SYNTHESIS OF HARVEST SPECIFICATIONS FLEXIBILITY ALTERNATIVES

This report describes the potential interplay between the different alternatives described in Agenda Item F.5, Attachment 1. This discussion is non-exhaustive and discusses potential trade-offs and combinations of action items and alternatives to help the Pacific Fishery Management Council (Council) determine a range of alternatives (ROA) and potentially identify a preliminary preferred alternative (PPA).

Table 1 provides a key of interactions between each action item. Each letter in a cell corresponds to a discussion of trade-offs or issues between the two action items below the table. An overarching discussion is provided at the end of the document in response to how each item could address issues identified in the problem statement proposed in Attachment 1.

Table 1: Key of Action Item Interactions

Action	Carryover	Phase-In ABC Change	Mid-Biennium Specification Change	Accounting for Off-the-Top Deductions	Specifications Frequency
Carryover		A.	B.	C.	D.
Phase-In ABC Change	A.		E.	F.	G.
Mid-Biennium Specifications Change	B.	E.		H.	I
Accounting for Off-the-Top Deductions	C	F	H.		J.
Specifications Frequency	D.	G.	I.	J.	

A. **Carryover and Phase-In Acceptable Biological Catch (ABC) Change:** A stock under a phase-in ABC harvest control rule (HCR) would not be eligible for ABC Carryover (Carryover- Alternative 1) even if there were unutilized annual catch limit (ACL) in a prior year based on the proposed eligibility criteria. Phase-In ABC control rules are set to ramp down (or up) the ABC based on a new stock assessment. However, under a Phase-In for a ramp down, the ABC is likely to be set closer to the overfishing limit (OFL) than under the default HCR during the phase-in decrease (see Figure 1 for an example). As shown in Figure

1, the two dashed lines which represent the hypothetical Phase-In in Year 1 and Year 2 are closer compared to the solid lines for OFL and ABC under the default HCR. Therefore, it is likely in some years that there would be little to no Carryover possible (depending on the minimum buffer established between the OFL and ABC- see Attachment 1 for details). Additionally, Carryover-Alternative 1 (ABC Carryover) is likely to increase the risk of uncertainty of overfishing associated with a Phase-In and could be seen as counter to the Phase-In framework.

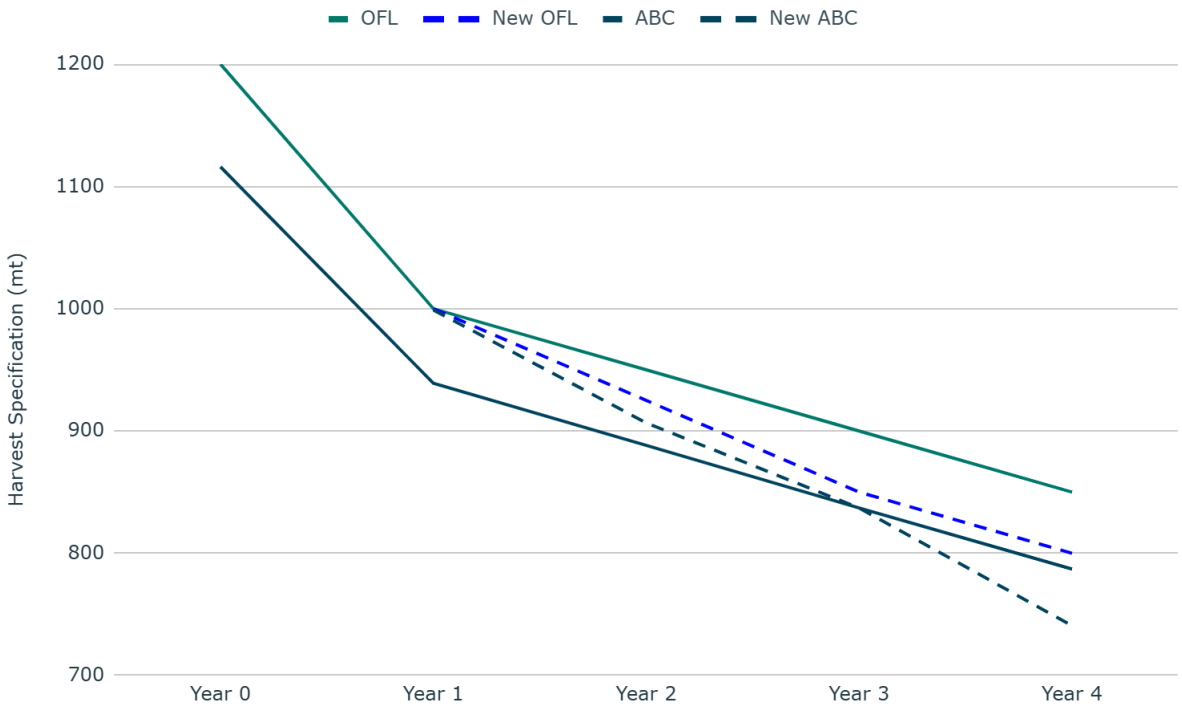

Figure 1. Example of Phase-In ABC

With regards to Carryover-Alternative 2 (ACL Carryover), whether or not it could be combined with a Phase-In depends on the ACL HCR. If ABC=ACL, then ACL Carryover wouldn't be possible regardless. If the ACL was less than the ABC during a Phase-In, then ACL Carryover would potentially be possible. This would be for stocks that are in the precautionary zone, have a constant catch ACL, or could occur if the Council were to change catch accounting process for Off-the-Top deductions.

B. **Carryover and Mid-Biennium Harvest Specifications Change:** A Mid-Biennium Specifications framework could increase OFLs (ABC and ACL) the next year based on a new assessment, whereas Carryover could only increase ABCs and/or ACLs within the established OFL for a given year. A Mid-Biennium Specification change would be based on a new assessment or projection, including the assumed harvest in the current year provided by the Groundfish Management Team. Carryover would not be issued for a stock with a Mid-Biennium Specifications change as the new specifications would already consider the most recent mortality and would be providing an increase in the available yield to the fishery.

C. **Carryover and Accounting for Off-the-Top Deductions:** For an eligible stock, Carryover may increase the ABC (Alternative 1) or ACL (Alternative 2) and the resulting yield made available for harvest in the groundfish fishery regardless of where off-the-top deductions are accounted for. If off-the-top deductions are accounted for between the ABC and ACL (Alternatives 1 or 2) and the stock is eligible for ABC Carryover (Carryover-Alternative 1), then the post-Carryover ABC would continue to be reduced by the off-the-top deductions before the post-Carryover ACL is set. Figure 2 shows an example of Carryover under this situation where the orange bar represents the difference between the ABC and the ACL- in other words, the off-the-top deductions under a change in catch accounting. In the Baseline Year (Year 1) and Year 2 (where Carryover is issued), the off-the-top deductions remain the same in this example, but the ABC and ACL both increase based on the available Carryover. If off-the-top deductions are accounted for between the ABC and ACL (Alternatives 1 or 2) and the stock is eligible for ACL Carryover (Carryover- Alternative 2), the post-Carryover ACL could only increase up to the ABC minus the off-the-top deductions. The accounting does not change the harvestable surplus available to the groundfish fishery under either Carryover scenario.

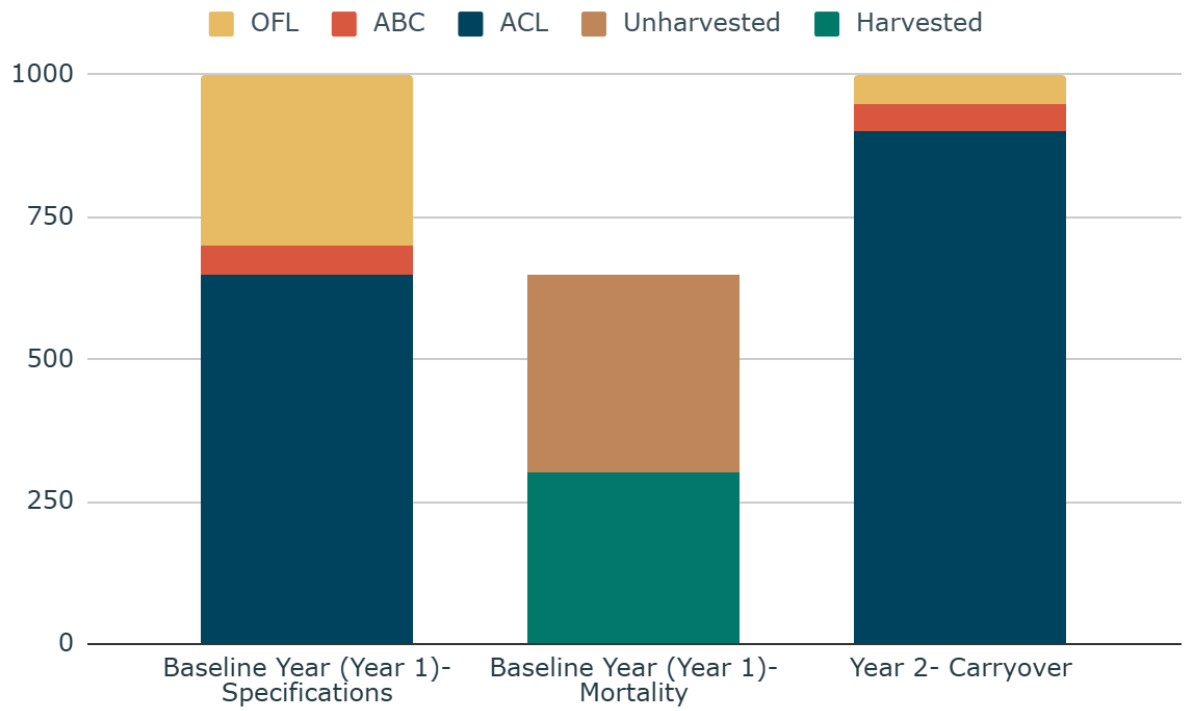

Figure 2. Example of ABC Carryover (Carryover-Alternative 1) combined with Accounting for Off-the-Top Deductions

With the change in off-the-top accounting (either Alternatives 1 or 2) and implementation of Carryover (specifically ABC carryover), there would be a reduction in the buffer between the OFL and ABC (through Carryover). Therefore, while the risk of overfishing would likely increase due to the lower buffer and the continuing uncertainty with off-the-top deductions for research and incidental open access until the following year, given the ability to control catch of the groundfish

fisheries and implement measures inseason, the risk is likely mitigated. If a stock were to exceed the ABC and potentially the OFL after final mortality estimates are available in the following year, then the Council and/or National Marine Fisheries Service would have the ability to not to issue Carryover or implement other management measures to control catch in the groundfish fishery if needed noting that there is no ability to control catch in the research or incidental open access fisheries as described in Attachment 1.

With a change to off-the-top deductions, this would result in the ACL being less than the ABC (unless there were no off-the-top deductions for a stock or stock complex). As noted in Attachment 1, the indirect benefit of this is that all quota species would therefore be eligible for individual fishing quota (IFQ) surplus carryover. Surplus carryover for the IFQ sector is issued at the vessel account level and is limited to 10 percent of the cumulative total quota pounds or individual bycatch quota pounds (used and unused) transferred (see 50 CFR 660.140(e)(5)(i)). It is important to consider that Carryover would be issued to quota share-holders whereas surplus IFQ carryover would be issued to vessel account holders (where eligible). Furthermore, in the analysis to support issuing IFQ surplus carryover, National Marine Fisheries Service must consider the risk to exceeding the trawl allocation and ACL.

Staff examined the potential ABC Carryover for petrale sole and IFQ vessel carryover (assuming the change in Off-the-Top Deductions) in 2025. Carryover would be based on Process Option A (Year 1 to Year 3) which would issue Carryover from 2023 to 2025 based on final year end data. IFQ surplus carryover would be from 2024 to 2025 vessel accounts. ABC Carryover would increase the IFQ allocation by 156 mt (2157 mt versus 2001 mt) at the maximum (assuming ABC=OFL), resulting in an increase in the annual vessel limit of 16,222 lbs. In contrast, a change in Off-the-Top Deductions to allow IFQ surplus carryover would have resulted in an additional 62 mt to the fleet while vessels are still held to the current annual vessel limit (see last two sets of columns.

Table 1. Petrale sole specifications for 2023-2025 and comparison of 2025 specifications under ABC Carryover (Carryover- Alternative 1) and Accounting for Off-the-Top Deductions (Alternative 1). All values in mt unless noted.

	No Action			ABC Carryover		Off-the-Top Deduction
Year	2023	2024	2025	2025 a/	Year	2025
OFL	3763	3563	2518	2518	OFL	2518
ABC	3485	3285	2354	2518	ABC	2354
ACL	3485	3285	2354	2518	Off-the-Top	318.5
Off-the-Top	386.24	386.24	318.5	318.5	ACL	2035.5
Fishery HG	3098.8	2898.8	2035.5	2199.5		
IFQ All	3064	2864	2001	2157	IFQ Allocation	2001
IFQ Surplus Carryover	0	0	0	0	IFQ Surplus Carryover	62
Annual Vessel Limit (lbs)	303,950	248,108	198,515	214,737	Annual Vessel Limit (lbs)	198,515

a/ For simplicity, assumes no changes to off-the-top deductions, Allocation Option A- Remainder Only, and Set Asides Option A- No Change.

If the Council did change the catch accounting structure for Off-The-Top Deductions and did ABC Carryover (Carryover- Alternative 1), the resulting Carryover would be the same as described above. Given the high attainment of petrale in most years, it is possible that IFQ surplus carryover would not be issued in the same year as ABC carryover- even theoretically possible given the increased risk to the ACL. Furthermore, there is an increased risk to overfishing with a lower buffer between the OFL and ABC through carryover and the uncertainty surrounding the off-the-top deductions until the next year (for fisheries where data is available).

In considering ACL Carryover (Carryover-Alternative 2) with the change in Off-the-Top Accounting, it is likely that ACL Carryover would not be permissible unless the buffer between the ABC and ACL were greater than the Off-the-Top Deductions. IFQ surplus carryover would still be possible.

D. **Carryover and Harvest Specifications Frequency:** With Harvest Specification Frequency (either Alternatives 1 or 2), the Council would need to consider adopting multi-year harvest specifications for stocks not subject to new assessments or projections. This process change would likely be necessary for annual specifications (in order to allow for annual setting of specifications) and would lead to potential efficiency in the biennial specifications (Alternative 2). If the Council recommended Carryover with either Harvest Specifications Frequency Alternative, the Council would need to decide what levels of ACL (or ABC) attainment would be used for projections in stock assessments. Currently, a 100 percent ACL attainment assumed is used for all projection tables as the basis of setting harvest specifications, even though the majority of groundfish stocks are significantly underattained. For ABC Carryover, stock assessments would need to have a run that projected 100 percent attainment of the OFL (or whatever the maximum ABC could be- pending the option selected by the Council- see page 14 of Attachment 1). For ACL Carryover, this process would require a run of the ABC. However, given the underattainment trends for most stocks, alternative runs in the catch projection tables may be appropriate. This could be addressed in the Terms of Reference changes for the next stock assessment cycle.

E. **Phase-In ABC Change and Mid-Biennium Harvest Specification Change:** A Mid-Biennium Specifications framework could be combined with a Phase-In ABC framework. If a stock were to be prioritized and recommended for a Mid-Biennium Change and were currently under a Phase-In, then the stock assessment informing the Mid-Biennium Change would include the impacts from the Phase-In HCR. Given that it is likely that the Mid-Biennium Change would be in year two of a two- or three-year phase-in period, the default HCR would apply during year two instead of the Phase-In given that the new stock assessment showing new information on the status of the stock would likely override the need for the Phase-In that was previously recommended.

F. **Phase-In ABC Change and Accounting for Off-the-Top Deductions:** With a Phase-In ABC Change and Off-the-Top Deduction Catch Accounting Change, there is the potential for an increased risk in overfishing depending on the buffer implemented between the OFL and ABC through the Phase-In. For example, a Phase-In could have the ABC set very close to the OFL (such as the example shown Figure 1) in some years.

G. **Phase-In ABC Change and Harvest Specifications Frequency**: A Phase-In ABC Change could occur with either Harvest Specifications Frequency alternative. For either Harvest Specifications Frequency alternative in which specifications are adopted for a longer period than one or two years, a phase-in could be analyzed within those longer term projections.

H. **Mid-Biennium Harvest Specifications Change and Accounting for Off-the-Top Deductions:** A Mid-Biennium Specifications framework could be used with a change in Off-the-Top accounting. If combined, and both frameworks do not broadly apply to all stocks, each framework would need to account for variable approaches in Off-the-Top accounting. However, as proposed in Attachment 1, the change in Off-the-Top deductions would apply to all stocks, except for sablefish north of 36 N. lat., therefore no variable approaches would be needed.

I. **Mid-Biennium Harvest Specifications Change and Harvest Specifications Frequency:** If the Council recommends moving to an Annual Specifications cycle (Harvest Specifications Frequency- Alternative 1), then there would be no need for the Mid-Biennium Specifications Change item. The Mid-Biennium Specifications change is only applicable for biennial cycles to be more reactive to new scientific information from assessments. Annual specifications would be using any new assessments in the near term and be responsive to all new assessments.

J. **Accounting for Off-the-Top Deductions and Harvest Specifications Frequency:** If catch accounting for off-the-top deductions is recommended (Alternative 1 or 2), the timeline for setting off-the-top deductions would need to be reconsidered. For example, under the current biennial process, preliminary off-the-top deductions are considered in November with identification of PPA ACLs. In order to adopt a range of ACLs in September, developing off-the-top deductions would need to be frontloaded in order for the Council to adopt preliminary off-the-tops in September. Alternative 1 or 2 impact the ACL determination and in the current biennial process, interim ACLs are adopted for most stocks/stock complexes in September of the biennial process.

Discussion of Action Items Related to Proposed Problem Statement

Considering the proposed problem statement in Agenda Item F.5, Attachment 1, the following provides an initial assessment of how each action item may meet the purpose of the action.

Stabilizing harvest specifications and providing reliable access to groundfish are likely outcomes with items that reduce the variability in harvest specifications and still mitigate the risk of overfishing. The process changes that have potential to stabilize harvest specifications are the **Phase-In ABC Change** and **Carryover**. The benefits of **Phase-In ABC Change** include ramping down catches of species of concern (or stocks where the biomass estimates have declined) to help struggling markets to find solid ground and the mitigation of the short-term impacts to industry by creating a longer transition (three years instead of one year) in the application of the lower harvest specifications. **Carryover** would potentially provide additional quota. However, staff also note that the Council could use these policies to increase harvest of constraining stocks, which could increase the risk of overfishing.

Increasing access to groundfish stocks and thereby increasing ACL and allocation attainments could be assisted by **Mid-Biennium Harvest Specifications Change, Carryover,** and **Accounting for Off-the-Top Deductions**. These items would increase the annual harvestable surplus of the subject stock for the subject year and provide additional fishing opportunity while preventing overfishing. **Mid-Biennium Harvest Specifications Change** and **Carryover** may increase the ACL attainment of the subject stock, but more likely could increase the availability of constraining stocks to harvest co-occurring stocks. For example, if one of these processes was used to increase canary rockfish ACLs in the biennium, it could concurrently increase widow and yellowtail rockfishes or whiting attainments as they co-occur with canary rockfish.

While it is uncertain at the time of the drafting of this document how quick rulemaking timelines could be, the prescriptive design nature as proposed for both the **Mid-Biennium Harvest Specifications Change** and **Carryover** may be able to expedite issuance of each item. As proposed, these actions are prescriptive and may be able to be implemented via an expedited process. While the changes proposed in **Accounting for Off-the-Top Deductions** would not result in additional yield for most stocks (unless there was a reduction already between the ACL and ABC- see canary rockfish example in Attachment 1), it could lead to less restrictive management inseason (as only directed groundfish fisheries would be subject to the ACL- see discussion in Attachment 1). For stocks with a reduction between the ACL and ABC, the change in **Accounting for Off-the-Top Deductions** could allow for increased yield available to the fishery. Similar to the **Mid-Biennium Harvest Specifications Change and Carryover**, changes described in **Accounting for Off-the-Top Deductions** would likely help to increase availability of co-occurring or constraining stocks which would increase access to target groundfish stocks.

Harvest Specifications Frequency may not directly respond to any of the problems outlined in the problem statement. As noted in Attachment 1, the biennial cycle was intended to provide stability by reducing the potential volatility that coincided with the annual cycle. That being said, the current biennial process (without the benefit of a **Mid-Biennium Harvest Specifications Change** as an example) is not responsive to new science that is available during the biennium and therefore could be impeding access to healthy stocks, resulting in unnecessary constraints. Both alternatives, however, may provide some sense of stability by adopting harvest specifications for a to-be-determined period of time, allowing for longer term planning.

PFMC
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