Discussion Paper: BSAI Blackspotted Rougheye Rockfish Accountability Measures

September 12, 2025[1]

1 Introduction

The stock-wide annual catch limit (ACL), which is equal to the acceptable biological catch (ABC), for the Bering Sea and Aleutian Islands (BSAI) blackspotted (*Sebastes melanostictus*) and rougheye rockfish (*S. aleutinus*) (BSRE) complex has been exceeded for three of the past four years. The overfishing limit (OFL) has not been exceeded in any of these years. While accountability measures (AMs) are specified in the BSAI Fishery Management Plan for Groundfish, they have not prevented catch from exceeding the ACL. The National Standard 1 guidelines require that the system of ACLs and AMs be reevaluated and modified if necessary, when an ACL is exceeded more than once in a four-year period. In accordance with the National Standard 1 guidelines, the North Pacific Fishery Management Council (Council) requested that staff develop a discussion paper to evaluate the effectiveness of the current AMs for the BSAI BSRE complex and explore additional or modified AMs to prevent catch from exceeding the ACL.

In June 2025, a portion of that larger request was fulfilled by reviewing a suite of potential AMs that could be explored for this stock, and the Council requested that the 2025/2026 specifications cycle focus on two specific BSRE AMs (Reducing Total Allowable Catch (TAC) in the Pacific ocean perch directed fishery; and modifying inseason management authority to allow NMFS the flexibility to close areas or directed fisheries where blackspotted and rougheye are caught when the annual catch limit (ACL) is reached, similar to the authority NMFS has when an overfishing limit is reached) which are discussed in further detail in Section 3. This discussion paper provides both additional information on stock status, non-target catch of BSRE complex in different fishery targets as requested as well as expanded discussion

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of the AMs identified by the Council in June. The Council's review at this meeting will identify whether either of these AMs will be pursued for this stock in the 2025 harvest specifications cycle or moving forward into the future.

Although BSRE in the BSAI is managed as a stock complex with a single overfishing limit (OFL) and acceptable biological catch (ABC), the total allowable catch (TAC) is further divided between the Eastern Bering Sea/ Eastern Aleutian Islands (BS/EAI) and the Western/Central Aleutian Islands subareas (WAI/CAI). The Council uses spatial apportionments of ABC (as recommended by the Scientific and Statistical Committee (SSC)) to inform Council subarea TAC recommendations for BSRE. The Council has so far treated these apportionments as limits on what the Council recommends for subarea BSRE TACs. However, there is no Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requirement regarding further spatial apportionment of ABC beyond the stock level. Exceeding spatially apportioned ABCs does not constitute exceeding the ACL. The Council is scheduled to review this separate spatial management issue for all groundfish stocks during the October Council meeting when taking up the 2026 and 2027 proposed harvest specifications[2]. Acknowledging that the terminology regarding "subarea ABCs" is being revised, for the purposes of this paper, we use the term "spatial apportionments of ABC" to differentiate these apportionments from the stock-level ABC (ACL). **Regardless of this related consideration, for this stock, despite the spatial apportionment methods that have historically been used and described further in Section 2.2.2, it is the stock-wide ACL that has been exceeded in three of the past four years and thus requires consideration of potentially alternative AMs.**

2 Background

2.1 Accountability Measures under the BSAI Groundfish FMP

The Magnuson-Stevens Act requires FMPs to specify AMs to ensure that overfishing does not occur. An AM is a management control intended to prevent ACLs from being exceeded, and to correct or mitigate overages of the ACL if they occur (50 CFR 600.130(g)). The AMs are at the overall stock level. AMs should address and minimize both the frequency and magnitude of overages and correct the problems that caused the overage in as short a time as possible. AMs can be implemented in-season or postseason. AMs may include regulatory changes such as a fishery or area closure, a reduction in the next year's ACL, implementation of a closed season, modifications to bag limits or trip limits, etc. Section 3.2.4 of the BSAI Groundfish FMP sets forth the following accountability measures: (1) the North Pacific Observer Program; (2) the catch accounting system (CAS); (3) inseason management (described as management of the fisheries to the specified TAC level); and (4) the harvest specifications process that will account for any TAC overages. These measures are referenced in the FMP and are designed to accurately manage fisheries for catch accounting and to prevent exceeding the specified TAC level.

2.1.1 Why these AMs have not prevented catch from exceeding the ACL for BSRE complex

The AMs established under both the BSAI and GOA Groundfish FMPs as referenced above are set forth to manage to a specified TAC level and to account for total catch annually in stock assessments. These measures are meant to ensure TACs are not exceeded, and, because TACs are equal to or less than ABCs, that means the ABC would also not be exceeded. Once a TAC is reached for a sector, area, or stock,

[2] June 2025 SSC minutes note that "one of the central tenets of fisheries science is that by default, harvest should be spread out in relative proportion to stock distribution, particularly when little is known about the spatial ecology of stock and stock structure. This is meant to preserve biocomplexity, reproductive potential, and fishing opportunities, particularly if there is stock structure and in cases where stock dynamics may be uncertain. Adding some limited flexibility to spatial apportionment is unlikely to compromise the biological sustainability of groundfish stocks in Alaska."

NMFS has authority to designate that species as prohibited catch status (PSC status) which prohibits the retention of the species. However, a vessel will still encounter that species while participating in other directed fisheries. When these encounters occur, the vessel is required to discard that species, but the discarded catch still accrues towards the TAC, ABC, and OFL, which can allow overages to continue. As a result, these AMs are not equipped to react to an ABC exceedance should one occur. For example, NMFS does not currently have the inseason authority to close other directed fisheries or areas when the incidental catch of another species approaches or exceeds the ABC. This authority is vested only when the OFL for a given stock or species is approached. As noted in Section 3.1, one of the AMs the Council may consider is to recommend changes to NMFS's in-season management authority to better address and prevent an ACL being exceeded.

2.2 Current stock status for BSRE complex

The most recent stock assessment (Spencer and Ianelli, 2024) estimates a very large 2011 year class (Table 1), which is over eight times larger than the next-largest year class (2002). However, this estimate also has a high level of uncertainty, with a high coefficient of variation (0.43). The estimates of recruitment are influential for the estimation of $B_{40\%}$, stock status, and recommended ABC (Figure 1, Figure 2). Use of the unadjusted estimate of the 2011 year class would result in a 47% increase in $B_{40\%}$ relative to the 2022 estimate, and a stock status well below $B_{40\%}$ (Spencer and Ianelli, 2024). Due to the high uncertainty in the 2011 year class, and its management implications, the assessment authors recommended (and the SSC approved) using an adjusted value of the 2011 year class set to the estimate of the 2002 year class (i.e., the next highest year class) for the purposes of estimating $B_{40\%}$. Despite the high uncertainty of recent recruitment for this stock, survey biomass estimates have increased since 2018, which is consistent with recent age and length composition data showing increased recent recruitment.

Table 1 Estimates of total biomass, spawner biomass and recruitment for the BSAI BSRE rockfish stock (from Spencer and Ianelli, 2024)

	Total Biomass (ages 3+)		Spawner Biomass (ages 3+)		Recruitment (age 3+)	
	Estimate (mt)	CV	Estimate (mt)	CV	Estimate (thousands of fish)	CV
2008	11,629	0.115	2,666	0.268	2,584	0.978
2009	12,060	0.119	2,645	0.267	2,257	0.962
2010	12,524	0.123	2,621	0.269	1,924	0.929
2011	13,017	0.127	2,601	0.274	27,926	0.424
2012	13,600	0.131	2,603	0.283	1,730	0.869
2013	14,135	0.135	2,595	0.298	2,093	0.922
2014	16,143	0.153	2,577	0.32	2,655	1.049
2015	17,330	0.161	2,603	0.345	2,981	1.073
2016	18,611	0.169	2,652	0.374	2,266	0.934
2017	20,009	0.176	2,726	0.405	1,625	0.813
2018	21,416	0.184	2,806	0.438	1,397	0.772
2019	22,733	0.19	2,896	0.47		
2020	23,909	0.198	2,984	0.501		
2021	24,868	0.205	3,075	0.529		
2022	25,881	0.211	3,208	0.553		
2023	26,881	0.216	3,378	0.572		
2024	27,665	0.221	3,554	0.588		

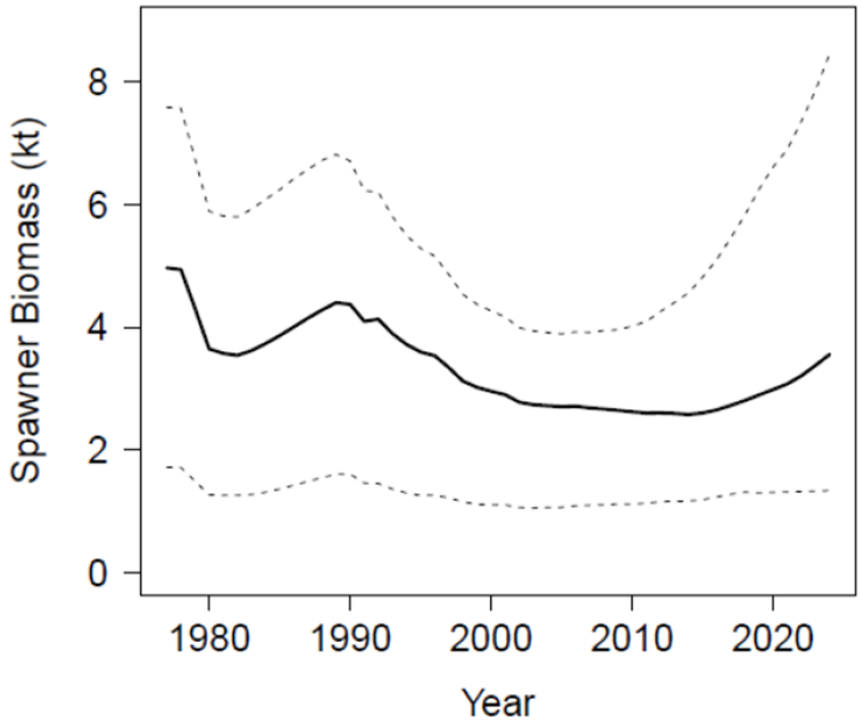

Figure 1 Spawning stock biomass estimates (black line) from the most recent assessment (Spencer and Ianelli, 2024) 1978-2024 with 95% confidence intervals (dotted lines)

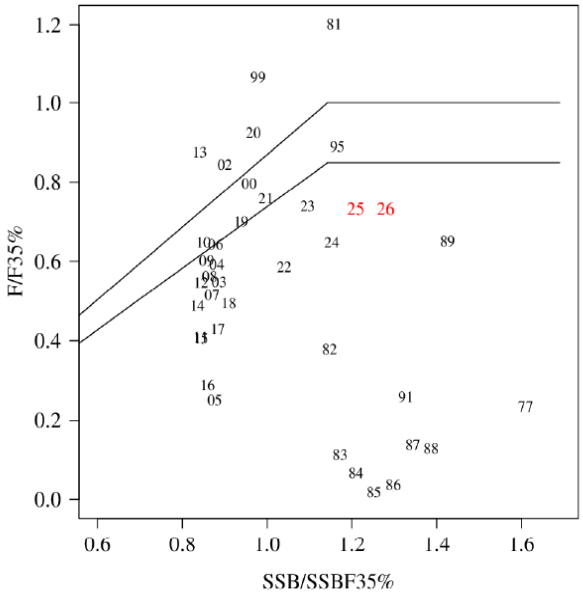

Figure 2 Estimated fishing mortality and spawning stock biomass (SSB) in relation to the OFL (top line) and ABC (bottom line) harvest control rules with projected stock status in 2025 and 2026 (red) from Spencer and Ianelli, 2024.

As has been noted for many years however, there is concern regarding localized depletion across the AI area despite BSRE in the BSAI being considered a single stock complex. An excerpt from the 2024 BSRE assessment is included below detailing these concerns:

Information on stock structure

A stock structure evaluation report was included in the 2010 assessment, and evaluated species distributions within the blackspotted/rougheye complex, genetic data, and size-at-age data (Appendix A in Spencer and Rooper 2010). The patterns of spatial variation in species composition noted above for this two-species complex were considered in this evaluation because differences in species composition could imply different levels of productivity across spatial areas. Tests for genetic homogeneity indicated that genetic differences occurred between samples of blackspotted rockfish grouped into four areas within the BSAI. A significant isolation by distance (IBD) pattern was also estimated in the 2010 analysis, although this was based upon a relatively small sample size. The BSAI Plan Team concluded in 2010 that spatial structure exists within the BSAI for blackspotted and rougheye rockfish, and recommended the BSAI ABC be partitioned into an ABC[3] for the western and central Aleutian Islands, with a separate ABC for the remainder of the BSAI area [Eastern Bering Sea (EBS), Eastern Aleutian Islands (EAI)].

Additional information was presented to the BSAI Plan Team in 2010, 2012, and 2013 indicating disproportionate harvesting within the three subareas within the AI and identifying several attributes regarding spatial patterns in abundance, mean size, proportion of survey tows with no blackpotted/rougheye catch, exploitation rates, and distribution of harvest.

The relatively small number of samples available for the genetic analysis conducted in 2010 motivated the collection and analysis of additional samples since 2010. A more recent genetic analysis does not indicate a statistically significant pattern of isolation by distance at the $\alpha = 0.05$ level ($P=0.11$) (Spencer et al. 2014). However, stock structure remains a concern. Disproportionately high harvest rates (See Appendix 14B of Spencer and Ianelli, 2024) and reduced abundance (prior to the 2024 AI survey estimate) have occurred in the western AI. The reduced abundance of western Aleutian Islands stock of blackspotted rockfish does not appear to have been replaced by fish from the central Aleutian Islands, consistent with a lack of movement in rockfish in general. Given ongoing questions about genetic structure, new analyses using low-coverage whole genome sequencing (lcWGS) were conducted in 2024-2025 to investigate individual-level genomewide genetic patterns across samples from the BSAI through the GOA and west coast (Washington State/Oregon). For both species, genomewide data suggest no population genetic structure throughout the sampled range (Baetscher & Larson, in prep.).

2.2.1 Limitation in assessment information for evaluating BSRE complex stock status

The BSAI BSRE complex is assessed with an age-structured model for the AI portion of the stock and a non-age-structured model for the EBS portion of the stock. The AI is surveyed biennially thus full assessments for this stock are produced on a biennial basis. The most recent full assessment for this stock was in 2024 (Spencer and Ianelli, 2024). In 2025 a catch report only will be produced with the next full assessment scheduled for 2026.

2.2.2 Overview of specifications process

BSAI BSRE is managed as a stock complex with a corresponding OFL and ABC specified at the BSAI area level. Following the examination of stock structure in 2010, spatial apportionments of the BSAI BSRE ABC were established for the CAI/WAI and BS/EAI subareas beginning in 2011. As mentioned previously, these spatial apportionments of ABC are not ACLs and therefore are not tied to accountability measures. The Council uses these spatial apportionments to inform subarea TAC recommendations. The Council has so far treated these apportionments as maximum limits on what the Council recommends for

[3] Note recent changes associated with modified description of spatial apportionment of ABC are not reflected in this statement

subarea BSRE TACs. However, there is no Magnuson-Stevens Act requirement regarding further spatial apportionment of ABC beyond the stock level, and spatial apportionments of ABC are not equivalent to an ACL. Under the BSAI FMP, ACL is set equal to the ABC for the stock, thus at the BSAI level for BSRE. Further discussion of redefining and clarifying spatial apportionment of ABCs are being considered at the October Council meeting under agenda item C-5c on spatial apportionment process.

Table 2 Acceptable biological catch (ABC), catch and percentage of ABC in the BSRE complex from 2008 to 2024, from NMFS Alaska Regional Office.

Year	Catch	ABC	%
2008	193	202	95%
2009	197	539	37%
2010	228	547	42%
2011	170	454	37%
2012	201	475	42%
2013	337	378	89%
2014	208	416	50%
2015	196	453	43%
2016	164	561	29%
2017	234	501	47%
2018	250	613	41%
2019	405	555	73%
2020	531	708	75%
2021	515	482	107%
2022	455	503	90%
2023	607	525	116%
2024	639	569	112%

Due to noted concerns in the assessment with disproportionately large harvest rates in the WAI subarea a '*maximum subarea species catch*' (MSSC) level was developed for the WAI to help guide the fleet in voluntary efforts to reduce non-target catch in the area. This is the only Council managed stock for which an MSSC is developed. Both the BSAI Groundfish Plan Team and the SSC have requested continued monitoring of the MSSC relative to catch. As shown in Table 3, the WAI catch has exceeded the MSSC every year except 2016. At the larger spatial scale the CAI/WAI catches have exceeded the CAI/WAI sub-apportionment of the ABC every year since 2019. Providing the MSSC to industry has not been successful in preventing overages.

Table 3 MSSC, catch and Catch/MSSC in WAI 2015-2024

Year	MSSC	Catch	Catch/MSSC
2015	46	70	1.51
2016	58	40	0.69
2017	29	35	1.21
2018	35	67	1.91
2019	37	104	2.81
2020	48	168	3.50
2021	31	120	3.89
2022	32	104	3.25
2023	61	181	2.97
2024	67	252	3.76

2.2.3 Biological consequences of ACL overages and spatially disproportionate harvesting

The most direct biological consequence of an ACL overage, at the stock-wide level, is that the population size would be reduced such that maximum sustainable yield would not be obtained. Additionally, other biological consequences of high fishing rates include increased variability in abundance and reduced population stability (Hsieh et al 2006, 2010; Anderson et al 2008), and potentially increased sensitivity to climate variation (Hsieh et al 2008). Note that these concerns pertain generally to any managed stock, which motivates regulations aimed at not exceeding target and limit fishing rate reference points for all managed stocks, including stocks that are caught incidentally in other target fisheries.

The biological consequences of spatially disproportionate harvest is localized depletion, or areas of low abundance that are not replenished by movement from neighboring areas. The existence of localized depletion indicates limited demographic connectivity with neighboring areas, and the biological concerns regarding population stability and variability mentioned above would be expected to apply here as well. The biological and management consequences of both local depletion and stock-wide ACL overages pertain to an "ecological" scale of interest to management (i.e., annual time scales). However, genetic analyses of population structure pertain to "evolutionary" time scales (i.e., intergenerational time scales), and recognition of demographic structure may be difficult to detect from genetic analyses (Waples et al. 2008). For this reason, the central point of the stock structure template used by Alaska Fisheries Science Center assessment authors is that both genetic and non-genetic information should be used when determining stock structure and spatial management units. In 2014, the BSAI Groundfish Plan Team considered the recent (at that time) genetic data, along with non-genetic data, and concluded that stock structure was still a concern for BSAI BSRE due to disproportionate harvest rates and the observed decline in the WAI.

Some of the biological consequences mentioned above may be observed for BSAI BSRE, particularly in the WAI. Rockfish are a periodic strategist (King and McFarlane 2003), with slow population growth, high longevity, and potentially long periods between strong recruitment. The age at which 50% of the population reaches maturity is 24.5 years, which is old relative to other marine groundfish. Similarly, the ages at which 50% of the population recruit to the Aleutian Island trawl survey and fishery are also relatively old at 15.7 years and 13.7 years, respectively (Spencer and Ianelli 2024). Maturation and recruitment at old ages, combined with long periods between strong recruitment, can lead to long periods of low population sizes if stock depletions occur (either localized or stock-wide), which may contribute to the long period of low survey abundance estimates in the WAI. In the WAI, high survey abundances occurred in the 1990s, and high exploitation rates in the late 1990s resulted in reduced survey abundances

beginning in the 2000 survey that extended until the 2018 survey, a time period encompassing 10 surveys and nearly 20 years.

Finally, recent research has further increased our knowledge of demographic connectivity and spatial management. A critical question for spatial stock structure is the level of migration between neighboring areas that would lead to demographic independence. Spies et al. (2025) found a threshold that averaged between 5% and 10%, but ranged from 0.2% to 40%, which suggests that demographic independence may occur even with migration rates larger than the 10% rule of thumb often used (Hastings 1993). An additional critical question is how to spatially manage stocks with an isolation-by-distance spatial structure, in which there are no obvious breakpoints for stock boundaries. One approach is to define many separate spatial stocks, each with its own set of stock ABCs (ACLs) and reference points. However, Spies et al. (2015) used simulation modeling to find that nearly equivalent yields were obtained from defining one stock and allocating harvest between areas to be proportional to survey abundance, and this approach is commonly used for Gulf of Alaska groundfish stocks.

2.3 Catch information on the BSRE complex

In recent decades the BSRE stock complex has not been open for directed fishing. It is entirely caught as incidental catch in other fisheries. NMFS regularly places the stock on prohibited species status requiring discard of all BSRE catch (Table 4). Despite the prohibited status, catch patterns have not changed in recent years. From 2008 through 2018 the catch has ranged from a low of 164 tons in 2015 to a high of 337 tons in 2013 which was 89% of the ABC. At the November 2013 BSAI Groundfish Plan Team meeting, one industry member testified that the fleet (and himself in particular) have historically engaged in topping off behavior for BSRE, particularly in the Pacific ocean perch (POP) fishery. “Topping off” is a fishing behavior where vessels intentionally catch greater quantities of a species that is closed for directed fishing, but remain under the maximum retainable amount (MRA) of incidental catch allowed in a different target fishery. The testifier stated that when a rockfish trawl tow was finished, the vessel would slow down and head offshore into deeper water to haul back the net. He testified that when wanting to top off on BSRE he would follow this procedure, but refrain from hauling back the net for a time so that it could fall deeper down the slope before engaging the winches for the haul back. At the November 2013 meeting the testifier and representatives from other companies fishing for POP in the AI agreed to cease topping off behavior and make a concerted attempt to promote BSRE conservation. From 2014 through 2018 catches remained below 50% of the BSAI ABC (Table 2).

Table 4 Years rougheye rockfish only (2013) and BSRE in the BSAI were designated as prohibited species through an inseason action from 2011-2024.

Year	Subarea	Date put on PSC Status
2013	BSEAI	15-Jul
2019	WAI, CAI	6-Aug
2020	WAI, CAI	20-Aug
2021	WAI, CAI	2-Aug
2022	WAI, CAI	6-Aug
2023	WAI, CAI	10-Jul
2024	WAI, CAI	26-Aug

Beginning in 2019 members representing the POP fleet have testified during Plan Team meetings that large numbers of small BSRE have been intermingling with POP at all depth levels and are increasingly difficult to avoid. The catch in 2019 was 405 mt and 75% of the BSAI ABC. Since that time there has

been increased catch with a high of 639 tons in 2024 which was 112% of the BSAI ABC. BSRE catch has exceeded the BSAI ABC in 2021, 2023, and 2024.

POP is a valuable target fishery and is generally fully harvested up to the ABC.

2.3.1 Spatial information

Both Pacific ocean perch (POP) and blackspotted/rougheye rockfish (BSRE) are concentrated along the continental slope. Unlike more broadly distributed fisheries such as flatfish, pollock, or Pacific cod, POP can only be effectively targeted in limited geographic areas, particularly in the Aleutian Islands (Figure 3). The BSRE catch occurs largely in the same areas as POP (Figure 4). The habitat of BSRE and POP overlap, resulting in most BSRE catch attributed to the POP fishery.

BSRE are apportioned into two subareas in the BSAI: the BS/EAI subarea apportionment and the CAI/WAI subarea apportionment. Because most BSRE are taken incidentally in the POP fishery (Table 5), it is useful to consider the spatial apportionment of POP. POP has separate TACs for the BS, EAI (541), CAI (542), and WAI (543). The catch of BSRE is correlated with the size of the POP fisheries in the four POP apportionment areas and is associated with the size of those fisheries (Table 5). However, the rate of incidental catch (kg of BSRE per mt of POP) also differs depending on the area. The rate of BSRE in the POP fishery is highest in the CAI (Area 542). This has led to CAI/Area 542 being a significant contributor to the BSRE catch, despite having lower relative POP harvest.

Table 5 Kilograms BSRE per mt of POP in the rockfish target (source CAS by haul target)

	BS	541	542	543	EBS/AI	CAI/WAI	BSAI
2008	0.0	9.2	8.7	6.3	11.3	7.2	7.7
2009	4.2	7.4	10.2	9.6	5.9	9.8	9.1
2010	3.4	8.7	5.5	14.2	5.5	11.1	8.5
2011	2.9	6.9	5.0	5.7	4.0	5.5	4.9
2012	1.2	5.7	5.4	7.9	2.8	7.2	5.6
2013	0.2	7.2	6.3	8.3	4.5	7.6	6.4
2014	0.3	4.5	6.0	5.9	2.5	6.0	4.3
2015	0.1	3.2	5.3	6.0	1.7	5.7	3.9
2016	0.1	3.3	8.0	3.3	1.6	5.0	3.6
2017	0.2	2.8	5.9	3.1	1.6	4.3	3.2
2018	1.0	2.3	15.0	5.2	1.6	9.1	5.5
2019	1.7	2.5	23.9	7.0	2.1	15.0	8.9
2020	3.2	6.1	20.7	13.4	4.8	16.9	11.2
2021	9.3	5.1	21.3	8.4	7.7	13.4	10.5
2022	9.2	7.5	18.6	5.9	8.5	10.3	9.4
2023	11.0	10.5	25.1	11.7	10.9	15.2	13.1
2024	3.8	13.4	32.0	18.7	6.0	22.3	14.3

From 2010 through 2014, there was a notable increase in POP and BSRE catch in the EAI (Area 541). Understanding this correlation is important for explaining temporal changes in BSRE removals that cannot be attributed to POP fisheries alone. In some years, the increase coincided with the rapid expansion of the arrowtooth/Kamchatka flounder fishery in that same area. When the Kamchatka flounder fishery developed, fishing effort along the slope of the EAI/Area 541 intensified and overlapped with areas of higher BSRE abundance. As a result, BSRE removals increased in proportion to the scale of the flounder fishery. Kamchatka flounder harvests peaked at over 63,000 mt in 2010, before declining to

36,279 mt in 2015, where they have generally remained. BSRE catch in the EAI/Area 541 followed this same trajectory, demonstrating that the presence and intensity of the Kamchatka flounder fishery directly influenced BSRE bycatch levels there.

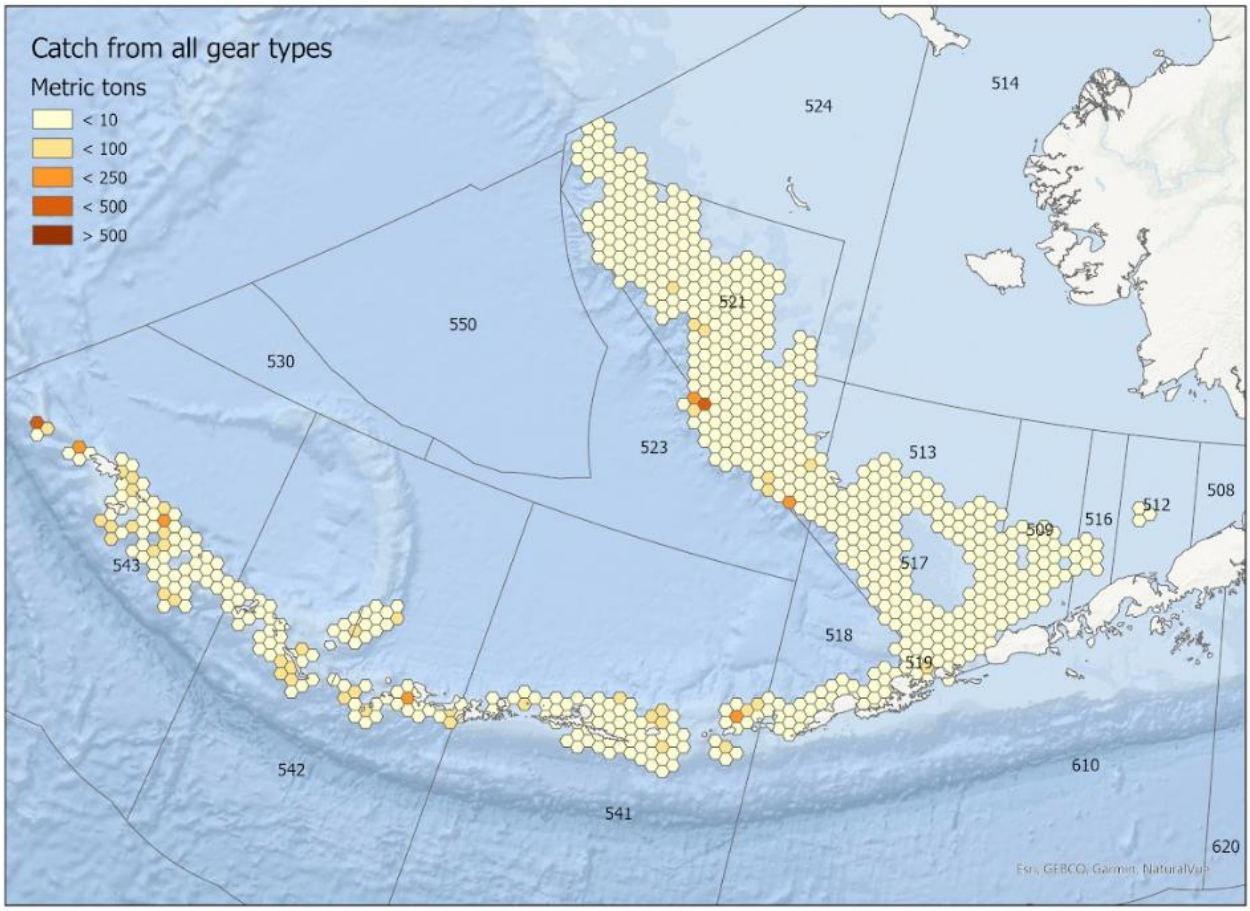

Figure 3 **2024 POP catch in the BSAI for all gear types: EBS/EAI (Areas 508-524 and 541) and the CAI/WAI (Areas 542 and 543)**

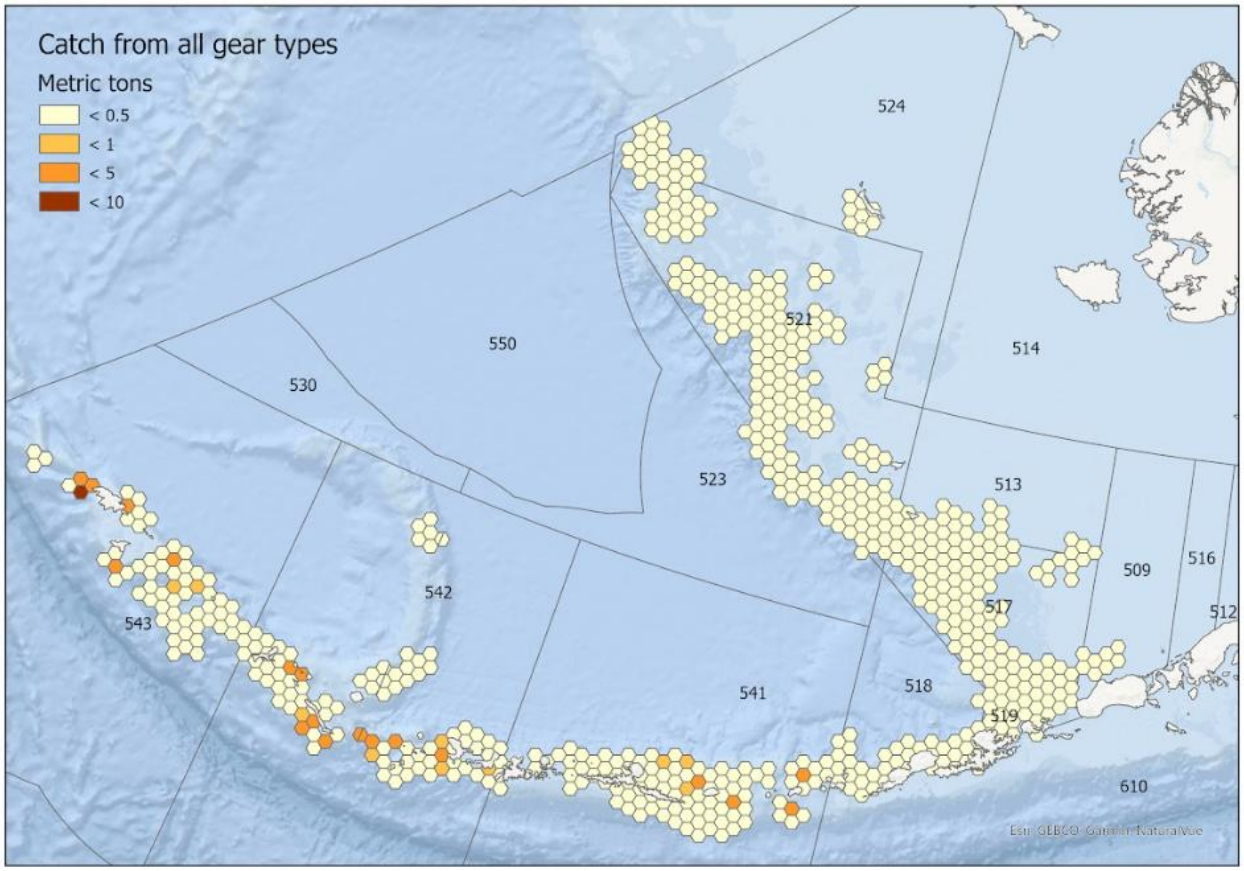

Figure 4 **2024 BSRE catch in the BS/EAI (Areas 508-524 and 541) and the CAI/WAI (Areas 542 and 543) for all gear types.**

2.3.2 Catch by target fisheries

Most of the incidental catch of BSRE occurs in the POP trawl fishery (Table 6).

Table 6 **Proportion of observed BSRE rockfish catch by target 2008-2024 (source: CAS by Haul Target)**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Rockfish	75%	66%	51%	63%	59%	60%	66%	59%	57%	45%	71%	73%	69%	72%	68%	67%	76%
Pacific Cod	15%	13%	14%	7%	19%	7%	5%	18%	7%	37%	14%	7%	13%	8%	9%	1%	3%
Atka Mackerel	3%	10%	6%	2%	3%	4%	1%	4%	8%	5%	10%	11%	7%	10%	11%	15%	11%
Arrowtooth/Kamchatka Flounder	6%	9%	26%	26%	15%	27%	23%	13%	21%	5%	4%	1%	8%	7%	8%	12%	6%
Other	2%	3%	3%	2%	3%	1%	4%	5%	7%	8%	2%	7%	3%	3%	4%	6%	4%

POP is harvested by Amendment 80 (A80) and in the open access trawl fishery. Prior to 2018, other target fisheries such as arrowtooth/Kamchatka flounder and Pacific cod accounted for large proportions of the BSRE incidental catch in some years. Catch from the Pacific cod fishery has historically been dominated by the freezer longline fleet operating in the Aleutian Islands. In recent years this fleet has had limited effort in the Aleutian Islands and instead primarily operated on the Bering Sea shelf, where BSRE incidental catch has been minimal. In years when the BSAI ABC of BSRE has been exceeded, the BSRE coming from the POP fishery has been roughly 66.7%–75% of the total BSRE catch. Recently, kilogram of BSRE per metric ton of POP catch has increased across all areas, with particularly high rates in the CAI/Area 542 (Table 5). These increases are consistent with increases in the biomass estimates of BSRE from the SAFE (Table 1).

3 Revised Accountability Measures Considered for the BSRE Complex

3.1 Modified in-season management authority

NMFS has inseason management authority (50 CFR 679.20(d)(1)(iii)) to close directed fisheries if a allocation or apportionment has been or will soon be reached. NMFS also has inseason authority to designate a species as a prohibited species (PSC status) if it is determined that the TAC for a sector, area, or total TAC of the stock/stock complex has been or will be achieved prior to the end of the year (50 CFR 679.20(d)(2)). When a species is designated as being on PSC status, vessels are no longer permitted to retain that species (with exceptions for catcher vessels in the trawl EM category and rockfish species caught by catcher vessels using hook-and-line, pot, or jig gear). Placing a species on PSC status does not necessarily mean that vessels will not continue to catch that species, but any catch of a species on PSC status must be discarded. Putting a species on PSC status disincentivizes the fleet from purposely targeting that species and topping off because it is no longer economically advantageous to do so. However, if a vessel is naturally encountering that species while prosecuting other fisheries, overall catch of that species may remain steady even after it was placed on PSC status. All catch (retained and discarded) accrues towards the TAC. As a result, the TAC can be exceeded.

NMFS does not have inseason management authority to take any action when an ABC has been or will be reached. Directed fishing closures and designating PSC status due to the DFA or TAC being reached can only be made for the stock or stock complex that has reached the TAC. Closures cannot extend to other directed fisheries that are catching a species of concern, nor can areas with high incidental catch rates of these species be closed. Therefore, under current management authority, the POP fishery cannot be closed based upon the BSRE TAC being reached.

NMFS also has broad inseason management authority to close fisheries or areas to prevent an OFL overage. Under NMFS's inseason management authority, based on a determination that an action is necessary to prevent overfishing of any stock, NMFS may close, extend, or open a season in all or part of a management area; modify the allowable gear to be used in all or part of a management area; adjust TAC or PSC limits; or implement interim closures of statistical areas, or portions thereof, to directed fishing for specified groundfish species (50 CFR 679.25) (note that additional determinations may be required to implement some of these adjustments). Regulations at 50 CFR 679.20(d)(3) also require NMFS to specify limitations or prohibitions for fishing on one stock or stocks designed to prevent overfishing of another stock if NMFS determines that fishing may lead to overfishing of a stock for which the allocation or apportionment has been or will be reached. However, NMFS may consider allowing fishing to continue or resume with certain gear types or in certain areas and times based on the following findings:

> (A) The risk of biological harm to a groundfish species or species group for which the TAC or PSC limit is or will be reached.
>
> (B) The risk of socioeconomic harm to authorized users of the groundfish for which the TAC or PSC limit will be or has been reached.
>
> (C) The impact that the continued closure might have on the socioeconomic well-being of other domestic fisheries.

NMFS does not have inseason management authority to issue similar closures or adjustments due to an ACL/ABC being reached or exceeded. As noted in their June Council motion, the Council is interested in exploring a limited expansion of NMFS inseason management authority to address ACLs being exceeded, which may include similar management measures already in place to ensure OFLs are not exceeded. This is further discussed in Section 3.1.1

3.1.1 Goals and Objectives of modified inseason management authority

In consideration of modifying NMFS inseason management authority, the Council needs to articulate which authority to include, what determinations are necessary for NMFS to implement this authority, and the specific goals and objectives of the use of this authority.

The current authorities at 50 CFR 679.25 (inseason adjustments including to prevent overfishing) and 50 CFR 679.20(d)(3) (overfishing closures) are prescriptive in what actions NMFS can take and the determinations necessary to implement those actions. The Council could consider recommending a similar level of detail for inseason management authority to prevent ACL/ABC overages. These are outlined below as (1) the type of adjustments that could be used in 50 CFR 679.25; (2) the determinations/considerations required under 50 CFR 679.20 or 50 CFR 679.25; (3) any other limitations; and (4) specific triggers for implementing ACL/ABC measures.

The Council could consider whether the same type of adjustments for preventing overfishing would also be available for NMFS to implement to prevent ACL/ABC overages. 50 CFR 679.25 currently specifies the types of adjustments NMFS can implement to prevent overfishing:

> (i) Closure, extension, or opening of a season in all or part of a management area.
>
> (ii) Modification of the allowable gear to be used in all or part of a management area.
>
> (iii) Adjustment of TAC and PSC limits.
>
> (iv) Interim closures of statistical areas, or portions thereof, to directed fishing for specified groundfish species.

The Council could consider the determinations necessary to implement such adjustments. Under the current inseason authority at 50 CFR 679.25, NMFS must make the following determinations to implement these adjustments:

> (i) Closure, extension, or opening of a season in all or part of a management area: the adjustment is necessary to prevent overfishing of any stock and the adjustment selected is the least restrictive necessary to achieve the purpose of the adjustment.
>
> (ii) Modification of the allowable gear to be used in all or part of a management area: the adjustment is necessary to prevent overfishing of any stock and the adjustment selected is the least restrictive necessary to achieve the purpose of the adjustment (for example, any gear modification would protect the species in need of conservation, but would still allow other fisheries to continue).
>
> (iii) Adjustment of TAC and PSC limits: the adjustment is necessary to prevent overfishing of any stock and the adjustment is based upon the best available scientific information concerning the biological stock status of the species in question and that the currently specified TAC or PSC limit is incorrect.
>
> (iv) Interim closures of statistical areas, or portions thereof, to directed fishing for specified groundfish species: the adjustment is necessary to prevent overfishing of any stock and the closures are necessary to prevent one of the following: a continuation of relatively high bycatch rates of prohibited species; take of an excessive share of PSC limits or bycatch allowances; closure of one or more directed fisheries for groundfish due to excessive prohibited species bycatch rates occurring in a specified fishery; or premature attainment of established PSC limits or bycatch allowances and associated loss of opportunity to harvest the groundfish OY.

Similar determinations could be required for adjustments to address ACL/ABC overages, such as that the adjustment is necessary to prevent exceeding the ACL/ABC and is the least restrictive necessary to achieve that purpose.

Finally, the Council could consider other limitations on the use of specific adjustments to prevent ACL/ABC overages. For example, current regulations direct that an inseason closure of a statistical area, or a portion thereof, shall not extend beyond a 60–day period unless information and data supporting the closure warrants an extended closure period. Similarly, the Council could choose to only allow the use of this modified inseason management authority when certain conditions are met, such as the number of times the ACL has been exceeded within a certain amount of time. Currently, AMs must be reconsidered and potentially modified if an ACL is exceeded more than once in a four-year period. In conferring additional NMFS inseason management authority, the Council likely intends for it to be used sparingly and not to replace the current use of inseason authority for managing fisheries since the current system of AMs has generally been successful in preventing ACL overages with some limited exceptions.

For example, the Council may consider articulating one of the following options as their intent:

1) If a stock's ACL is exceeded more than once in a four-year rolling time frame, then NMFS may use their inseason authority to close fisheries that are catching that stock as the ACL is approached *for the following year*.
2) If a stock's ACL is exceeded more than once in a four-year rolling time frame, then NMFS may use their inseason authority to close fisheries that are catching that stock as the ACL is approached *for the next three years*.
3) If a stock's ACL is exceeded more than twice in a four-year rolling time frame, then NMFS may use their inseason authority to close fisheries that are catching that stock as the ACL is approached *for the following year*.
4) If a stock's ACL is exceeded more than twice in a four-year rolling time frame, then NMFS may use their inseason authority to close fisheries that are catching that stock as the ACL is approached *for the next three years*.

The Council may also wish to articulate different time frames for conferring this additional authority and/or the time frame over which NMFS may exercise that authority for the stock.

3.1.2 Additional BSAI and GOA fisheries with potential ACL overages

ACL overages have also occurred in other rockfish stocks, most recently the BSAI other rockfish complex in 2024. The Council could decide to have any inseason management authority under this action apply to additional stocks beyond BSRE. For example, new inseason management authority could be exercised only for BSRE, for any rockfish stock in the BSAI or GOA, or for any groundfish stock with an ACL overage. However, if the Council recommends to only extend inseason management authority for BSRE, it is possible that ACL overages could occur for another stock or stock complex, and a suitable AM would not be in place to address the issue.

3.1.3 Decision points for the Council to move forward with an analysis for modified inseason management authority

In moving forward with an action to modify inseason management authority, the Council will be initiating an FMP and regulatory amendment package. As with initiating other actions, the Council should develop a problem statement and a suite of alternatives. As noted in Section 3.1.1, the alternatives (in addition to the no action alternative) may include a range of time frames over which this authority would be invoked. The Council should also specify if this authority is specific to the BSRE rockfish complex or, as staff suggests, that it apply in any situation under both the BSAI and GOA groundfish FMPs in which an ACL overage is applicable.

3.2 Reduced TAC in target fisheries with high incidental catch of BSRE

The BSAI POP fisheries are divided by A80, Community Development Quota (CDQ) and trawl limited access fisheries in the AI and is an open access fishery in the BS. All of these sectors harvest near 100%

of the allocation and apportionments of POP made available to them every year. Incidental catch of BSRE in the POP fishery has been increasing in the very recent years, so precise estimates of TAC reduction of POP to prevent exceeding the ABC of BSRE are not possible. It is also extremely difficult to predict if rates (kg of BSRE/mt of POP) will continue to rise. However, we can use recent overages and incidental rates as a rough estimate. The largest overages of BSRE beyond the BSAI ABC are the two most recent years (2023 and 2024) with 82 and 70 mt overages, respectively. Table 7 uses an 85 metric ton BSRE reduction for this exercise. Should the Council consider this approach to reduce BSRE catch, the current year's catch can be included for the December harvest specification process for the 2026 and 2027 BSAI harvest specifications without a regulatory change or FMP amendment. The amount needed to be reduced will also be dependent upon the BSRE BSAI ABC that the SSC determines in the December process. The rates of incidental BSRE have been increasing in recent years, with 2024 being the highest (Table 5). Since 2021 was the first year in which ABC was exceeded (Table 2), both the average BSRE incidental catch rates of 2021-2024 and the most recent 2024 POP fisheries were used to estimate POP TAC reductions needed to conserve 85 mt of BSRE for specific subareas as well as BSAI-wide. It should be noted that both A80 and CDQ participants have POP limits that cannot be exceeded (e.g. hard caps) outside of the BS subarea. If not enough POP is available for incidental catch needs in fisheries such as Pacific cod and Atka mackerel, A80 and CDQ groups would not be able to prosecute those fisheries.

Table 7 Reductions in POP catch required to Reduce BSRE by 85 tons Based Upon 2024 and 2021-2024 Average Incidental Catch Rates in the POP Fisheries

Rate Years	BS	541	542	543	BS/EAI	CAI/WAI	BSAI
2024	22,406	6,339	2,655	4,546	14,067	3,816	5,952
2021-2024 Average	10,214	9,303	3,503	7,604	10,244	5,558	7,200

If the Council were to set lower TACs for some species, NMFS may have the ability to increase the TAC through the reapportionment of the non-specified reserves in the BSAI if reapportionments are consistent with 50 CFR 679.20(a)(3) and do not result in overfishing (50 CFR 679.20). However, pollock, Pacific cod, and other A80 species (flatfish, Atka mackerel, and AI POP), do not contribute to the non-specified reserves because A80 is a catch share program and NMFS does not have inseason management authority to increase the associated TACs. Because POP in the BS is not allocated to the A80 program, NMFS can, and regularly does, increase the BS POP TAC up to the BS apportionment of the ABC by reapportioning the non-specified reserves. Atka mackerel, Pacific cod, and POP TAC in the AI cannot be increased through non-specified reserves. This means that if the Council were to lower POP TACs in the AI, NMFS would not have authority to increase those TACs with the non-specified reserves. As a result, this would likely limit the amount of BSRE incidental catch those fleets would harvest. However, it also means that if the BSRE catch was low, NMFS could not release additional POP TAC in the AI.

4 Next steps for Council action

The next steps for the Council are whether to take action to select one of these AMs. There are both short-term and long-term potential actions and need not be mutually exclusive.

Immediate action for the 2026-2027 fisheries: During the 2025 harvest specifications process the Council could choose to set lower POP TACs to potentially reduce the incidental catch of BSRE. This could be indicated during proposed specifications in October or during final specifications in December and does not require additional analysis or rulemaking.

Longer-term action: The Council could also choose to initiate an action as indicated in this paper to modify in-season management authority as a longer term solution as this would require both regulatory and FMP amendment action and corresponding analysis.

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