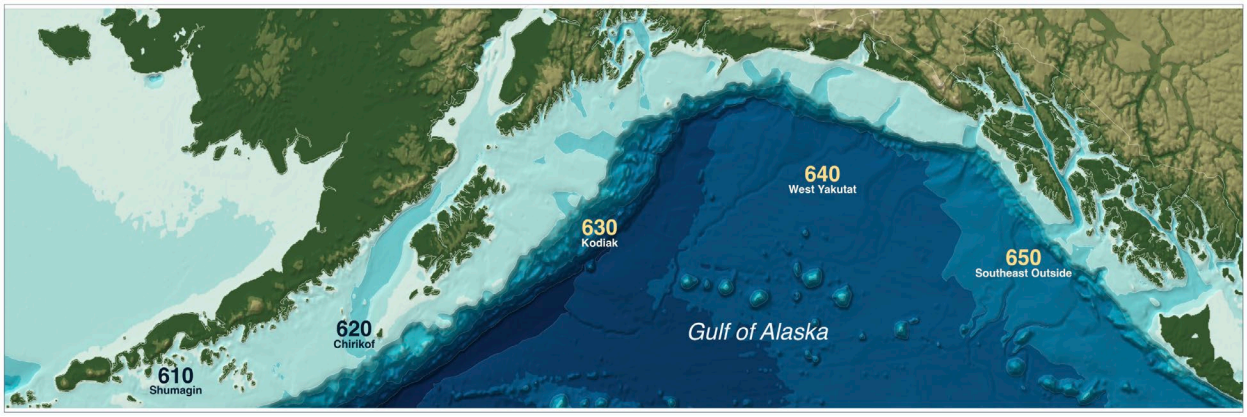
STOCK ASSESSMENT AND FISHERY EVALUATION REPORT FOR THE GROUNDFISH RESOURCES OF THE GULF OF ALASKA

Compiled by

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Summary

The *National Standard Guidelines for Fishery Management Plans* published by the National Marine Fisheries Service (NMFS) require that a stock assessment and fishery evaluation (SAFE) report be prepared and reviewed annually for each fishery management plan (FMP). The SAFE reports are intended to summarize the best available scientific information concerning the past, present, and possible future condition of the stocks and fisheries under federal management. The FMPs for the groundfish fisheries managed by the North Pacific Fishery Management Council (Council) require that drafts of the SAFE reports be produced each year in time for the December Council meetings.

The SAFE report for the Gulf of Alaska (GOA) groundfish fisheries is compiled by the Plan Team for the GOA FMP from chapters contributed by scientists at NMFS Alaska Fisheries Science Center (AFSC) and the Alaska Department of Fish and Game (ADF&G). The stock assessment section includes recommended acceptable biological catch (ABC) levels for each stock and stock complex managed under the FMP. The ABC recommendations, together with social and economic factors, are considered by the Council in determining total allowable catches (TACs) and other management strategies for the fisheries.

The GOA Groundfish Plan Team met at the Alaska Fisheries Science Center in Seattle on November 16-20, 2026, to review the status of stocks that are managed under the FMP. This year, several stocks were reviewed by the Plan Team in September, including all stocks with harvest projections. The Plan Team review was based on presentations by ADF&G and NMFS AFSC scientists with opportunity for public comment and input. Members of the Plan Team who compiled the SAFE report were James Ianelli (co-chair), Chris Lunsford (co-chair), Sara Cleaver (coordinator), Craig Faunce, Pete Hulson, Aaron Lambert, Nat Nichols, Paul Spencer, Abby Jahn, Sophia Wasserman, and Ben Williams.

Management Areas and Species

The GOA management area lies within the 200-mile U.S. Exclusive Economic Zone (EEZ) of the United States (Fig. 1). Formerly, five categories of finfishes and invertebrates were designated for management purposes: target species, other species, prohibited species, forage fish species and non-specified species. Effective in 2011, these categories were revised in Amendments 96 and 87 to the FMPs for Groundfish of the Bering Sea/Aleutian Islands (BSAI) and GOA, respectively. This action was necessary to comply with requirements of the Magnuson-Stevens Fishery Conservation and Management Act (MSFMCA) to prevent overfishing, achieve optimum yield, and to comply with statutory requirements for annual catch limits (ACLs) and accountability measures (AMs). Species and species groups must be identified "in the fishery" for which ACLs and AMs are required. An ecosystem component (EC) category is also included in the FMPs for species and species groups that are not:

1) targeted for harvest
2) likely to become overfished or subjected to overfishing, and
3) generally retained for sale or personal use.

The effects of the 2011 action amended the GOA and BSAI groundfish FMPs to

1) identify and manage target groundfish stocks "in the fishery";
2) eliminate the "other species" category and manage (GOA) squids, (BSAI and GOA) sculpins; (BSAI and GOA) sharks, and (BSAI and GOA) octopuses separately "in the fishery";
3) manage prohibited species and forage fish species in the ecosystem component category; and
4) remove the non-specified species outside of the FMPs.

Amendments 91/100 added grenadiers to the GOA and BSAI FMPs as an Ecosystem Component in 2014. Amendments 106/117 moved squid to the Ecosystem Component category of the FMP in GOA and BSAI FMPs in 2018. Amendments 110/121 moved sculpins to the Ecosystem Component category of the FMPs in 2020.

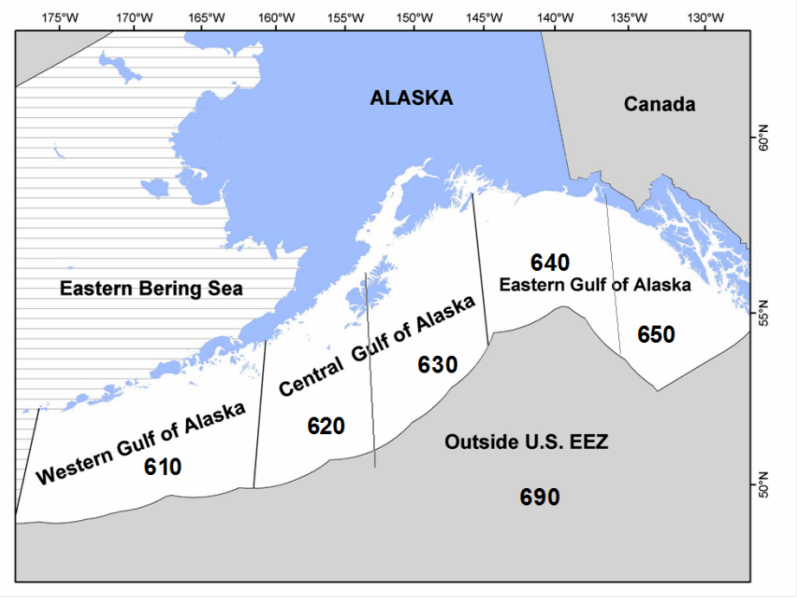


Figure 1. Gulf of Alaska statistical and reporting areas.

Species may be split or combined within the "target species" category according to procedures set forth in the FMP. The three categories of finfishes and invertebrates that have been designated for management purposes are listed below.

In the Fishery:
Target species – are those species that support a single species or mixed species target fishery, are commercially important, and for which a sufficient database exists that allows each to be managed on its own biological merits. Accordingly, a specific total allowable catch (TAC) is established annually for each target species or species assemblage. Catch of each species must be recorded and reported. This category includes walleye pollock, Pacific cod, sablefish, deep water flatfish, shallow water flatfish, rex sole, flathead sole, arrowtooth flounder, Pacific ocean perch, shortraker rockfish, rougheye/blackspotted rockfish, northern rockfish, "other" rockfish, dusky rockfish, demersal shelf rockfish, thornyhead rockfish, Atka mackerel, sharks, octopus, big skates, longnose skates, and other skates.

Ecosystem Component:

1) Prohibited Species–are those species and species groups the catch of which must be avoided while fishing for groundfish, and which must be immediately returned to sea with a minimum of injury except when their retention is authorized by other applicable law. Groundfish species and species groups under the FMP for which the quotas have been achieved shall be treated in the same manner as prohibited species.
2) Forage fish species– are those species listed in the table below, which are a critical food source for many marine mammal, seabird and fish species. The forage fish species category is established to allow for the management of these species in a manner that prevents the development of a commercial directed fishery for forage fish. Management measures for this species category will be specified in regulations. These may include measures prohibiting directed fishing, limiting allowable bycatch retention, or limiting commercial exchange and the processing of forage fish in a commercial facility.
3) Grenadiers – The grenadier complex (family Macrouridae), also known as "rattails", are comprised of at least seven species of grenadier known to occur in Alaskan waters, but only three are commonly found at depths shallow enough to be encountered in commercial fishing

operations or in fish surveys: giant grenadier (*Albatrossia pectoralis*), Pacific grenadier (*Coryphaenoides acrolepis*), and popeye grenadier (*Coryphaenoides cinereus*).

4) Squids –There are approximately 15 species of squids in the GOA, which are mainly distributed along the shelf break. The most abundant species is *Berryteuthis magister* (magistrate armhook squid). Squid in Alaska are generally taken incidentally in the target fishery for pollock. Catches of squids are generally low relative to population size and most of the squid bycatch occurs in the central GOA.
5) Sculpins- Sculpins are a group of benthic-dwelling predatory teleost fishes that include 48 species in waters off the coast of Alaska (Families *Cottidae, Hemitripteridae, Psychrolutidae,* and *Rhamphocottidae*). A total of forty-six species of sculpins have been listed as occurring in the GOA, and 39 of these have been identified on NMFS GOA research surveys.

The following lists the GOA stocks within these FMP species categories:

In the Fishery	
Target Species[1]	Walleye pollock, Pacific cod, Sablefish, Flatfish (shallow-water flatfish, deep-water flatfish, rex sole, flathead sole, arrowtooth flounder), Rockfish (Pacific ocean perch, northern rockfish, shortraker rockfish, rougheye/blackspotted rockfish, other rockfish, dusky rockfish, demersal shelf rockfish[3], thornyhead rockfish), Atka mackerel, skates (big skates, longnose skates, and other skates), sharks, octopus
Ecosystem Component	
Prohibited Species[2]	Pacific halibut, Pacific herring, Pacific salmon, Steelhead trout, King crab, Tanner crab
Forage Fish Species[4]	Osmeridae family (eulachon, capelin, and other smelts), Myctophidae family (lanternfishes), Bathylagidae family (deep-sea smelts), Ammodytidae family (Pacific sand lance), Trichodontidae family (Pacific sand fish), Pholidae family (gunnels), Stichaeidae family (pricklebacks, warbonnets, eelblennys, cockscombs, and shannys), Gonostomatidae family (bristlemouths, lightfishes, and anglemouths), Order Euphausiacea (krill)
Grenadiers[5]	Macrouridae family (grenadiers)
Squids[6]	Chiroteuthidae family, Cranchiidae family, Gonatidae family, Onychoteuthidae family, Sepiolidae family,
Sculpins[7]	Families: Cottidae, Hemitripteridae, Psychrolutidae, and Rhamphocottidae

[1] Means there is a TAC for each listing. Species and species groups may or may not be targets of directed fisheries
[2] Must be immediately returned to the sea
[3] Management of the DSR stock complex is delegated to the State of Alaska in the Southeast Outside Area. NMFS manages DSR in the combined Western GOA, Central GOA, and West Yakutat (W/C/WYAK) area. Recommendations to remove the seven demersal shelf rockfish (DSR) species previously assessed in the Other rockfish complex in the W/C/WYAK areas to a separate GOA-wide DSR stock complex was approved for the 2024 assessment cycle for implementation in the 2025 fisheries.
[4] Management measures for forage fish which are an Ecosystem Component are established in regulations implementing the FMP
[5] The grenadier complex was added to both FMPs as an Ecosystem Component in 2014
[6] The squid complex was added to both FMPs as an Ecosystem Component in 2018 and implemented in 2019
[7]Sculpins were added to both FMPS as an Ecosystem Component in 2019 and implemented in 2020.

This SAFE report describes stock status of target and non-target species in the fishery.

A species or species group from within the fishery category may be split out and assigned an appropriate harvest level. Similarly, species in the fishery category may be combined and a single harvest level assigned to the new aggregate species group. The harvest level for demersal shelf rockfish in the combined W/C/WYAK and Southeast Outside Areas are specified by the Council each year. However, management of the fishery in the SEO area is delegated to the State of Alaska with Council oversight.

The GOA FMP recognizes single species and species complex management strategies. Single species specifications are set for stocks individually, recognizing that different harvesting sectors catch an array of species. In the GOA these species include pollock, Pacific cod, sablefish, Pacific ocean perch, flathead sole, rex sole, arrowtooth flounder, northern rockfish, shortraker rockfish, dusky rockfish, Atka mackerel, big skates, and longnose skates. Other groundfish species that are usually caught in groups have been managed as complexes (also called assemblages). For example, other rockfish, rougheye and blackspotted rockfish, demersal shelf rockfish, thornyhead rockfish, deep water flatfish, shallow water flatfish, skates, sharks, and octopus have been managed as complexes.

The FMP authorizes splitting species, or groups of species, from the complexes for purposes of promoting the goals and objectives of the FMP. Atka mackerel was split out from "other species" beginning in 1994. In 1998, black and blue rockfish were removed from the GOA FMP and management was conferred to the ADF&G. In 2008, dark rockfish were similarly removed from the GOA FMP with sole management taken over by the ADF&G. Beginning in 1999, osmerids (eulachon, capelin and other smelts) were removed from the "other species" category and placed in a separate forage fish category. In 2004, Amendment 63 to the FMP was approved which moved skates from the other species category into a target species category whereby individual OFLs and ABCs for skate species and complexes could be established.

Groundfish catches are managed against TAC specifications for the EEZ and near coastal waters of the GOA. State of Alaska internal water groundfish populations are typically not covered by NMFS surveys and catches from internal water fisheries are generally not counted against the TAC. The Team has recommended that these catches represent fish outside of the assessed region and should not be counted against an ABC or TAC. Beginning in 2000, the pollock assessment incorporated the ADF&G survey pollock biomass, therefore, the Plan Team acknowledged that it is appropriate to reduce the Western (W), Central (C) and West Yakutat (WY) combined GOA pollock ABC by the anticipated Prince William Sound (PWS) harvest level for the State fishery. Since 2001, the W/C/WY pollock ABCs have been reduced by the PWS GHL as provided by ADF&G, before area apportionments were made. At the 2012 September Plan Team meeting, ADFG presented a proposal to set the PWS GHL in future years as a fixed percentage of the W/C/WY pollock ABC of 2.5%. That value is the midpoint between the 2001-2010 average GHL percentage of the GOA ABC (2.44%) and the 1996 and 2012 levels (2.55%). The Plan Team accepted this proposal. The Plan Team deducted a value for the 2027 and 2028 PWS GHL (equal to 2.5% of the recommended 2027 and 2028 W/C/WY pollock ABCs) from the recommended 2027 and 2028 W/C/WY pollock ABCs (listed in the summary table), before area apportionments are made. It is important to note that the value of the PWS GHL is dependent on the final specified W/C/WY pollock ABC. The values used by the Plan Team to derive the 2027 and 2028 W/C/WY pollock apportioned ABCs are listed in the pollock summary under *Biologically-informed Recommended Distributions*.

Starting in 2026, what were formerly referred to as subarea ABC recommendations are renamed Biologically-informed Recommended Distributions (BRDs). However, the Plan Team has provided spatial apportionment recommendations on a case-by-case basis since 1998. The Plan Team recommended splitting the EGOA ABC for species/complexes that would be disproportionately harvested from the West Yakutat area by trawl gear. The Team did not split EGOA ABCs for species that were prosecuted by multi-gear fisheries or harvested as bycatch. The approaches for splitting the EGOA ABCs are given in the specific stock assessments.

Biological Reference Points (BRDs)

A number of biological reference points are used in this SAFE. Among these are the fishing mortality rate (F) and stock biomass level (B) associated with MSY (F_{MSY} and B_{MSY}, respectively). Fishing mortality rates reduce the level of spawning biomass per recruit to some percentage P of the pristine level ($F_{P\%}$).

The fishing mortality rate used to compute ABC is designated F_{ABC}, and the fishing mortality rate used to compute the overfishing level (OFL) is designated F_{OFL}.

Definition of Acceptable Biological Catch and the Overfishing Level
Amendment 56 to the GOA Groundfish FMP, approved by the Council in June 1998, defines ABC and OFL for the GOA groundfish fisheries. The new definitions are shown below, where the fishing mortality rate is denoted *F*, stock biomass (or spawning stock biomass, as appropriate) is denoted *B*, and the *F* and *B* levels corresponding to MSY are denoted F_{MSY} and B_{MSY} respectively.

Acceptable Biological Catch is a preliminary description of the acceptable harvest for a given stock or stock complex. Its derivation focuses on the status and dynamics of the stock, environmental conditions, other ecological factors, and prevailing technological characteristics of the fishery. The fishing mortality rate used to calculate ABC is capped as described under "overfishing" below.

Overfishing is defined as any amount of fishing more than a prescribed maximum allowable rate. This maximum allowable rate is prescribed through a set of six tiers which are listed below in descending order of preference, corresponding to descending order of information availability. The SSC will have final authority for determining whether a given item of information is reliable for this definition and may use either objective or subjective criteria in making such determinations. For Tier (1), a pdf refers to a probability density function. For Tiers (1-2), if a reliable pdf of B_{MSY} is available, the preferred point estimate of B_{MSY} is the geometric mean of its pdf. For Tiers (1-5), if a reliable pdf of *B* is available, the preferred point estimate is the geometric mean of its pdf. For Tiers (1-3), the coefficient α is set at a default value of 0.05, with the understanding that the SSC may establish a different value for a specific stock or stock complex as merited by the best available scientific information. For Tiers (2-4), a designation of the form "$F_{X\%}$" refers to the *F* associated with an equilibrium level of spawning per recruit (SPR) equal to X% of the equilibrium level of spawning per recruit in the absence of any fishing. If reliable information sufficient to characterize the entire maturity schedule of a species is not available, the SSC may choose to view SPR calculations based on a knife-edge maturity assumption as reliable. For Tier (3), the term $B_{40\%}$ refers to the long-term average biomass that would be expected under average recruitment and $F=F_{40\%}$.

Tier

1) Information available: *Reliable point estimates of B and B_{MSY} and reliable pdf of F_{MSY}.*
   - 1a) Stock status: $B/B_{MSY} > 1$
     $F_{OFL} = \mu_A$, *the arithmetic mean of the pdf*
     $F_{ABC} \le \mu_H$, *the harmonic mean of the pdf*
   - 1b) Stock status: $\alpha < B/B_{MSY} \le 1$
     $F_{OFL} = \mu_A \times (B/B_{MSY} - \alpha)/(1 - \alpha)$
     $F_{ABC} \le \mu_H \times (B/B_{MSY} - \alpha)/(1 - \alpha)$
   - 1c) Stock status: $B/B_{MSY} \le \alpha$
     $F_{OFL} = 0$
     $F_{ABC} = 0$
2) Information available: *Reliable point estimates of B, B_{MSY}, F_{MSY}, $F_{35\%}$, and $F_{40\%}$.*
   - 2a) Stock status: $B/B_{MSY} > 1$
     $F_{OFL} = F_{MSY}$
     $F_{ABC} \le F_{MSY} \times (F_{40\%}/F_{35\%})$
   - 2b) Stock status: $\alpha < B/B_{MSY} \le 1$
     $F_{OFL} = F_{MSY} \times (B/B_{MSY} - \alpha)/(1 - \alpha)$
     $F_{ABC} \le F_{MSY} \times (F_{40\%}/F_{35\%}) \times (B/B_{MSY} - \alpha)/(1 - \alpha)$
   - 2c) Stock status: $B/B_{MSY} \le \alpha$
     $F_{OFL} = 0$
     $F_{ABC} = 0$
3) Information available: *Reliable point estimates of B, $B_{40\%}$, $F_{35\%}$, and $F_{40\%}$.*
   - *3a) Stock status:* $B/B_{40\%} > 1$
     $F_{OFL} = F_{35\%}$
     $F_{ABC} \le F_{40\%}$
   - *3b) Stock status:* $\alpha < B/B_{40\%} \le 1$
     $F_{OFL} = F_{35\%} \times (B/B_{40\%} - \alpha)/(1 - \alpha)$
     $F_{ABC} \le F_{40\%} \times (B/B_{40\%} - \alpha)/(1 - \alpha)$
   - *3c) Stock status:* $B/B_{40\%} \le \alpha$
     $F_{OFL} = 0$
     $F_{ABC} = 0$
4) Information available: *Reliable point estimates of B, $F_{35\%}$, and $F_{40\%}$.*
   $F_{OFL} = F_{35\%}$
   $F_{ABC} \le F_{40\%}$
5) Information available: *Reliable point estimates of B and natural mortality rate M.*
   $F_{OFL} = M$
   $F_{ABC} \le 0.75 \times M$
6) Information available: *Reliable catch history from 1978 through 1995.*
   OFL = the average catch from 1978 through 1995, unless an alternative value is established by the SSC on the basis of the best available scientific information
   $ABC \le 0.75 \times OFL$

Overfished or approaching an overfished condition is determined for all age-structured stock assessments by comparison of the stock level in relation to its MSY level according to the following two harvest scenarios (Note for Tier 3 stocks, the MSY level is defined as $B_{35\%}$):

Overfished (listed in each assessment as projection scenario 6):

In all future years, F is set equal to F_{OFL}. (Rationale: This scenario determines whether a stock is overfished. If the stock is expected to be 1) above its MSY level in 2026 or 2) above ½ of its MSY level in 2026 and above its MSY level in 2036 under this scenario, then the stock is not overfished.)

Approaching an overfished condition (listed in each assessment as scenario 7):

In 2027 and 2028, F is set equal to *max* F_{ABC}, and in all subsequent years, F is set equal to F_{OFL}. (Rationale: This scenario determines whether a stock is approaching an overfished condition. If the stock is 1) above its MSY level in 2028 or 2) above 1/2 of its MSY level in 2028 and expected to be above its MSY level in 2038 under this scenario, then the stock is not approaching an overfished condition.)

For stocks in Tiers 4-6, no determination can be made of overfished status or approaching an overfished condition as information is insufficient to estimate the MSY stock level.

Overview of Stock Assessments

The status of individual groundfish stocks managed under the FMP is summarized in this section. The spawning biomass estimates of pollock (W/C GOA), sablefish, northern rock sole, southern rock sole, Dover sole, flathead sole, rex sole, arrowtooth flounder, Pacific ocean perch, rougheye and blackspotted rockfish, northern rockfish, and dusky rockfish are above target stock size (Fig. 2). The spawning biomass of Pacific cod is below the proxy for B_{MSY}. The target biomass levels for EGOA pollock, deep-water flatfish (excluding Dover sole), shallow-water flatfish (excluding northern and southern rock sole), shortraker rockfish, other rockfish, demersal shelf rockfish, thornyhead rockfish, Atka mackerel, skates, octopus, and sharks are unknown.

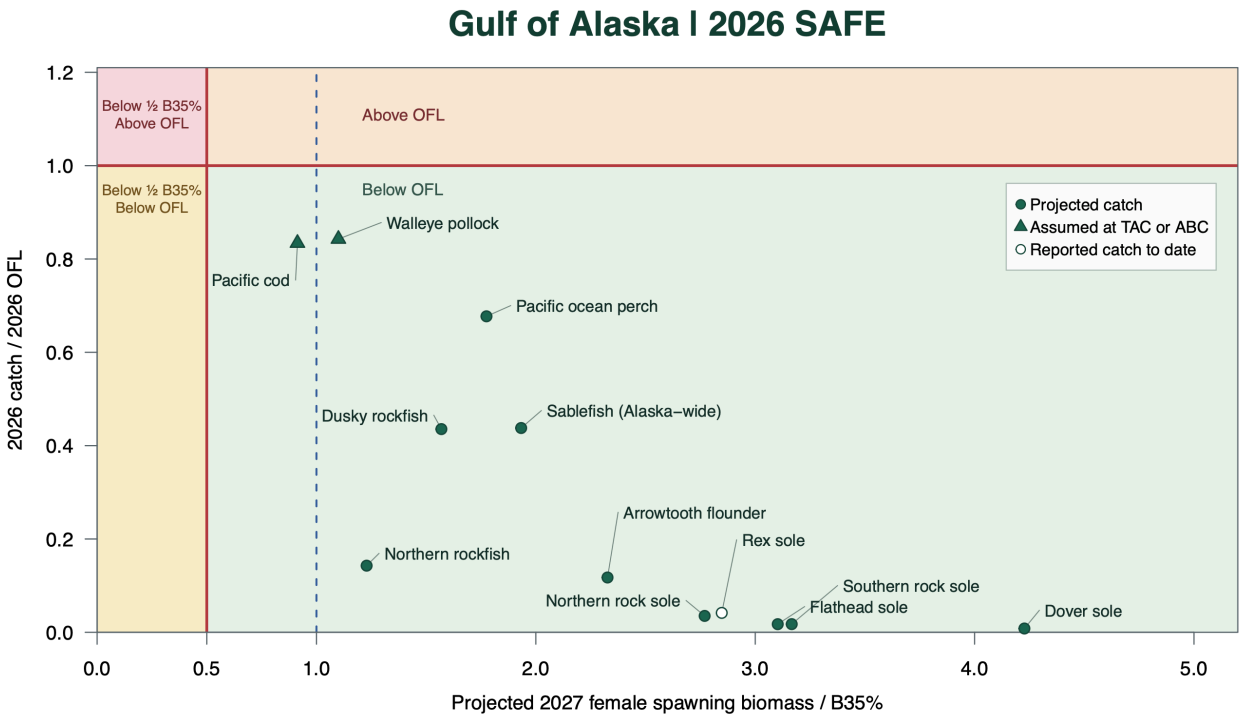


Figure 2. Summary of Gulf of Alaska stock status next year (spawning biomass relative to $B_{35\%}$; the proxy for B_{MSY}; horizontal axis) and current year catch relative to fishing at F_{MSY} (taken as catch/OFL; vertical axis). Note that sablefish is for Alaska-wide values including the BSAI catches.

Summary

Table 1 provides a summary of the status of the groundfish stocks, including catch statistics, ABCs, and TACs for 2026, and recommendations for ABCs and overfishing levels (OFLs) for 2027 and 2028. ABCs and TACs are specified for each of the GOA regulatory areas illustrated in Figure 1.

The sum of the Plan Team's recommended 2027 ABC for target species in the GOA (excluding sablefish, for which ABC is set Alaska-wide) is 530,377 t. The sums of the Plan Team's recommended 2027 and 2028 OFLs for target species in the GOA (again, excluding sablefish) are 607,223 t and 564,315 t, respectively. For perspective, the sum of the 2026 GOA TACs, not including sablefish, was 449,981 t and the sum of the ABCs was 503,618 t (and catch through November 12, 2026, without sablefish, was 209,939 t). The sum of GOA total TAC from 2026, including the W/C/WYAK/SEO sablefish TACs

(which total 22,550 t), is 520,020 t, which is within FMP-approved optimum yield (OY) of 116,000 - 800,000 t for the Gulf of Alaska.

Risk Tables

A general description of guidance and the risk table template that applies to all risk tables in the assessment chapters, is provided here. The risk tables are intended to account for uncertainty not directly captured in the stock assessments. The risk tables can be used to justify recommendations of ABC below maximum permissible ABC.

Risk table considerations/levels of concern				
	Assessment-related	*Population dynamics*	*Ecosystem*	*Fishery-informed stock*
Level 1: Normal	Typical to moderately increased uncertainty/minor unresolved issues in assessment.	Stock population dynamics (e.g., recruitment, growth, natural mortality) are typical for the stock and recent trends are within normal range.	No apparent ecosystem concerns related to biological status (e.g., environment, prey, competition, predation), or minor concerns with uncertain impacts on the stock.	No apparent concerns related to biological status (e.g., stock abundance, distribution, fish condition), or few minor concerns with uncertain impacts on the stock.
Level 2: Increased concern	Substantially increased assessment uncertainty/ unresolved issues, such as residual patterns and substantial retrospective patterns, especially positive ones.	Stock population dynamics (e.g., recruitment, growth, natural mortality) are unusual; trends increasing or decreasing faster than has been seen recently, or patterns are atypical.	Indicator(s) with adverse signals related to biological status (e.g., environment, prey, competition, predation).	Several indicators with adverse signals related to biological status (e.g., stock abundance, distribution, fish condition).
Level 3: Extreme Concern	Severe assessment problems; very poor fits to important data; high level of uncertainty; very strong retrospective patterns, especially positive ones.	Stock population dynamics (e.g., recruitment, growth, natural mortality) are extremely unusual; very rapid changes in trends, or highly atypical patterns compared to previous patterns.	Indicator(s) showing a combined frequency (low/high) and magnitude(low/high) to cause severe adverse signals a) across the same trophic level as the stock, and/or b) up or down trophic levels (i.e., predators and prey of the stock) that are likely to impact the stock.	Multiple indicators with strong adverse signals related to biological status (e.g., stock abundance, distribution, fish condition), a) across different sectors, and/or b) different gear types.

The table is applied by evaluating the severity of four types of considerations that could be used to support a scientific recommendation to reduce the ABC from the maximum permissible. These considerations are stock assessment considerations, population dynamics considerations, ecosystem considerations, and fishery performance. Examples of the types of concerns that might be relevant include the following:

1. Assessment-related considerations—data-inputs: biased ages, skipped surveys, lack of fishery-independent trend data; model fits: poor fits to fits to fishery or survey data, inability to simultaneously fit multiple data inputs; model performance: poor model convergence, multiple minima in the likelihood surface, parameters hitting bounds; estimation uncertainty: poorly-estimated but influential year classes; retrospective bias in biomass estimates.

2. Population dynamics considerations—decreasing biomass trend, poor recent recruitment, inability of the stock to rebuild, abrupt increase or decrease in stock abundance.

3. Ecosystem considerations—adverse trends in environmental/ecosystem indicators, ecosystem model results, decreases in ecosystem productivity, decreases in prey abundance or availability, increases or increases in predator abundance or productivity.

4. Fishery-informed stock considerations—fishery CPUE is showing a contrasting pattern from the stock biomass trend, unusual spatial pattern of fishing, changes in the percent of TAC taken, changes in the duration of fishery openings.

Use of Terms

The following conventions in this SAFE are used:

1) "Fishing mortality rate" refers to the full-selection *F* (i.e., the rate that applies to fish of fully selected sizes or ages). A full-selection *F* should be interpreted in the context of the selectivity schedule to which it applies.
2) For consistency and comparability, "exploitable biomass" refers to projected age+ biomass, which is the total biomass of all cohorts greater than or equal to some minimum age. The minimum age varies from species to species and generally corresponds to the age of recruitment listed in the stock assessment. Trawl survey data may be used as a proxy for age+ biomass. The minimum age (or size), and the source of the exploitable biomass values are defined in the summaries. These values of exploitable biomass may differ from values listed in the corresponding stock assessments if the technical definition is used (which requires multiplying biomass at age by selectivity at age and summing over all ages). In those models assuming knife-edge recruitment, age+ biomass and the technical definitions of exploitable biomass are equivalent.
(3) The values listed for prior years' ABCs correspond to the values (in metric tons, abbreviated "t") approved by NMFS. The Council TAC recommendations for pollock were modified to accommodate revised area apportionments (now BRDs) in the measures implemented by NMFS to mitigate pollock fishery interactions with Steller sea lions and for Pacific cod removals by the State water fishery of not more than 25% of the Federal TAC. **The values listed for 2027 and 2028 in the SAFE introduction correspond to the Plan Team recommendations, while values within each SAFE chapter correspond to author recommendations.**
(4) The exploitable biomass for 2025 and 2026 that are reported in the following summaries were estimated by the assessments in *those* years. Comparisons of the projected 2027 biomass with previous years' levels should be made with biomass levels from the revised hindcast reported in each assessment.
(5) The catches listed in the following summary tables are those reported by the Alaska Regional Office Catch Accounting System (https://www.fisheries.noaa.gov/alaska/commercial-fishing/fisheries-catch-and-landings-reports-alaska#goa-groundfish) unless otherwise noted.
(6) The values used for 2027 and 2028 were from modified assessments for selected species, rolled over (typically for Tiers 4-6) or based on updated projections. Note that projection values often

assume catches and hence their values are likely to change (as are the Tiers 4-6 numbers when new data become available and/or is incorporated in the assessment).

Two-year OFL and ABC Determinations
Amendment 48/48 to the GOA and BSAI Groundfish FMPs, implemented in 2005, made a significant change with respect to the stock assessment process requiring proposed and final specifications for a period of at least two years. This requires providing ABC and OFL levels for the next two years in this cycle (Table 1). The 2027 harvest specifications (from Council recommendations in December 2025 and February 2026 for Pacific cod) are in place to start the fishery on January 1, 2027, but these will be replaced by final harvest specifications that will be recommended by the Council in December 2026. The final 2027 and 2028 harvest specifications will become effective when final rulemaking occurs in February or March 2027. This process allows the Council to use the most current survey and fishery data in stock assessment models for setting quotas for the next two years, while having no gap in harvest specifications.

The 2028 ABC and OFL values recommended in next year's SAFE report are likely to differ from this year's projections for 2028 because of new information (e.g., survey, projections) that is incorporated into the assessments. In the case of stocks managed under Tier 3, ABC and OFL projections for the second year in the cycle are typically based on the output for Scenarios 1 or 2 from the standard projection model using assumed (best estimates) of total year catch levels. For stocks managed under Tiers 4-6, projections for the second year in the cycle are set equal to the Plan Team's recommended values for the first year in the cycle.

Stock assessment definitions and revised stock assessment schedule
The AFSC has developed Terms of Reference (TOR) for defining the types of stock assessments AFSC will produce and how these assessment types translate to national stock assessment definitions used in the NMFS next generation stock assessment improvement plan. Stock assessment document definitions are detailed in this document. Below is a brief overview of the stock assessment types/definitions for reference:

Operational full assessment
- Formerly known as "full" or "benchmark"
- Considers all data, new model configurations, new modeling platform
- Full in-depth review required (Sept/Oct)

Operational update assessment
- Formerly known as a "full"
- Introduced to help improve efficiency and reduce workload
- Maintains model structure of previous full assessment, incorporates new data, minimal changes
- Reduced review requirements

Harvest projection
- Formerly known as "partial"
- Executive summary
- Runs projection model, reports new catches, catch/biomass or REMA model

Catch report
- Introduced to show off year assessments are considered and accounted for
- Reports recent catch, ABC, OFL

Based on consideration of stock prioritization including assessment methods and data availability, some stocks are assessed on an annual basis while others are assessed less frequently. The following table

provides an overview of the level of assessment presented in this year's SAFE report, the Tier level and schedule, as well as the year of the next operational assessment (full or update) by stock.

Alaska Fisheries Science Center's GOA Groundfish stock assessment frequency schedule 2026-2029. OP is operational full or update, HP is harvest projection, CR is catch report, Rep is ecosystem report, and NA is nothing.

Stock	Tier	Freq.	Last Full	2026	2027	2028	2029
Pollock	3	1	2024	OP	OP	OP	OP
Pacific cod	3	1	2026*	OP	OP	OP	OP
Sablefish	3	1	2024	OP	OP	OP	OP
Dusky rockfish	3	2	2024	HP	OP	CR	OP
Northern rockfish	3	2	2024	OP	CR	OP	CR
Pacific ocean perch	3	2	2023	OP	OP	CR	OP
Rougheye & blackspotted rockfish	3	2	2023	OP	OP	CR	OP
Shortraker rockfish	5	2	2023	OP	OP	CR	OP
Skates	5	2	2023	OP	CR	OP	CR
Thornyheads	5	2	2024	OP	CR	OP	CR
Demersal shelf rockfish	4, 5, 6	2	2024	OP	CR	OP	CR
Other rockfish	4, 5, 6	2	2024	OP	CR	CR	OP
Forage species (w/ squid)	Ecosys rep.	2	2024	Rep	NA	Rep	NA
Arrowtooth flounder	3	4	2021	OP	CR	HP	CR
Flathead sole	3	4	2022	HP	OP	CR	HP
Rex sole	3	4	2021	OP	CR	HP	CR
Atka mackerel	6	4	2021	CR	OP	CR	CR
Octopus	6	4	2021	CR	OP	CR	CR
Shallow water flatfish (incl. N/S rock sole)	3, 5	4	2021	HP	OP	CR	HP
Deep water flatfish (incl. Dover sole)	3, 6	4	2023	HP	CR	OP	CR
Sharks	5, 6	4	2022	CR	OP	CR	CR
Grenadiers	Ecosys rep.	4	2024	NA	NA	NA	Rep
Sculpins	Ecosys rep.	4	2023	NA	NA	Rep	NA

*GOA Pacific cod was done out of cycle in February 2026 due to government shutdown in 2025.

Economic Summary of the GOA commercial groundfish fisheries in 2024-2025

The Economic SAFE report contains detailed information about economic aspects of the groundfish fisheries, including figures and tables that report historical catch, finished production, and ex-vessel and first-wholesale value, for harvesting and processing sectors for a range of factors (gear, species, management area, product type), and a set of economic performance indices. The report includes a section summarizing in-season catch and ex-vessel revenue estimates for groundfish and halibut, and wholesale market profiles for the most commercially valuable species. Data tables in the Economic SAFE report are organized into four sections: (1) All Alaska, (2) BSAI, (3) GOA, and (4) Pacific halibut. The figures and tables in the report provide information on: total groundfish catch; groundfish discards and discard rates; prohibited species catch (PSC) and PSC rates; the ex-vessel value of groundfish catch; the ex-vessel value of catch in other Alaska fisheries; the gross product value of the resulting groundfish seafood products; the number and sizes of vessels that participated in the groundfish fisheries off Alaska; fishing effort; and, crew

employment. The data behind the tables from this and past Economic SAFE reports are publicly available online at https://akhd.psmfc.org.

Summary of ex-vessel, and first wholesale, changes in Alaska, and the GOA
The ex-vessel value of all Alaska domestic fish and shellfish catch (state and federal), which represents the amount paid to harvesters for fish caught, and the estimated value of pre-processed fish species that are caught by catcher/processors, increased from $1,382 million in 2024 to $1,848 million in 2025 (real 2025$). The first wholesale value of 2025 groundfish catch after primary processing was $2,602 million, an increase from the 2024 value of $2,476 million. The 2025 total quantity of retained groundfish catch increased by 1.6%, primarily driven by increased pollock (*Gadus chalcogrammus*) harvest in the BSAI and GOA, and the total first wholesale volume of processed groundfish increased by 2.5%, relative to 2024. The increase in wholesale prices for pollock, cod, and sablefish, compounded with the increase in catch and production volume, explains the increased 2025 first wholesale value over 2024.

The groundfish fisheries collectively accounted for the largest share (42%) of the ex-vessel value of all commercial fisheries off Alaska in 2025, with $782 million in revenue, while the Pacific salmon (*Oncorhynchus spp.*) fishery closely followed with $701 million, or 38% of the total Alaska ex-vessel value. The ex-vessel value of the shellfish fishery amounted to $254 million, or 14% of the total for Alaska. The ex-vessel value of Pacific halibut (*Hippoglossus stenolepis*) was $98 million, or 5% of the total for Alaska in 2025.

According to data reported in the current Groundfish Economic SAFE report, the total real (i.e., inflation-adjusted) ex-vessel value of catch in state and federal waters of the Gulf of Alaska (GOA) groundfish increased by 33% from $111 million in 2024 to $147 million in 2025 (Figure 3), and real first-wholesale revenues from the processing and production of groundfish in the GOA increased by 26% between 2024 ($296 million) and 2025 ($374 million) (Figure 4). The total quantity of groundfish products from the GOA increased by 9% from 2024 (99 thousand metric tons) to 2025 (107 thousand metric tons).

Decomposition of the change in first-wholesale revenues from 2024-2025 in the GOA
The following analysis summarizes the overall nominal revenue changes that occurred from 2024 to 2025 and the quantity produced, and revenue generated from GOA groundfish and how revenues have been affected by changes in quantity or prices of each species and product group (Figure 5). Unlike the numbers cited above, these values are not adjusted for inflation, to enable a simple comparison of how changes in the price and quantity for each group contribute to the overall change in first-wholesale revenues for groundfish from 2024 to 2025 in the GOA. In results presented by species group, positive price and quantity effects for pollock, sablefish, and Pacific cod resulted in a positive net effect of $30, $29, and $21 million, respectively. For Pacific cod and sablefish, the positive price effect was larger than the positive quantity effect, while for pollock, the opposite pattern is observed (Figure 5, top panel). Rockfish and Atka Mackerel also experienced a positive price and quantity effect, resulting in a positive net effect of $9 and $1 million, respectively. Flatfish had a positive price effect that was outweighed by a negative quantity effect, resulting in a negative net effect of -$3 million.

In results by product group, excluding roe and "Other" products, all product groups had positive price and quantity effects in the GOA from 2024 to 2025. For whole head & gut, filets, and surimi, the positive price effect was greater than the positive quantity effect, resulting in a net effect of $47 million, $27 million, and $4 million, respectively (Figure 5, bottom panel). A positive quantity effect for roe outweighed a negative price effect, resulting in a net increase of $2 million. For "Other" products, a positive price effect produced a positive net effect of $7 million.

In summary, the changes in first-wholesale revenues from the GOA groundfish fisheries increased by $86 million from 2024 to 2025 due to positive price effects worth $58 million combined with positive quantity effects worth $28 million. These positive effects were concentrated in the whole head & gut, and fillet, products, price effects for sablefish and Pacific cod, and quantity effects for pollock.

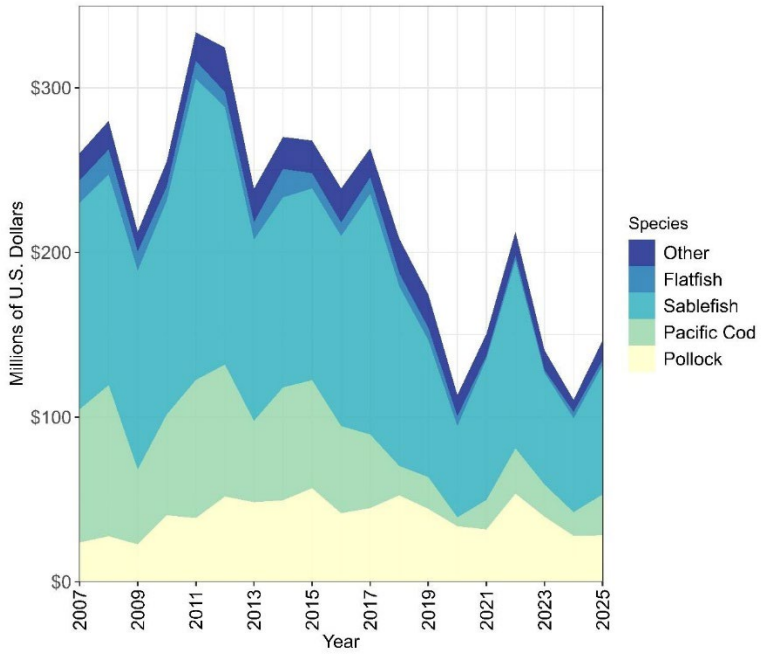


Figure 3. Real (2025 dollars) ex-vessel value of the groundfish catch in the domestic commercial fisheries in the GOA area by species, 2007-2025.

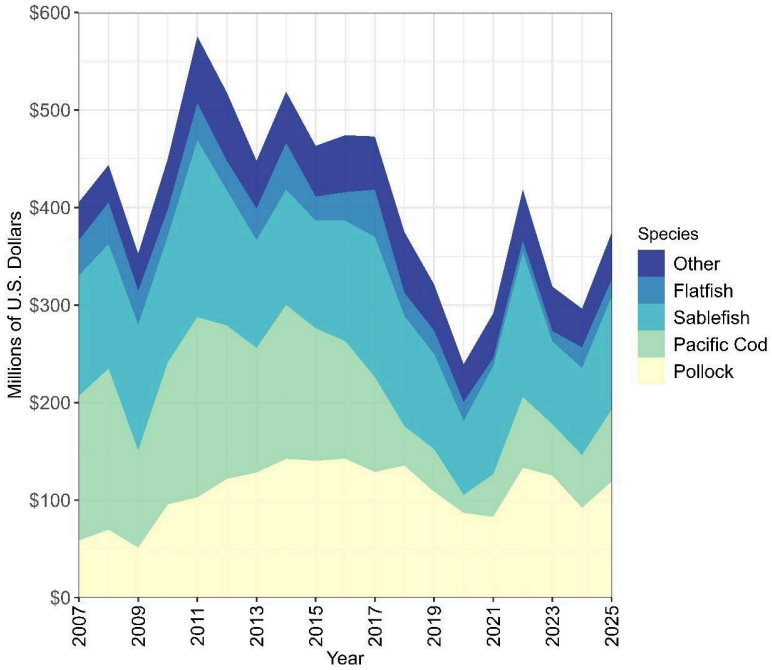


Figure 4. Real (2025 dollars) gross product value of the groundfish catch in the GOA area by species, 2007-2025.



Figure 5. Decomposition of the change in first-wholesale revenues from 2024 to 2025 in the GOA management area. The first decomposition is by the species groups used in the Economic SAFE report, and the second decomposition is by product group. The price effect refers to the change in revenues due to the change in the first-wholesale price index (current dollars per metric ton) for each group. The quantity effect refers to the change in revenues due to the change in production (in metric tons) for each group. The net effect is the sum of price and quantity effects. Year-to-year changes in the total quantity of first-wholesale groundfish products include changes in total catch and the mix of product types (e.g., fillet vs. surimi).

Ecosystem Considerations summary

The Gulf of Alaska's (GOA) shelf marine ecosystem experienced a productive year in 2026, after a warmer and less productive 2025. Groundfish data from 2026 are limited due to the NOAA Gulf of Alaska bottom trawl and EcoFOCI surveys occurring only in odd years. Highlights of the year include indicators of above-average phytoplankton and zooplankton production, suggesting a good prey base for juvenile and plankton-eating adult groundfish, forage fish, and seabirds. Capelin and herring populations remain present in predator diets across the GOA, further supporting a productive prey base for groundfish, seabirds, and marine mammals in 2026. Marine mammal populations continue to be responding to the reduced prey availability of the 2014 – 2016 and 2019 marine heatwave years, including declining harbor seal populations, changing Glacier Bay humpback whale population dynamics, and the first year of Prince William Sound humpback whales returning to 2014 whale encounter rates. The current El Niño is expected to warm GOA shelf surface temperatures in 2027 to a similar magnitude as observed in the previous very strong El Niño of 2015/2016. However, the average temperatures and relatively productive initial conditions in 2026 and the predicted ENSO transition to neutral conditions in 2027 have set the stage for a one-year ecological response to the El Niño, versus the multi-year cumulative ecological response to the 2014 – 2016 marine heatwave years. The GOA ecosystem is still expected to experience reduced food web productivity, that could stress early responders to environmental

change, such as forage fish and seabirds populations. Warm ocean temperatures will impact age-0 groundfish survival, and potentially adult groundfish condition and distribution, but not likely to lead to extensive adult groundfish mortality. These statements are based on observations from previous strong El Niños and marine heatwave events. A large amount of uncertainty remains in how the GOA will respond to this potentially strongest El Niño on record.

Stock Assessment Section

1. Walleye pollock

Status and catch specifications (t) of pollock and projections for 2027 and 2028. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year (age 3+ for W/C/WYAK and survey biomass for SEO). The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data were through November 12th, 2026.

The GOA-wide and W/C/WYAK ABCs listed in this table are before reductions for the Prince William Sound GHL. However, the federal TACs from earlier years reflect reductions from the ABC due to State waters GHL. State waters GHL was computed as 2.5% of the total W/C/WYAK ABC.

Area	Year	age-3+ Biomass	OFL	ABC	TAC	Catch
W/C/WYAK	2025	1,269,931	210,111	181,022	176,496	134,413
	2026	1,005,310	153,971	133,075	129,749	110,650*
	2027	818,037	180,370	155,551		
	2028		123,876	106,222		
SEO	2025	43,328	12,998	9,749	9,749	2
	2026	43,328	12,998	9,749	9,749	0
	2027	25,333	7,600	5,700		
	2028		7,600	5,700		

**excludes PWS state waters catch*

Changes from the previous assessment
The 2026 assessment updated catches through 2026, fishery ages through 2025, and data from the Shelikof Strait acoustic survey, NMFS bottom-trawl survey, and ADF&G crab and groundfish trawl survey. There was no 2025 assessment because of the government shutdown.

Model 26a moved the previously accepted Model 23d into Rceattle and estimates recruitment variability. The authors recommended Model 26b, which adds a dynamic structural equation model (DSEM) to explain recruitment variation using ecosystem indicators. The harvest projections did not use DSEM recruitment forecasts.

Spawning biomass and species trends
Model 26b projects female spawning biomass in the Western and Central GOA and West Yakutat at 228,801 t in 2027, or 38.4% of unfished spawning biomass, and 189,463 t in 2028 (SAFE chapter, p. 4). The latest Shelikof Strait acoustic and ADF&G trawl indices fell by about 35% and 27%, respectively, while the NMFS bottom-trawl index rose by about 35%. Neither candidate model reproduced the recent increase in the NMFS bottom-trawl index.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
The Western and Central GOA and West Yakutat are in Tier 3b because projected female spawning biomass is below B40%. The authors recommended the maximum permissible ABCs from Model 26b.

The Southeast Outside area remains in Tier 5, with a survey-based biomass estimate from the REMA random effects model, an ABC of 5,700 t, and an OFL of 7,600 t in both years.

The Team discussed comparing fishery patterns with the survey indices and examining whether some pollock caught in Area 610 originate in the eastern Bering Sea. It also discussed additional tests of DSEM recruitment predictions and guidance for updating the model.

Status determination
The Gulf of Alaska pollock species is not being subjected to overfishing and is neither overfished nor approaching an overfished condition.

BRDs
The apportionment uses seasonal survey biomass distributions for Areas 610, 620, and 630. The assessment allocates half of their combined share to each of the A and B seasons. West Yakutat (Area 640) is apportioned using the summer biomass distribution and has no seasonal split (SAFE chapter, Appendix 1C). The table shows annual BRDs for 2027 and 2028.

Year	W (610)	C (620)	C (630)	WYAK	SEO	PWS GHL	W/C/WYAK
2027	39,492	68,522	40,071	3,577	5,700	3,889	155,551
2028	26,968	46,792	27,363	2,443	5,700	2,656	106,222

2. Pacific cod

Status and catch specifications (t) of Pacific cod in recent years. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	age-0+ Biomass	OFL	ABC	TAC	Catch
2025	177,497	38,688	32,141	23,670	19,716
2026	182,156	49,782	41,520	30,053	27,403
2027	192,257	50,194	41,937		
2028		43,208	35,866		

Changes from the previous assessment
The previous GOA Pacific cod assessment was conducted out of cycle in February 2026 because of the 2025 government shutdown. This year's operational update retained Model 24.0, which was accepted in February, and was run in Stock Synthesis (SS3). The bounds of the length bins used for conditional age-at-length data were adjusted to follow updated SS3 documentation. This change had negligible effects on model estimates.

Spawning biomass and species trends
The stock has been recovering from low levels following steep declines from 2014 to 2018. Total and female spawning biomass have increased since then. From 2027 to 2028, total biomass is projected to increase while female spawning biomass is projected to decrease.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
The GOA Pacific cod stock is in Tier 3b. The Plan Team concurred with the authors' recommended ABCs and OFLs.

Status determination
The stock is not subject to overfishing, is not overfished, and is not approaching an overfished condition.

BRDs
The area-specific BRDs for ABC were estimated by applying the random effects model (REMA) to GOA bottom trawl survey biomass estimates.

Year	Western	Central	Eastern	Total
2027	10,401	29,020	2,516	41,937
2028	8,894	24,820	2,152	35,866

3. Sablefish
Status and catch specifications (t) of sablefish in recent years. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The Alaska-wide OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Area	Year	age-2+ Biomass	OFL	ABC	TAC	Catch
AK Total	2025	633,000	58,532	47,605	n/a	22,114
	2026	622,000	57,797	47,008	n/a	24,307
	2027	547,769	44,333	37,436	n/a	
	2028		44,565	37,636	n/a	

Changes from the previous assessment

Changes in input data

1. Added trawl fishery length data and fixed-gear fishery age compositions for 2024 and 2025.
2. Fixed gear fishery length data dropped.
3. Composition data were separated by sex.
4. Added final catch estimates for 2024 and 2025 and preliminary and imputed catch for 2026.
5. Added NOAA longline survey abundance indices for the Gulf of Alaska in 2025 and for the Bering Sea and Aleutian Islands in 2026.
6. Added Gulf of Alaska survey age compositions for 2025.
7. Updated length- and weight-at-age estimates using survey data through 2025.
8. Composition input sample sizes now reflect differences in sampling among years within each fishery or survey.
9. Removed the GOA trawl survey.
10. Removed the historical Japanese and domestic fixed-gear catch-per-unit-effort indices and the fixed-gear fishery and NOAA longline survey length compositions.
11. Removed extrapolated western Aleutian Islands stations from the survey index and apportionment calculations.

Changes in assessment methodology

The accepted model (26.2_FAA) contains a suite of changes beginning with changes made for Model 25.12, which was a bridging model from the previously accepted model (23.5) and was initially reviewed by the Plan Team in September 2025. No operational assessment was completed that year because of the federal shutdown. The accepted Model (26.2_FAA) is further built upon model 25.12 and was reviewed and accepted by the Plan Team in November 2026.

1. The changes below were initially reviewed for Model 25.12:
    a. Transitioned to the SPoRC stock assessment package.
    b. Removed legacy coding errors and implemented appropriate likelihood functions.
    c. Removed all selectivity parameter linkages.
    d. Updated the *M* prior to be more biologically realistic: ~N(ln(0.085), sd=0.1).
    e. Estimated sex-specific *M*

2. The accepted Model (26.2_FAA) - built from Model 25.12 - is a "fleets-as-areas" model that fits the Bering Sea, Aleutian Islands, and Gulf of Alaska longline **survey** indices and age compositions separately. This model was recommended after extensive simulation analyses and evaluations of fleet alternatives and selectivity parameterizations. Each regional survey has its own catchability and selectivity parameters. With the revised survey design alternating between the Gulf of Alaska and the Bering Sea–Aleutian Islands, the model can fit the observations directly without interpolating indices for unsurveyed regions. The following changes to Model 25.12 were made to become Model 26.2_FAA.
    a. Longline survey data split retained as three regions: GOA, BS, and AI
    b. New priors for fishery and survey selectivity priors.
    c. Remove early fixed-gear selectivity time block.
    d. Input index standard errors increased by 1.5 times instead of 2 times.
    e. Trawl fishery selectivity changed to asymptotic logistic (rather than domed).

Spawning biomass and stock trends
Model 26.2_FAA estimates that Alaska-wide total biomass has increased from a time-series low in 2015, with little change from 2025 to 2026. Female spawning biomass continued to increase as strong cohorts matured. It increased 10% from 2025, and is now at 64% of unfished spawning biomass. Projections indicate further increases in female spawning biomass in 2028 while age-2+ biomass remains nearly steady or begins to decline, depending on the projected catches.

The strong 2014–2017 year classes continue to support the stock. The 2014 cohort is now fully mature, and the 2016 and 2017 cohorts are estimated to be 90% and 81% mature, respectively. Recruitment since 2019 has generally been lower than during 2014–2017, although the 2020 and possibly the 2022 year classes appear above average. Eastern Bering Sea trawl length data have yet to show evidence of large 2025 or 2026 year classes. The 2014–2022 cohorts account for about 90% of projected 2027 spawning biomass.

The regional longline survey indices diverged in recent years. The Aleutian Islands index increased 26% from 2022 to 2026, the Bering Sea index decreased 14% from 2023 to 2026, and the Gulf of Alaska index increased 4% from 2023 to 2025. Alaska-wide catch has been relatively steady, at about half of ABC in 2025 and 2026. Utilization differed substantially by area, generally running about 80–90% in the Gulf of Alaska and below 25% in the Bering Sea and Aleutian Islands. The authors identified no elevated risk-table concerns.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
Projected Alaska-wide female spawning biomass in 2027 is 68% of unfished biomass, above B40%, placing sablefish in Tier 3a. The recommended 2027 ABC is about 20% below the 2026 ABC of 47,008 t. The region-specific survey model (Model 26.2_FAA) results in estimates lower recent spawning biomass

and catch limits than the single-region alternative. All model alternatives predict a large recent increase in spawning biomass due to some large recruitments in the last 12 years.

Status determination
The assessment concludes that Alaska sablefish is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition.

BRDs
The authors recommend retaining the five-year moving average of regional longline survey biomass proportions for the BRDs. Due to the 2025 change in survey design, the previous apportionment method that used an interpolation based on change in the GOA RPNs is no longer feasible. The Team agreed with the author's recommendation for the 'carryover' interpolation with the extrapolated western Aleutian Islands stations excluded. The resulting BRDs from the recommended apportionment method are shown below.Since flagged for Council discussion, the Team recommended that BRDs in GOA do not exceed the 2026 TAC levels and BSAI BRDs can be reduced to account for any increases in GOA.

Year	Western	Central	WYAK*	SEO*	GOA-wide	AK Total
2027	4,118	7,862	2,246	4,492		37,436
2028	4,140	7,904	2,258	4,516		37,636

*95:5 split in the EGOA following the trawl ban in SEO.

4. Shallow-water flatfish

Status and catch specifications (t) of shallow water flatfish and projections for 2027 and 2028. The shallow water flatfish (SWF) complex comprises of northern rock sole, southern rock sole, yellowfin sole, butter sole, starry flounder, English sole, sand sole and Alaska plaice. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	Biomass	OFL	ABC	TAC	Catch
2025	454,847	69,277	56,559	46,054	2,157
2026	455,146	69,610	56,910	46,258	2,179
2027	448,887	69,206	56,518		
2028		68,867	56,236		

Changes from the previous assessment
The shallow-water flatfish stock complex is assessed on a four-year schedule. The last full assessment was conducted in 2021. This year, the authors presented a harvest projection. Northern and southern rock sole are Tier 3a species and assessed separately from the other shallow water flatfish, which are Tier 5. This year's harvest projection includes results from the projection model for northern and southern rock sole, and results from the random effects model from the last operational assessment for the Tier 5 species. A full stock assessment document with assessment and projection model results is expected to be presented in November 2027.

Spawning biomass and stock trends
Survey biomass trends vary by species. Estimates for Alaska plaice, butter sole, starry flounder, and southern rock sole have been highly variable with no apparent trend. English sole survey biomass is increasing, sand sole exhibits cyclic trends, and northern rock sole and yellowfin sole survey biomass is

decreasing. The shallow-water flatfish complex 2027 biomass estimate is a slight increase from the 2026 biomass estimate. Overall, biomass for shallow water flatfish is stable.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
Northern and southern rock sole are Tier 3a, while the other species in the complex are Tier 5. The OFL and ABC estimated for SWF species other than the rock soles were added to the management advice from the 2026 projection model for northern and southern rock sole to provide a SWF complex OFL and ABC. The Team agreed with the author recommendations for OFLs and ABCS and for a full assessment in 2027, given the last was in 2021.

Status determination
Information was insufficient to determine stock status relative to overfished criteria for the complex. For the rock soles, the projection model indicates that they are not overfished nor are they approaching an overfished condition. Catch for this complex remains below the TAC and below levels where overfishing would be a concern.

BRDs

The recommended area apportionments, based on the random effects model applied to bottom trawl survey biomass estimates are:

Year	Western	Central	WYAK	SEO	Total
2027	23,738	28,259	2,826	1,695	56,518
2028	23,619	28,118	2,812	1,687	56,236

5. Deep-water flatfish

Status and catch specifications (t) of deepwater flatfish (Dover sole and others) and projections for 2027 and 2028. Biomass for each year is for Dover sole only and corresponds to the model estimate associated with the ABC for that year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	age-3+ Biomass	OFL	ABC	TAC	Catch
2025	84,026	8,263	6,958	6,958	87
2026	82,048	8,118	6,836	6,836	149
2027	80,097	7,959	6,702		
2028		7,784	6,555		

Changes from the previous assessment
The deepwater flatfish complex is comprised of Dover sole, Greenland turbot, Kamchatka flounder, and deepsea sole. Deep-water flatfish are on a 4-year assessment schedule. The last full assessment for the Gulf of Alaska deepwater flatfish complex was conducted in 2023. This year, the authors presented a harvest projection for Deep-water flatfish which includes results from the projection model for Dover sole and Tier 6 estimates based on the average catch for Greenland turbot, Kamchatka flounder, and deepsea sole.

Spawning biomass and stock trends
The model estimate of 2026 spawning stock biomass for Dover sole is well above $B_{40\%}$ and is expected to remain stable through 2027. Stock trends for Greenland turbot, Kamchatka flounder, and deepsea sole are unknown.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
For ABC/OFL calculations, a Tier 3a approach was used for Dover sole and Tier 6 approaches were used for Greenland turbot, Kamchatka flounder, and deepsea sole. OFLs and ABCs for the individual species in the deepwater flatfish complex are determined and then summed for calculating complex-level OFLs and ABCs. The Team agreed with the author's recommended ABC and OFL.

Status determination
The Gulf of Alaska Dover sole stock is not being subjected to overfishing and is neither overfished nor approaching an overfished condition. Information is insufficient to determine stock status relative to overfished criteria for Greenland turbot, Kamchatka flounder, and deepsea sole. Since Dover sole comprises nearly all of the deepwater flatfish complex they are considered the main component for determining the status of this stock complex. Catch levels for this complex remain well below the TAC and below levels where overfishing would be a concern.

BRDs
The REMA random effects model was used to determine BRDs for Dover sole. BRDs for Greenland turbot, Kamchatka flounder, and deepsea sole are based on the relative proportion of survey biomass of these species found in each area, averaged over the years 2001–2023, the last year a full assessment was done. The BRDS for the deepwater flatfish complex are the sums of the species-specific portions of the BRDs. The BRDs for 2027 and 2028 are as follows:

Year	Western	Central	WYAK	SEO	Total
2027	228	2,519	1,760	2,195	6,702
2028	224	2,464	1,721	2,146	6,555

6. Rex sole

Status and catch specifications (t) of rex sole and projections for 2027 and 2028. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	age-3+ Biomass	OFL	ABC	TAC	Catch
2025	129,835	26,002	21,387	21,387	567
2026	129,082	25,743	21,173	21,173	1,340
2027	98,311	19,523	16,077		
2028		18,683	15,381		

Changes from the previous assessment
The rex sole stock is assessed on a four-year schedule. No assessment was conducted in 2025. This year a full operational model was conducted. All new data available through 2026 were added to the model. In addition, the following model changes were made:

(1) Fishery age composition data are calculated using methods from the sampler repository

(2) The logspace standard error corresponding to survey biomass data in the Eastern GOA was updated to correct a smaller error where CV was used in place of logspace standard error in the 2021 assessment
(3) The 1984 and 1987 survey biomass data for the Eastern GOA were inadvertently included in the 2021 assessment and have been removed
(4) An ageing error matrix specific to GOA rex sole was added to the model

Spawning biomass and stock trends
Projected female spawning biomass and total biomass are estimated to be lower than previously thought in the last accepted model (2021) but remain well above B40%. Both female spawning and total biomass are projected to decline slightly through 2028.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
Rex sole are determined to be in Tier 3a. The Team concurred with the author's recommended model (25.1) and to use the maximum permissible ABC and corresponding OFL. This ABC is a 22% decrease from the 2026 ABC.

Status determination
This stock is not being subjected to overfishing and is neither overfished nor approaching an overfished condition.

BRDs
The recommended rex sole BRDs are based on the proportion of trawl survey biomass projected for each area using the REMA model.

Year	Western	Central	WYAK	SEO	Total
2027	2,786	10,053	1,532	1,706	16,077
2028	2,669	9,631	1,457	1,624	15,381

7. Arrowtooth flounder

Status and catch specifications (t) of arrowtooth flounder and projections for 2027 and 2028. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	age-1+ Biomass	OFL	ABC	TAC	Catch
2025	1,316,560	142,832	119,547	100,454	13,075
2026	1,341,280	143,347	119,985	100,769	22,024
2027	1,437,490	157,261	134,083		
2028		157,060	133,901		

Changes from the previous assessment
The last full operational stock assessment for Gulf of Alaska arrowtooth flounder was conducted in 2021. Following a multi-stage bridging exercise (2024–2025) and subsequent recommendations from the SSC and GOA Plan Team, the assessment framework was transitioned from ADMB to TMB within the Rceattle platform. In September, 2025, a stepwise comparison was provided that added extensive data improvements resulting in the base Model 25.0, which provided similar trends over time as the base

model used in 2021. Model 25.0 was updated this year with current data and is a single-species TMB based Rceattle model with data improvements that fixes sex-specific M (females = 0.2 and males = 0.35) and treats annual recruitment as random effects.

Spawning biomass and stock trends
Total biomass for ages 1+ experienced a long-term decline beginning in the late 2000s and fell to a historic low in 2018 before starting a gradual recovery, with projections estimating an increase from 2027 to 2028. Female spawning biomass mirrored this downward trajectory with a slight lag, peaking in 2008 and hitting a historic low in 2021, but it has since been rebuilding and is projected to rise slightly 2027-2028.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
Arrowtooth flounder assessment is determined to be in Tier 3a. The Team concurred with the author's risk assessment and recommendation to use model 25.0 with updated data, the maximum permissible ABC and corresponding OFL from the full assessment.

Status determination
This stock is not being subject to overfishing and is neither overfished nor approaching an overfished condition.

BRDs
BRDs for Arrowtooth flounder are based on the proportion of trawl survey biomass projected for each area using the REMA model. The following table shows the PT recommendations for BRDs for 2027 and 2028.

Year	Western	Central	WYAK	SEO	Total
2027	25,572	80,318	9,692	18,501	134,083
2028	25,537	80,209	9,679	18,476	133,901

8. Flathead sole

Status and catch specifications (t) of flathead sole and projections for 2027 and 2028. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	age-3+ Biomass	OFL	ABC	TAC	Catch
2025	293,674	50,587	41,476	36,534	900
2026	291,288	51,176	41,980	36,873	1,192
2027	288,245	51,152	41,975		
2028		50,740	41,639		

Changes from the previous assessment
The flathead sole stock is assessed on a four-year schedule. The last full assessment was conducted in 2022. This year a harvest projection was presented. The projection model was run using updated catches.

Spawning biomass and stock trends
Projected female spawning biomass is projected to increase through 2026. Projected total biomass (3+) is stable with a slight decrease projected through 2026.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
Flathead sole are determined to be in Tier 3a. The Team concurred with the author's recommendation to use the maximum permissible ABC and corresponding OFL from the updated harvest projection.

Status determination
This stock is not being subjected to overfishing and is neither overfished nor approaching an overfished condition.

BRDs
The flathead sole BRDs are based on the proportion of trawl survey biomass projected for each area using the REMA model.

Year	Western	Central	WYAK	SEO	Total
2027	13,208	21,421	4,807	2,539	41,975
2028	13,103	21,250	4,768	2,518	41,639

9. Pacific ocean perch

Status and catch specifications (t) of Pacific ocean perch and projections for 2027 and 2028. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	age-2+ Biomass	OFL	ABC	TAC	Catch
2025	637,024	46,562	38,962	38,962	27,562
2026	617,148	44,826	37,509	37,509	30,415
2027	634,354	43,132	36,317		
2028		41,204	34,693		

Changes from the previous assessment
This year's full assessment updated design-based survey biomass estimates through 2025; survey age compositions for 2023 and 2025; fishery age compositions for 2024; final catches for 2023–2025 and preliminary catch for 2026; and weight-at-age and the size-at-age transition matrix through 2025.

The assessment uses standard lognormal likelihoods for catch, survey biomass and for priors (previous specifications ignored constants). Similarly, composition multinomial negative log-likelihoods followed standard functions as used in the RTMB software platform. A key difference in how fishery selectivity was specified included using a two-parameter dome-shaped gamma function for the second time series "block". Previous models applied the average of the first and third blocks.

Spawning biomass and species trends
Projected female spawning biomass for 2027 is above B40% and decreases slightly in 2028.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
Pacific ocean perch is in Tier 3a. The Plan Team concurred with the authors' recommendation to use the maximum permissible ABCs and corresponding OFLs from the updated harvest projections.

Status determination
The stock is not subject to overfishing, is not overfished, and is not approaching an overfished condition.

BRDs
The 2027 and 2028 BRDs were estimated using the random effects model (REMA) with the same assumptions as the 2023 assessment.

Year	Western	Central	Eastern	Total
2027	1,191	24,427	10,699	36,317
2028	1,138	23,334	10,221	34,693

Amendment 41 prohibits trawling east of 140° W in the Eastern GOA. About 22% of the Eastern-area biomass is in fishable waters in West Yakutat (147° W to 140° W). The table below shows the split between West Yakutat and East Yakutat/Southeast.

Year	WYAK	SEO	Total
2027	2,305	8,394	10,699
2028	2,202	8,019	10,221

10. Northern rockfish

Status and catch specifications (t) of northern rockfish and projections for 2027 and 2028. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	age-2+ Biomass	OFL	ABC	TAC	Catch
2025	96,967	6,064	5,076	5,076	1,684
2026	95,374	5,848	4,895	4,895	847
2027	81,448	5,699	4,769		
2028		5,636	4,716		

Changes from the previous assessment
This year's full assessment retained the 2024 SSC-accepted model (m24). It updated bottom-trawl survey biomass estimates and age compositions through 2025; fishery size compositions for 2024 and 2025; final catches for 2024 and 2025 and preliminary catch for 2026; and survey weight-at-age and the size-at-age transition matrix through 2025. The assessment methodology was unchanged.

Spawning biomass and species trends
Total and spawning biomass plateaued in the early 2000s and have declined since. In recent years, spawning biomass has remained above B35% and fishing mortality below F35%.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
Northern rockfish is in Tier 3a. The Plan Team concurred with the authors' recommendation to retain model m24 and use the maximum permissible ABCs and corresponding OFLs. The 2027 ABC is about 6% below the 2025 ABC and 3% below the 2026 ABC projected in the previous assessment.

Status determination
The stock is not subject to overfishing, is not overfished, and is not approaching an overfished condition.

BRDs
The random effects model (REMA) smoothed design-based bottom-trawl survey biomass estimates for the Western, Central, and Eastern GOA using default settings. The table shows the BRDs for 2027 and 2028.

Year	Western	Central	Eastern*	Total
2027	824	3,944	1	4,769
2028	814	3,901	1	4,716

* The 1 t Eastern BRD shown here is transferred to the Other rockfish complex in West Yakutat for management.

11. Shortraker rockfish

Status and catch specifications (t) of shortraker rockfish and projections for 2027 and 2028. Biomass for each year corresponds to the projections given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	Biomass	OFL	ABC	TAC	Catch
2025	28,768	863	647	647	500
2026	28,768	863	647	647	427
2027	25,227	757	568		
2028		757	568		

Changes from the previous assessment
This year's assessment was an update; the last full assessment was in 2023. The model incorporated longline survey relative population weights (RPWs) from 1992 to 2025 and bottom-trawl survey biomass estimates from 1990 to 2025. The assessment retained Model 23.3, a random effects model (REMA) that gives the two surveys equal weight and accounts for additional observation error in the longline survey.

Spawning biomass and species trends
The model estimates that exploitable biomass in 2027 will be about 12% lower than the 2026 estimate.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
Shortraker rockfish is managed under Tier 5. The Plan Team concurred with the authors' recommended ABC and OFL for 2027 and 2028.

Status determination
The stock was not subject to overfishing in 2025. Data are insufficient to determine whether it is overfished.

BRDs
The BRDs use each area's share of biomass predicted by REMA using Model 23.3, which is informed by the bottom trawl survey. The Plan Team did not see a biological concern with small deviations of TAC from BRDs.

Year	Western	Central	Eastern	Total
2027	26	179	363	568
2028	26	179	363	568

12. Dusky rockfish

Status and catch specifications (t) of dusky rockfish and projections for 2027 and 2028. Biomass for each year corresponds to the projections given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	age-4+ Biomass	OFL	ABC	TAC	Catch
2025	85,912	7,705	6,338	6,338	6,338
2026	83,297	7,319	6,021	6,021	3,209
2027	79,386	6,920	5,693		
2028		6,577	5,411		

Changes from the previous assessment
The Dusky rockfish stock is assessed on a two-year schedule. A full stock assessment was conducted in 2024. This year a harvest projection was presented. The projection model was run using updated catches.

Spawning biomass and stock status trends
The 2027 spawning biomass estimate above the $B_{40\%}$ estimate and is projected to decrease in 2028.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
The dusky rockfish stock is estimated to be in Tier 3a. The Team agreed with the author's recommendation to use the maximum permissible ABC and corresponding OFL from the updated harvest projection.

Status determination
The stock is not being subjected to overfishing, is not currently overfished, nor is it approaching an overfished condition.

BRDs

Year	Western	Central	Eastern	Total
2027	188	5,225	280	5,693
2028	178	4,967	266	5,411

Amendment 41 prohibited trawling in the Eastern area east of 140° W longitude. This results in the following BRDs:

Year	WYAK	SEO	Total
2027	193	87	280
2028	184	82	266

13. Rougheye and blackspotted rockfish

Status and catch specifications (t) of rougheye and blackspotted rockfish and projections for 2027 and 2028. Biomass for each year corresponds to the projections given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	age-3+ Biomass	OFL	ABC	TAC	Catch
2025	46,109	1,576	1,180	1,180	254
2026	46,319	1,631	1,203	1,203	283
2027	26,801	965	804		
2028		965	804		

Changes from the previous assessment
This year a full assessment was completed for rougheye and blackspotted rockfish, focusing on alternative Tier 4 and Tier 5 assessment models. The assessment updated catch through 2026, incorporated the 2025 bottom-trawl survey biomass and AFSC longline survey indices, and updated fishery and survey composition data, weight-at-age, and the age-length transition matrix for the Tier 3 comparison model.

The author-recommended model is Model 25.1b. This Tier 4 model uses species-specific information on size at age and functional maturity to compute fishing mortality reference points based on spawning potential ratio, and the random effects model (REMA) to smooth the survey biomass estimates. The existing single-species Tier 3 model averaged the biological parameters across the species, in part because blackspotted and rougheye rockfish are not identified to species in the fishery data.

Spawning biomass and species trends
Transitioning from an age-structured Tier 3 model to a Tier 4 framework means spawning biomass is no longer estimated. Exploitable biomass trends are obtained from REMA that combines bottom trawl and longline survey indices, and indicates declines in the Central GOA alongside generally stable or variable trends across other subareas and low overall catch levels.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
The Plan Team concurred with adopting Model 25.1b, agreeing that the Tier 4 approach is appropriate given the difference in biological characteristics between the species. The Team noted that future assessments could re-evaluate species ratios using tools such as otolith morphometrics. Because Model 25.1b relies on fishery selectivity curves obtained from the existing Tier 3 model that is not recommended, the Team recommended using the tier4tools package in the next assessment to evaluate reference point sensitivity to alternative selectivity forms and researching methods to update selectivity without an age-structured model. The Team recommended the authors' proposed 2027 and 2028 OFLs and ABCs based on Model 25.1b.

Status determination
The rougheye and blackspotted rockfish stock complex is not being subjected to overfishing, as total catch in the most recent complete year remained below the OFL. Information is insufficient to determine stock status relative to overfished criteria because reliable estimates of spawning biomass are unavailable under Tier 4.

BRDs
The GOA-wide ABC is apportioned across regulatory areas (Western, Central, and Eastern GOA) using spatial proportions derived by averaging trawl-informed REMA biomass estimates and longline survey RPW estimates, allowing the longline survey to influence apportionment scale. While spatial trends in biology and abundance justify these apportionments, minor adjustments are unlikely to cause major biological impacts and are acceptable at current catch levels despite Central GOA declines. The recommended BRDs for 2027 and 2028 are shown below.

Year	Western	Central	Eastern	Total
2027	159	251	394	804
2028	159	251	394	804

14. Demersal shelf rockfish

Status and catch specifications (t) of demersal shelf rockfish and projections for 2027 and 2028. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

ARea	Year	Biomass	OFL	ABC	TAC	Catch
W/C/WYAK	2025		361	271	271	291
SEO	2025	24,912	524	394	394	267
W/C/WYAK	2026		361	271	271	236
SEO	2026	24,912	524	394	394	258
W/C/WYAK	2027		361	271		
SEO	2027	27,108	568	427		
W/C/WYAK	2028		361	271		
SEO	2028		568	427		

Changes from the previous assessment
Fishery average weights were updated through September 2025, and catch information was updated through October 2026. IPHC longline survey catch-per-unit-effort (CPUE) for yelloweye rockfish in the Southeast Outside (SEO) area was updated through 2025. Thirteen IPHC survey stations were removed because they were outside the SEO management area.

The recommended model (Model 26.1) replaced the GAM standardization of the IPHC CPUE index with a zero-inflated spatiotemporal model, which allows fitting to both positive- and zero-catch stations in the yelloweye rockfish depth range. Model 26.1 also uses bootstrapping to estimate the coefficients of variation (CV) of the IPHC CPUE index; in areas where bootstrapping was not possible (i.e., missing or zero catch), twice the maximum historical CVs were used.

Spawning biomass and species trends
Estimated SEO yelloweye rockfish biomass from Model 26.1 increased rapidly from 2019 to 2024 before leveling off in 2025, with the 2025 estimate carried forward to 2026 with wider uncertainty due to missing survey data. The projected SEO yelloweye rockfish biomass for 2027 is moderately higher (27,108 t) than the previous assessment's estimate (24,912 t), reflecting updated IPHC data, removal of

out-of-area stations, and the spatiotemporal index standardization. Biomass estimates are unavailable for Tier 6 DSR species in SEO and W/C/WYAK.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
DSR species in W/C/WYAK and non-yelloweye DSR species in SEO are managed under Tier 6, while SEO yelloweye rockfish is managed under Tier 5 using the previously accepted natural mortality rate. The Plan Team supported Model 26.1, noting that its higher bootstrapped CVs appropriately downweight sparse IPHC sampling in recent years and prevent upward IPHC trends from overly driving biomass estimates. Although the risk table rated assessment considerations at level 2 (“increased concern”) due to the loss of the ADF&G ROV survey since 2023 and reduced IPHC station coverage, the Team agreed with the authors that no additional buffer below maximum permissible ABC is needed given Model 26.1's CV weighting and precautionary Tier 5 control rules.

The Team recommended the authors' proposed 2027 and 2028 OFLs and ABCs, which remain unchanged from previous specifications for W/C/WYAK and increase slightly for SEO. The Team also emphasized prioritizing restoration of the ADF&G ROV survey (or evaluating camera sled, jig, or longline alternatives), supporting continued IPHC sampling in Area 2C, and improving historical halibut fishery discard estimates for the 2028 assessment.

Status determination
The DSR stock complexes in both SEO and W/C/WYAK are not being subjected to overfishing, as total catches in the most recent complete year remained below their respective OFLs. Information is insufficient to determine stock status relative to overfished criteria because estimates of spawning biomass are unavailable.

BRDs

Harvest in the Western and Central GOA and West Yakutat is not apportioned further by area. Management of DSR in Southeast Outside is deferred to the State of Alaska, which determines any apportionment within the district.

15. Thornyhead rockfish

Status and catch specifications (t) of thornyhead rockfish and projections for 2027 and 2028. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

Year	Biomass	OFL	ABC	TAC	Catch
2025	59,459	1,784	1,338	1,338	127
2026	59,459	1,784	1,338	1,338	190
2027	52,513	1,575	1,182		
2028		1,575	1,182		

Changes from the previous assessment
Model 26 updates the depth strata used to estimate exploitable biomass following the 2025 bottom-trawl survey redesign. The previous REMA model (24.2a) used bottom-trawl strata of 0–500, 501–700, and 701–1,000 m, along with longline survey data from 151–1,000 m. Some redesigned bottom-trawl strata cross 500 m. As requested by the Plan Team and SSC, Model 26 combines the upper strata into a single 0–700 m stratum and excludes the 1990, 1993, 1996, and 2001 bottom-trawl surveys, which sampled only to 500 m.

Spawning biomass and species trends
Spawning biomass is not estimated for the thornyhead complex. Longline survey biomass continues to decline in all three GOA regions. The bottom-trawl survey also shows a decline in the shallow stratum (0–500 m).

Tier determination/Plan Team discussion and resulting ABCs and OFLs
The thornyhead complex is in Tier 5. The Plan Team concurred with the authors' recommendation for a maximum permissible ABC of 1,182 t and an OFL of 1,575 t in both 2027 and 2028.

Status determination
The thornyhead complex is not subject to overfishing.

BRDs
The BRDs for 2027 and 2028 are based on area-specific REMA biomass estimates.

Year	Western	Central	Eastern	Total
2027	266	527	389	1,182
2028	266	527	389	1,182

16. Other rockfish

Status and catch specifications (t) of other rockfish. Biomass estimates for 2027 and 2028 are based on the random effects model for Tier 4 and 5 species from the last full assessment. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. *Note that 1 t of northern rockfish has been added for management purposes to the Other rockfish complex in WYAK of the EGOA. Catch data are current through November 12th, 2026.

Year	Biomass	OFL	ABC	TAC	Catch
2025	70,299	4,618	3,505	1,384	441
2026	70,299	4,618	3,505	1,384	715
2027	97,090	6,422	4,930		
2028		6,422	4,930		

Changes from the previous assessment
Other rockfish are assessed on a biennial stock assessment schedule to coincide with the availability of new survey data. The last operational full assessment was conducted in 2023. An operational update assessment was provided in 2024 as a result of removing DSR species from the GOA other rockfish complex. An update assessment was planned for 2025 to coincide with new survey data, however, due to the 2025 Federal shutdown an updated assessment is presented this year.

New data included in the assessment are updated total catch for 2025 and partial year's catch for 2026 through the date specified.

There were no changes made to the assessment methodology.

Spawning biomass and species trends
Biomass estimates for 2027 and 2028 are based on the random effects model for Tier 4 and 5 species from the previous operational assessment. The estimated other rockfish biomass has increased from 2024, and there is no evidence to suggest that overfishing is occurring. There is considerable variation in

individual species biomass estimates, mostly attributed to sampling variation as many of these species are poorly sampled by the trawl survey.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
The Team agreed with the authors that there are currently no apparent conservation concerns for other rockfish, including concerns of overfishing this complex. The Team supported the authors' ABC and OFL recommendations.

Status determination
The other rockfish complex is not being subjected to overfishing. Information is insufficient to determine stock status relative to overfished criteria as estimates of spawning biomass are unavailable.

BRDs
Area apportionment is based on the sum of random effects model biomass from last operational assessment (Tier 4 and 5 species) and catch history (Tier 6 species) by region. The Team recommends BRDs for the combined W/C/WYAK area and for the SEO area. The Team recommends the following apportionments:

year	W/C/WYAK	SEO*	Total
2027	1,478	3,452	4,930
2028	1,478	3,452	4,930

*Note that the small northern rockfish BRDs from EGOA are combined with OR in the WYAK management area and added for management purposes here from the Plan Team recommended apportionments for OR.

17. Atka mackerel

The last full/operational stock assessment was conducted in 2021. This year is a catch report, with ABC and OFL values rolled over from last year's harvest specifications.

Status and catch specifications (t) of Atka mackerel in recent years. Atka mackerel are managed under Tier 6 because reliable estimates of biomass are not available. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026.

		Tier 6			
Year	Biomass	OFL	ABC	TAC	Catch
2025		6,200	4,700	3,000	967
2026		6,200	4,700	3,000	1,019
2027		6,200	4,700		
2028		6,200	4,700		

BRDs
GOA sharks are managed Gulf-wide.

18. Skates

Status and catch specifications (t) of skates. Biomass for 2025 is from the previous assessment. Biomass for 2026–2028 is from the 2026 SAFE assessment (Table 18-4). The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12, 2026.

			Tier 5			
Species	Year	Biomass	OFL	ABC	TAC	Catch
Big Skate	2025	37,802	3,780	2,835	2,835	1,292
	2026	37,212	3,780	2,835	2,835	1,272
	2027	37,212	3,721	2,791		
	2028	37,212	3,721	2,791		
Longnose Skate	2025	33,804	3,380	2,536	2,536	1,292
	2026	35,721	3,380	2,536	2,536	1,188
	2027	35,721	3,572	2,678		
	2028	35,721	3,572	2,678		
Other Skates	2025	8,673	887	665	665	520
	2026	11,106	887	665	665	427
	2027	11,106	1,111	833		
	2028	11,106	1,111	833		

Changes from the previous assessment
This year was an operational update assessment. The last full assessment was conducted in 2021.

Spawning biomass and stock trends
GOA-wide predicted biomass for all skate species remains stable from 2023. Estimated biomass for Other skates increased by 28%. Projected biomass for Big skate in the WGOA decreased by 24%, but the population appears relatively stable. Biomass estimates for Longnose skate increased from 2023 except for a 47% decrease in the WGOA.

Tier determination/Plan Team discussion and resulting ABCs and OFLs
The skate complex is a Tier 5 assessment with three groups: Big skate, Longnose skate, and 'Other skates'. The Team agreed with the authors' recommendations for ABC and OFL values.

Status determination
Big skates, Longnose skates, and "Other skates" are not being subjected to overfishing. Information is insufficient to determine stock status relative to overfished criteria as estimates of spawning biomass are unavailable.

BRDs
All GOA skates have Gulf-wide OFLs and ABCs. For Big and Longnose skate, ABCs are apportioned into BRDs by management area. These BRDs are based on the random effects (RE) model; a separate RE model was run for each managed group, and for each regulatory area.

Year	Species	Western	Central	Eastern	Total
2027	big_skate	567	1,796	428	2,791
2028		567	1,796	428	2,791
2027	Longnose	55	2,021	602	2,678
2028		55	2,021	602	2,678
2027	Skates				833
2028					833

19. Sharks

The last full/operational stock assessment was conducted in 2021. This year is a catch report, with ABC and OFL values rolled over from last year's harvest specifications.

Status and catch specifications (t) of the GOA shark complex and projections for 2027 and 2028. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026

Year	Biomass*	OFL	ABC	TAC	Catch
2025	31,243	6,521	4,891	4,891	1,536
2026	31,243	6,521	4,891	4,891	1,251
2027	31,243	6,521	4,891		
2028		6,521	4,891		

*Spiny dogfish random effects modelled biomass only.

BRDs
GOA sharks are managed Gulf-wide.

20. Octopus

The last full/operational stock assessment was conducted in 2021. This year is a catch report, with ABC and OFL values rolled over from last year's harvest specifications.

Status and catch specifications (t) of GOA octopus. Biomass for each year corresponds to the projection given in the SAFE report issued in the preceding year. The OFL and ABC for 2027 and 2028 are those recommended by the Plan Team. Catch data are current through November 12th, 2026

Year	Biomass	OFL	ABC	TAC	Catch
2025		1,307	980	964	223
2026		1,307	980	932	197
2027		1,307	980		
2028		1,307	980		

BRDs
GOA octopus are managed Gulf-wide.

Appendix 1. Forage Fish

A combined BSAI and GOA forage fish ecosystem report was provided by Johanna Vollenweider. The primary data source for the GOA report is the bottom trawl survey which is conducted on a biennial schedule in odd years. This report updates data to the most recent survey in 2025. The bottom trawl survey is not designed to sampling the water column (where many forage species reside) and is not designed to capture small fish. Furthermore, the sampling does not include very shallow or very deep waters in the GOA. Consequently, measures of abundance, prevalence, and distribution are uncertain. The goal of this report is to present the data from the bottom trawl survey for forage species while understanding the potential shortcomings of the survey for this task.

Forage fish 2026 indices (prevalence, abundance, and biomass) in the Gulf of Alaska are generally favorable across species and are predominantly above long-term averages. Incidental catches of forage fish in commercial fisheries in 2026 is low for all species with the exception of herring, which had the 4th highest incidental catch since 1993.

Tables

Table 1. Gulf of Alaska groundfish Plan Team recommendations for 2027 and 2028: overfishing limits (OFL), acceptable biological catches (ABC), and biologically informed recommended distributions (BRD), in metric tons. The 2026 columns show final specifications and catch through November 12, 2026.

Stock	Area	2026 final specifications			2026 catch	Plan Team recommended 2027			Plan Team recommended 2028		
		OFL	ABC	TAC	11/12/26	OFL	ABC	BRD	OFL	ABC	BRD
Pollock	State GHL		3,326		3,136			3,889			2,656
	W (610)		27,453	27,453	10,472			39,492			26,968
	C (620)		60,477	60,477	60,095			68,522			46,792
	C (630)		37,936	37,936	37,987			40,071			27,363
	WYAK		3,883	3,883	2,095			3,577			2,443
	W/C/WYAK	**153,971**	**133,075**	**129,749**	**110,650**	**180,370**	**155,551**		**123,876**	**106,221**	
	SEO	12,998	9,749	9,749	0	7,600	5,700		7,600	5,700	
Pacific Cod	W		10,297	6,693	5,871			10,401			8,894
	C		28,732	21,549	20,740			29,020			24,820
	E		2,491	1,811	792			2,516			2,152
	Total	**49,782**	**41,520**	**30,053**	**27,403**	**50,194**	**41,937**		**43,208**	**35,866**	
Sablefish	W		4,687	4,687	3,665			4,118			4,140
	C		9,622	9,622	8,418			7,862			7,904
	WYAK		2,652	2,652	2,358			2,246			2,258
	SEO		5,589	5,589	5,175			4,492			4,516
	GOA Total			**22,550**	**19,615**						
Alaska-wide OFL and ABC	**AK Total**	**57,797**	**47,008**			**44,333**	**37,436**		**44,565**	**37,636**	
Shallow-Water Flatfish	W		23,902	13,250	46			23,738			23,619
	C		28,455	28,455	2,130			28,259			28,118
	WYAK		2,846	2,846	3			2,826			2,812
	SEO		1,707	1,707	0			1,695			1,687
	Total	**69,610**	**56,910**	**46,258**	**2,179**	**69,206**	**56,518**		**68,867**	**56,236**	
Deep-Water Flatfish	W		231	231	2			228			224
	C		2,570	2,570	141			2,519			2,464
	WYAK		1,796	1,796	3			1,760			1,721
	SEO		2,239	2,239	3			2,195			2,146
	Total	**8,118**	**6,836**	**6,836**	**149**	**7,959**	**6,702**		**7,784**	**6,555**	
Rex Sole	W		3,353	3,353	15			2,786			2,669
	C		13,582	13,582	1,325			10,053			9,631
	WYAK		1,413	1,413	0			1,532			1,457
	SEO		2,825	2,825	0			1,706			1,624
	Total	**25,743**	**21,173**	**21,173**	**1,340**	**19,523**	**16,077**		**18,683**	**15,381**	
Arrowtooth Flounder	W		33,716	14,500	127			25,572			25,537
	C		68,511	68,511	21,854			80,318			80,209
	WYAK		6,719	6,719	28			9,692			9,679
	SEO		11,039	11,039	16			18,501			18,476
	Total	**143,347**	**119,985**	**100,769**	**22,024**	**157,261**	**134,083**		**157,060**	**133,901**	
Flathead Sole	W		13,757	8,650	30			13,208			13,103
	C		22,083	22,083	1,162			21,421			21,250
	WYAK		4,018	4,018	0			4,807			4,768
	SEO		2,122	2,122	0			2,539			2,518
	Total	**51,176**	**41,980**	**36,873**	**1,192**	**51,152**	**41,975**		**50,740**	**41,639**	
Pacific ocean perch	W		1,688	1,688	1,528			1,191			1,138
	C		27,156	27,156	27,060			24,427			23,334
	WYAK		1,993	1,993	1,826			2,305			2,202
	SEO		6,672	6,672	1			8,394			8,019
	Total	**44,826**	**37,509**	**37,509**	**30,415**	**43,132**	**36,317**		**41,204**	**34,693**	
Northern Rockfish	W		1,346	1,346	225			824			814
	C		3,549	3,549	621			3,944			3,901
	E			0							
	Total	**5,848**	**4,895**	**4,895**	**847**	**5,699**	**4,769**		**5,636**	**4,716**	
Shortraker Rockfish	W		34	34	14			26			26
	C		189	189	198			179			179
	E		424	424	216			363			363
	Total	**863**	**647**	**647**	**427**	**757**	**568**		**757**	**568**	
Dusky Rockfish	W		199	199	40			188			178
	C		5,527	5,527	3,129			5,225			4,967

Stock	Area	2026 final specifications			2026 catch	Plan Team recommended 2027			Plan Team recommended 2028		
		OFL	ABC	TAC	11/12/26	OFL	ABC	BRD	OFL	ABC	BRD
	WYAK		204	204	40			193			184
	SEO		91	91	1			87			82
	Total	**7,319**	**6,021**	**6,021**	**3,210**	**6,920**	**5,693**		**6,577**	**5,411**	
Rougheye and Blackspotted Rockfish	W		229	229	80			159			159
	C		366	366	131			251			251
	E		608	608	72			394			394
	Total	**1,631**	**1,203**	**1,203**	**283**	**965**	**804**		**965**	**804**	
Demersal shelf rockfish	**W/C/WYAK**	**361**	**271**	**271**	**236**	**361**	**271**		**361**	**271**	
	SEO	524	394	394	188	568	427		568	427	
Thornyhead Rockfish	W		206	206	37			266			266
	C		590	590	120			527			527
	E		542	542	34			389			389
	Total	**1,784**	**1,338**	**1,338**	**190**	**1,575**	**1,182**		**1,575**	**1,182**	
Other Rockfish	W/C/WYAK		1,084	1,084	693			1,478			1,478
	SEO		2,421	300	22			3,452			3,452
	Total	**4,618**	**3,505**	**1,384**	**715**	**6,422**	**4,930**		**6,422**	**4,930**	
Atka mackerel	**Total**	**6,200**	**4,700**	**3,000**	**1,019**	**6,200**	**4,700**		**6,200**	**4,700**	
Big Skate	W		745	745	202			567			567
	C		1,749	1,749	925			1,796			1,796
	E		341	341	144			428			428
	Total	**3,780**	**2,835**	**2,835**	**1,272**	**3,721**	**2,791**		**3,721**	**2,791**	
Longnose Skate	W		104	104	32			55			55
	C		1,894	1,894	725			2,021			2,021
	E		538	538	432			602			602
	Total	**3,380**	**2,536**	**2,536**	**1,188**	**3,572**	**2,678**		**3,572**	**2,678**	
Other Skates	GOA-wide	887	665	665	427	1,111	833		1,111	833	
Sharks	GOA-wide	6,521	4,891	4,891	1,251	6,521	4,891		6,521	4,891	
Octopuses	GOA-wide	1,307	980	932	197	1,307	980		1,307	980	
TOTAL		**662,391**	**550,626**	**472,531**	**226,418**	**676,429**	**567,813**		**608,880**	**509,010**	

Note: TAC = total allowable catch. BRDs inform spatial distribution of TAC; the ABC applies at the stock or stock complex level. Sablefish OFL and ABC are Alaska-wide, but only GOA sablefish catch contributes to the catch total. Sources: final GOA harvest specifications and Catch Accounting System.

Table 2. 2027 and 2028 Discard Mortality Rates for Vessels Fishing in the Gulf of Alaska. Values are percent of halibut assumed to be dead]

Gear	Sector	Halibut discard mortality rate (percent)
Pelagic trawl	Catcher vessel	100
	Catcher/processor	100
Non-pelagic trawl	Catcher vessel	50
	Mothership and catcher/processor	86
Hook-and-line	Catcher/processor	8
	Catcher vessel	15
Pot	Catcher vessel and catcher/processor	36