New England Fishery Management Council
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Daniel Salerno, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: January 14, 2026

TO: Scientific and Statistical Committee (SSC)

CC: Groundfish Committee

FROM: Groundfish Plan Development Team (PDT)

SUBJECT: **Possible overfishing limits (OFLs) and acceptable biological catches (ABCs) for white hake, fishing years (FY) 2026 through 2030**

The PDT met by webinar on January 8, 2026, to discuss the Council's request that the SSC consider FY2026-2030 ABCs for white hake based on 75% F_{MSY}, rather than the ABCs based on 70% F_{MSY} ($F_{Rebuild}$) that were recommended by the SSC in its November 12, 2025, memorandum[1]. The Council voted to accept any revised SSC recommendations for adoption in Framework 72 without further Council discussion. The PDT previously provided possible OFLs and ABCs for white hake for FY2026-2030 in its October 14, 2025, memorandum to the SSC[2]. This memorandum provides updated information for the SSC's consideration at its meeting on January 21, 2026.

Overview

At its December 2025 meeting, the Council passed the following motion:

That the Council:
1) Preliminarily, approve white hake OFLs/ABCs for FY2026-2030 as recommended by the SSC; and
2) Request the SSC consider FY2026-2030 ABCs for white hake based on 75% F_{MSY}, taking into consideration the Council's Risk Policy and rebuilding plan. The Council accepts any revised SSC recommendations without discussion for adoption in Framework 72.

In making the motion, the Council clarified that its intent was for the SSC to consider revised ABCs for all 5 years (2026-2030) and not for the SSC to consider revised OFLs or ABCs for a subset of the 5 years.

[1] See "SSC memo to the Executive Director re groundfish, November 12, 2025": https://d23h0vhsm26o6d.cloudfront.net/2b_251112-SSC-report-groundfish.pdf
[2] See "Groundfish PDT memo to SSC re FY 2026 – 2030 OFLs and ABCs for several groundfish stocks, October 14, 2025": https://d23h0vhsm26o6d.cloudfront.net/3_251014-GF-PDT-memo-to-SSC-re-several-groundfish-stocks-FY2026-2030-OFLs-and-ABCs-with-appendix.pdf

The PDT previously provided a memorandum to the Groundfish Committee on November 26, 2025[3], that provided additional information on white hake catch projections and rebuilding projections in response to the following tasking:

> *For white hake, the GF Committee tasks the PDT to produce the following information in time for the Council meeting:*
>
> 1. *Provide OFL/ABC projections associated with F(MSY)75% for FY2026-2030, and provide updated rebuilding projections comparing 70% F(MSY) and 75% F(MSY) under both the long-term (1963-2022) and more-recent recruitment timeframes (1995-2022).*
>
> 2. *Include draft specifications based on projections at 75% F(MSY) for FY2026-2030.*

This memorandum to the SSC incorporates that information along with updates.

Rebuilding Plans

Previous Rebuilding Plan

The previous rebuilding plan for white hake was developed in Amendment 13 and ended in 2014. The stock did not rebuild by 2014, but the rebuilding plan was not revised at the end of the rebuilding period because, based on the 2015 assessment, the stock was making adequate rebuilding progress. In 2017, NMFS advised the Council to continue setting catch limits to maintain fishing mortality at 75% F_{MSY}. However, following the 2019 assessment, the Council was notified that the stock was again overfished and a new rebuilding plan was required because the rebuilding plan date had passed and the stock had not rebuilt.

Current Rebuilding Plan

The white hake stock is currently not overfished but is in a rebuilding plan. The rebuilding plan has an $F_{Rebuild}$ of 70%F_{MSY}. Framework Adjustment 61 implemented the rebuilding plan in 2021 with a scheduled end date of 2031. At that time, projections showed the stock could have rebuilt by 2025 with F=0 or by 2028 at 75%F_{MSY} (with a 50% probability of success). Consistent with National Standard 1, the rebuilding plan was set at 10 years, based on biological factors (low recruitment, history of overly optimistic projections) and fishery factors (multispecies nature of the fishery), with an 87.4% probability of achieving B_{MSY}. ABCs based on the $F_{Rebuild}$ were first implemented in FY2022 as part of Framework Adjustment 63.

In Framework Adjustment 65, the Council adopted an ABC for white hake for fishing year 2023 but not fishing years 2024- 2025. The Council considered the SSC's recommendation for OFL and ABC for fishing years 2023-2025 and elected to adopt the single year advice to allow for potential modification of the white hake rebuilding plan in the fall of 2023. This was in response to the SSC's comments on uncertainty due to the conflicting trends in biomass and recruitment seen in the 2022 assessment, and recommendations for exploration of internal consistency between biological reference points and projections, and consideration of change point analysis or recruit-per-spawner analysis to inform recruitment time stanzas. The 2022 Peer Review Panel had similar comments on uncertainties in the assessment. The Council also requested a management track assessment for white hake in the fall of 2023 given the SSC's

[3] See "Groundfish PDT memo to Groundfish Committee re white hake projections, November 26, 2025": https://d23h0vhsm26o6d.cloudfront.net/4d_251126-GF-PDT-memo-to-CMTE-re-white-hake-projections.pdf

recommendations, but a management track assessment was not completed. In 2023, the Council commissioned two separate independent contractors to prepare an analysis of recruitment assumptions used in stock projections for white hake.[4] The work by the independent contractors provided information helpful to the rebuilding and ABC discussions in the absence of a new management track assessment. This work on white hake recruitment assumptions was reviewed by the SSC at its meeting on August 10, 2023.

Previous Modification of the Current Rebuilding Plan
In 2023, the SSC discussed using 75%F_{MSY} for FYs 2024 and 2025 at its meetings on September 8th and October 27th. On September 8, 2023, the SSC met to consider a request from the Council to: 1) evaluate a rebuilding plan modification that uses 75% F_{MSY} for FY 2024-2025, weighing the risks to rebuilding progress along with possible social and economic impacts in the multispecies fishery, and 2) if warranted, propose revised FY 2024 and FY 2025 OFLs and ABCs for white hake. The modification considered within the rebuilding plan would be to use 75%F_{MSY} in fishing years 2024 and 2025 in place of 70%F_{MSY}. There would be no other changes to the rebuilding plan, including the rebuilding timeline (end date 2031). Starting with FY2026, the rebuilding plan would revert to 70%F_{MSY}.

At that time, the SSC considered projections based on using two catch bridge years (calendar year [CY] 2022 and CY 2023), autocorrelated long-term recruitment for the short-term projections, and ABCs under 75%F_{MSY}. In its discussions, the SSC expressed continued concern about the lack of recent white hake recruitment. There was considerable discussion concerning the lack of recruitment despite low harvest, and whether this was signaling a longer-term change in stock productivity. This contrasts with rebuilding projections which assume that recruitment will return to the long-term mean. The SSC recommended using 75% F_{MSY} for FY 2024-2025, and the Council then adopted revised OFLs and ABCs via Framework Adjustment 66. The SSC included the following in its rationale:

- The SSC concurred that use of 75%F_{MSY} for FY 2024-2025 would not significantly increase the risk of meeting the rebuilding timeline relative to 70%F_{MSY} and would slightly increase the economic and social benefits to the fishery in the short term with a low likelihood of negative consequences in the long term.
- The SSC noted that, at the time, the white hake stock was neither overfished nor experiencing overfishing and was making progress on rebuilding.
- The SSC referred to information provided by the PDT which showed that the year in which rebuilding was projected to be achieved was the same under 70%F_{MSY} and 75%F_{MSY}.[5]
- The SSC also noted that the choice of recruitment assumptions does have a significant effect on the modeled time to rebuilding.

Current Status
The 2025 management track assessment was an update using the same ASAP model from the 2022 management track assessment. Survey indices continue to show declining trends and recent

[4] See "Appendix VI to Framework 66": https://d23h0vhsm26o6d.cloudfront.net/A6_231214_Groundfish_FW66_Appendix_VI_White_Hake_Recruitment_Assumptions.pdf
[5] See "Groundfish PDT memo to SSC re white hake OFLs and ABCs for FY2024-2025 and white hake rebuilding options, September 1, 2023": https://d23h0vhsm26o6d.cloudfront.net/7_230901-GF-PDT-memo-to-SSC-re-white-hake-with-attachments.pdf

recruitment estimates are near time series lows. Recruitment has been persistently weak over the past two decades, with no strong year classes to drive rebuilding. The white hake assessment uses different recruitment methods between short-term and long-term projections: SSB_{MSY} is estimated using the SAW56 approved method of long-term projections at an $F_{40\%proxy}$ for F_{MSY} using a cumulative distribution function (CDF) of recruitment from the model time series minus the last two years (1963-2022; Long R). However, short-term projections used for catch advice were developed using the SAW56 method of recruitment from 1995-2022 (Short R) because there was a declining trend in recruitment. The 2025 Peer Review Panel concluded white hake is not overfished, and overfishing is not occurring.

The SSC met on October 21-22, 2025, to recommend OFLs and ABCs for white hake and several other groundfish stocks (Table 1). The SSC recommended using Option B of the ABC control rule for white hake at 70% F_{MSY} and using the projections, rather than holding out-years constant. Use of 70% F_{MSY} is consistent with the rebuilding plan. The SSC's recommended OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

Table 1- SSC's recommended OFLs and ABCs for FY2026-FY2030 for white hake, following 70%F_{MSY} projections.

Fishing Year	OFL (mt)	ABC (mt)
2026	1,943	1,393
2027	1,760	1,261
2028	1,640	1,174
2029	1,618	1,157
2030	1,698	1,215

The SSC provided several bases for its decision in its rationale.

1. White hake had been making progress on rebuilding, though this rebuilding seems to have stalled in recent years.
2. Utilization of white hake by the multispecies groundfish fishery is high, and it can be a constraining stock. The assessed stock status and condition do not well match industry perceptions of white hake populations per written correspondence and public comment received by the SSC. The SSC weighed these issues during its deliberations.
3. The SSC's recommended ABCs follow the groundfish rebuilding control rule (70% F_{MSY}). The SSC considered there to be moderate uncertainty in the projections, but the SSC did not find sufficient biological nor socioeconomic justification to deviate from control rule by holding any out-years constant.
4. White hake life history and fishing practices predisposes the stock to less severe "paper fish" issues (projected catch composed of projected and yet unobserved recruits) than winter flounder stocks, though still by 2028, 25% of projected white hake SSB is from projected recruits. The SSC did not find this amount of uncertainty sufficient justification for holding out-years constant.
5. Further, it was not obvious that holding out-years constant would have increased biological risk or alleviated socioeconomic hardship (the SSC-recommended ABC's at 70% F_{MSY} would allow marginally more catch 2028-2030 than holding 2029 and 2030 ABCs constant at 2028 levels). The SSC also recognized that the stock status (rebuilding)

and trends (declining with especially low recruitment in recent years) presented challenges to recommending ABCs greater than those specified by the control rule.

6. The SSC discussed the major sources of uncertainty for this stock being the catch-at-age information not being well characterized throughout the assessment time period, the use of pooled and survey age-length keys to age commercial catch, possible seasonal movement of white hake out of defined stock area, and inconsistency between recruitment methods used in the long-term and short-term projections.

Need for a New Rebuilding Plan

At its December 2025 meeting, the Council added a review of the white hake rebuilding plan and biological reference points (BRP) as a multiyear priority beginning in 2026 through the following motion:

to amend the Council's 2026 priority work items for Groundfish by adding a review of white hake rebuilding plan and reference points as a multiyear priority.

Risk Policy

In September 2024, the Council adopted a new Risk Policy Statement and Concept that became effective on January 1, 2025[6] (see Risk Policy Matrix for White Hake). The Council has several strategic initiatives underway to further support the application of the Risk Policy. The ABC Control Rules for the Northeast Multispecies Fishery Management Plan remain unchanged. However, at its December meeting, the Council added a 2026 priority to resume work to revise the ABC control rules for northeast multispecies stocks.

OFLs and ABCs Based on 75%F_{MSY}

Prior to the Council's meeting, at the direction of the Groundfish Committee, the PDT developed additional OFLs and ABCs associated with catch projections at 75%F_{MSY} for FY 2026-2030, along with projected spawning stock biomass (SSB) and fishing mortality (F) (Table 2), in comparison to the OFLs and ABCs following 70%F_{MSY} catch projections, as recommended by the SSC (Table 4). For FY2026, this results in an increase in ABC of 95 mt from 1,393 mt to 1,488 mt.

The PDT also provides the catch performance plot (Figure 1) and table (Table 3) for white hake, updated to include catch projections at 75%F_{MSY}. A sensitivity run using autocorrelated recruitment (AR1) for 70%F_{MSY} ($F_{Rebuild}$) was provided to the SSC in October but is not shown in Table 4.

[6] See "New England Fishery Management Council's Risk Policy Statement and Concept (2025)": https://d23h0vhsm26o6d.cloudfront.net/Risk-Policy-Statement-and-Concept-Overview-for-posting-v1-final.pdf

Table 2- OFLs and ABCs for FY2026-FY2030 for white hake, following 75%F_{MSY} projections. Projected F and SSB are also provided. SSB values in red are below the overfished threshold.

Fishing Year	Possible OFL (mt)	Possible ABC (mt)	F	*SSB (mt)
2026	1,943	1,488	0.132	12,267
2027	1,748	1,337	0.132	11,382
2028	1,617	1,236	0.132	11,026
2029	1,588	1,213	0.132	11,030
2030	1,662	1,270	0.132	11,412

*SSB_{MSY} = 25,004 mt. The stock is considered overfished if SSB < 50%B_{MSY} = 12,502 mt. Setting OFLs and ABCs for FY2026-FY2030 using 75%F_{MSY} projections results in the stock being overfished in all 5 years.

Table 3- OFLs and ABCs for FY2026-FY2030 for white hake, following 70%F_{MSY} projections, as recommended by the SSC. Projected F and SSB are also provided. SSB values in red are below the overfished threshold.

Fishing Year	OFL (mt)	ABC (mt)	F	*SSB (mt)
2026	1,943	1,393	0.123	12,293
2027	1,760	1,261	0.123	11,497
2028	1,640	1,174	0.123	11,204
2029	1,618	1,157	0.123	11,252
2030	1,698	1,215	0.123	11,673

*SSB_{MSY} = 25,004 mt. The stock is considered overfished if SSB < 50%B_{MSY} = 12,502 mt. Setting OFLs and ABCs for FY2026-FY2030 using 70%F_{MSY} projections results in the stock being overfished in all 5 years.

Figure 1- Catch performance for white hake including: catches from CY2005-CY2024, historical OFLs and ABCs since FY2010, and F_{MSY}, 75%F_{MSY}, 70%F_{MSY}, and 70%F_{MSY} autocorrelated recruitment sensitivity for FY2026-FY2030. Overfishing status in the terminal year of the assessment indicated on the x-axis ("Yes" = overfishing, "No" = not overfishing).

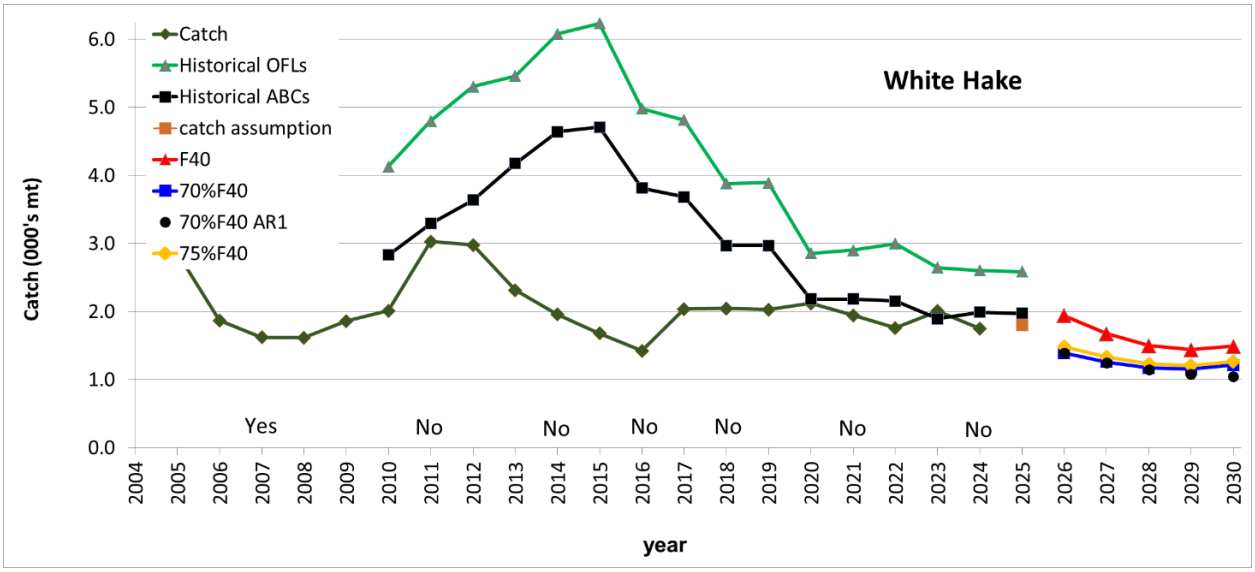


Table 4- Catch performance (CY2010-CY2024), historical OFLs and ABCs (FY2010-FY2025), and ABC estimates for F_{MSY}, 75%F_{MSY}, and 70%F_{MSY} for FY2026-FY2030 for white hake.

Year	Catch	Historical OFLs	Historical ABCs	Catch Assumption	F40%	75%F40	$F_{Rebuild}$ 70%F40
2010	2,014	4,130	2,832				
2011	3,029	4,805	3,295				
2012	2,981	5,306	3,638				
2013	2,316	5,462	4,177				
2014	1,959	6,082	4,642				
2015	1,681	6,237	4,713				
2016	1,426	4,985	3,816				
2017	2,040	4,816	3,686				
2018	2,046	3,885	2,971				
2019	2,030	3,898	2,971				
2020	2,122	2,857	2,186				
2021	1,947	2,906	2,186				
2022	1,761	3,002	2,155				
2023	2,009	2,650	1,897				
2024	1,754	2,607	1,991				
2025		2,591	1,978	1,802			
2026					1,943	1,488	1,393
2027					1,677	1,337	1,261
2028					1,502	1,236	1,174
2029					1,443	1,213	1,157
2030					1,493	1,270	1,215

Rebuilding Projections

Updated rebuilding projections, based on the latest management track assessment, using the long-term recruitment assumption used in the BRP, indicate that the stock will not rebuild by 2031, even with F=0. Rebuilding projections indicate the stock could be rebuilt by 2032 using F=0, while both 70%F_{MSY} and 75%F_{MSY} would each rebuild the stock by 2035.

Using the short-term recruitment assumption (Short R; which is used in short-term catch projections but is not used in the long-term rebuilding projections) results in a longer time for rebuilding, with the stock indicated to rebuild by 2034 under F=0. Extending the timeline out to

2040, neither 70%F_{MSY} nor 75%F_{MSY} achieve rebuilding under the short-term recruitment assumption.

Rebuilding projections for white hake resample recruitment from the entire times series (Long R; 1963-2022) of the assessment, but short term catch advice for estimating ABCs and OFLs are made using projections that assume a more recent time series (Short R; 1995-2022) of lower estimates of recruitment in the near term. This inconsistency in recruitment assumptions between the long-term and short-term projections was explored in the 2025 Management Track Stock Assessment but remains the approved projection approach for white hake as developed in SAW56 and reaffirmed by the 2025 Peer Review Panel.[7] The short-term projections used for setting catch advice are not intended for use in determining rebuilding projections, since these projections are not consistent with the BRPs, and thus the rebuilding projections conducted using the short-term recruitment assumption should be considered a sensitivity analysis.

The PDT conducted rebuilding projections under the following F options:

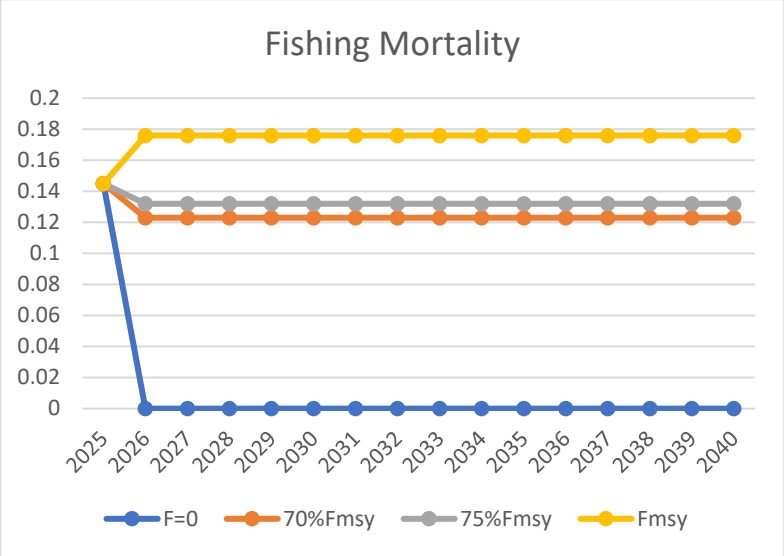
- F=0
- 70%F_{MSY}
- 75%F_{MSY}
- F_{MSY}

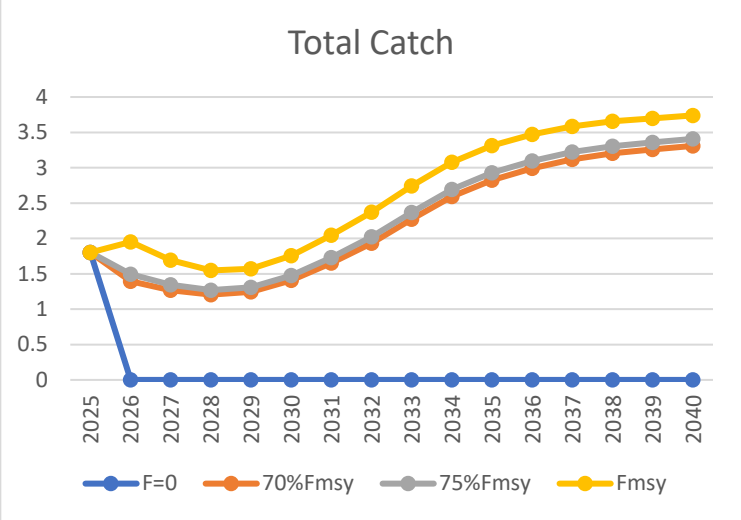
Projections under each of the fishing mortality rates above were conducted using both the rebuilding plan BRP projections under the long-term recruitment assumption (Figure 2 and Table 4), and under the catch advice projection short-term recruitment assumption as a sensitivity analysis (not shown).

Summarized results are based on the median values from the projections. Projections that rebuild (cross the horizontal red line in the figures) result in at least a 50% probability of achieving the rebuilding target SSB (SSB_{MSY} = 25,004 mt). Projections that drop below the horizontal red dotted line in the figures show SSB below the overfished definition (½ SSB_{MSY} =12,502 mt).

[7] The 2025 Management Track Assessment brought forward an alternative projection approach that uses projected recruitment based on a lognormal distribution with autocorrelated error in recruitment ("AR1" in Figure 1, Cadrin 2023). Based on the 2025 Peer Review Panel recommendations, projections continue the use of the projection methodology from the SAW56 benchmark, which uses a CDF of recruitment from the full time series for biological reference point projections and 1995-2022 recruitment time series for short-term catch advice projections. Projections using the alternative AR1 approach were provided to the SSC as a sensitivity, as requested by the Review Panel.

Figure 2- White hake rebuilding projections (BRP projections using long-term recruitment from 1963-2022). Top plot is the fishing mortality, the middle plot shows the catches (ABCs in 000s mt) given the fishing mortality rates, and the bottom plot is SSB (000s mt) with the horizontal red line indicating the SSB_{MSY} to achieve the rebuilding target and the dotted horizontal red line indicating ½ SSB_{MSY} as the threshold for a stock to have a status of overfished.





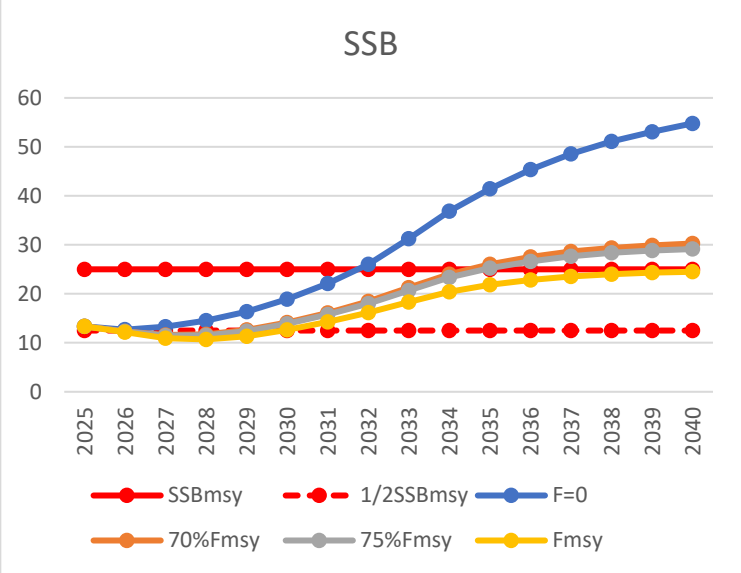


Table 5- White hake rebuilding projections (BRP projections using long-term recruitment from 1963-2022). Fishing mortality rates, total catches (ABCs in 000s mt) given the fishing mortality rates, and SSB (000s mt). SSB values highlighted in yellow show the stock has rebuilt above B_{MSY} and SSB values highlighted blue show the stock is below ½ B_{MSY} and in an overfished status.

	Fishing mortality			
	F=0	70%Fmsy	75%Fmsy	Fmsy
2025	0.145	0.145	0.145	0.145
2026	0	0.123	0.132	0.176
2027	0	0.123	0.132	0.176
2028	0	0.123	0.132	0.176
2029	0	0.123	0.132	0.176
2030	0	0.123	0.132	0.176
2031	0	0.123	0.132	0.176
2032	0	0.123	0.132	0.176
2033	0	0.123	0.132	0.176
2034	0	0.123	0.132	0.176
2035	0	0.123	0.132	0.176
2036	0	0.123	0.132	0.176
2037	0	0.123	0.132	0.176
2038	0	0.123	0.132	0.176
2039	0	0.123	0.132	0.176
2040	0	0.123	0.132	0.176

Total catch

	F=0	70%Fmsy	75%Fmsy	Fmsy
2025	1.802	1.802	1.802	1.802
2026	0	1.396	1.492	1.949
2027	0	1.270	1.346	1.691
2028	0	1.206	1.27	1.548
2029	0	1.247	1.309	1.569
2030	0	1.409	1.476	1.757
2031	0	1.651	1.729	2.047
2032	0	1.935	2.022	2.373
2033	0	2.271	2.366	2.741
2034	0	2.592	2.692	3.079
2035	0	2.825	2.927	3.311
2036	0	2.993	3.096	3.473
2037	0	3.119	3.222	3.583
2038	0	3.203	3.304	3.656
2039	0	3.259	3.358	3.699
2040	0	3.309	3.408	3.740

SSB

	F=0	70%Fmsy	75%Fmsy	Fmsy
2025	13.385	13.385	13.385	13.385
2026	12.680	12.314	12.288	12.16
2027	13.298	11.602	11.488	10.947
2028	14.516	11.701	11.526	10.696
2029	16.396	12.632	12.402	11.364
2030	18.905	14.134	13.856	12.625
2031	22.085	16.101	15.769	14.284
2032	26.064	18.426	18.007	16.157
2033	31.251	21.234	20.693	18.324
2034	36.855	24.008	23.322	20.402
2035	41.473	26.063	25.264	21.835
2036	45.375	27.517	26.631	22.864
2037	48.563	28.621	27.654	23.561
2038	51.123	29.383	28.355	23.982
2039	53.096	29.909	28.831	24.315
2040	54.803	30.269	29.140	24.498

Additional Fishery Information

The PDT previously provided fishery information regarding the commercial fishery and the sector fishery in its October 14, 2025, memorandum to the SSC[8]. This memorandum updates the information for the Quota Change Model (QCM) that was previously provided, to include QCM predictions for fishing year 2026 to evaluate white hake sector sub-ACLs based on both 70%F_{MSY} and 75%F_{MSY} (see Appendix 1).

Figure 3 is updated from what was previously provided in October 2025 and shows commercial groundfish (sector and common pool) catch of white hake since FY2021 along with the FY2025 commercial ACLs. Utilization by the groundfish fishery has been very high over the last five years. Table 5 (unchanged from October 2025) compares the performance of the QCM since FY2012 to the realized outcomes for white hake. As utilization increased, predicted utilization and catch have tracked realized values in recent years. Utilization rates have been over 90% since FY2021. White hake is a highly constraining stock for the groundfish sector fishery. Figure 4 (unchanged from October 2025) shows that inter-sector ACE lease prices for white hake have ranged from $0.25/lb to $1.00/lb over the last five years.

[8] See "Groundfish PDT memo to SSC re FY 2026 – 2030 OFLs and ABCs for several groundfish stocks, October 14, 2025": https://d23h0vhsm26o6d.cloudfront.net/3_251014-GF-PDT-memo-to-SSC-re-several-groundfish-stocks-FY2026-2030-OFLs-and-ABCs-with-appendix.pdf

Figure 3- Updated in-season utilization of white hake by the commercial (sectors and common pool) groundfish fishery. The red dot denotes 2025 catch information included in the previous QCM run.

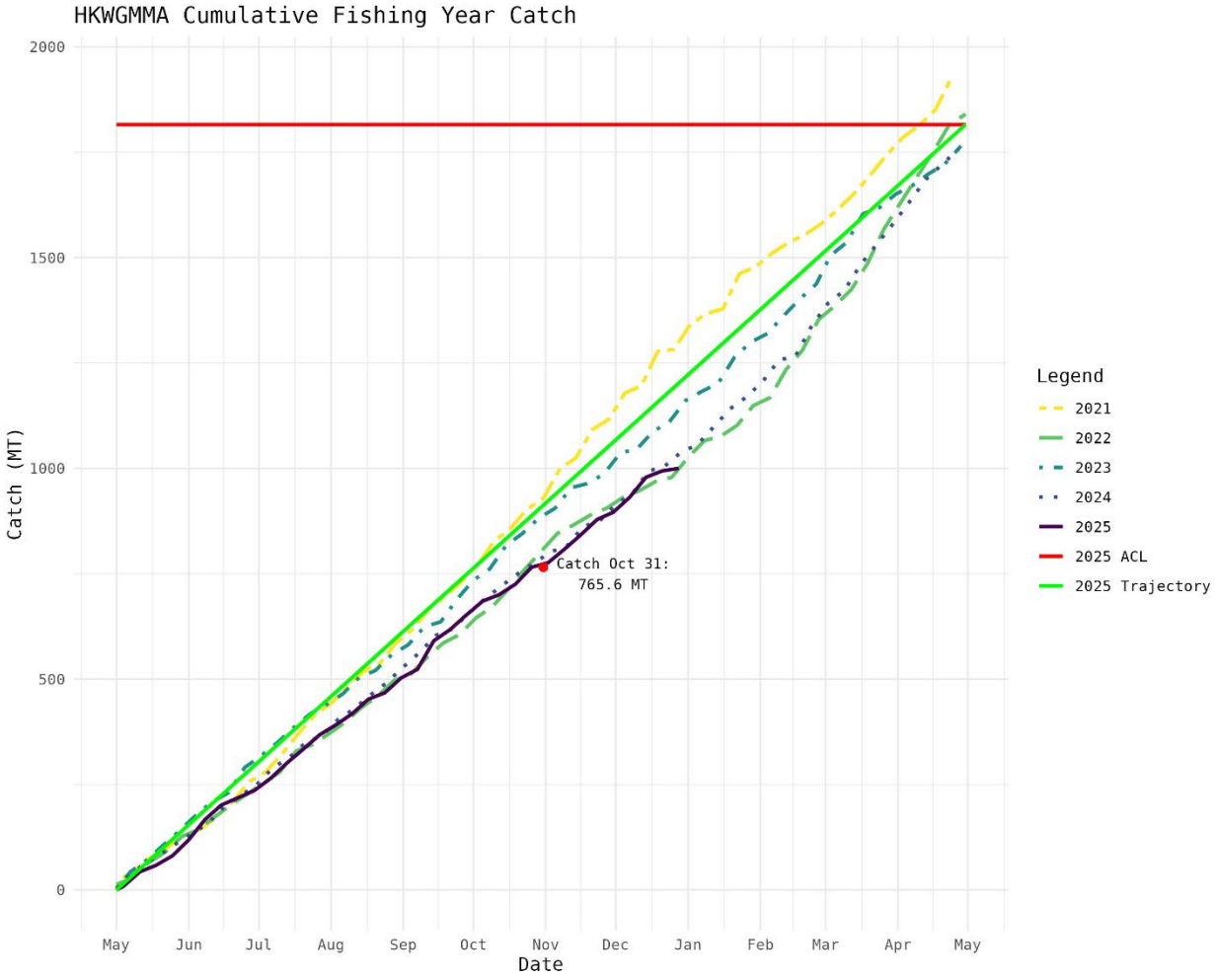
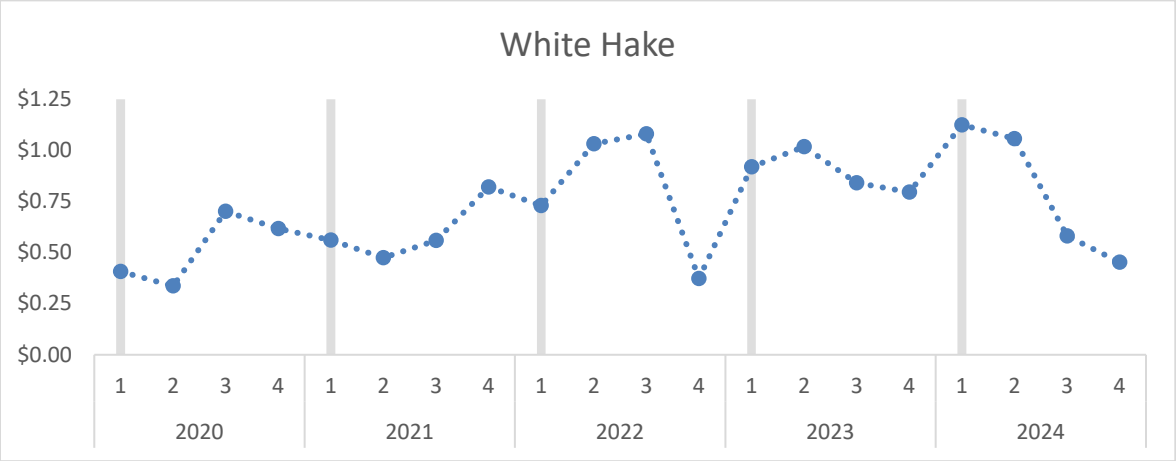


Table 5- White hake stock-level catch and revenue predictions from the Quota Change Model (QCM) for each fishing year between 2012 and 2024 compared to realized catch and revenue (in 2024$) from October 2025 PDT memorandum to SSC.

	FY	Sector sub-ACL	Catch (mt)		*Utilization (%)*		Gross Rev ($mil, 2024)	
			Realized	Predicted	*Realized*	*Predicted*	Realized	Predicted
White Hake	2012	3,257	2,414	1,980	*0.74*	*0.43*	9.3	5.8
	2013	4,142	2,025	2,570	*0.49*	*0.70*	7.7	8.2
	2014	4,308	1,721	1,932	*0.40*	*0.45*	7.3	7.4
	2015	4,313	1,581	1,689	*0.37*	*0.39*	6.3	6.4
	2016	3,434	1,432	1,780	*0.42*	*0.52*	5.6	7.1
	2017	3,333	2,014	2,071	*0.60*	*0.62*	5.6	8.3
	2018	2,713	2,083	1,907	*0.77*	*0.70*	5.4	7.1
	2019	2,715	2,044	2,691	*0.75*	*0.99*	5.1	7.1
	2020	2,004	1,790	1,839	*0.89*	*0.92*	5.2	4.8
	2021	1,994	1,930	1,995	*0.97*	*1.00*	6.6	4.6
	2022	1,970	1,824	1,906	*0.93*	*0.97*	5.7	5.8
	2023	1,808	1,747	1,719	*0.97*	*0.95*	4.9	5.6
	2024	1,905	1,741	1,904	*0.91*	*1.00*	4.8	5.2

Figure 4- ACE lease prices estimated for white hake for fishing years 2020-2024 using a hedonic price model comprised of inter-sector ACE leases from October 2025 PDT memorandum to SSC. First quarter (May-July) lease prices are indicated by the vertical gray bars.



As described in Appendix 1, the QCM predictions for FY2026 were originally conducted using FY2024 fishing activity as the reference period. A later update was conducted using a more recent reference period (November 1, 2024 - October 31, 2025). As shown in Appendix 1, incorporating FY2025 activity reduced predicted FY2026 utilization rates for Western Gulf of Maine (WGOM) cod and Georges Bank (GB) cod. Lessening these constraints increases the importance of a higher white hake sector sub-ACL and increases fishery value by up to 5%. Revenue increases are across a variety of groundfish stocks, emphasizing the importance of white hake to various components of the fishing fleet.

These lower catch rates for cod provided an indication that an increase in the white hake sector sub-ACL to 1,443 mt may be impactful when considering more recent fishing activity. This proved to be the case with fishery-wide revenues increasing by 4.9% and catch increasing by

4.8%. Increasing revenues by 4.9% would translate to $40.5M in groundfish revenues for FY2026. This increase in revenues covers a variety of groundfish stocks, including white hake (+6.1%), GB haddock (+5.1%), and pollock (+4.5%).

Conclusion

The difference between setting the catch advice for white hake based on 75%F_{MSY} or 70%F_{MSY} is minimal, with negligible practical impact on predicted rebuilding outcomes. Current stock assessments lack the precision to reliably measure a difference in predicted outcomes from a 5% difference in fishing mortality. Such a minor difference in fishing mortality is unlikely to determine whether a stock successfully rebuilds.

In Framework Adjustment 66, the 75%F_{MSY} level was used to set higher catch advice for white hake while in the rebuilding plan because it resulted in the same projected rebuilding year (2035) as 70%F_{MSY}. However, in retrospect, these small increases in fishing mortality did not improve outcomes for the stock, as shown by updated assessments. Under the current control rule, setting catch advice at 75%F_{MSY} would essentially result in no fishing mortality reduction for a stock in a rebuilding plan compared to a stock at SSB_{MSY}.

The white hake stock assessment has high levels of uncertainty and many unanswered questions. Like many assessments, longer term projections rely heavily on the most uncertain estimates in the model: recruitment estimates at the end of the time series. As noted in the PDT's October 14, 2025, memorandum to the SSC, by 2028, white hake projections are relying on greater than 50% of future year classes from modeled recruitment (aka "paper fish"). The limited information on recruitment in recent years does not support higher estimates of recruitment at the end of the time series and results in lower projections.

The updated QCM run (see Appendix 1) predicts that white hake will be the most constraining stock for the fishery in FY2026, that the increased sector sub-ACL resulting from setting catch advice based on 75%F_{MSY} will increase catch by 4.8%, and that fishery-wide revenues will increase by 4.9%. This increase in revenues covers a variety of groundfish stocks, including white hake (+6.1%), GB haddock (+5.1%), and pollock (+4.5%). That would translate to a total of $40.5M in groundfish revenues for FY2026. Importantly, the QCM is a tool used for evaluating immediate, short-term economic impacts to the fishery. Quantifying longer-term impacts, including potential economic costs of forgone yield from not rebuilding the stock, is far more difficult and not analyzed by the QCM.

Given the limitations of the assessment's ability to discern biological differences between setting catch advice based on 75%F_{MSY} or 70%F_{MSY}, the SSC should make its decision based on risk tolerance and the immediate effects on the fishery, rather than predicted biological effects that are likely within the error of the assessment. Justifying the small increase in catch advice provided by 75%F_{MSY} requires accepting a slightly higher risk to the stock's likelihood of rebuilding. Given the minimal difference in rebuilding potential, increasing the catch advice effectively concludes that the assessment results are overly pessimistic. However, it is difficult to predict whether future assessments will be more optimistic or pessimistic. Improvements in indices of abundance trends would need to occur to produce more optimistic assessments in the future. In conclusion, a decision to increase the risk of the stock not rebuilding by basing ABCs on 75%F_{MSY} instead of 70%F_{MSY} ($F_{Rebuild}$) could be made based on the immediate needs of the

fishery, but the projected effects on rebuilding are likely within the error of the assessment and therefore are not a reliable measure of biological effects.

Quota Change Model Comparison for White Hake (70% F_{MSY} vs. 75%F_{MSY})

The Quota Change Model (QCM) is used to analyze the impacts of each combination of measures on the sector portion of the groundfish fishery, which has comprised 99% of commercial groundfish revenues over the last five fishing years (see Framework Adjustment 69 Affected Environment: Human Communities[9]). Information on the mechanics of the model as well as model performance is available in the document provided during the December Council meeting[10]. This document provides a discussion of FY2026 under two white hake sector sub-ACLs (each assuming the removal of the management uncertainty buffer for sectors). Under 70%F_{MSY}, the white hake sector sub-ACL for FY2026 would be 1,339.6mt. Under 75%F_{MSY}, the white hake sector sub-ACL would be 1,443mt, representing an increase of 93.4mt (+7.0%).

Previous Analysis

During the December Council meeting, the QCM results presented used FY2024 (May 1, 2024 – April 30, 2025) as the reference period. The FY2026 summary results presented for that meeting are shown below (Table 1), as well as the predicted most constraining stocks (Table 2).

Table 1- Predicted FY2026 revenues and costs for the sector portion of the commercial groundfish fishery; median values; nominal dollars; FY2024 reference period for QCM.

Option	Groundfish Gross Revenues	Total Gross Revenues	Operating Cost	Sector Cost	Quota Cost	Operating Profit	Days Absent
FY2026 (Alt. 2 w/o MUBs; white hake 70% Fmsy	38.6	55.1	12.6	1.1	6.9	34.6	7,869

Table 2- Groundfish stocks with predicted FY2026 utilization rates >90%, using white hake quotas based on at 70%F_{MSY}; FY2024 reference period for QCM.

Stock	Sub-ACL (mt)	Predicted Catch (mt)	Predicted Utilization
White Hake	1,340	1,330	99.3%
Redfish	5,567	5,380	96.6%
WGOM Cod	294	283	96.3%
GB Cod	134	121	90.3%

When evaluating a higher white hake sector sub-ACL using FY2024 as the reference period, the extra 93.4mt, resulting from using 75%F_{MSY} rather than 70%F_{MSY}, had little impact on fishery

[9] See "Framework 69 Final Submission – March 11, 2025": https://d23h0vhsm26o6d.cloudfront.net/250311_Groundfish_FW69_Final_Submission.pdf
[10] See Quota Change Model Predictions: https://d23h0vhsm26o6d.cloudfront.net/4e_251201_FW72-Quota-Change-Model-predictions.pdf

predictions. For example, groundfish gross revenues were still $38.6M and total gross revenues were $55.3M (+0.2M). These similar results under the two white hake sector sub-ACLs can be explained by the other constraining stocks listed in Table 2.

New Analysis

Thus far in FY2025, cod catch rates have been far below recent years. Given these declines, the QCM was re-run incorporating a more recent reference period of November 1, 2024 – October 31, 2025. This change in eligible trips produced a large change in predicted FY2026 catch for cod stocks, with Western Gulf of Maine (WGOM) cod utilization falling to 90.8% and Georges Bank (GB) cod utilization falling to 54.4% under a white hake sector sub-ACL of 1,399.6 mt.

These lower catch rates for cod provided an indication that an increase in the white hake sector sub-ACL to 1,443 mt may be impactful when considering more recent fishing activity. This proved to be the case with fishery-wide revenues increasing by 4.9% and catch increasing by 4.8%. A 4.9% increase in revenues would translate to $40.5M in groundfish revenues for FY2026. This increase in revenues covers a variety of groundfish stocks, including white hake (+6.1%), GB haddock (+5.1%), and pollock (+4.5%).

The PDT provides the following draft specifications based on 75%F_{MSY}, in comparison to those based on 70%F_{MSY}.

Stock	FY	OFL	US ABC	State-Waters Sub-Component	Other sub-component	Scallops	Groundfish Sub-ACL	Comm. Ground-fish Sub-ACL	Rec Ground-fish Sub-ACL	Preliminary Sectors Sub-ACL	Preliminary Non-sector Groundfish Sub-ACL	MWT or Small mesh Sub-ACL	Total ACL
White Hake	2026	1,943	1,457	0	7.3		1,377	1,377.3		1,361.4	15.9		1,385
75%F_{MSY}	2027	1,748	1,306	0	6.5		1,234	1,234.5		1,220.3	14.2		1,241
	2028	1,617	1,205	0	6.0		1,139	1,139		1,125.9	13.1		1,145
	2029	1,588	1,182	0	5.9		1,117	1,117.3		1,104.4	12.9		1,123
	2030	1,662	1,239	0	6.2		1,171	1,171.2		1,157.7	13.5		1,177
White Hake	2026	1,943	1,362	0	6.8		1,287	1,287.4		1,272.6	14.8		1,294
70%F_{MSY}	2027	1,760	1,230	0	6.2		1,163	1,162.7		1,149.3	13.4		1,169
	2028	1,640	1,143	0	5.7		1,081	1,080.5		1,068	12.5		1,086
	2029	1,618	1,126	0	5.6		1,064	1,064.4		1,052.1	12.3		1,070
	2030	1,698	1,184	0	5.9		1,119	1,119.2		1,106.3	12.9		1,125