

**GROUND FISH MANAGEMENT TEAM REPORT ON PRELIMINARY PREFERRED
 MANAGEMENT MEASURE ALTERNATIVES FOR 2019-2020 FISHERIES**

The Groundfish Management Team (GMT) has reviewed the documents under this agenda item and received an overview from Mr. John DeVore of Pacific Fishery Management Council (Council) staff. We have organized and numbered our comments in the order that is presented in [Agenda Item F.5, Supplemental Attachment 3](#). This report covers issues related to the Salmon Incidental Take Statement (ITS; Item 16). All other new management measures (Item 16 through Item 21) are covered in Agenda Item F.5.a, Supplemental GMT Report 4, April 2018.

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Background

In December 2017, the National Marine Fisheries Service (NMFS) released the results of its Section 7 consultation and 2017 ITS. At the March 2018 Council meeting, the GMT provided a report to the Council on several of the reasonable and prudent measures (RPM) and their accompanying terms and conditions (T&Cs) from the 2017 Salmon ITS that were to be developed for the 2019-2020 biennium ([Agenda Item H.5.a, GMT Report 1, March 2018](#)). These T&Cs required assessing current salmon monitoring capabilities, as well as developing mitigation measures to address salmon bycatch and rules for managing the “reserve.”

To build upon the range of alternatives (ROA) provided by the GMT in March, the Council requested that the GMT further investigate additional items pertaining to the reserve, non-trawl fisheries, and whiting sector-specific bycatch reduction areas (BRAs). The items include measures to reduce bycatch before there is a need to access the reserve and a protocol for accessing the reserve. Below, the GMT provides a short description of each item under the different issues for consideration (including those presented in March), the ROA, and recommendations for the Council’s selection of a Preliminary Preferred Alternative (PPA). To help facilitate Council discussion and decision-making, the GMT has grouped the issues and labeled each item and ROA. Appendix A of this document contains a summary table listing all of the issues and items along with GMT recommendations for Council consideration.

Overarching considerations

The 2017 Salmon ITS requires groundfish fisheries (both non-whiting and whiting) to be managed so that their salmon bycatch does not exceed the thresholds established for those fisheries. Mitigation measures are required before the Council could consider allowing sectors to fish into the reserve. Many of the alternatives discussed below are mandatory to meet the conditions specified in the ITS. The GMT notes that since 2002, there has never been a situation where both sectors exceeded their threshold levels at the same time. A situation like this would be undesirable as both could benefit from the reserve but it may not be available to both sectors, potentially resulting in widespread closures. Additionally, industry has shown the ability to be proactive in their avoidance of salmon, and some sectors, such as the at-sea fleet, have self-regulated hotspot closures and move-along rules. The Council should consider these factors when evaluating how conservative alternatives need to be, for example, the extent of depth restrictions.

Issue A: Expansion of Routine BRAs for Midwater Gear

Description

BRAs are depth-based management measures used to close depths shallower than a specified depth contour to vessels using midwater gear to minimize impacts to groundfish, or any prohibited or protected species, such as salmon. Currently in regulation, BRAs are available to close areas shoreward of the 75, 100, and 150 fathom depth contours and can be implemented for a specific sector (i.e., catcher/processor, mothership, shoreside whiting, and shoreside non-whiting midwater) at any latitudinal break. The Council requested in November 2017 that the GMT analyze a BRA that could be implemented from the 200 fathom depth contour shoreward. Upon completion of that analysis ([Appendix C](#), Section 1.2.1), the GMT determined that the 200 fathom BRA would likely be the most effective of the depth contours for reducing salmon bycatch in the whiting sectors, because it would close shallower areas with the highest bycatch rates (Figure 1 from [Agenda Item H.5.a, GMT Report 1, March 2018](#)). However, in the non-whiting midwater trawl fishery, the GMT notes that a 200 fathom BRA would essentially close the fishery as the fishery typically operates in more shallow waters. Regardless, the GMT supports creating a 200 fathom BRA as a new management tool.

The GMT developed the following alternative based on our analysis of BRAs and the Council's discussion in March 2018.

Range of Alternatives

No Action: BRAs are available through routine inseason action at 75, 100, and 150 fathom depth contours for mitigating salmon bycatch for vessels using midwater gear.

Alternative 1: In addition to the current BRAs, add the 200 fathom depth contour for use as a BRA for vessels using midwater gear through routine inseason action.

Recommendation

The GMT recommends that the Council select Alternative 1 as its PPA. Alternative 1 would make a BRA from the 200 fathom depth contour shoreward available for routine inseason action for all vessels using midwater gear (whiting and non-whiting). This BRA would be effective for reducing Chinook salmon bycatch in the whiting sectors since it would close the depths with the highest bycatch rates. However, this BRA would close off a majority of the areas where the shoreside, mothership, and non-whiting midwater fishery operate. Ultimately, Alternative 1 would align all the midwater gear sectors (whiting and non-whiting) for regulatory ease and would be a mitigation tool in the future if needed.

Issue B: Whiting sector mitigation measures

B.1. Whiting Ocean Salmon Conservation Zone

Description

The Ocean Salmon Conservation Zone (OS CZ) prohibits all whiting fishing and consists of all waters shoreward of a boundary line approximating the 100 fathom (183 m) depth contour if the whiting sectors, including tribal, are projected to attain, or exceed, the 11,000 Chinook salmon threshold (50 CFR 660.131(c)(3)). At that point, the Regional Administrator for NMFS West Coast

Region would implement the OSCZ through automatic action authority. The 2017 ITS required that the OSCZ be analyzed to determine its effectiveness.

Range of Alternatives

No Action: Maintain the OSCZ.

Alternative 1: Eliminate the OSCZ.

Recommendation

The GMT recommends that the Council eliminate the OSCZ (Alternative 1) as the PPA. Based on the GMT's previous analysis ([Agenda Item H.5.a, GMT Report 1, March 2018](#)), the OSCZ does not appear to be an effective means of reducing salmon bycatch in the whiting fishery because it only closes shallow waters that are less than 100 fathoms. Effort in this area by the whiting sector tends to be low throughout the year, especially in the fall and winter, when this type of mitigation measure would most likely be used. Additionally, the Council may have other options for mitigation measures, such as a BRA or industry self-regulation, that may provide a more effective way to mitigate salmon bycatch in the whiting sector.

B.2. Automatic authority for BRAs for whiting: Aggregate catch trigger

Description

Currently, in regulation, BRAs may be implemented through automatic action if a whiting sector is projected to reach a sector-specific allocation prior to attaining the whiting allocation (§ 660.60(d)). This does not include salmon. Regulations would need to be developed to provide NMFS with the automatic action authority to implement BRAs once a specific salmon threshold is breached or projected to be breached prior to attaining the whiting allocation.

In the GMT's [March 2018 Supplemental Report](#) (Agenda Item H.5.a), we evaluated the usefulness of alternative depth restrictions as a means to reduce inseason Chinook salmon bycatch for the three whiting sectors (shoreside, catcher/processor, and mothership) in aggregate. The GMT noted that BRAs could also be implemented on a sector-specific basis at any latitudinal break, which may be more effective for mitigating salmon bycatch than a "one-size-fits-all" approach. For example, a 200 fathom BRA closure, which closes the area shoreward of the 200 fathom depth contour to all whiting sectors, would be the most effective for reducing bycatch; however, it could disproportionately impact the shoreside and mothership (MS) sectors, which tend to fish in shallower waters than catcher/processors (CP; see Figure 1).

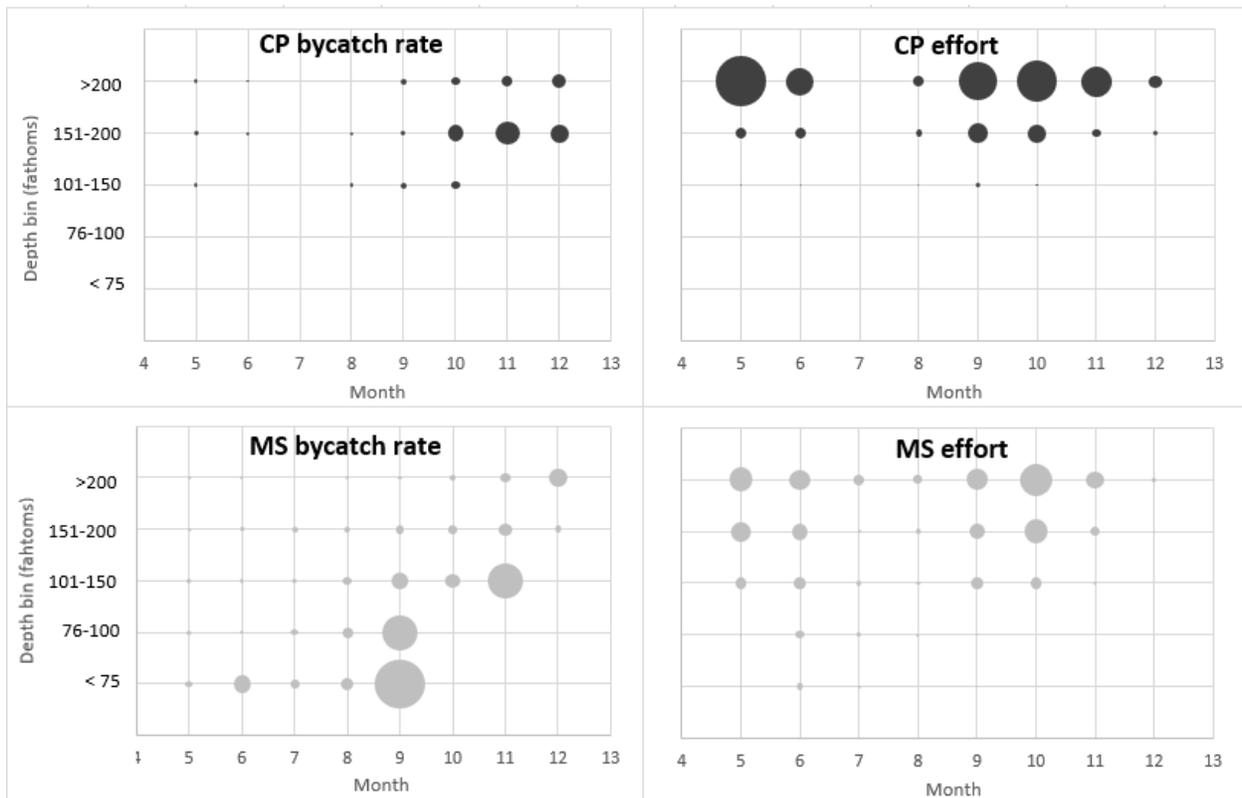


Figure 1: Relative bycatch rate (# Chinook salmon / mt of whiting) and effort (percent of hauls) distributions by month and depth bin for the catcher/processor and mothership at-sea whiting sectors, 2011-2017.

A more equitable and practicable approach could be a BRA at 150 fathoms for the MS sector, which would mitigate against the higher bycatch bins (<150 fathoms), while at the same time avoiding pushing the MS sector into depths that are outside of their normal operational area. For the same reasons, a 200 fathom BRA would be advisable for CP and a 150 fathom BRA for the shoreside fleet per the bycatch rate and effort distributions described in our March report (Figure 1 above and Figure 1 from [Agenda Item H.5.a, GMT Report 1, March 2018](#), respectively).

If the Council recommended the creation of an automatic action authority for implementation of BRAs to mitigate against salmon bycatch in the whiting sector, non-discretionary triggers that would prompt action would need to be developed. The GMT provides a range of alternatives below for Council consideration.

Range of Alternatives

No Action: BRAs not available as an automatic action for mitigating salmon bycatch in the whiting sector.

Alternative 1: Create an automatic action authority where the aggregate whiting catch (tribal and non-tribal) is the trigger for NMFS to implement a 100 fathom BRA for the shoreside and MS sector and a 150 fathom BRA for the CP when X percent of the threshold is taken:

- Option a:* 70 percent of threshold (7,700)
- Option b:* 80 percent of threshold (8,800)
- Option c:* 90 percent of threshold (9,900)

Alternative 2: Create an automatic action that would implement a 150 fathom BRA for the shoreside and MS sectors and a 200 fathom BRA for the CP sector if the whiting sectors' threshold of 11,000 Chinook salmon is exceeded before the whiting allocation is fully attained.

Recommendation

The GMT recommends that the Council select Alternative 2 as its PPA. This would develop an automatic authority for sector-specific BRAs for the whiting sectors that are triggered when the aggregate catch amount reaches the whiting threshold. The GMT believes that Alternative 2 provides the mechanisms to limit bycatch in the whiting sector in the case that the whiting sector exceeds the threshold and there is potential take of the reserve.

Alternative 1 was initially developed to reduce the chance of exceeding the threshold. The Council would need to specify a percent attainment of the whiting Chinook threshold that would trigger sector-specific BRAs (Option A = 70 percent; Option B = 80 percent; Option C = 90 percent). These options are simply for consideration; however, the amount could be something less than 100 percent of the threshold. If the Council were to select Alternative 1, the GMT does not have a recommendation on the threshold option at which to implement the first BRA, as we believe this is ultimately a risk call by the Council on when and how they want to mitigate bycatch. Ultimately, the GMT believes that if high bycatch rates were to occur inseason, the Council should address these situations through routine inseason actions initially and could develop additional mitigation measures if needed in November 2018 under the salmon ITS agenda item. Additionally, the evaluation through inseason would allow the Council to consider sector-specific industry (e.g., co-op style management, hotspot closures) and Council efforts to reduce impacts to salmon to date and better inform decisions on implementation of depth restrictions that would be most effective, if needed.

B.3. Automatic authority for BRAs for whiting: Sector-specific catch trigger

While the Council could consider only developing BRAs for the entire whiting fleet if an overall level of Chinook salmon is taken (similar to the OSCZ), the Council could also consider automatic authority to implement BRAs for a specific sector if that sector reaches a specific bycatch amount or rate at a certain period in the season. Based on the Council's guidance from March for sector-specific BRAs, the GMT examined historical trends in cumulative catch of Chinook salmon in each of the non-tribal whiting sectors from 2011-2016 (Figure 2). As shown, in some years, sectors can have higher than normal bycatch rates. For example, the shoreside whiting sector had high bycatch by August in both 2011 and 2014, and reached over 6,000 salmon by October of 2014. The Council could consider recommending the development of an automatic action authority that would implement BRAs for each sector, if they take a specific amount by a given month based on historical bycatch levels. Based on the historical data, the GMT informs the ROA below with strawman sector-specific triggers that are based on trying best to accommodate sector-specific

historical bycatches shown in Figure 2. These suggested values cover observed but higher than normal catches in recent years.

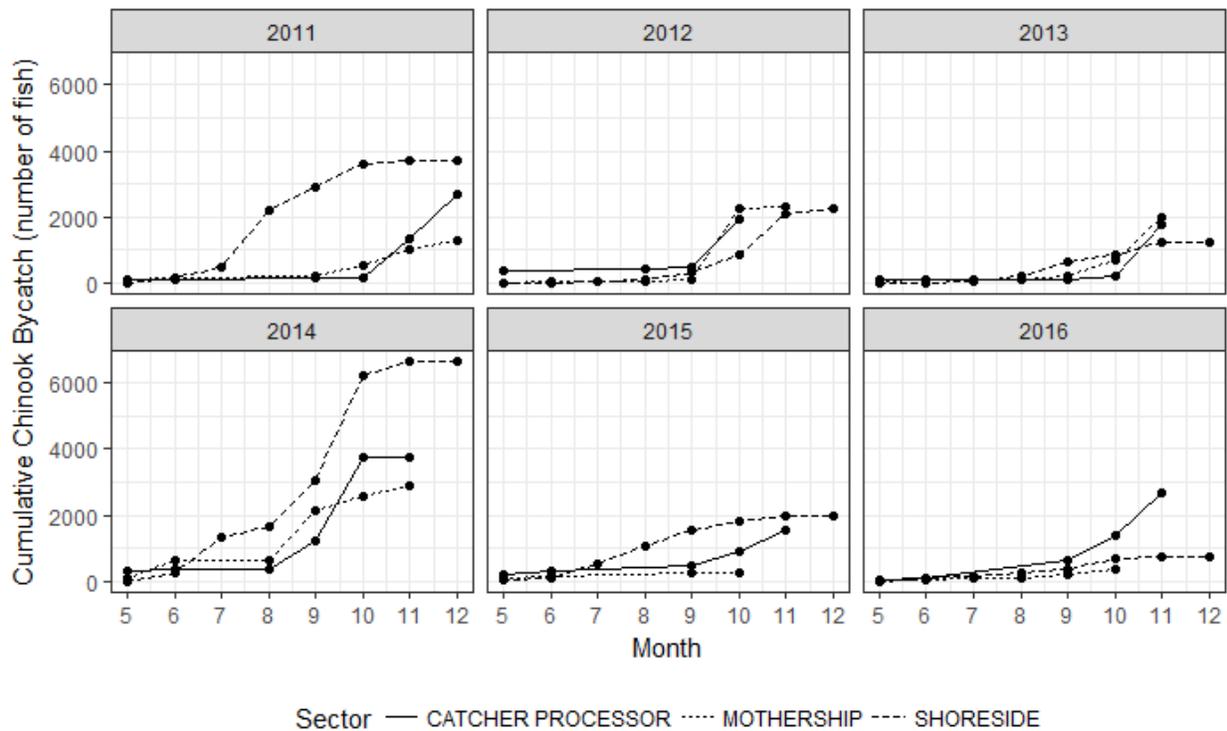


Figure 2. Cumulative Bycatch of Chinook salmon (numbers of fish) in the non-tribal whiting sectors, 2011-2016.

Range of Alternatives

No Action: No automatic authority in regulation for salmon bycatch mitigation in the whiting sector.

Alternative 1: Create an automatic action authority where a whiting sector’s specific catch is the trigger for NMFS to implement the following BRAs.

- If the shoreside whiting sector is projected to exceed or exceeds 4,000 Chinook salmon by September 30, NMFS will implement a coastwide BRA at 150 fm for that sector; and
- If the MS sector is projected to exceed or exceeds 3,000 Chinook salmon by September 30, NMFS will implement a coastwide BRA at 150 fm for that sector; and
- If the CP sector is projected to exceed or exceeds 3,000 Chinook salmon by September 30, NMFS will implement a coastwide BRA at 200 fm for that sector.

Recommendation

For Item B.3, the GMT does not recommend the Council select an action alternative at this time. The Council already has the ability to recommend a sector-specific BRA be implemented through routine inseason action at a Council meeting if one sector has higher than normal bycatch.

As stated above, the GMT does find merit in sector-specific triggers since it would increase individual sector accountability by creating numerical triggers to which they can manage. However, these triggers could also reduce flexibility if certain sectors are constrained while overall Chinook salmon bycatch is low. The GMT recognizes that industry has shown in recent years that they are willing and able to self-regulate to avoid Chinook bycatch. If desired, the Council could consider additional actions in November 2018 under the Salmon ITS agenda item.

Issue C: Mitigation Measures for non-whiting

Item C.1. Automatic authority for non-whiting trawl

Description

The 2017 Salmon ITS specifies that full attainment of a sector's threshold plus the full reserve would result in closure of that sector, and closure of the second sector upon attainment of their threshold. Therefore, full attainment of the non-whiting threshold plus the reserve would result in closure of all the non-whiting fisheries (i.e., midwater non-whiting trawl, bottom trawl, and select non-trawl fisheries). Of the non-trawl fisheries, this includes the fixed gear (limited entry, open access, and individual fishing quota), recreational groundfish fisheries outside of salmon seasons, and the Oregon recreational longleader fishery (April-October). It does not pertain to recreational groundfish fisheries during open salmon seasons, when the majority of recreational groundfish effort occurs.

The Council was interested in the GMT's recommendation in our March 2018 statement to "set aside" a portion of the non-whiting threshold to account for the relatively minor non-trawl impacts and to attempt to provide protection for these fisheries. After taking into account the non-trawl impacts, the Council could establish a trigger point for implementing management measures (e.g., depth restrictions) to slow down salmon bycatch by the non-whiting trawl sector, to minimize disruption of the non-whiting, non-trawl fisheries.

In our March 2018 report, the GMT originally proposed a "set-aside" of 404 fish for the non-trawl sectors. This number was based on the maximum bycatch of 124 Chinook salmon for nearshore/non-nearshore, the 18 maximum for California primary skiff recreational bottomfish fisheries outside the salmon season, and the 12 assumed-maximum for Oregon longleader. The 404 fish "set-aside" includes a 250 fish cushion to address uncertainty in the commercial non-trawl, Oregon/Washington recreational bottomfish outside salmon seasons, and California recreational fisheries (except the primary skiff fishery) outside salmon seasons. For simplicity, the GMT has rounded 404 to 400 in the ROA below.

During discussions in March, the Council wanted to consider a higher amount to account for additional uncertainty, especially if the recreational salmon seasons were short, or even closed. Therefore, the GMT proposes a second alternative that would create a 625 Chinook salmon "set-aside" for the non-trawl sectors within the non-whiting threshold of 5,500. This number is based on the current 400 estimate plus the "worst case" scenario of the salmon season being closed in California. California Department of Fish and Wildlife (CDFW) staff estimates that ~225 Chinook salmon could be taken (but discarded) by recreational directed groundfish trips. The GMT notes that the addition of the 225 Chinook that CDFW estimates for a worst case scenario would be double counting the portion of the impacts, which include all California sport fisheries except

primary skiffs, that were already accounted for in the 250 fish cushion; however, the double-counted portion is difficult to calculate.

Range of Alternatives

No Action: No automatic authority

Alternative 1: Create an automatic action authority where the aggregate non-whiting trawl catch (bottom trawl and midwater trawl) against the threshold is the trigger for NMFS to implement a 75 fathom BRA for the non-whiting midwater trawl fishery when X percent of the threshold is taken:

Option a: 70 percent of the 5,100 non-whiting trawl reference point (3,570)

Option b: 80 percent of the 5,100 non-whiting trawl reference point (4,080)

Option c: 90 percent of the 5,100 non-whiting trawl reference point (4,590)

Alternative 2: Create an automatic action authority to implement a 100 fathom BRA for the non-whiting midwater trawl fishery when the non-whiting threshold is exceeded.

Recommendation

The GMT recommends the Council select No Action for Item C.1 for the midwater non-whiting fishery. As stated in [Agenda Item F.3.a, Supplemental GMT Report 1](#), the GMT believes that the Council could take a more holistic approach in managing the non-whiting sector by considering automatic authorities for all non-whiting gears (bottom and midwater non-whiting trawl and non-trawl fisheries) together in November 2018 under the salmon ITS agenda item.

The GMT notes there has been considerable interest in developing measures to provide seamless continuation of the non-trawl fisheries. As shown in **Table 1**, the 400 fish deduction to non-trawl would provide ample cushioning since it would be two to six times more than what they take. It would also cover the non-trawl total for most years even assuming the worst case scenario of California not having a recreational salmon season. The sole exception could have been a 30-fish overage in 2012, noting this was an atypically high year.

Table 1: Recent years' Chinook salmon bycatch mortality (in numbers of fish) by non-trawl sectors.

Sector	2010	2011	2012	2013	2014	2015	2016	2017
WA Rec. outside salmon	34	96	111	11	65	47	64	40
OR Rec. outside salmon	3	2	2	16	1	5	0	7
OR Rec. longleader max projection	12	12	12	12	12	12	12	12
CA Rec. outside salmon	a/	a/	18	8	0	0	3	a/
Commercial FG	16	8	63	122	34	40	15	a/
Total	65	118	206	169	112	104	94	a/
Total with worst case for CA needing extra 225	290 b/	343 b/	431	394	337	329	319	a/

a/ = data available but estimates not yet finalized

b/ = totals do not include CA rec. estimates, which have not been finalized

Therefore, the GMT believes the best method for cushioning the non-trawl sectors is within the reserve rules alternatives below (Item D.2.). Even without automatic authorities, the Council would still have the ability to mitigate high bycatch inseason with routine BRAs.

Item C.2. Columbia River and Klamath River Conservation Zone Prohibitions

Description

Current regulations at 660.131 define the Klamath and Columbia River Salmon Conservation Zones as groundfish closed areas, and vessels using midwater trawl gear fishing during the primary whiting season are prohibited from entering them. These two areas are further described in regulations as:

Klamath River Salmon Conservation Zone. The ocean area surrounding the Klamath River mouth bounded on the north by 41° 38.80' N. lat. (approximately 6 nm north of the Klamath River mouth), on the west by 124° 23' W. long. (Approximately 12 nm from shore), and on the south by 41° 26.80' N. lat. (approximately 6 nm south of the Klamath River mouth).

Columbia River Salmon Conservation Zone. The ocean area surrounding the Columbia River mouth bounded by a line extending for 6 nm due west from North Head along 46° 18' N. lat. to 124° 13.30' W. long., then southerly along a line of 167 True to 46° 11.10' N. lat. and 124° 11' W. long. (Columbia River Buoy), then northeast along Red Buoy Line to the tip of the south jetty.

Figure 3 through Figure 5 show where these two areas are found within the waters off the west coast and the bottom trawl and non-whiting midwater trawl effort that has occurred near these areas between 2011 and 2015.

T&C 2e of the 2017 Salmon ITS states that “NMFS and the Council shall implement regulations within 2 years of issuance of this opinion to prohibit the following within the nearshore Klamath and Columbia River Salmon Conservation Zones:

1. Bottom trawling (except with a selective flatfish trawl gear), and
2. All non-whiting midwater trawling.”

As the Biological Opinion (BiOp) was issued in December 2017, these provisions must be in place by December 2019. The GMT believes that the 2019-2020 biennial process is the most efficient pathway to put these regulations into effect and has developed the following range of alternatives for the Council’s consideration.

Range of Alternatives

No Action: Maintain the current prohibitions, which restrict midwater trawl gear, during the Pacific whiting primary season, from fishing inside the Klamath River Salmon Conservation Zone or the Columbia River Salmon Conservation Zone.

Alternative 1: Prohibit all midwater trawling within the Klamath River Salmon Conservation Zone and Columbia River Salmon Conservation Zone year-round; and

Prohibit the use of all bottom trawl gear except selective flatfish trawl inside the Klamath River Salmon Conservation Zone and Columbia River Salmon Conservation Zone.

Recommendation

The GMT recommends the Council select Alternative 1.

When the regulations were originally developed to protect the Klamath River Salmon Conservation Zone and Columbia River Salmon Conservation Zone from midwater trawling, there was no midwater trawling outside the Pacific whiting primary season. Therefore, all midwater trawling was essentially prohibited in these areas (Figure 3; no midwater effort has been observed near the Klamath River Salmon Conservation Zone). However, with the upcoming increase in catch limits for midwater stocks and the development of a year-round, coastwide midwater exemption within the 2018 trawl gear EFP, there is a potential that future non-whiting midwater trawling could take place in these areas. Alternative 1 would allow the same protections to remain in place if the Council moves in the direction of a year-round midwater trawl fishery.

Alternative 1 would also maintain the current prohibition on the use of bottom trawl, other than selective flatfish trawl gear, inside the Columbia River Salmon Conservation Zone (Figure 4) and Klamath River Salmon Conservation Zone (Figure 5) once NMFS implements the current suite of recommendations the Council made under the gear package. Because selective flatfish trawl is currently required shoreward of the trawl rockfish conservation area in the area north of 40° 10’

N. lat., maintaining this prohibition would not have any additional implications beyond what we see under the No Action alternative and would keep the fishery in compliance with the ITS.

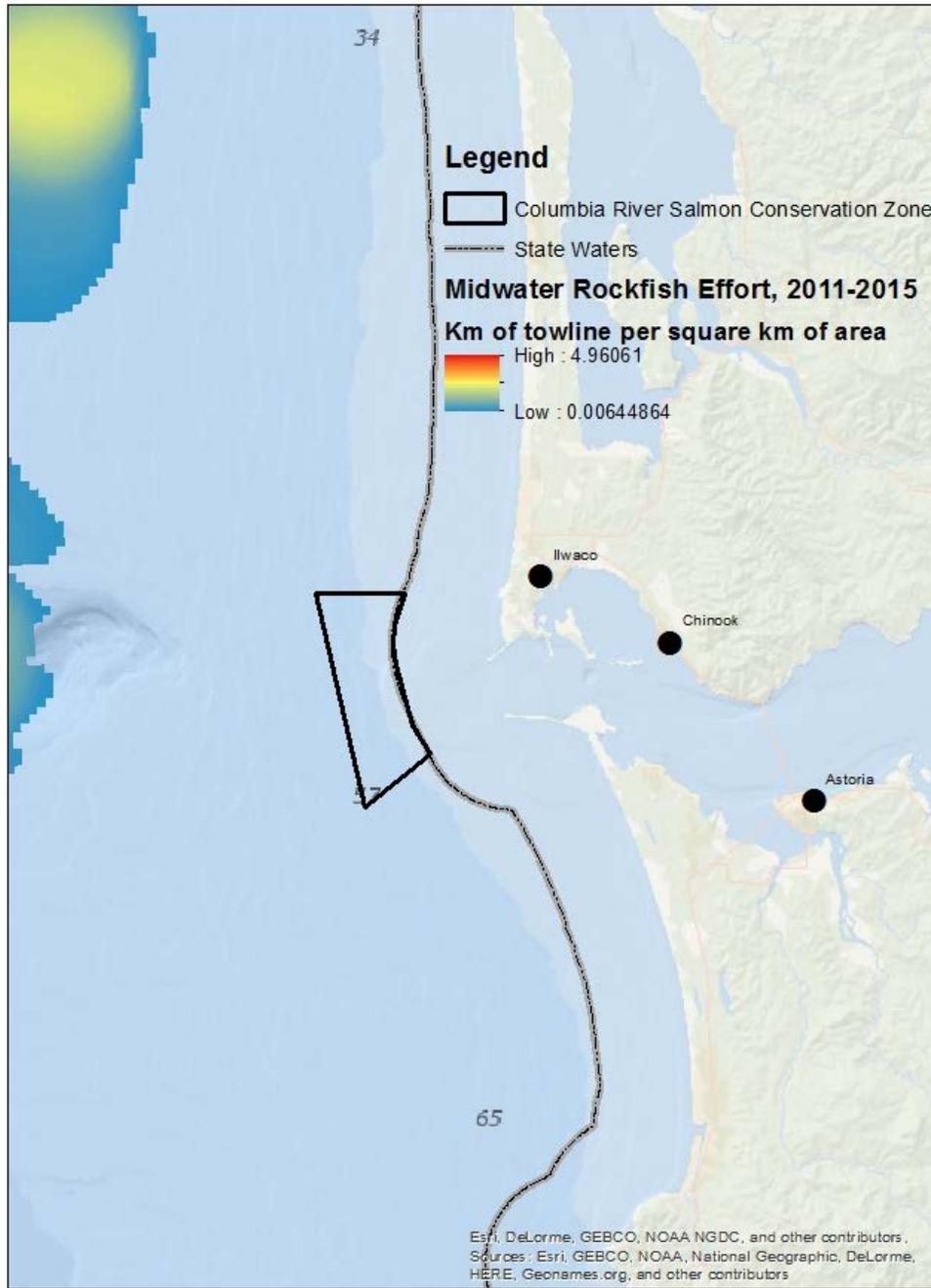


Figure 3. Map of 2011-2015 non-midwater trawl fishing effort around and within the Columbia River Salmon Conservation Zone. Effort layer was created in response to the Biological Opinion on Continuing Operation of the Pacific Coast Groundfish Fishery and is published on the [Northwest Fishery Science Center Data Warehouse](#).

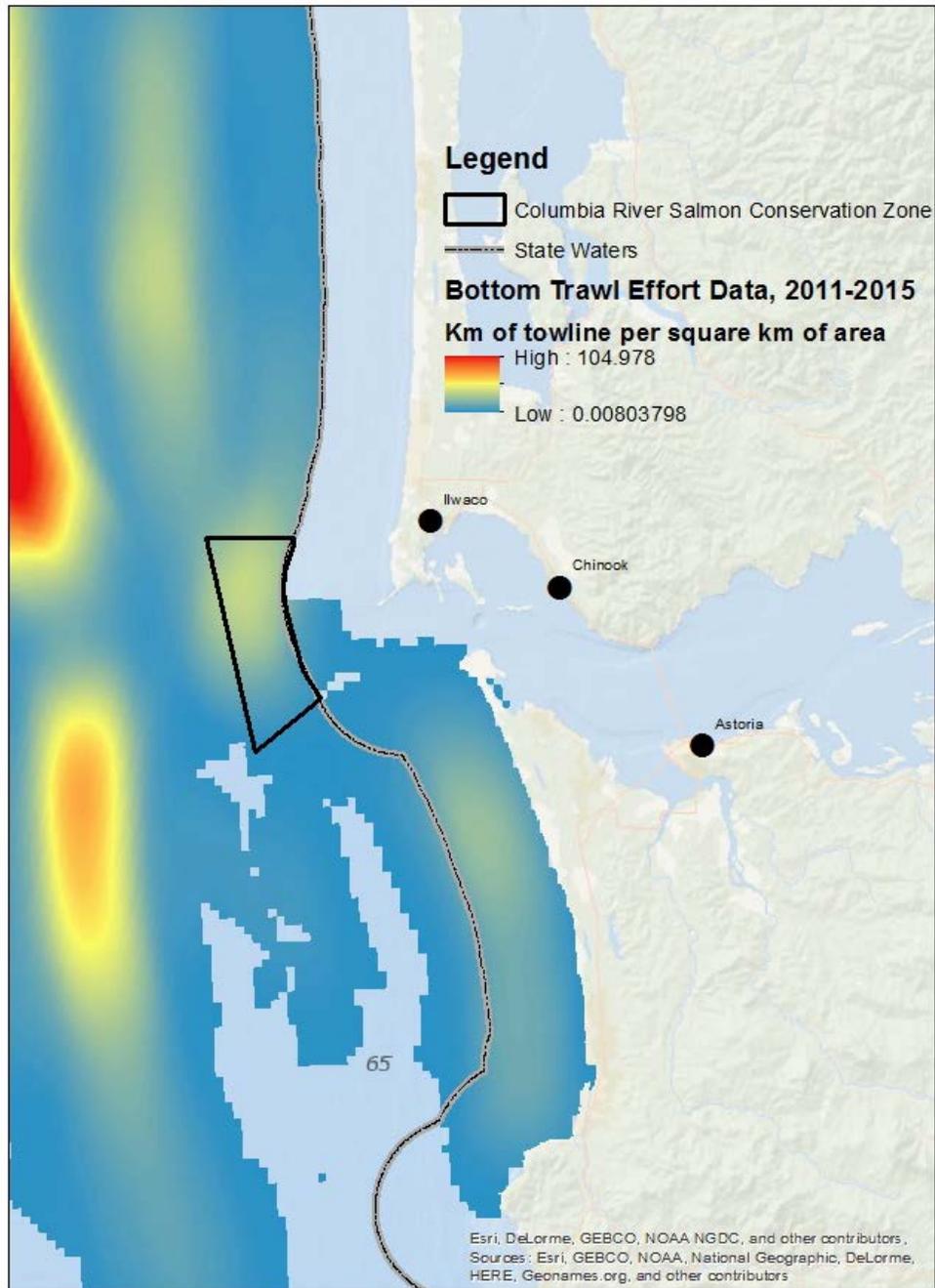


Figure 4. Map of 2011-2015 bottom trawl fishing effort around and within the Columbia River Salmon Conservation Zone. Effort layer was created in response to the Biological Opinion on Continuing Operation of the Pacific Coast Groundfish Fishery and is published on the [Northwest Fishery Science Center Data Warehouse](#).

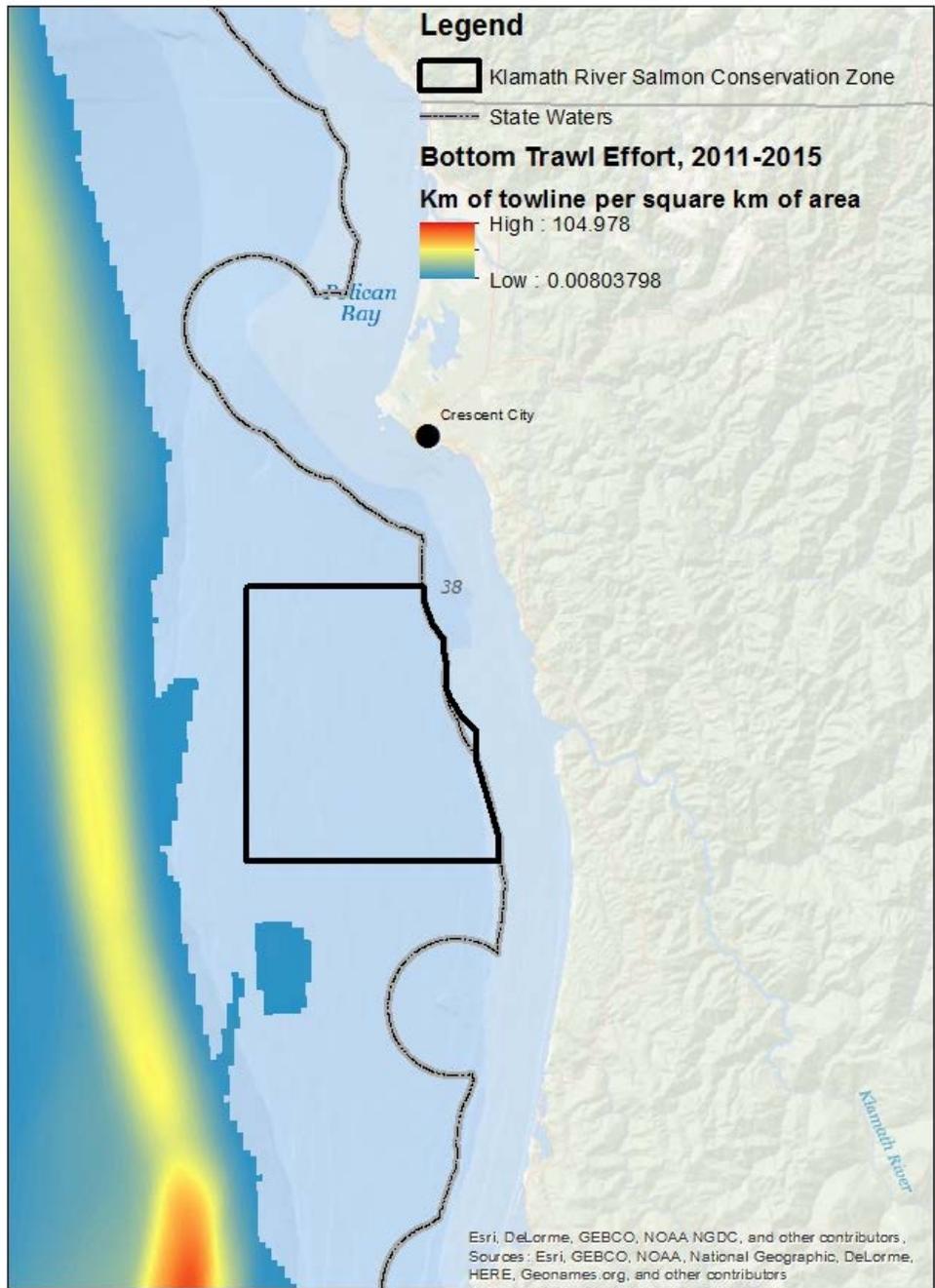


Figure 5. Map of 2011-2015 bottom trawl fishing effort around and within the Klamath River Salmon Conservation Zone. Effort layer was created in response to the Biological Opinion on Continuing Operation of the Pacific Coast Groundfish Fishery and is published on the [Northwest Fishery Science Center Data Warehouse](#).

Issue D: Reserve rules

D.1. Automatic closure of sector(s) when threshold and reserve reached

Description

T&C 3c of the Salmon ITS requires the Council and NMFS to develop regulations, through the 2019-2020 biennial harvest specifications and management measures process, to create an automatic authority which could be used to close a sector (whiting or non-whiting) when that sector exceeds its guideline plus the reserve, or when one sector has been closed under the prior scenario and the other sector reaches its guideline.

Range of Alternatives

No Action: No automatic authorities around the Chinook salmon thresholds will be implemented in regulation.

Alternative 1: Create two automatic authorities in regulations that would allow NMFS to

- a) close either sector (whiting or non-whiting) upon that sector having exceeded or being projected to exceed its Chinook salmon bycatch threshold and the reserve amount of 3,500, and
- b) close a sector (whiting or non-whiting) when one sector has been closed after exceeding or being projected to exceed its Chinook salmon bycatch threshold and the reserve amount of 3,500, and the second sector exceeds or is projected to exceed its salmon bycatch threshold.

Recommendation

The GMT recommends that the Council select Alternative 1 as PPA as it is required to meet the T&Cs of the ITS.

D.2. Sector Specific Reserve Limits

Description

As noted in [Agenda Item H.5.a, GMT Report 1, March 2018](#), if the Council did not develop rules pre-season, or give guidance during inseason at a Council meeting, a sector could fish over their Chinook bycatch threshold, and access the reserve with no mitigation measures implemented. There were several concerns about the potential for high Chinook bycatch in the trawl sectors leading to the closure of the non-trawl sectors, as the 2017 ITS requires NMFS to close a sector if the threshold and the reserve is exceeded or close both sectors if both thresholds and the reserve are exceeded. Therefore, the Council asked the GMT to develop rules limiting portions of the reserve that could be taken by a sector in the situation that they exceeded their threshold, while allowing for seamless continuation of the non-trawl fisheries.

As a reminder, access to the reserve “will not be available as a matter of course to allow the sectors to exceed their bycatch guidelines” (pg. 2-185 of the ITS). The GMT believes that the mitigation measure alternatives proposed above would need to be coupled with the ROA below in order to meet the intent of the reserve.

Range of Alternatives

No Action: No reserve rules established in regulation (sectors could continue fishing as normal, even if threshold is exceeded).

Alternative 1: Develop the following automatic closures in regulation as stop-gaps for action to occur between Council meetings.

Whiting: If the whiting sectors (tribal and non-tribal) exceed the 11,000 Chinook salmon threshold after mitigation measures [A.2., A.3.] are implemented, fishing may continue until 1,500 additional Chinook salmon are taken. If the sector reaches or exceeds a total of 12,500 Chinook salmon, the sector will be automatically closed.

Non-Whiting Trawl (bottom and midwater): If the non-whiting trawl sectors (bottom trawl and non-whiting midwater trawl) exceed the 5,500 Chinook salmon threshold after mitigation measures [B.2.] are implemented, fishing may continue until 1,500 additional Chinook salmon are taken. If the sector reaches a total of 7,000 Chinook salmon, the sector will be automatically closed.

Recommendation

The GMT recommends the Council consider Alternative 1 as the PPA, as it would limit fisheries from taking the entire reserve and would provide for seamless continuation of the non-trawl fisheries.

In order to keep the non-trawl fisheries operating, 500 Chinook salmon would be reserved for the non-trawl fisheries to ensure that the total of 20,000 Chinook salmon is not taken, which would result in the closure of all groundfish fisheries. The estimate of 400 Chinook salmon is already conservative given previously observed bycatch by the fishery (see Table 2), so a total of 500 fish provides an additional buffer for the non-trawl sectors. The 500 Chinook would also be expected to provide enough cushion in a worst case scenario of a complete closure of the California recreational fishery, where projected bycatch for all non-trawl fisheries would be 430 or less.

To be clear, this would result in closure of the whiting fisheries at 12,500 chinook salmon (11,000 whiting threshold + 1,500 Chinook salmon out of the reserve). It would also shut down only the non-whiting midwater and bottom trawl fisheries if they catch 7,000 Chinook salmon (5,500 non-whiting threshold + 1,500 Chinook salmon out of the reserve), leaving the non-trawl fisheries open.

The GMT notes that the Alternative 1 automatic closure trigger points are strawman proposals based on earlier Council feedback and could be adjusted to other amounts if the Council chooses this now or in future cycles.

Appendix A. Salmon Mitigation Measure Summary & Recommendations

GMT recommendations in bold

Issue	Item Number	Name	Alternatives
A: Expansion of Routine BRAs for Midwater Gear	A.1.	Expansion of Routine BRAs for Midwater Gear	<p><u>No Action</u>: BRAs are available through routine inseason action at 75, 100, and 150 fathom depth contours for mitigating salmon bycatch for vessels using midwater gear.</p> <p><u>Alternative 1</u>: In addition to the current BRAs, add the 200 fathom depth contour for use as a BRA for vessels using midwater gear through routine action.</p>
B: Whiting Mitigation Measures	B.1.	Ocean Salmon Conservation Zone	<p><u>No Action</u>: Maintain the OSCZ</p> <p><u>Alternative 1</u>: Eliminate the OSCZ from regulation</p>
	B.2.	Automatic authority for BRAs for whiting: Aggregate Catch Trigger	<p><u>No Action</u>: BRAs not available as an automatic action for mitigating salmon bycatch in the whiting sector.</p> <p><u>Alternative 1</u>: Create an automatic action authority where the aggregate whiting catch (tribal and non-tribal) is the trigger for NMFS to implement a 100 fathom BRA for the shoreside and mothership sector and a 150 fathom BRA for the catcher/processor when X percent of the threshold is taken:</p> <p style="padding-left: 40px;"><i>Option a</i>: 70 percent of threshold (7,700) <i>Option b</i>: 80 percent of threshold (8,800) <i>Option c</i>: 90 percent of threshold (9,900)</p> <p><u>Alternative 2</u>: Create an automatic action that would implement a 150 fathom BRA for the shoreside and mothership sector and a 200 fathom BRA for the catcher/processor if the whiting sector's threshold is exceeded.</p>
	B.3.	Automatic authority for BRAs for whiting: Sector-Specific Catch	<p><u>No Action</u>: No automatic authority in regulation for salmon bycatch mitigation in the whiting sector.</p>

Issue	Item Number	Name	Alternatives
		Trigger	<p><u>Alternative 1</u>: Create an automatic action authority where a whiting sector's specific catch is the trigger for NMFS to implement the following BRAs.</p> <p style="padding-left: 40px;">If the shoreside whiting sector is projected to exceed or exceeds 4,000 Chinook salmon by September 30, NMFS will implement a coastwide BRA at 150 fm for that sector; and</p> <p style="padding-left: 40px;">If the MS sector is projected to exceed or exceeds 3,000 Chinook salmon by September 30, NMFS will implement a coastwide BRA at 150 fm for that sector; and</p> <p style="padding-left: 40px;">If the CP sector is projected to exceed or exceeds 3,000 Chinook salmon by September 30, NMFS will implement a coastwide BRA at 200 fm for that sector.</p>
C: Non-Whiting Mitigation Measures	C.1.	Automatic authority for non-whiting trawl	<p><u>No Action: No automatic authority</u></p> <p><u>Alternative 1</u>: Create an automatic action authority where the aggregate non-whiting trawl catch (bottom trawl and midwater trawl) against the threshold is the trigger for NMFS to implement a 75 fathom BRA for the non-whiting midwater trawl fishery when X percent of the threshold is taken:</p> <p style="padding-left: 40px;"><i>Option a</i>: 70 percent of the 5,100 non-whiting trawl reference point (3,570)</p> <p style="padding-left: 40px;"><i>Option b</i>: 80 percent of the 5,100 non-whiting trawl reference point (4,080)</p> <p style="padding-left: 40px;"><i>Option c</i>: 90 percent of the 5,100 non-whiting trawl reference point (4,590)</p> <p><u>Alternative 2</u>: Create an automatic action authority to implement a 100 fathom BRA for the non-whiting midwater trawl fishery when the non-whiting threshold is exceeded.</p>
	C.2.	Columbia River and Klamath River Conservation Zone Prohibitions	<u>No Action</u> : Maintain the current prohibitions which restrict midwater trawl gear, during the pacific whiting primary season, from fishing inside

Issue	Item Number	Name	Alternatives
			<p>the Klamath River Salmon Conservation Zone or the Columbia River Salmon Conservation Zone.</p> <p><u>Alternative 1:</u> Prohibit all midwater trawling within the Klamath River Salmon Conservation Zone and Columbia River Salmon Conservation Zone year-round; and</p> <p>Prohibit the use of all bottom trawl gear except selective flatfish trawl inside the Klamath River Salmon Conservation Zone and Columbia River Salmon Conservation Zone.</p>
D. Reserve Rules	D.1.	Automatic closure of sector(s) when threshold and reserve reached	<p>No Action: No automatic authorities around the Chinook salmon thresholds will be implemented in regulation</p> <p><u>Alternative 1:</u> Create two automatic authorities in regulations that would allow NMFS to</p> <ul style="list-style-type: none"> a) close either sector (whiting or non-whiting) upon that sector having exceeded or being projected to exceed its Chinook salmon bycatch threshold and the reserve amount of 3,500, and b) close a sector (whiting or non-whiting) when one sector has been closed after exceeding or being projected to exceed its Chinook salmon bycatch threshold and the reserve amount of 3,500, and the second sector exceeds or is projected to exceed its salmon bycatch threshold.
	D.2.	Sector Specific Reserve Limits	<p><u>No Action:</u> No reserve rules established in regulation (sectors could continue fishing as normal, even if threshold is exceeded)</p> <p><u>Alternative 1:</u> Develop the following <u>automatic closures</u> in regulation as stop-gaps for action to occur between Council meetings.</p>

Issue	Item Number	Name	Alternatives
			<p><i>Whiting:</i> If the whiting sectors (tribal and non-tribal) exceed the 11,000 Chinook salmon threshold after mitigation measures [A.2., A.3.] are implemented, fishing may continue until 1,500 additional Chinook salmon are taken. If the sector reaches or exceeds a total of 12,500 Chinook salmon, the sector will be automatically closed.</p> <p><i>Non-Whiting Trawl (bottom and midwater):</i> If the non-whiting trawl sectors (bottom trawl and non-whiting midwater trawl) exceed the 5,500 Chinook salmon threshold after mitigation measures [B.2.] are implemented, fishing may continue until 1,500 additional Chinook salmon are taken. If the sector reaches a total of 7,000 Chinook salmon, the sector will be automatically closed.</p>

PFMC
04/10/18