

GROUND FISH MANAGEMENT TEAM DRAFT ANALYSIS TO SUPPORT REMOVAL OF
THE SHORTSPINE THORNYHEAD MANAGEMENT LINE AT 34° 27' NORTH
LATITUDE

This report is both draft and an incomplete analysis of the potential new management measure that would remove the shortspine thornyhead management line at 34° 27' North latitude (N. lat.). The intent is to provide additional analysis beyond the analysis detailed in [Agenda Item F.7.a, Supplemental GMT Report 3, March](#) 2024 for Pacific Fishery Management Council (Council) consideration. The Groundfish Management Team (GMT) seeks guidance from the Council and other advisory bodies regarding how to move forward with this proposed new management measure. The GMT acknowledges that internal team discussion and discussions with other advisory bodies and the Council could change assumptions made in the following analysis. Should the Council move forward with this measure, additional analysis may be required, based on guidance. A final version will be presented in the June advance briefing book to support Council decisions making.

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Executive Summary

- Currently, Shortspine thornyhead is defined as a coastwide stock with area-specific annual catch limits (ACLs) and fishery harvest guidelines (HGs) north and south of 34° 27' N. lat., which are further divided into trawl and non-trawl allocations north and south.
- The 2023 stock assessment puts the stock in the precautionary zone, resulting in lower anticipated ACLs for the 2025-2026 biennium.
- These lower ACLs are expected to impact the trawl and non-trawl sectors north of 34° 27' N. lat. but will result in a particularly notable constraint for the non-trawl sector north of 34°27' N. lat.
 - To address these impacts, a new management measure has been proposed that would remove the management line at 34° 27' N. lat. If the management line is removed, it should help alleviate some allocation constraints, improve utilization of the coastwide stock, and protect non-trawl fisheries north of 34° 27' N. lat. from potential collapse. It would allow for the northern and southern non-trawl fisheries to potentially harvest the same levels as in 2023, if not more.
 - Federal regulations provide a process for re-combining management areas for the trawl sector and proportionally adjusting quota share holdings if a coastwide trawl allocation is created. Using this process, the allocations in 2025 would be 64 percent of the future coastwide HG for the trawl sector and 36 percent for the non-trawl sector. The Council can choose to set the 2026 allocations at any level.
 - Fishing mortality could become more concentrated in the north, which could exceed the estimated proportional biomass in the north. If this occurs, it is unclear what potential risk this may pose to the coastwide stock.
 - Trawl activity is not expected to increase in the south if the management line is removed, but it is unclear whether gear switching activity may increase following the recent opening of the Cowcod Conservation Areas.
 - Depending on the year and allocation choice made, the shortspine thornyhead individual fishing quota allocation north of 34° 27' N. lat. in 2025-26 could be 5 mt less or 48 mt greater than that under the Status Quo option. The potential additional 48 mt in 2026 could lessen the degree to which quota pound prices are expected to increase due to status quo allocation reductions.
- The decisions before the Council are:
 - Option 1 (Status Quo): Shortspine thornyhead continues to be managed with area-based ACLs north and south of 34° 27' N. lat.
 - Option 2: The 34° 27' N. lat. management line is removed for shortspine thornyhead, and coastwide ACLs and allocations are established. Under this option, there are several sub-options:
 - 2026 Allocation Proportions:
 - The allocation for 2025 will be 64 percent trawl and 36 percent non-trawl under Option 2 (see above).
 - Sub-option A: Maintain the allocation scheme of 64 percent trawl and 36 percent non-trawl sharing in 2026 and beyond.
 - Sub-option B: Change the allocation scheme to 71 percent trawl and 29 percent non-trawl starting in 2026. This is the only sub-option under Option 2 that would result in substantive socioeconomic

impacts for the trawl sector that are different from status quo impacts.

- Non-trawl ACT:
 - Sub-Option 1: Set limited entry fixed gear and open access trip limits according to the coastwide non-trawl allocation (no ACT).
 - Sub-Option 2: Establish a non-trawl ACT north of 34° 27' N. lat. set equal to 25 percent of the coastwide non-trawl allocation. This would provide a mechanism to slow the concentration of effort in the northern non-trawl fishery.
- Non-trawl trip limits
 - Option 1 (Status Quo): See Tables 11 & 12 of this report.
 - Option 2:
 - Convert open access trip limits from monthly to bimonthly.
 - Increase limited entry north and limited entry south (40° 10' N. lat. - 34° 27' N. lat.) trip limits by 1,000 lbs. in periods 1-3 and by 500 lbs. in periods 4-6.
 - Increase limited entry south of 34° 27' N. lat. trip limits by 1,000 lbs.

1.1 Background

As a result of the 2023 stock assessment for shortspine thornyhead, which determined the coastwide stock to be in the precautionary zone, in September 2023 the GMT stated that, “the projected ABCs [Acceptable Biological Catch] using a P* of 0.45 are comparable to the GMT predicted catch projections for 2023 and 2024.” ([Agenda Item G.6.a, Supplemental GMT Report 1, September 2023](#)). In November, the GMT stated, “...shortspine thornyhead may still become a constraining species to the groundfish fishery even under the highest P* available to the Council.” ([Agenda Item E.5.a, Supplemental GMT Report 2, November 2023](#)). Under the status quo management structure, the trawl and non-trawl sector allocations north of 34° 27' N. lat. would be affected by that Annual Catch Limit (ACL) reduction. However, south of 34° 27' N. lat., only the non-trawl sector allocation would experience a reduction proportional to the ACL since there is a fixed value in the trawl sector (50 mt). In November 2023, the Groundfish Advisory Subpanel (GAP) and GMT both recommended that Amendment 21 formal allocations, including shortspine thornyhead, be reviewed as a part of the upcoming intersector allocation review process ([Agenda Item E.7.a, Supplemental GAP Report 1, November 2023](#), [Agenda Item E.7.a, Supplemental GMT Report 3, November 2023](#)). However, during the overwinter analysis, an issue was uncovered that may be constraining to the prosecution of a targeted non-trawl fishery north of 34° 27' N. lat.

The impacts of both alternative Harvest Control Rules (HCRs) for shortspine thornyhead under status quo management can be found within Chapters 3 through 5 of the Council Analytical Document ([Agenda Item F.5, Attachment 2, April 2024](#)). For the purposes of the analysis in this document, impacts to the various fisheries are based on the Alternative 2 HCR for shortspine thornyhead (P* 0.45) since that is the Council’s Preliminary Preferred Alternative (PPA). Under the Alternative 2 HCR and status quo allocation scheme, the trawl Individual Fishing Quota (IFQ) allocations north of 34° 27' N. lat. in 2025-26 are decreasing by roughly 65 percent compared to 2023 (Table 1) and would be lower than the fishery’s typical annual catches prior to 2020; 2025-26 allocations could still constrain some vessels in the fishery even if the allocation is not fully attained. Bottom trawl vessels in the IFQ fishery, in particular, are likely to be impacted by limited

shortspine thornyhead quota and may be required to modify their targeting behavior away from Dover sole and toward sablefish if shortspine thornyhead becomes a constraint, but the ability for markets to absorb additional sablefish landings may continue to be a limitation. Under the Alternative 2 HCR and status quo management measures, the non-trawl allocation south of 34° 27' N. lat. in 2025-26 is decreasing by roughly 72 percent compared to 2023 and 66 percent north of 34° 27' N. lat. The GMT realized that trip limits for the non-trawl sector north of 34° 27' N. lat. would need to be reduced by 86 percent in the limited entry fixed gear (LEFG) sector and 20 percent in the open access (OA) sector to stay under the area-specific ACL, likely eliminating the ability of the non-trawl sector to prosecute a targeted fishery. The fishery south of 34° 27' N. lat. will continue to be able to prosecute a targeted fishery. In this report, we focus on the impacts to the LEFG fleet since that specific fleet is targeting shortspine thornyhead for a higher price per pound.

Table 1. Status quo (SQ) shortspine thornyhead north of 34° 27' N. lat. non-trawl allocation, trawl allocation, and subsequent at-sea set-aside and individual fishing quota (IFQ) allocation (under the trawl allocation), 2023-2026. The 2025 and 2026 amounts are based on the Council’s Preliminary Preferred Alternative (PPA) harvest control rule (HCR) P* 0.45.

Year	Non-Trawl Allocation	Trawl Allocation	At-Sea Set-Aside	IFQ Allocation
2023	64	1,217	70	1,147
2024	62	1,187	70	1,117
2025 (SQ)	22	481	70	411
2026 (SQ)	26	486	70	416

As a result of the overwinter analysis, the GMT presented three different pathways for exploration to the Council in [Agenda Item F.7.a, Supplemental GMT Report 3, March 2024](#). The GAP and the GMT discussed the issues around the decrease in shortspine thornyhead ACLs for the 2025-26 biennium. In [Agenda Item F.7.a, Supplemental GAP Report 1, March 2024](#), the GAP agreed on and recommended including Pathway 2, removal of the management line at 34° 27' N. lat., with modifications. Under Council discussion in March under F.7, the GMT was instructed “to prioritize pathway 2 as outlined in the GAP Report for analysis. No further analysis on other pathways.” The GMT has analyzed Pathway 2 with the GAP modifications using the PPA HCR of P* 0.45. The GMT’s understanding of the GAP-preferred method, including proposed modifications, are as follows:

- Remove the management line at 34° 27' N. lat. and set a coastwide ACL.
- Set trawl/non-trawl allocations for 2025 at 64 percent trawl, 36 percent non-trawl, using the Amendment 20 (A-20) component rule for area recombinations, which requires the use of 2024 as the base year to determine future trawl/non-trawl allocations.
- For 2026 and beyond, change the trawl/non-trawl allocations to 71 percent of the coastwide fishery Harvest Guideline (HG) to trawl and 29 percent to non-trawl (GAP rationale: values would be the allocations if recombination was done in 2025 using the same calculations as below).

- Establish a non-trawl annual catch target (ACT) north of 34° 27' N. lat. and/or trip limit adjustments to better align effort in the non-trawl sector with the estimated proportional biomass of shortspine thornyhead north and south of 34° 27' N. lat. based on the Northwest Fisheries Science Center (NWFSC) West Coast Groundfish Bottom Trawl (WCGBT) survey data.

1.2 Current Management and Allocation Structure of Shortspine Thornyhead

Shortspine thornyhead was recently defined as a coastwide stock via Amendment 31 ([88 FR 78677](#)). Shortspine thornyhead’s allocation structure is laid out in Amendment 21 to the [Pacific Coast Groundfish Fishery Management Plan \(FMP\)](#) (see page 64). It has a coastwide overfishing limit (OFL) and ABC (Table 2), and two area-specific ACLs and fishery HGs are set for north and south of 34° 27' N. lat. The ACL apportionment method was historically based on the available data (2003-2012) from the NWFSC WCGBT survey at the time of the previous assessment conducted in 2013. However, the Council recently recommended that it be based on a recent five-year rolling average ([Agenda Item E.5.a, Supplemental GMT Report 1, November 2023](#)), aligning the methodology with how area-specific ACLs have been determined for sablefish. Both methods have resulted in roughly 70 percent of the biomass estimated north of 34° 27' N. lat. for the past five years (see Table 1 from [Agenda Item E.5.a, Supplemental GMT Report 1, November 2023](#)). The allocation amounts for Alternative 1 and Alternative 2 (PPA) are shown in Sections §2.41 and §3.4.1 of the GMT Council Analytical Document ([Agenda Item F.5, Attachment 2, April 2024](#)), respectively. The allocation structure is repeated in Table 3 and Figure 1. The non-trawl fishery is managed via trip limits and the trawl fishery is managed via set-asides and tradable quota.

Table 2. Shortspine thornyhead coastwide OFL and ABC from the 2023 stock assessment.

Year	OFL	ABC
2025	940	821
2026	961	831

Table 3. Trawl/Non-trawl allocation structure for shortspine thornyhead under Amendment 21.

North of 34°27' N. lat.		South of 34°27' N. lat.	
Trawl	Non-trawl	Trawl	Non-trawl
95%	5%	50 mt	Remaining Yield

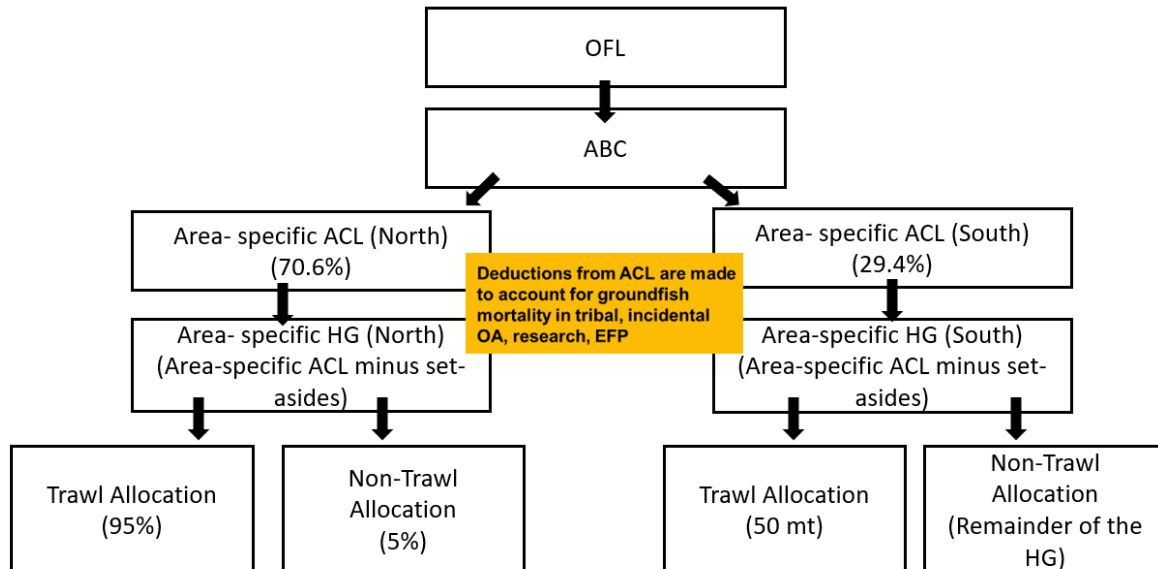


Figure 1. Status Quo Allocation Scheme under Amendment 21.

Mirroring the ACL management areas, shortspine thornyhead is managed with area-specific quota shares in the IFQ program north and south of 34° 27' N. lat. As part of Amendment 20 (i.e., Trawl Rationalization), the Council chose this area-based management of shortspine thornyhead quota because at the time, there were separate area-based Optimum Yields. At the time, the GMT noted that “as data becomes available, area management within the [IFQ] program is expected to evolve and adapt,” ([Agenda Item F.3.f, Supplemental GMT Report, November 2008](#)). At the November 2008 Council meeting, the GMT, GAP, Enforcement Consultants, and Groundfish Allocation Committee were generally in agreement that IFQ management areas should largely be designed to address area-based biological or conservation concerns, recognizing that other factors may play a role on a species-by-species basis.

1.3 Purpose and Need of New Management Measure

This action is needed because shortspine thornyhead allocation reductions in 2025-26 are expected to constrain fisheries, specifically by requiring substantial trip limit reductions to stay within the non-trawl allocation and potentially limiting targeting flexibilities of bottom trawl vessels. The purpose of this action would be to remove the management line at 34° 27' N. lat. to alleviate allocation constraints, improve utilization of the coastwide stock, and protect non-trawl fisheries north of 34° 27' N. lat. from potential collapse. Sub-options under this action to remove the management line are provided below that provide alternative options for allocating harvest across the coast to protect current fishery operations while also considering the distribution of the stock across the West Coast.

1.4 Options

Option 1 (Status Quo): Shortspine thornyhead continues to be managed with area-based ACLs north and south of 34° 27' N. lat.

Option 2: The 34° 27' N. lat. management line is removed for shortspine thornyhead, and coastwide ACLs and allocations are established.

Figure 2 shows the flow of decisions the Council would need to make associated with this action. If the Council chooses Option 2 (i.e., remove the management line), there are three additional decisions the Council will need to make which are 1) 2026 trawl/non-trawl allocation shares, 2) whether to establish a non-trawl ACT north of 34° 27' N. lat., and 3) whether to modify non-trawl trip limits in response to a coastwide allocation. There are two options, including status quo, under each of the three additional decision points. If the Council chooses Option 1 (Status Quo) to keep the management line at 34° 27' N. lat., no other decisions are necessary, and the Council would continue to manage the trawl and non-trawl sectors to area-based allocations north and south of 34° 27' N. lat. with management measures currently outlined in the Council Analytical Document.

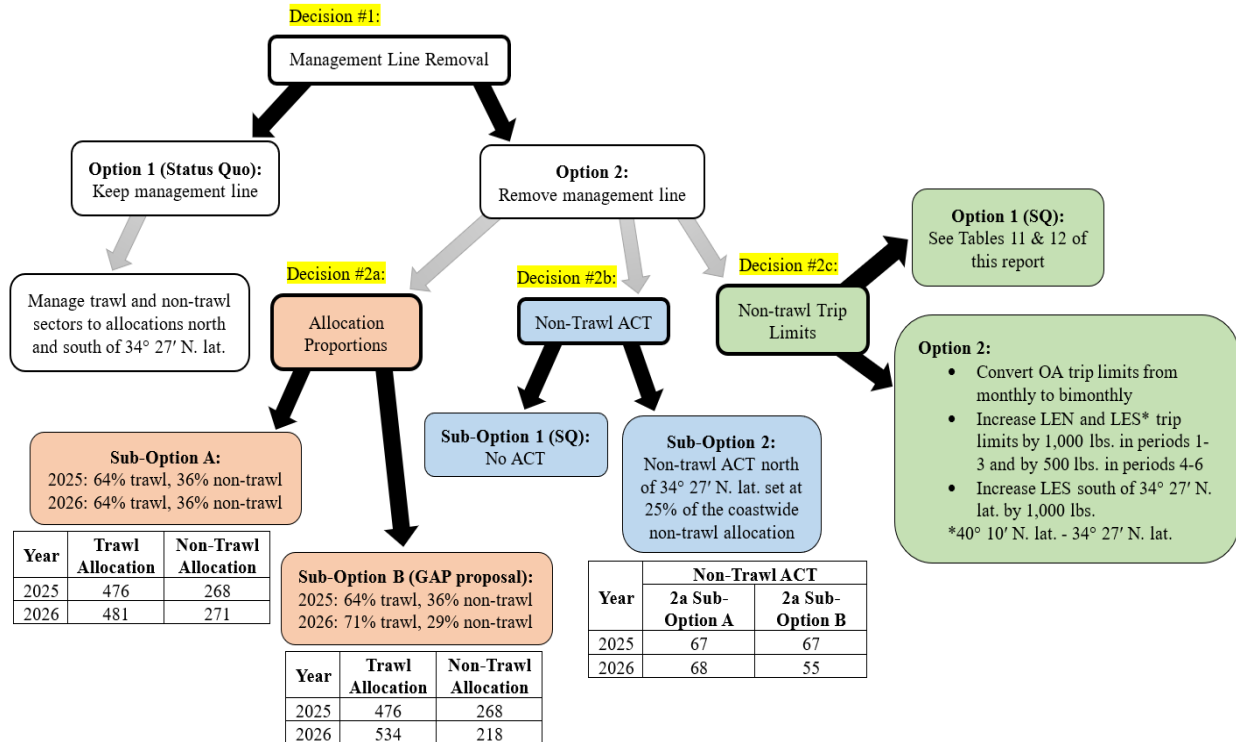


Figure 2. Decision tree for each decision point under this action. Under Decisions #2a and #2b, tables are included to provide numerical 2025-26 coastwide allocations (mt) and northern ACT (mt) under the options proposed, based on the Council’s PPA HCR of P* 0.45. Gray arrows reflect steps from one decision point to the next decision, and black arrows reflect options under a specific decision.

1.5 Description of No Action

If the Council chooses Option 1, which would mean no action is taken to remove the management line, shortspine thornyhead would be managed with status quo area-based management measures north and south of 34° 27' N. lat. Impacts from these status quo management measures are described in detail in the [Council Analytical Document](#) in Chapters 3 through 5, under Alternatives 1 (HCR of P* 0.40) and Alternative 2 (PPA HCR of P* 0.45).

1.6 Option 2: Removal of the Management Line at 34° 27' N. lat.

Removal of the management line (Option 2) would set a coastwide ACL, combine off-the-top deductions and HGs, and coastwide trawl and non-trawl allocations based on proportions calculated using the previous year’s area-combined allocations. This pathway would require

amending the management structure for shortspine thornyhead in the Pacific Coast Groundfish FMP at Section 6.3.2.3 to set a coastwide ACL for shortspine thornyhead (as opposed to two separate area-specific ACLs north and south for the 2025-26 harvest specifications cycle and beyond). Under this proposal, the Council could choose to maintain shortspine thornyhead as an FMP-specified allocation (*i.e.*, the result of the allocation percentage outlined in the math above for the single stock coastwide) or make it a 2-year allocation stock. Although, the Council can revisit both at their discretion.

Using 2024 specifications and allocations as the base year (because the regulations at [50 CFR 660.140\(c\)\(3\)\(vii\)\(A\)\(2\)](#) require that area recombination maintain current quota share [QS] holdings), if the Council chose this pathway, the following process (Figure 3) would need to occur for 2025 to result in a 64 percent trawl: 36 percent non-trawl split. However, the Council has the ability to choose the allocation structure for 2026. Sub-option B was proposed by the GAP in March 2024 ([Agenda Item F.7.a, Supplemental GAP Report 1, March 2024](#)). Their rationale was that the 71 percent trawl and 29 percent non-trawl split is what would have been calculated using the base year of 2025 instead of 2024.

1.7 Allocation decisions sub-options for 2026

Sub-option A: Maintain the 2024 base year allocation scheme of 64 percent trawl and 36 percent non-trawl sharing in 2026 and beyond.

Sub-option B: Change the allocation scheme to 71 percent trawl and 29 percent non-trawl starting in 2026.

Base Year (2024) Calculation for Pathway Two:

The area-based 2024 specifications and allocations are combined at each step to calculate the trawl and non-trawl percentages of the combined 2024 fishery HG, as follows:

Coastwide OFL = **3,162 mt**

Coastwide ABC = **2,030 mt**

Combined ACL: 1,328 mt (north of 34°27' N. lat.) + 702 mt (south of 34°27' N. lat.) = **2,030 mt** (*i.e.*, equal to the ABC)

Combined off-the-top deductions: tribal set-aside (50 mt) + north research catch set-aside (10.48 mt) + north incidental open access set-aside (17.82 mt) + south research catch set-aside (0.71 mt) + south incidental open access set-aside (6 mt) = **85.01 mt**

Combined HG: ACL (2,030 mt) - off-the-top deductions (85.01 mt) = **1,945 mt**

The result would be a combined ACL across both areas with combined off-the-top deductions and a combined HG. Recombination would be done using the 2024 base year HGs for the north and south. Allocation proportions would still be calculated based on separate north and south HGs for this one-time process because allocation percentages flow from the HG (see calculations below). Federal regulations provide a process to follow for area recombination in the trawl sector (see next

section), which the National Marine Fisheries Service (NMFS) would follow when re-issuing trawl QS based on the new coastwide trawl allocation. Options for the non-trawl sector are discussed further below.

1.7.1 Amendment 20 Regulatory Process for Trawl Area Recombination

The “component rule” for Amendment 20 to the Pacific Coast Groundfish FMP ([75 FR 78344](#); January 11, 2011) implemented the regulations at [50 CFR 660.140\(c\)\(3\)\(vii\)\(A\)\(2\)](#), which provide a process to follow when two management areas are combined for an IFQ species. The regulations require that when re-combining two areas, the QS or individual bycatch quota (IBQ) held by individuals in each area will be adjusted proportionally such that: 1) the total QS or IBQ for the area sums to 100 percent, and 2) a person holding QS or IBQ in the newly created area will receive the same amount of total quota pounds (QP) or IBQ pounds as they would if the areas had not been recombined. Given these conditions, the new trawl allocation amount would be adjusted as follows:

Current Combined Trawl Allocation Formulas:

Trawl Allocation North of 34° 27’ N. lat. = Harvest guideline North of 34° 27’ N. lat. x 0.95 = 1,187 mt in 2024

Trawl Allocation South of 34° 27’ N. lat. = 50 mt in 2024

Sum of the Trawl Allocations N. and S. of 34° 27’ N. lat. = Trawl Allocation North of 34° 27’ N. lat. + Trawl Allocation South of 34° 27’ N. lat. = 1,237 mt in 2024

Proposed combined trawl allocation formula for future bienniums: 1,237 mt (2024 combined allocation) / 1,945 mt (sum of 2024 [base year] N. and S. HG) = **64 percent of future coastwide HG**

Table 4 shows the 10-year projected coastwide trawl allocations if the management line were removed (Option 2) compared to the status quo trawl allocations north and south of the management line if the Council chose Option 1. The sum of the status quo north and south allocations are not used in management and are only provided for comparison against the Option 2 coastwide allocation. QS would be proportionally re-calculated by NMFS based on the summed coastwide allocation.

Table 4. Trawl allocations projected for 2025-2034 under Option 1 (SQ) and Option 2 assuming 2025-26 off-the-top deductions in all future years. Under Option 2, the two allocation sub-options are shown. Sub-option A being 64 percent of the coastwide harvest guideline (HG) for all years. Sub-option 2, the coastwide trawl allocation has been calculated as 64 percent of the coastwide harvest guideline (HG) in 2025 and 71 percent for all other years. Also shown is the status quo method of calculating the trawl allocation to the north (N) and south (S) of 34° 27’ N. lat., with the sum of the area allocations for comparison only.

Year	Option 1 (SQ)	Option 2
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	HG N	HG S	SQ Trawl Allocation (mt) N	SQ Trawl Allocation (mt) S	Sum of SQ Trawl allocations N and S	HG (mt) coastwide	Sub-Option A Trawl Allocation (mt) Coastwide	Sub-Option B Trawl Allocation (mt) Coastwide
2025	506	238	481	50	531	744	476	476 a/
2026	512	240	486	50	536	752	481	534
2027	519	243	493	50	543	762	488	541
2028	525	246	499	50	549	771	493	547
2029	531	248	504	50	554	779	499	553
2030	536	251	510	50	560	787	504	559
2031	541	253	514	50	564	794	508	564
2032	546	254	518	50	568	800	512	568
2033	549	256	522	50	572	805	515	572
2034	553	258	526	50	576	811	519	576

a/ Calculated as 64 percent of the coastwide HG using the 2024 base year. All other years use the new allocation of 71 percent of the coastwide HG.

1.7.2 Options for Non-Trawl Adjustments

Although federal regulations provide a process for re-combining management areas for the trawl sector and proportionally adjusting QS holdings if a coastwide trawl allocation is created, this process of recombination for the non-trawl sector is not outlined in federal regulations, therefore the GMT proposes one way this could be accomplished. The non-trawl allocation could be established by the same recombination method as the trawl sector described above:

Current Non-Trawl Allocation Formulas:

Non-Trawl Allocation North of 34° 27' N. lat. = Harvest guideline North of 34° 27' N. lat. x 0.05 = 63 mt in 2024

Non-Trawl Allocation South of 34° 27' N. lat. = Harvest guideline South of 34° 27' N. lat. - 50 mt = 645 mt in 2024

Sum of the Non-Trawl allocations N. and S. of 34° 27' N. lat. = Non-Trawl Allocation North of 34° 27' N. lat. + Non-Trawl Allocation South of 34° 27' N. lat. = 708 mt

Proposed Non-trawl allocation for future bienniums: 708 mt (2024 allocation) / 1,947 mt (sum of 2024 N. and S. HGs) = **36 percent of coastwide HG**

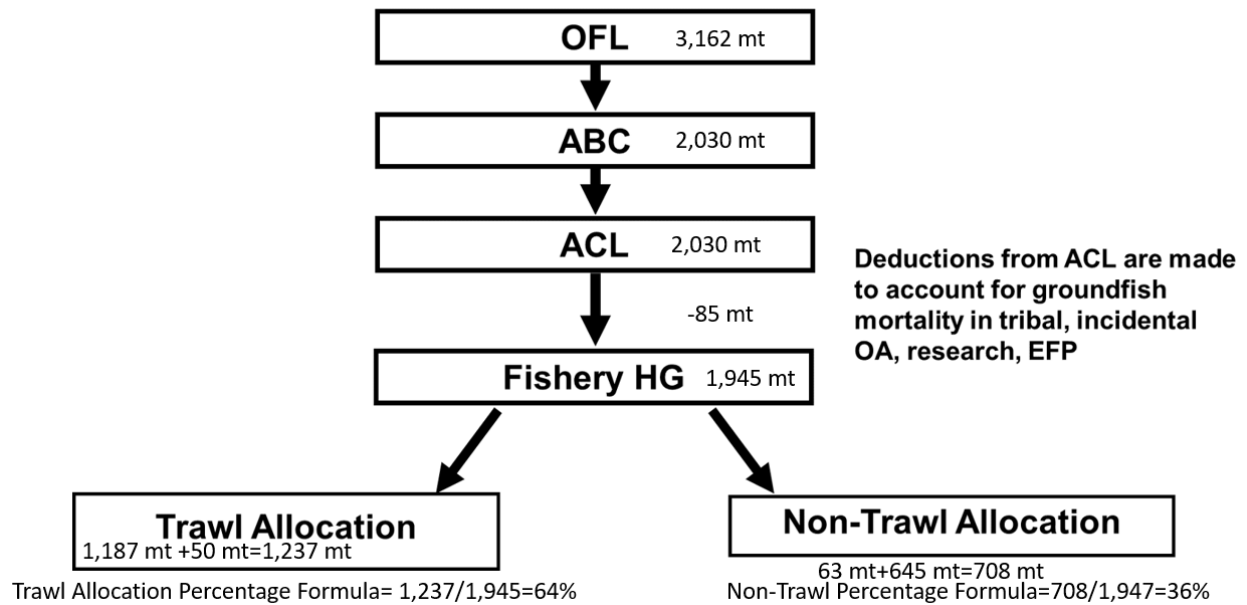


Figure 3. Schematic showing how the trawl/non-trawl allocation calculations are derived using 2024 as the base year.

For 2025, the 2024 base year calculation results in allocation shares of 64 percent trawl and 36 percent non-trawl (Figure 3). Figure 4 shows the values associated with 2025. If the Council were to move forward with Option 2 with the GAP modification in 2026 (Sub-Option B), the 2026 allocation scheme would be an allocative decision separate from the area recombination method, where the future biennial allocations would be calculated as 71 percent trawl and 29 percent non-trawl (Figure 5). Table 5 shows what future non-trawl allocations could be under this allocation structure if off-the-top deductions remain the same as those proposed for 2025-26 (72 mt).

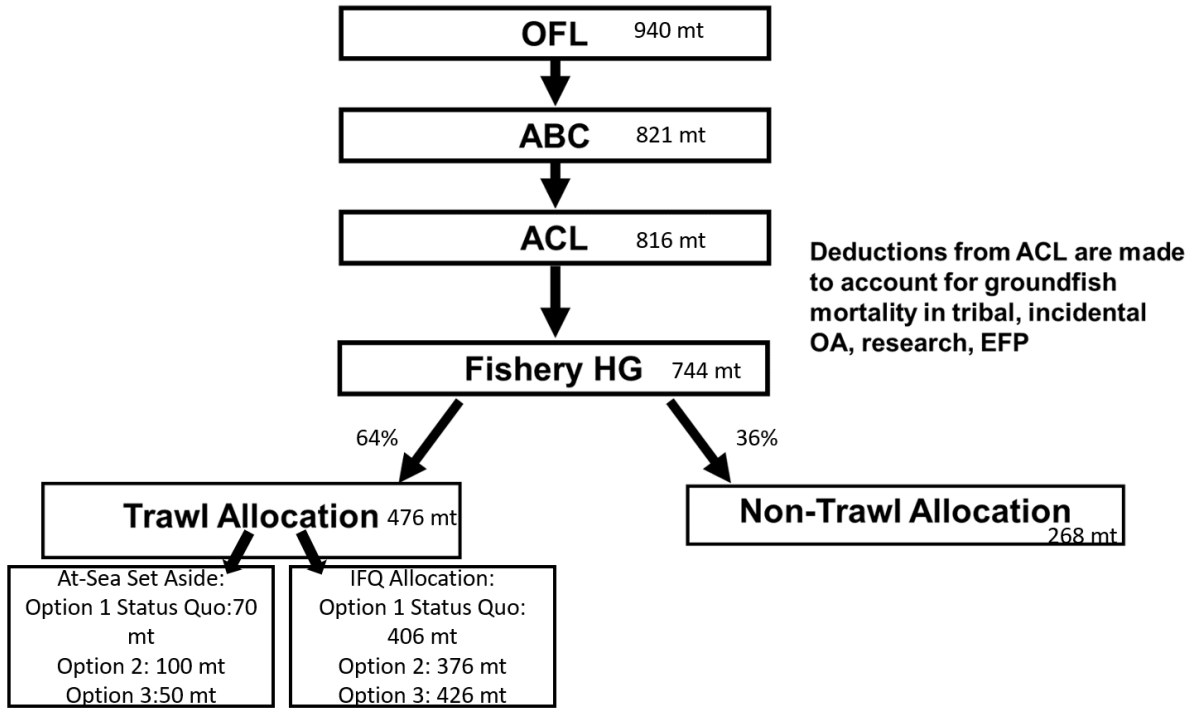


Figure 4. 2025 allocations (mt) based on P* 0.45 and the 2024 base year calculations.

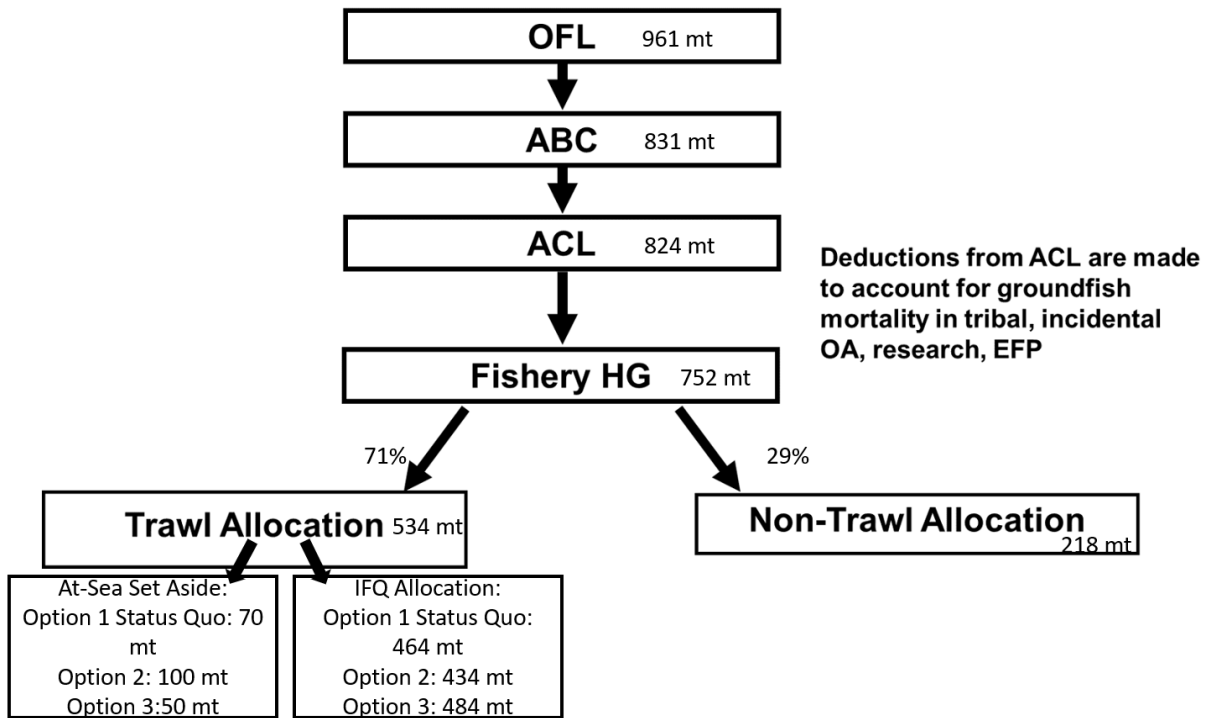


Figure 5. 2026 allocations under allocation Sub-option B (GAP modification) and using P* 0.45.

Table 5. This table represents potential future allocations to the non-trawl fleet by area if the off-the-top deductions remain the same from 2025 onward (72 mt). Under Option 2, the two allocation sub-options are shown. Sub-option A being 36 percent of the coastwide harvest guideline (HG) for all years. Sub-option 2, the coastwide trawl allocation has been calculated as 36 percent of the coastwide harvest guideline (HG) in 2025 and 29 percent for all other years. Potential future trawl allocations are found in Table 4. Also shown is the status quo approach to calculating the non-trawl allocation to the North (N.) and South (S.) of 34° 27' N. lat., with the sum of the area allocations for comparison only.

Year	Option 1 (SQ)					Option 2		
	HG N.	HG S.	Non-Trawl Allocation (mt) N.	Non-Trawl Allocation (mt) S.	Sum of Non-Trawl allocations N. and S.	Coastwide HG (mt)	Sub-option A Coastwide Non-Trawl Allocation (mt)	Sub-option B Coastwide Non-Trawl Allocation (mt)
2025	506	238	25	188	213	744	268	268 a/
2026	512	240	26	190	216	752	271	218
2027	519	243	26	193	219	762	274	221
2028	525	246	26	196	222	771	278	224
2029	531	248	27	198	225	779	280	226
2030	536	251	27	201	227	787	283	228
2031	541	253	27	203	230	794	286	230
2032	546	254	27	204	232	800	288	232
2033	549	256	27	206	233	805	290	233
2034	553	258	28	208	235	811	292	235

a/ Calculated as 36 percent of the coastwide HG using the 2024 base year. All other years use the new allocation of 29 percent of the coastwide HG.

The GAP recommended analyzing “Option 2 with the establishment of non-trawl ACTs and/or trip limits to protect non-trawl fishermen south of 34° 27' N. lat.” Therefore, the GMT proposes the following ACT sub-options under Option 2 for the Council’s consideration. Sub-option 2 is designed to distribute non-trawl effort based on the biomass if the Council removes the management line. The GMT proposes adopting an ACT for north of 34° 27' N. lat. of 25 percent of the coastwide non-trawl allocation. The Council directed the GMT to analyze the GAP modification (sub-option 2 below), therefore, the GMT only analyzed sub-area trip limits (see non-trawl impact section) and not the coastwide trip limit option outlined in the scoping document in March 2023.

Sub-option 1: Coastwide non-trawl allocation set LEFG and OA trip limits according to the coastwide non-trawl allocation with no ACT.

Sub-option 2: *Create a non-trawl ACT north of 34° 27' N. lat.* that is set at 25 percent of the coastwide non-trawl allocation.

An ACT of 25 percent was analyzed because it is expected to ensure the prosecution of the targeted non-trawl sector north of 34° 27' N. lat. since the ACT is greater than the northern non-trawl sector's most recent five-year average mortality of 36 mt (ACT = 67 mt in 2025, 55 mt in 2026, if sub-option B is chosen) while allowing the southern sector to continue to prosecute the southern portion of shortspine thornyhead. The GMT proposes that if 25 percent of the non-trawl allocation is projected to be reached or exceeded by the north and the south has exceeded 50 percent of the non-trawl allocation, the GMT will alert the Council and evaluate the need for trip limit decreases in the north for Council consideration. If these criteria are not met, the GMT will continue to monitor and bring to the Council's attention when there is a risk to the ACL. *The GMT requests feedback on this proposal from the GAP and the Council.*

1.8 Impact Analysis

1.8.1 Biological/Environmental Impacts

The non-trawl fisheries operate from the U.S./Canada border to the U.S./Mexico border, but there are substantially different markets throughout that area. From 40° 10' N. lat. to the Mexico border there are more market opportunities for shortspine thornyhead landed live which leads to a higher price per pound and a more targeted fishery within the limited entry non-trawl sector (see Table 30 in [Council Analytical Document](#)). This is distinctly different from the trawl sector, which is closed to bottom trawl fishing in most areas south of 34° 27' N. lat. as well as processing restrictions for the at-sea fishery south of 42° N. lat. Removals from the trawl sector have been entirely from the area north of 34° 27' N. lat. since 2017. The removal of the management line at 34° 27' N. lat. (Option 2) would potentially concentrate fishing mortality in the north which could exceed the estimated proportional biomass north, based on the current five-year rolling average biomass estimates in each area based on data from the WCGBT survey, (70 percent) and south (30 percent) of the management line (Table 6).

Shortspine thornyhead is well observed by the WCGBT survey, which gives us more confidence in the proportional biomass. However, if there is seasonal latitudinal movement throughout the year, the proportion of biomass by area observed by the fishery may differ from the survey estimates, whereas if there is seasonal seaward and shoreward movement, the survey is more likely to provide a more accurate estimate. Additionally, the northern estimate of shortspine thornyhead has increased roughly 5 percent since 2003 ([Table 1 of Agenda Item E.5.a, Supplemental GMT Report 1, November 2023](#)) and may continue to increase in the future, but to what extent and how quickly is unknown. The potential for this should be considered when establishing an allocation scheme that is based on proportional biomass estimates.

With the removal of the management line, future mortality is expected to be higher for the portion of the stock north of 34° 27' N. lat., compared to if the management line remains, given the distribution of the trawl fishery off the coast and the ability to access a coastwide allocation for the non-trawl fishery. Hence, under the Option 2 sub-options, effort by area may depart from, and exceed, the current estimates of shortspine thornyhead biomass north of 34° 27' N. lat. to varying degrees. However, it is unclear what potential risk this may pose to the coastwide stock. Specifically, if the Council chooses Option 2, allocation Sub-option A, and ACT Sub-option 2, up

to 73 percent of coastwide mortality could occur north of 34° 27' N. lat., whereas if the Council chooses Option 2, allocation Sub-option B, and ACT Sub-option 2, northern mortality could be up to 78 percent (Table 6). If the Council does not set an ACT but still removes the management line, there is a possibility that all mortality could occur north of 34° 27' N. lat.

Based on this, the GMT poses the following questions for consideration that may inform the Council's risk tolerance to certain sub-options under Option 2 (management line removal) of this action. The team is unclear whether these questions can be definitively answered before final action is taken in June, but the team agreed that they are important to ask when considering how estimates of proportional biomass north and south of 34° 27' N. lat. informs both the allocation and ACT decisions.

- *If mortality in the north exceeds the proportional biomass, what risk does this pose to the stock? Additionally, what is the risk to the stock if all mortality occurs north of 34° 27' N. lat.?*
- *Is there a meaningful difference between northern mortality of 73 percent and 78 percent of coastwide mortality when northern biomass is estimated to be an average of 70.6 percent of the coastwide total from 2017 to 2022?*

If the management line is removed, trawl activity in the south is not expected to increase beyond potentially minimal amounts due to status quo bottom trawl area closures (e.g., bottom trawl Essential Fish Habitat Conservation Areas) south of the management line that would continue to limit bottom trawl opportunities in 2025-26. While there has been no IFQ catch of shortspine thornyhead south of 34° 27' N. lat. since 2017, the Cowcod Conservation Areas (CCAs) off California were recently opened to fixed gear, which includes gear switchers in the IFQ fishery. Whether gear switching activity will increase south of 34° 27' N. lat. as a result of this is unclear. The at-sea fishery, which uses midwater trawl gear, has caught as much as 244 mt of shortspine thornyhead in a single year (2022), but the at-sea fishery is prohibited from processing south of 42° N. lat.

ACT Modification

ACT Sub-option 2, which sets an ACT north of 34° 27' N. lat. at 25 percent of the coastwide non-trawl allocation, slows the potential for concentration of effort in the north by as much as 19 percent which could prevent mortality from surpassing the estimated proportional biomass (Table 6). As discussed in detail below, there has not been any bottom trawl effort south of 34° 27' N. lat. for many years, and therefore, all trawl mortality comes from the north of 34° 27' N. lat. A non-trawl ACT north of 34° 27' N. lat. is a tool that could be implemented to align effort to estimated proportional biomass while still meeting coastwide harvest targets. Without the ACT, and if there is an average level of fishing in the south, 92 percent of shortspine thornyhead mortality is likely to occur north of 34° 27' N. lat.

Allocation Modification

The GAP modification to reallocate the trawl/non-trawl allocations in 2026 would increase the degree to which fishing mortality could surpass the current estimated northern biomass by increasing the potential northern mortality from 73 percent to 78 percent of coastwide mortality (Table 6), assuming the implementation of a non-trawl ACT in the north and that it is not exceeded. It is worth noting, however, that these percent estimates assume 100 percent of the trawl allocation

will be attained. Only very few IFQ species allocations are over 90 percent attained and those are typically high-volume target species such as petrale sole and sablefish. Due to the nature of the tradable quota market, there is generally some underutilization of most IFQ species, even with lower allocations. Additionally, vessels in both the at-sea and IFQ fisheries are likely to avoid shortspine thornyhead more when the set-aside and quota availability become a constraint. ACT Sub-option 2 with allocation Sub-option A better aligns with the estimated proportional biomass by area by maintaining the possible percent of mortality north at 73 percent (Table 6). This highlights a bigger issue with all of our coastwide stocks, many of which do not have uniform effort throughout the whole range. Management of all groundfish stocks might benefit from a deeper discussion about using area-based biomass estimates to inform the spatial allocation of fishery effort.

Table 6. Proposed non-trawl ACT of 25 percent north of 34° 27' N. lat. Shown are the coastwide harvest guideline (HG) and the trawl/non-trawl allocation under each sub-option. The possible northern mortality in mt is based on an assumption that 100 percent of the trawl allocation and 100 percent of the non-trawl ACT is attained, but under Sub-option 1, 64 mt is assumed to be harvested by the non-trawl fishery south of 34° 27' N. lat. based on their recent five-year average mortality. The estimated percent of mortality north is the possible northern mortality divided by the coastwide HG. Across the last 5 years WCGBT survey observed approximately 70 percent of shortspine thornyhead biomass north of 34° 27' N. lat.

Sub-option	Year	Coastwide HG (mt)	Coastwide Trawl Allocation (mt)	Coastwide Non-Trawl Allocation (mt)	Proposed North Non-Trawl ACT 25% (mt)	Possible Northern Mortality (mt) a/	Estimated Percent of Mortality North
Sub-option 1: Coastwide Non-trawl Allocation	2025	744	476	268	--	680 a/	91%
	2026	752	481	271	--	688 a/	91%
	2027	762	488	274	--	698 a/	92%
	2028	771	493	278	--	707 a/	92%
Sub-option 2: ACT with allocation Sub-option A	2025	744	476	268	67	543 b/	73%
	2026	752	481	271	68	549 b/	73%
	2027	762	488	274	69	556 b/	73%
	2028	771	493	278	69	563 b/	73%
Sub-option 2: ACT with GAP modification Sub-option B	2025	744	476	268	67	543 b/	73%
	2026	752	534	218	55	588 b/	78%
	2027	762	541	221	55	596 b/	78%
	2028	771	547	224	56	603 b/	78%

a/ Assumes 100 percent attainment of the trawl allocation added to the coastwide non-trawl allocation minus the 64 mt five-year average mortality from the fishery south of 34° 27' N. lat.

b/ North portion of the CW allocation assumes 100 percent attainment of the trawl allocation added to the north non-trawl ACT. The non-trawl ACT could be exceeded by some amount, which could result in possible mortality that is higher than the amount shown.

1.8.2 Socioeconomic Impacts

The removal of the management line at 34° 27' N. lat. under Option 2 would allow the targeted non-trawl fishery in the north to be prosecuted similarly to the average of the last few years, but not necessarily expanded (with the GAP modification of ACT sub-option 2). The removal of the management line would allow for the northern and southern non-trawl fisheries to potentially harvest the same levels as in 2023 (if not more). If conditions remained similar to 2023, there could be a potential of \$666,407 of ex-vessel revenue south of 34° 27' N. lat. from landings of 27.3 mt and a potential of \$493,571 in ex-vessel revenue north of 34° 27' N. lat. from landings of 27.9 mt.

Under any of the management options for 2025-26 (including status quo), there is the possibility that at least some vessels in the IFQ fishery will incur economic losses due to allocation reductions. The threshold at which certain allocation levels will impact IFQ vessels is unclear. If the management line is removed, only allocation Sub-option B would result in substantive¹ socioeconomic impacts that are different from status quo impacts. The additional 53 mt to the IFQ fishery under Sub-option B in 2026, compared to status quo, could provide bottom trawl vessels with greater flexibility in their Dover sole, thornyhead, and sablefish complex (DTS) targeting strategy and provide additional opportunity to target Dover sole, which is frequently caught with shortspine thornyhead. While greater volumes of Dover sole are typically landed in a single trip, resulting in greater overall ex-vessel revenue contribution than shortspine thornyhead, shortspine thornyhead tends to fetch a slightly higher price per pound than Dover sole in most years and therefore is still a highly marketable species itself.

Socioeconomic impacts to both the trawl and non-trawl fisheries are expected based on recombination and subsequent allocative decisions. More details of those impacts will be provided in the June briefing book.

1.9 Management Impacts

1.9.1 Trawl Impacts

Option 2 to remove the management line at 34° 27' N. lat. with the allocation Sub-Option A, which sets the trawl allocation at 64 percent of the coastwide HG, would result in coastwide shortspine thornyhead trawl allocations of 476 mt and 481 mt in 2025 and 2026, respectively (Table 7). Compared to keeping the management line in place (Option 1), those allocations would be 5 mt less each year than the 2025-26 trawl allocations north of 34° 27' N. lat. An at-sea set-aside is deducted from the trawl allocation to account for mortality in the at-sea fishery. The at-sea set-aside options for shortspine thornyhead are 70 mt (Option 1, status quo), 100 mt (Option 2), and 50 mt (Option 3). Under Option 2, management of the at-sea fishery would remain unchanged except that the set-aside amount would be deducted from a coastwide trawl allocation rather than the allocation north of 34° 27' N. lat. The at-sea fishery is prohibited from processing south of 42° N. lat., so effort distribution is not expected to change. Analysis of the at-sea set-aside options for

¹ All sub-options under Option 2 result in trawl and IFQ allocations that are 5 mt lower in 2025 than status quo, and allocation Sub-option A results in trawl and IFQ allocations that are 5 mt lower in 2026 as well.

shortspine thornyhead can be found in Chapter 3, Section 2.2.3 of the Council Analytical Document ([Agenda Item F.5, Attachment 2, April 2024](#)).

After removing the at-sea set-aside, the remainder of the trawl allocation is allocated to the IFQ program for which a quota system is used to monitor catches and keep mortality within the allocation. Based on the Council’s PPA HCR of P* 0.45 (Alternative 2), removing the management line and using the area recombination methods described previously would result in coastwide IFQ allocations ranging from 376 mt to 426 mt in 2025 and 381 mt to 484 mt in 2026, depending on the at-sea set-aside option chosen as well as the allocation sub-option under this action (Table 7). Compared to the status quo shortspine thornyhead IFQ allocation north of 34° 27’ N. lat. in 2025-26, the coastwide IFQ allocation would be 5 mt lower in both 2025 and 2026 if the trawl allocation is set at 64 percent of the coastwide HG both years (Sub-Option A). If the trawl proportion is increased to 71 percent in 2026, as proposed by the GAP (Sub-Option B), the 2026 IFQ allocation would be 48 mt higher in 2026 than the status quo north allocation.

Table 7. Shortspine thornyhead IFQ allocations in 2025-26 with (Option 2) and without (Option 1 SQ) management line removal across the two allocation sub-options and all three at-sea set-aside options under consideration. All IFQ allocations are based on the Alternative 2 HCR of P* 0.45.

Shortspine Thornyhead Management Line Option	Year	Coastwide HG (mt)	Coastwide Trawl Allocation (mt)	IFQ Allocation (mt)			Difference from SQ (mt)
				At-Sea Set-Aside Option 1 SQ (70 mt)	At-Sea Set-Aside Option 2 (100 mt)	At-Sea Set-Aside Option 3 (50 mt)	
Option 1 (Status Quo) a/	2025	N/A	N/A	411	381	431	
	2026	N/A	N/A	416	386	436	
Option 2, Sub-Option A (64% trawl allocation in 2026)	2025	744	476	406	376	426	-5
	2026	752	481	411	381	431	-5
Option 2, Sub-Option B (71% trawl allocation in 2026)	2025	744	476	406	376	426	-5
	2026	752	534	464	434	484	+48

a/ The status quo allocations shown are only for shortspine thornyhead north of 34° 27’ N. lat. If the management line is kept, the status quo allocation south of 34° 27’ N. lat. would be the fixed 50 mt.

IFQ mortality of shortspine thornyhead north of 34° 27’ N. lat. averaged 707 mt annually prior to 2020 and 333 mt annually since 2020 (Table 8), and attainment has generally been declining since the start of the IFQ program. Although mortality has been below 370 mt since 2020, status quo reductions to the shortspine thornyhead north IFQ allocation in 2025-26 could restrict the ability of bottom trawl vessels to flexibly target either Dover sole or sablefish based on market demand

and could, overall, increase the price of shortspine thornyhead quota pounds in the north as demand increases (See Chapter 4, Section 2.2.6 of the Council Analytical Document [[Agenda Item F.5, Attachment 2, April 2024](#)]). Additionally, higher sablefish allocations in 2025-26 could increase shortspine thornyhead catches, but to what extent is unknown, as data analysis and industry communication suggests that bottom trawl vessels are generally able to avoid shortspine thornyhead while targeting sablefish (Appendix D). Also, the co-occurrence of sablefish and shortspine thornyhead varies by vessel.

The allocation scheme proposed by the GAP (Sub-option B) would calculate the coastwide trawl allocation as 64 percent of the coastwide HG in 2025 and 71 percent of the coastwide HG in 2026. Using 71 percent to calculate the coastwide trawl allocation in 2026, instead of 64 percent, results in an additional 53 mt that could be used by trawlers that are currently operating north of 34° 27' N. lat. That additional 53 mt would likely give bottom trawlers some additional flexibility to set DTS targeting strategies based on market demand. Sablefish prices have been at record lows in recent years, and some trawl buyers have invested in Dover sole infrastructure, both of which could incentivize prioritizing Dover sole. Given that 95 percent of IFQ catch of shortspine thornyhead is by bottom trawlers and 96 percent of bottom trawl catch is caught with Dover sole on the same haul, the additional quota in 2026 under Sub-option B could be used to target additional Dover sole. The rate of Dover sole to shortspine thornyhead per haul varies widely for each vessel and across vessels in the fleet, so it would be complicated to estimate exactly how much additional Dover sole could be caught. However, fleetwide, generally 10-14 mt of Dover sole are caught per 1 mt of shortspine thornyhead every year and total catches of the two species tend to fluctuate in unison year-to-year.

Historically, there has been very little to no bottom trawl fishing south of 34° 27' N. lat. in the IFQ fishery, and therefore, the 50 mt allocation to the south has been underutilized (Table 8). 2012 is the only year in which IFQ trawl vessels landed any shortspine thornyhead south of 34° 27' N. lat. (0.6 mt). Fixed gear vessels in the IFQ fishery (i.e., “gear switchers”) have landed the remainder of shortspine thornyhead south; however, there has been zero total IFQ mortality of shortspine thornyhead south since 2017.

Table 8. Historical shortspine thornyhead mortality, allocation, and attainment north and south of 34° 27' N. lat. in the IFQ fishery, 2011-2024. Mortality Data Source: GEMM (2011-2022) and PacFIN (2023)

Year	North of 34° 27' N. lat.			South of 34° 27' N. lat.		
	IFQ Mortality (mt)	IFQ Allocation (mt)	IFQ Attainment	IFQ Mortality (mt)	IFQ Allocation (mt)	IFQ Attainment
2011	719	1,452	50%	8.4	50	17%
2012	722	1,435	50%	1.0	50	2%
2013	841	1,407	60%	3.7	50	7%
2014	688	1,392	49%	2.6	50	5%
2015	726	1,601	45%	0.7	50	1%

Year	North of 34° 27' N. lat.			South of 34° 27' N. lat.		
	IFQ Mortality (mt)	IFQ Allocation (mt)	IFQ Attainment	IFQ Mortality (mt)	IFQ Allocation (mt)	IFQ Attainment
2016	746	1,583	47%	1.6	50	3%
2017	743	1,571	47%	-	50	0%
2018	628	1,557	40%	-	50	0%
2019	551	1,537	36%	-	50	0%
2020	365	1,524	24%	-	50	0%
2021	327	1,282	25%	-	50	0%
2022	369	1,249	30%	-	50	0%
2023	273	1,217	22%	-	50	0%
2024		1,187			50	

There will likely be impacts to the value of shortspine thornyhead QS (long-term) and QPs (short-term) from removing the management line. QS holders of southern shortspine thornyhead are likely to see economic gains, because with the management line removed and coastwide QS, they would be able to sell QPs to willing buyers in the north where they are likely to be used. Impacts to QS holders of northern shortspine thornyhead are more complicated to predict and will likely be driven by several factors, including short-term QP price changes with changes in demand and the long-term health of the stock which impacts the profitability of investing in QS. Under status quo 2025-26 management measures, northern shortspine thornyhead allocation reductions are likely to increase demand for northern QPs, thereby increasing the price of QPs on the market. If the management line is removed, the additional 53 mt under allocation sub-Option B may lessen the degree to which QP prices increase, making it easier for vessels to acquire QPs to cover catches. However, the degree to which that additional quota will impact prices is unknown.

1.9.2 Non-Trawl Impacts

Analysis below assumes the Council chooses Option 2, allocation sub-option B and ACT sub-option 2. The removal of the management line at 34° 27' N. lat. (Option 2) and subsequent change in allocation in 2026 (sub-option B) would result in coastwide non-trawl allocations of 268 mt and 218 mt in 2025 and 2026, respectively. This coastwide non-trawl allocation would give the non-trawl sector the ability to prosecute both the 2018-2022 average mortalities of the northern and southern fisheries (42 mt and 64 mt, respectively seen in Table 2 from Agenda Item F.7.a, Supplemental GMT Report 3, March 2024, Table 9) with additional room for potential growth in the southern fishery.

If the Council moved forward with sub-option 2 (ACT), there would be a mechanism to slow the concentration of effort in the northern non-trawl fishery. With the removal of the CCAs, there are now 4,600 square miles of newly opened fishing grounds in the south, which historically have been productive shortspine thornyhead grounds. It is anticipated that the southern fishery will have

higher harvest in the next biennium because of this newly opened area. However, given that shortspine thornyhead is a coastwide stock, if the southern non-trawl fishery was not catching the remainder of the allocation, the north could harvest more than the ACT based on the coastwide ACL. The GMT has outlined some considerations under the biological impacts section of this report as to the conservation risk to the stock based on this potential concentration of fishing mortality north of 34° 27' N. lat.

The purpose and need of this management measure is to prevent the collapse of the non-trawl shortspine thornyhead targeted fishery north of 34° 27' N. lat. An ACT is a tool that could be used as a cautious approach when removing the management line to maintain historic fishing opportunities south of 34° 27' N. lat.

Table 9. Shortspine thornyhead mortality, allocation, and attainment north and south of 34° 27' N. lat. in the non-trawl sector, 2011-2024. Mortality Data Source: GEMM (2011-2022) and PacFIN (2023)

Year	North of 34° 27' N. lat.			South of 34° 27' N. lat.		
	Mortality (mt)	Allocation (mt)	Attainment	Mortality (mt)	Allocation (mt)	Attainment
2011	71	76	93%	183	313	58%
2012	65	76	86%	128	309	41%
2013	61	74	83%	109	305	36%
2014	53	73	73%	93	301	31%
2015	48	84	57%	79	831	9%
2016	49	83	59%	112	851	13%
2017	65	83	78%	146	814	18%
2018	67	82	82%	111	806	14%
2019	50	81	62%	83	839	10%
2020	34	80	42%	52	832	6%
2021	35	68	51%	41	749	5%
2022	27	66	41%	33	680	5%
2023	33	64	51%	31	663	5%
2024		62			645	

If the Council removes the management line (Option 2) and chooses ACT sub-option 2, there would be a coastwide ACL and trip limits would not need to be reduced like under status quo. In 2023, there were 69 LE vessels and 5 OA vessels that participated in the fishery north of 34° 27' N. lat., however, few were reaching their trip limits. The GMT has analyzed trip limit Option 2 which changes the OA trip limits from monthly to bimonthly and raises the trip limit for LE to 3,000 lbs. per bimonthly period (Table 10) north of 34° 27' N. lat. All trip limit options in the north

keep the projected mortality under the proposed ACT for 2026 if allocation Sub-option B is chosen (55 mt). The GMT projections do not take into account new entrants into the fishery that might choose to target shortspine thornyhead for the first time, nor do they account for any changes to how these fisheries will operate in relation to the closures to mitigate quillback rockfish impacts in California.

Table 10. Shortspine thornyhead trip limit options north of 34° 27' N. lat. with a P* of 0.45. This is compared to the 2026 (lower) north of 34° 27' ACT N. lat. of 55 mt (see Table 6).

Option	Sector	Trip Limit	Landing Projection (mt)	Est. Total Landings (mt)	Est. Discard Mortality Average: 2018-2022 Values (mt)	Est. Total Mortality (mt)	% of the 2026 N. of 34° 27' ACT (mt)
Status Quo: Option 1	OAN	50 lbs./ month for all periods	0.8	31	<i>Average: 4.0</i>	35.0	64%
	OAS: 40° 10' N. lat. - 34° 27' N. lat.	50 lbs./month for all periods	2.3				
	LEN	2,000 lbs./2 months for periods 1-3	7.2				
		2,500 lbs./2 months for periods 4-6					
	LES: 40° 10' N. lat. - 34° 27' N. lat.	2,000 lbs./2 months for periods 1-3	20.7				
		2,500 lbs./2 months for periods 4-6					
Option 2	OAN	100 lbs./2 months for all periods	0.8	32	<i>Average: 4.0</i>	36.0	66%
	OAS: 40° 10' N. lat. - 34° 27' N. lat.	100 lbs./2 months for all periods	2.3				
	LEN	3,000 lbs./ 2 months for all periods	7.3				
	LES: 40° 10' N. lat. - 34° 27' N. lat.	3,000 lbs./ 2 months for all periods	21.3				

The majority of fishing activity south of 34° 27' N. lat. occurred by LE fishermen (15 vessels participated in 2023 versus two that participated from the OA sector), so an OA trip limit model was not run. In 2024, the CCA reopened per Amendment 32, which resulted in approximately 4,600 square miles of fishing opportunity south of 34° 27' N. lat. that have not been fished in over 20 years where shortspine thornyhead are known to exist. Reopening these areas may provide additional opportunity in the next biennium and, given the actions taken to incentivize an offshore commercial fixed gear fishery off California, paired with the much higher price per pound of live fish, will likely result in increased shortspine thornyhead retention; however, the fishery is expected to remain within harvest limits. Option 2 increases the trip limit for LE fishing south of 34° 27' N. lat. in order to attain more of the non-trawl allocation, which has a limited impact on the projection since it is based on status quo effort (Table 11).

Table 11. Limited entry shortspine thornyhead south of 34° 27' N. lat. (LES) trip limit options.

Option	Sector	Trip Limit	Landing Projection (mt)	Est. Discard Mortality Average: 2018-2022 Values (mt)	Est. Total Mortality Range (mt)
Option 1 Status Quo:	LES: South of 34° 27' N. lat.	3,000 lbs./2 months for all periods	28.0	1.6	29.6
Option 2	LES: South of 34° 27' N. lat.	4,000 lbs./2 months for all periods	30.4	1.6	32

During the overwinter analysis, when all trip limits were being investigated, the GMT discovered that the OA fishery south of 34° 27' N. lat. has a daily limit. This daily limit is intended to limit effort into the fishery, especially since the bi-monthly limit is high. Therefore, the GMT does not see a reason to remove the daily limit south of 34° 27' N. lat. at this time.

Open Access Shortspine Thornyhead South of 34° 27' N. lat.:

- **Option 1 (Status Quo):**
 - Shortspine thornyhead and longspine thornyhead 100 lbs. per day, no more than 1,000 lbs. per 2 months.

The difference in effort between the north and the south of 34° 27' N. lat. showcases the importance of having sub-area trip limits that can be used as a mechanism to control catch in either area.