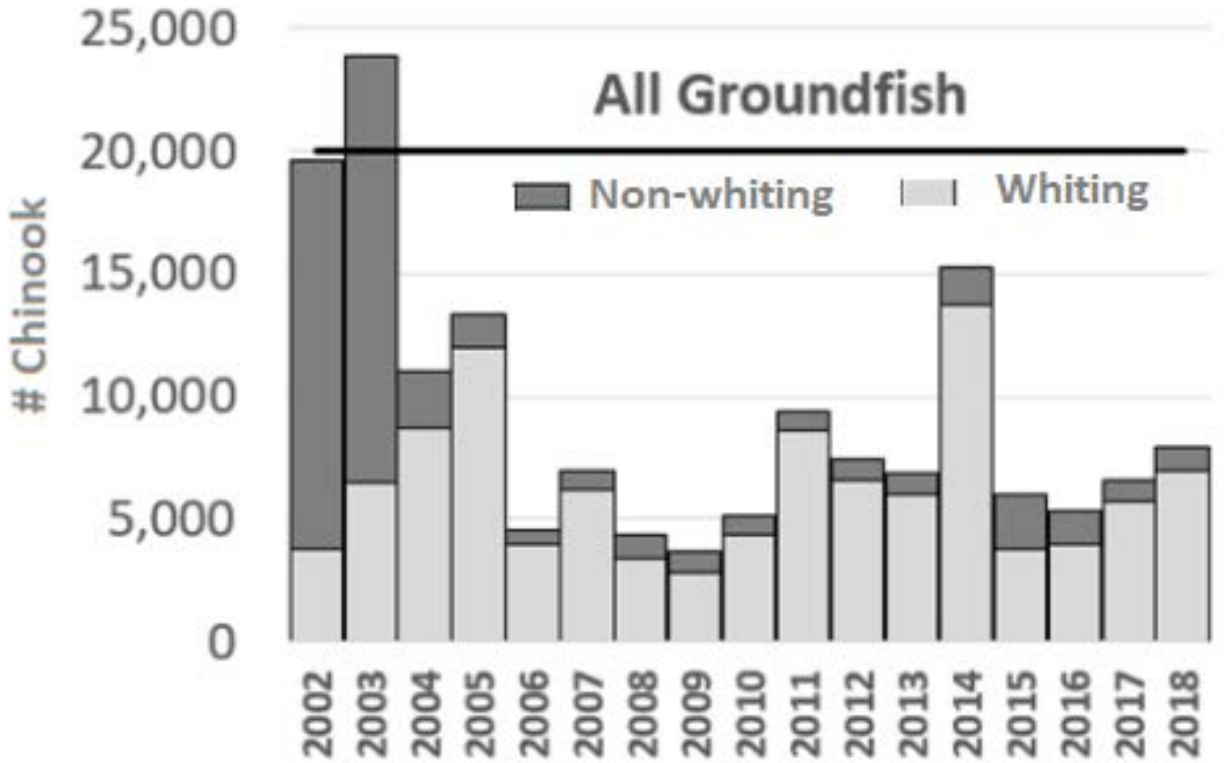
April 2019

This is only a summary that led to our ROAs – our recommendations are in Report 3

Background on the process:

- **Exceeded the whiting guideline in 2014 which triggered re-consultation**
- **New Biop Released in 2017**
- **ITS set new guidelines for Chinook Salmon:**
  - **20k Total**
  - **11k Whiting (tribal and non-tribal)**
  - **5.5k Non-whiting (trawl, FG, rec outside salmon seasons)**
  - **3.5k Reserve**
- **<u>Hard-cap closures if sector(s) exceed cap and Reserve taken</u>**
- **Reserve**
  - **Re-consultation triggered if accessed in 3 of 5 years**
  - **Not to be used for manner of course (only to address unexpected bycatch)**
  - **Regulatory action to slow bycatch required to access Reserve**
- **Council has already met most requirements of ITS…**
- **<u>This action is ROA pertains to new salmon tools and Reserve rules</u>**

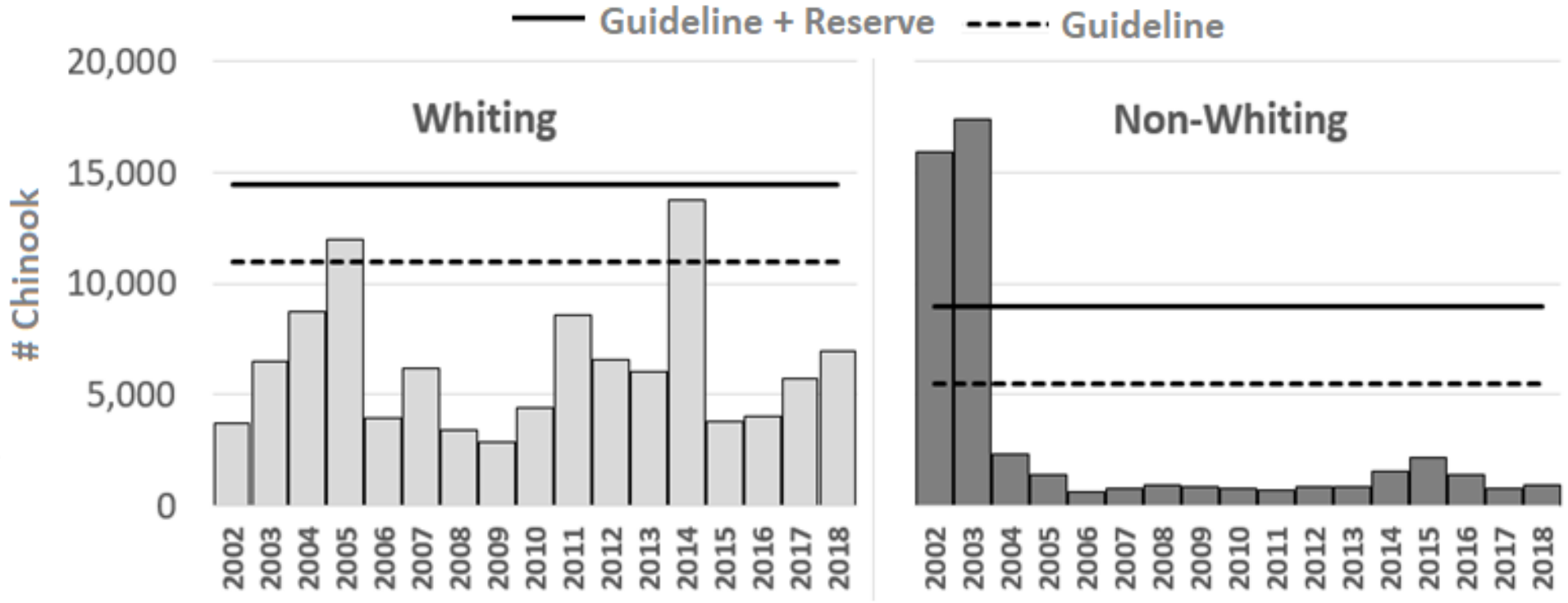
Background on bycatch and risk to guidelines:



Overall bycatch

- **<u>Low risk of exceeding 20k closure point for all</u>**
- **Recent bycatches have been low**
- ***"Avoiding salmon bycatch a top focus of trawlers since 2014 high" - GAP***
- **Risk could be further reduced with new salmon mitigation tools**

Background on bycatch and risk to guidelines:



Sector guidelines

- **Non-whiting bycatch low in recent years**
- **Whiting has exceeded 11k guideline twice…**
- **But not the 14.5k closure point *(+ 3.5k Reserve)***
- **<u>Most concern has been about keeping sectors within guidelines, and not impacting others</u>**

GMT ROA Report addresses last two ITS terms and conditions:

(1) Evaluate and develop new salmon bycatch reduction tools (T&C 2b):

- Only required "*if Council determines necessary to stay within guidelines*"
- Current tools very limited
- Council tasked us to evaluate new tools:
  (1) Block area closures for all trawl fisheries
  (2) Selective flatfish trawl in all-depths
  (3) Salmon excluders for whiting (BONUS)
  (4) Whiting sector actions

(2) Develop Reserve Rules (T&C 3a):

- Includes the proposal for a 500 "set-aside" for recreational and fixed gear
- And the inseason and automatic options for the salmon tools

Process slowed down: not required in 2020 and more time for input

ROA follows a simple framework:

Q1: Should we add this new tool to the tool box?

Q2: For routine inseason or automatic action (or both?)

- *Inseason best for evaluation of causes of bycatch problems*
- *Automatic provides a back-stop if problems arose between Council meetings*

Q3: If automatic, the Council has to specify the conditions ahead of time…

- *GMT had to provide options based on best current info…so there are uncertainties*

Threshold	Timing	Sectors	Area
Council would need to specify at what level the action would be triggered.	Council would need to select the length of time the BAC would remain in place, if predetermined. (e.g., 30 days, next Council meeting, end of year)	Council would need to specify the sector (CPs, MS, SS, bottom trawl, midwater non-whiting trawl)	Council would need to specify the specific area to be closed (e.g., certain areas are more appropriate for certain sectors).

Still ROA – can make changes to GMT's proposals

New tool 1: BACs for all trawl

Overview:

- BACs are like RCAs (any lat. / depth contour in regulations)
- More flexible/surgical than BRAs (close shore to X)

Bottom trawl:

- Proposed to be available for inseason use through EFH/RCA rule (OR/CA)
- GMT focused here on automatic authority impacts

Mid-water trawl (whiting and non-whiting):

- Currently only 200 fm BRA available for salmon (via inseason)
- So evaluated BACs for all trawl (inseason and automatic)
- Beneficial for more consistency and flexibility
- Also analyzed out to the 250 fm max

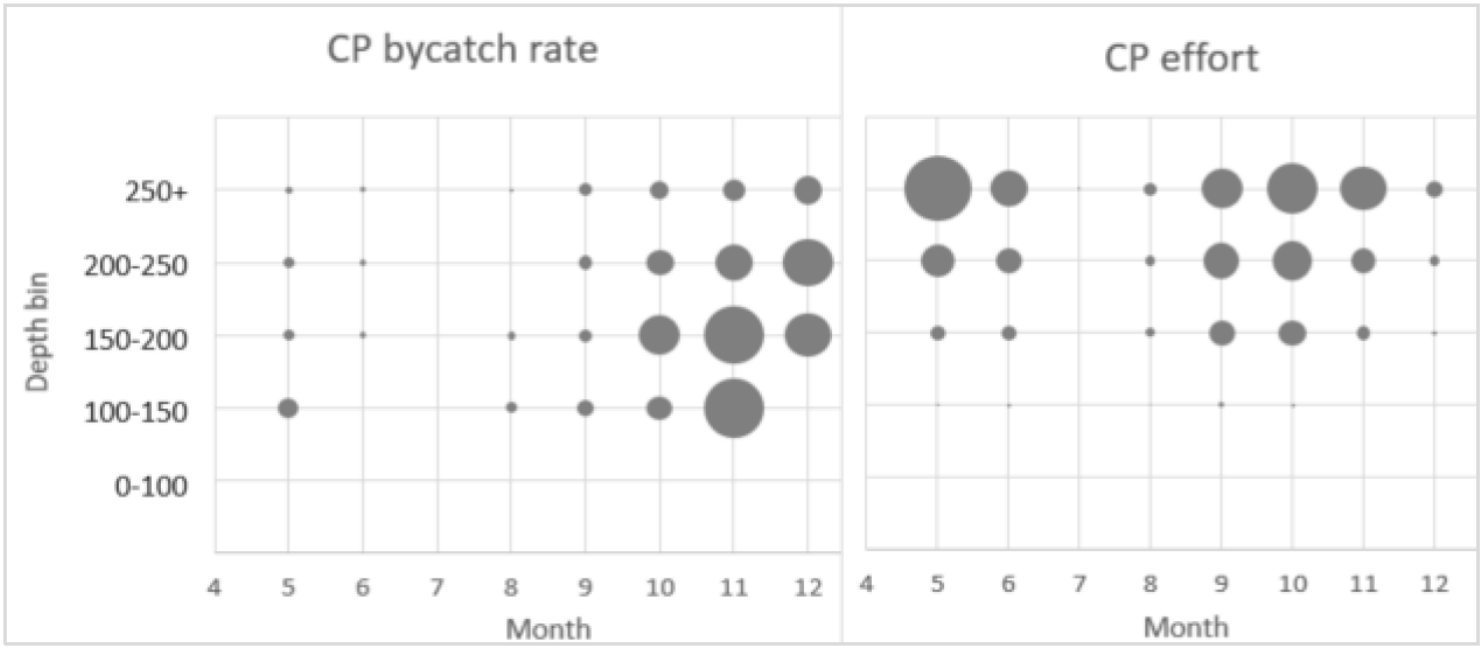
Factors to consider with evaluating BACs:

1. **Where are bycatch rates highest?**
   - Bycatch rates = balanced measure of success
   - Of low bycatch and high target catch

2. **Where does effort occur?**
   - Closing lightly fished areas = low benefit

3. **If close an area, where would effort shift to?**
   - Easiest to overlook if just look at past bycatch stats
   - Focus on bycatch rates on depths that would remain open
   - Even if lightly fished, effort would shift to those

How we came to our ROA for BACs <u>if desire automatic authority</u>:



Shore-200 fm BAC:

- ***Low expected bycatch reduction***
- ***Closes highest bycatch rate bins***
- ***But is where low effort occurs.***

Shore-250 fm BAC:

- ***High bycatch reduction expected***
- ***Shifts efforts to deepest depths w/ low bycatch rates***

Then the standard questions:

- ***At which trigger point***
- ***Until next Council meeting or end of year***

New tool 2: Selective Flatfish Trawls for Salmon Mitigation

- Strong swimming fish can go up-and-over cutback head
- Has been used to reduce bycatch of canary rockfish
- 83-94% reduction in catch for stronger swimming pelagic or semi-pelagic roundfishes throughout US

<u>GMT expects similar reduction for salmon</u>

- Captains also reported 25% fuel savings
- Appear to function fine in all depths

SFFTs appear to be a good salmon mitigation tool

Considerations for inseason SFFT requirements

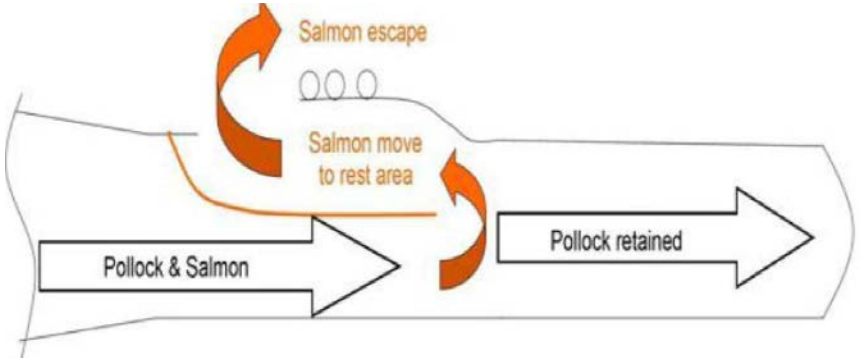
- Could be disruptive to implement a new net requirement inseason
- Not sure who owns them…~19-61% have used them
- They're expensive $10-15.5k and no stockpiles
- Interest by GAP to have a hybrid option where if a BAC adopted:
  - Could use SFFT in the BAC due to being lower bycatch gear

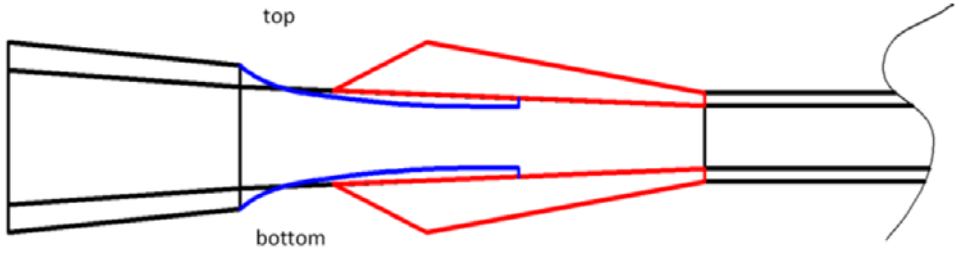
New tool 3: Salmon excluders for whiting

- Not in rule for use for salmon mitigation in whiting fisheries
- Similar rationales as SFFTs
- Strong swimming salmon able to escape panels/holes
- Several types have been tested (next slide)
- **Effective for reducing salmon, and rockfish, bycatch**
- Especially when escape panels illuminated
- Required for some CP and MS pollock fisheries in Alaska
- Voluntary use reportedly common in CP whiting fisheries
- Required in MS and shoreside whiting co-ops since late 2014

Salmon excluders for whiting appear to be a good salmon tool to add to the tool box

Salmon excluders have been successful for pollock and whiting



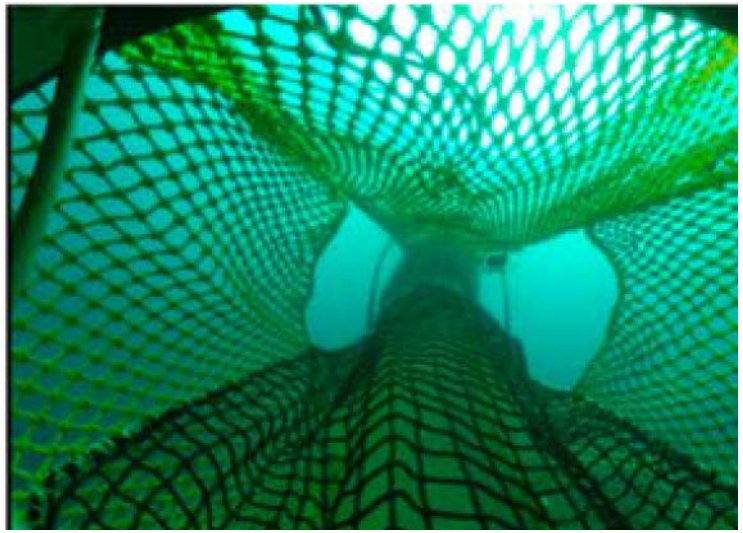


Flapper design:

- Commonly used in pollock fisheries
- Mixed results in ability to exclude salmon
- Issues in AK not working well on smaller horse power (HP) boats
- But may have been fixed since MS whiting catchers use them

Over/under design:

- More successful in AK pollock fisheries
- Salmon escapements of 34-54%
- And worked well with lower HP boats



Lomeli & Wakefield whiting designs w/ LEDS

- Works well with low HP catcher boats (shoreside and MS)
- Effective for reducing Chinook bycatch w/o LEDs (-53%)
- Even more effective with LEDs (-75-81%)
- Also reduced rockfish bycatch by -46%

Considerations for inseason excluder requirements

- Similar logic as SFFTs
- Expensive/disruptive to require inseason if don't already have them
- So another hybrid option (can use excluders inside BACs)
- Industry concerned about defining them in rule could hinder innovation

We don't have data on who uses them, so we recommend:

(1) At-sea observers start recording

(2) For EM, a checkbox be added to logbook (reviewers cannot determine if used)

Whiting sector actions:

Purpose:

- Recognize self-avoidance measures
- Develop automatic authority to NMFS to take conforming action…
- Recall ITS states “action” must be taken for Reserve access
- Still need input from GC and EC on two proposals

Two proposals:

(1) Small, temporary area closures

- Co-ops specify the specifics such as this area closed for three weeks
- Inform NMFS whom takes conforming actions
- No Council action needed = responsive

(2) IPA style (as done for pollock)

- Co-ops submit their mitigation plans to NMFS
- Able to modify throughout year
- No Council action needed

500 Chinook to keep select recreational and FG open

(Not an allocation – it's about adding new closure points)

- **Non-whiting sector has a shared 5.5k guideline for:**
  - Rec. bottomfish (only when rec. salmon season closed)
  - Oregon rec.l longleader
  - FG commercial fisheries
  - Bottom trawl and mid-water rockfish trawl
- **Closure of all if 5.5k non-whiting threshold plus 3.5k Reserve taken**
- Rec. and FG have minor bycatch compared to trawl fisheries
- 200 would cover high bycatch year, 500 for worst case scenarios
- **SAS and GAP wanted us to evaluate 500 to help keep these fisheries open**

GMT report 2 discusses low risk of select recreational and fixed gear closures even if the 500 is not selected:

(1) Mortality has been well below their closure points

- 20,000 would close all groundfish fisheries
- 9,000 would close all non-whiting fisheries

(2) Reducing bycatch a focus of trawl since 2014 high bycatch

- Fishermen's agreements b/w salmon troll, whiting, and rockfish & bottom trawlers
- Expanded co-op rules such as mandatory excluders in MS and Shoreside, and regular use in the CP sector

(3) Council considering new and more effective salmon tools

- Salmon bycatch will be closely monitored inseason
- Scorecards provided each meeting and a public report
- Council could take action to reduce bycatch and reduce risks to rec. and FG
- For example, could greatly reduce bycatch with a 250+ trawl BAC

If want to preserve 500, need 3 new automatic closure points for trawl:

(1) Close non-whiting trawl at 8,500

- ITS states all non-whiting close if take 5,500 guideline + full 3,500 Reserve
- Leaves 500 of non-whiting guideline for FG and Rec.

(2) Close whiting at 14,000

- Ensures whiting does not take the full Reserve (leaves 500)
- Prevents a rec. and FG closure scenario:
  - Where non-whiting trawl catches full 5.5k non-whiting threshold
  - And whiting takes full 3.5k Reserve

(3) Close all trawl at 19,500

- Ensures trawl fisheries in combination leave 500 of Reserve
- Prevents a Rec. and FG closure scenario where:
  - Whiting trawl takes full 11k guideline and a portion of the Reserve
  - And non-whiting trawl takes full 5.5k guideline and remainder of Reserve

ROA for 500 to keep select recreational and FG open

No action: Use existing hard-cap closures in regulation

Alternative 1: Add the 3 new closures to ensure 500 remains

BACK-UP SLIDES

Master ROA list for the 3 new tools:

Issue	Alternative	Description	Authority	Options for Automatic Authority						
				Trigger Point	Duration	Scope				
						CP	MS	SS	BT	MDT
BACs for All Trawl	No Action	• BACs available for bottom trawl off OR/CA • 200 fm BRA available for midwater	Inseason	N/A						
	Alt. 1	BACs for all trawl (except bottom trawl off WA)	a. Inseason	N/A						
			b. Automatic	TBD	1. Next Council meeting 2. End of Year	a. 0-200 b. 0-250	a. 0-150 b.0-200	a. 100-200 b. 0-150 c. 0-200	a. 100-200 b. 0-250	a. 100-200
SFFT Requirement for Bottom Trawl	No Action	SFFT not available as a salmon mitigation measure	N/A	N/A						
	Alt. 1	SFFT available as a salmon mitigation measure	a. Inseason	N/A						
			b. Automatic	TBD	1. Next Council meeting 2. End of Year	N/A			1. Required in all depths 2. Only required in BACs	N/A
Salmon Excluders for Whiting Trawl	No Action	Salmon excluders not available in regulation as salmon mitigation measure	N/A	N/A						
	Alt. 1.	Salmon excluders available as a salmon mitigation measure	a. Inseason	N/A						
			b. Automatic	TBD	1. Next Council meeting 2. End of Year	1. Required in all depths 2. Only required in BACs			N/A	
			c. Part of at-sea coop rule	TBD		TBD		N/A		

TABLE OF RETROSPECTIVE CHINOOK BYCATCH

	Sector	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Whiting	At-sea	1,663	2,617	803	3,958	1,192	1,317	718	318	714	3,989	4,209	3,739	6,695	1,806	3,051	3,772	4,402
	Shoreside/IFQ	1,062	425	4,206	4,018	839	2,462	1,962	278	2,997	3,722	2,359	1,263	6,898	2,002	738	1,394	1,330
	Tribal (all fisheries)	1,018	3,439	3,740	3,985	1,940	2,404	697	2,147	678	906	17	1,025	154	1	200	577	125
	Total	3,743	6,481	8,749	11,961	3,971	6,183	3,377	2,743	4,389	8,617	6,585	6,027	13,747	3,809	3,989	5,743	5,607
	Threshold	11,000																
	% Threshold	34%	59%	80%	109%	36%	56%	31%	25%	40%	78%	60%	55%	125%	35%	36%	52%	53%
	# above threshold	---	---	---	961	---	---	---	---	---	---	---	---	2,747	---	---	---	---
Non-whiting	Bottom trawl	15,384	16,855	1,773	816	61	191	419	308	237	175	304	323	984	1020	374	243	348
	Mid-water a/	*45*	*45*	*45*	*45*	*45*	*45*	*45*	*45*	*45*	*45*	*45*	*45*	*45*	*661*	*484*	42	45
	Rec + FG max b/	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*
	Total	15,929	17,400	2,318	1,361	606	736	964	853	782	720	849	868	1,529	2,181	1,358	785	893
	Threshold	5500																
	% Threshold	290%	316%	42%	25%	11%	13%	18%	16%	14%	13%	15%	16%	28%	40%	25%	14%	16%
	# above threshold	10929	12400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total	Total Chinook	19,672	23,881	11,067	13,322	4,577	6,919	4,341	3,596	5,171	9,337	7,434	6,895	15,276	5,990	5,347	6,528	6,500
	Closure threshold	20,000																
	% of threshold	98%	119%	55%	67%	23%	35%	22%	18%	26%	47%	37%	34%	76%	30%	27%	33%	33%
	# above threshold	---	3881	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

a/ EFP including in mid-water because almost exclusively targeting rockfish in mid-water column despite using "bottom trawl" gear in 2017

a/ But excludes 173 chinook EFP trip from Noah's Ark since were using "non-EFP" large footrope for DTS

a/ These 173 from Noah's Ark included b. trawl total which is more fitting due to fishing DTS

a/ Assume 45 each year, which is the high from 2017-2018 when fishery re-emerged

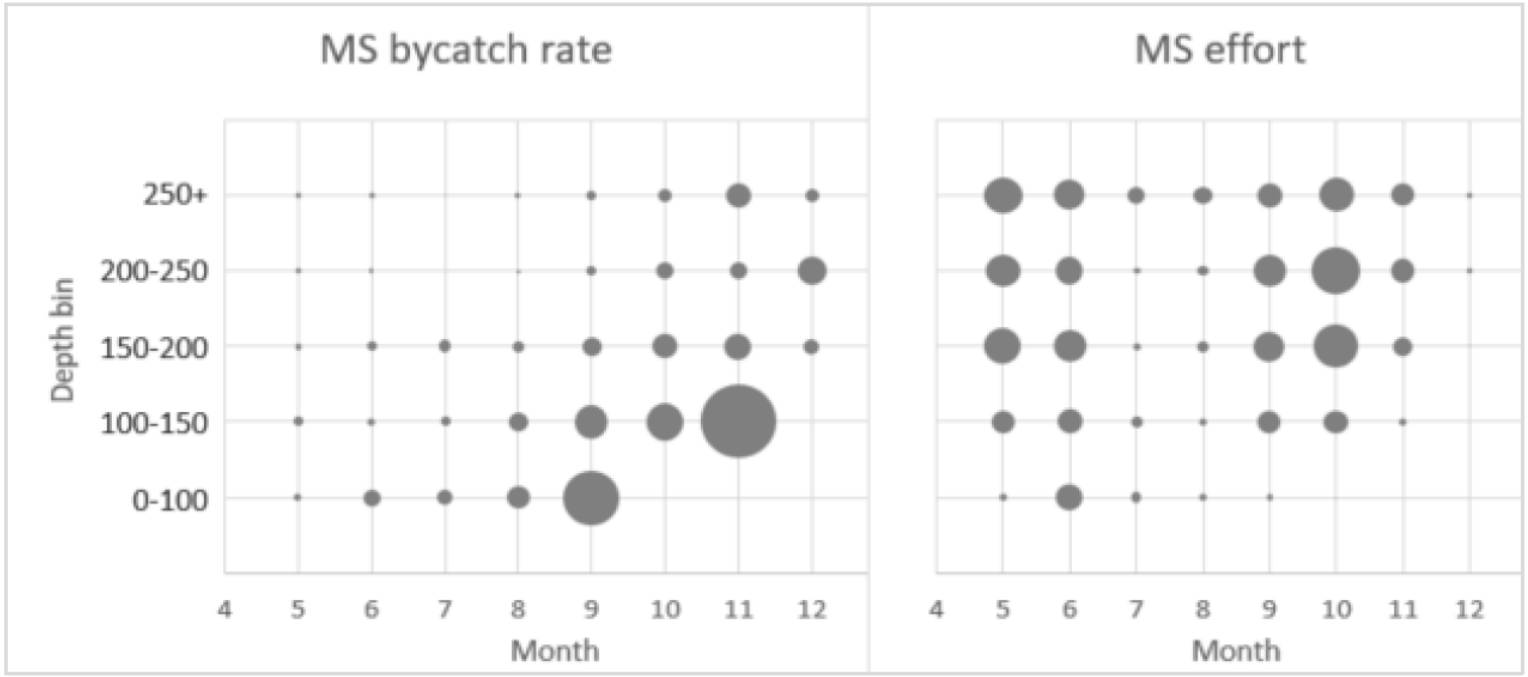
a/ Actual mid-water catches were 661 in 2015 and 484 in 2016, but were not deemed reflective of fishery as was before canary rebuilt and widow quotas low

Back-up: current tools limited ability for salmon

Sector	Description	Effectiveness for Chinook
Whiting/ Mid-water non-whiting	Delay start of Primary whiting season until May 15 for all sectors, north of 40° 30' N. lat.	Detrimental: Shifts effort to fall months with higher bycatch rates (Figure 3)
Whiting	10,000-lb trip limit restriction on targeted harvest of whiting inside 100 fathoms in the Eureka area	Negligible: There have not been any shoreside whiting landings in CA during the IFQ era.
Whiting	When shorebased whiting is allowed to begin fishing on April 15 south of 40° 30' N. lat., no more than five percent of the shorebased allocation may be taken prior to the opening of the main shorebased fishery on May 15.	Negligible: There have not been any shoreside whiting landings in CA during the IFQ era.
Whiting	Altering the start of the Primary whiting season based on the availability and stock status of prohibited species (e.g., salmon).	Detrimental: Shifts effort to fall months with higher bycatch rates
Whiting/ Mid-water non-whiting	200-fathom bycatch reduction area, which closes the entire area shoreward of the 200-fathom regulatory line	High: Shifts effort to depths where bycatch rates are lowest (Figure 3), but BACs more flexible and surgical (see BAC section)
Bottom trawl, Whiting*, Mid-water non—whiting*	Area closure of which the size could be greatly adjusted to any depth contour and latitude boundaries in Table 1.	High: Selectively close the highest bycatch rate intermediate depths (e.g, 100-200 fathoms)
Bottom trawl*	Selective flatfish trawl (SFFT) in all depths	High: Expected to greatly reduce bycatch rates, but could negatively impact those that do not have SFFTs. A BAC or SFFT option could be preferable (see SFFT section)

*if adopted by the Council and NMFS

ROA for Automatic BACs for MS Sector



Shore-150 fm BAC:

- ***Low/medium expected bycatch reduction***
- ***Closes higest bycatch rate bins***
- ***But moderate effort there…***

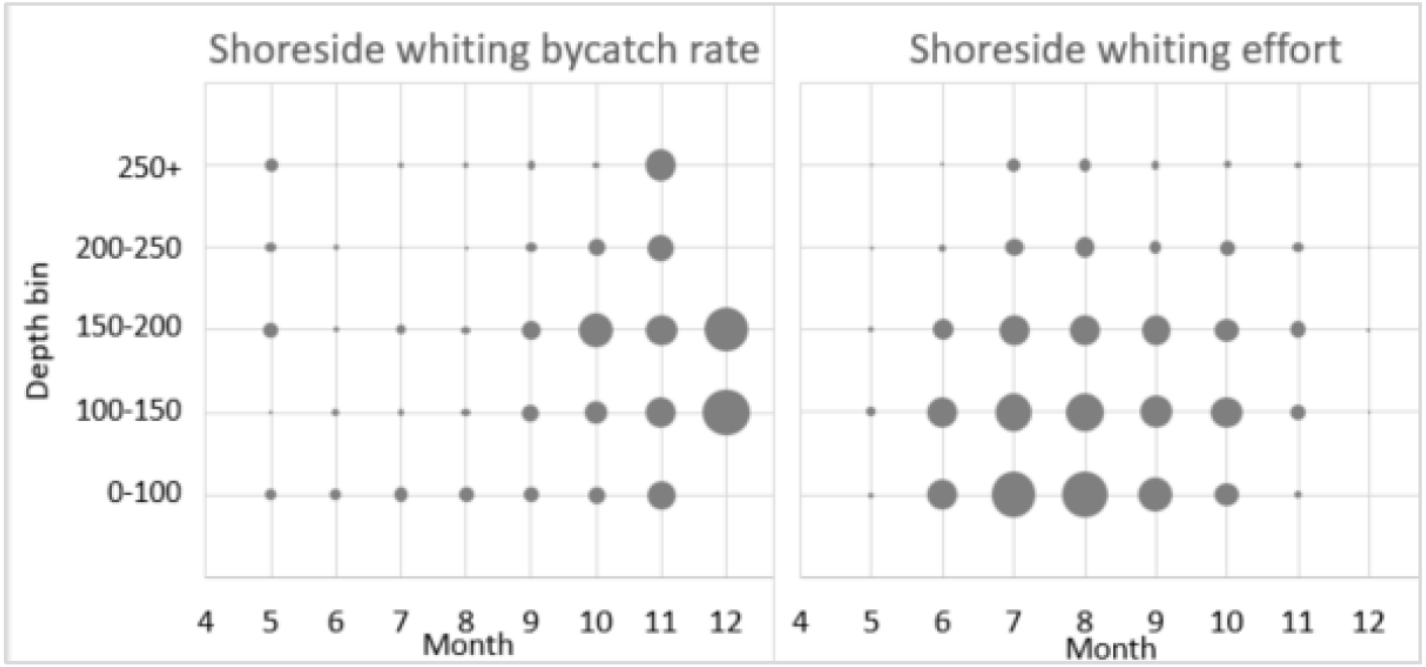
Shore-200 fm BAC:

- ***High bycatch reduction expected***
- ***Shifts efforts to deepest depths w/ lower bycatch rates***

Then the standard questions:

- ***At which trigger point***
- ***Until next Council meeting or end of year***

ROA for Automatic BACs for SS Whiting Sector



100-200 fm BAC:

- *Moderate expected bycatch reduction*
- *Closes highest bycatch rate bins with moderate effort …*

Shore-150 fm BAC:

- *Could be effective, but less certain*
- *Closes bins where the majority of salmon bycatch and effort occurs*
- *But could push more effort into the high bycatch rate 150-200 fm bin*
- *Which could decrease effectiveness*

Shore-200 fm BAC:

- *High bycatch reduction expected*
- *Close the highest bycatch rate bins*
- *But could disproportionality impact SS who fishes shallow*

Then the standard questions: trigger point and if until next Council meeting or end-of-year

ROA for Automatic BACs for CP Sector

	Depth bin (fathoms)				
	0-100	100-150	150-200	200-250	250+
Salmon bycatch rate	M	H	H	M	L
Groundfish catch	M	M	M	M	H

- **Bycatch rates highest in intermediate depths**
- **Had to make prediction for RCA (100-150 fm)**
- **Bycatch rates lowest in 250+ fms where bulk of groundfish catch comes from**

Ran scenario models of fall BAC closures:

100-200 fm BAC:

- ***Low expected bycatch reduction (-7%)***
- ***Moderate displacement of groundfish catch***

Shore to 250 fm BAC:

- ***High expected bycatch reduction (-83%)***
- ***But displaces high amount of groundfish catch***

Then the standard questions:

- ***At which trigger point***
- ***Until next Council meeting or end of year***

BACs for mid-water rockfish trawl (auto)

- Have to provide options if select automatic
- But not enough salmon bycatch data to evaluate BACs (136 chinook / 47 million lbs)
- GMT had to do their best based on all available info:

100-200 fm BAC:

- ***Fish shallower than whiting (75-150 fathoms)***
- ***100-200 fm highest bycatch rates for other trawl fisheries***
- ***And area where salmon trollers report high salmon***

Then the standard questions:

- ***At which trigger point***
- ***Until next Council meeting or end of year***