

Interagency Halibut DMR Workgroup¹ Recommendations for GOA and BSAI Groundfish Fisheries in 2025 and 2026

Summary

This document provides halibut DMR estimates for in-season management of BSAI and GOA groundfish fisheries in 2025 and 2026 (*Table 1*) as recommended by the Interagency Halibut DMR Workgroup.

Other updates include:

1. Observer data and corresponding updated annual DMRs through 2023
2. Updates on current research activity related to halibut DMRs
3. Additional workgroup comments and discussion summary

Introduction

Halibut discard mortality rates (DMRs) are reviewed each year as part of the North Pacific Fishery Management Council's (Council) groundfish harvest specifications process and are used for in-season management of halibut prohibited species catch (PSC) relative to limits² established for GOA and BSAI groundfish fisheries. DMRs are currently specified for twelve operational groups with unique combinations of area, gear, and handling characteristics that affect halibut mortality (see listings in Table 1). DMRs are estimated based on observer data for eleven of the operational groupings while for the pelagic trawl fisheries, the DMR is fixed at 100%. Prior to Council specification, draft DMRs are updated by an interagency workgroup that includes staff from Alaska Fisheries Information Network (AKFIN), the Council, International Pacific Halibut Commission (IPHC), National Marine Fisheries Service (NMFS), and Pacific States Marine Fisheries Commission (PSMFC). The workgroup's recommendations are reviewed by the Council's GOA and BSAI Groundfish Plan Teams, and by the Scientific and Statistical Committee (SSC) along with other annual BSAI and GOA SAFE documents³.

DMR Estimation Methods

A detailed description of halibut DMR estimation methods was provided at the [November 2016 Groundfish Plan Team meeting](#)⁴ and those methods continue to be applied in the current update. Briefly, data are collected by onboard observers who sample halibut according to established protocols including physical examination of individual halibut just prior to the discarding event (see AFSC 2023 for details). Based on injury type and overall vitality, halibut are assigned to gear-specific condition categories (e.g., minor injuries, moderate, serious, among others) that correspond to fixed mortality probabilities derived from the literature (e.g., Clark et al. 1992, Williams 1997, and Kaimmer and Trumble 1998).

Expansion of condition data from samples to hauls, trips, and ultimately to the defined operational group is structurally consistent with the statistical sampling hierarchy. Expansion of discard estimates is done within each sampling strata (e.g., full coverage or gear-specific partial coverage) before estimates are combined across strata to produce fishery-level DMRs.

¹ Jen Cahalan (PSMFC), Jennifer Ferdinand (NMFS AFSC), Michael Fey (AKFIN), Krista Melani (NMFS AKRO), Jason Gasper (NMFS AKRO), Ian Stewart (IPHC)

² <https://www.fisheries.noaa.gov/alaska/sustainable-fisheries/alaska-groundfish-harvest-specifications>

³ <https://www.fisheries.noaa.gov/alaska/population-assessments/north-pacific-groundfish-stock-assessments-and-fishery-evaluation>

⁴ [2017-2018 Halibut DMR Recommendations](#)

Specified DMRs are averages of the expanded DMRs for the two most recent complete fishing years. The appropriateness of different reference timeframes was evaluated by the workgroup and reviewed by the Plan Teams and SSC in 2016. A two-year period was chosen to balance the need for robust sample sizes and stable estimates while keeping PSC accounting consistent with recent DMR levels and fishery operational practices. In 2023, upon completing a 5-year review of rates and intra-annual variance associated with the specified rates the Workgroup began using four-year averages for the GOA Rockfish Program non-pelagic trawl CV, GOA hook-and-line CV and pot operational groups. The continued goal is to apply two-year averages when feasible to maintain a rate responsive to current fishing practices. From a management/policy perspective, frequently updating applied DMRs may, in the presence of other contributing factors, provide incentives for operations to adjust handling practices to improve halibut survival.

The GOA hook-and-line CV operational group has seen the number of condition assessments on trips with halibut PSC estimates decline significantly since 2019. In 2023, the GOA hook-and-line CV operational group was moved to a 4-year average in response to this decrease. As of 2024, the number of assessments continues to be small (i.e., 4 viabilities collected in 2022).

Because DMRs for the directed halibut fishery are not used to estimate halibut mortality, this operational group includes CVs fishing in the GOA that do not retain halibut (i.e., non-IFQ and non-halibut target). , hence CVs that retain but are not targeting halibut do not contribute data to the DMR for this operational group. These vessels' operations are similar to those vessels that have some IFQ quota (can retain halibut) but target other groundfish (e.g., sablefish or P. cod). Therefore, the workgroup moved to a new methodology to estimate the discard mortality rate that includes these trips in the operational group, thus increasing the sample size and where the observer estimate of halibut discarded is used in estimation rather than the PSC estimated by the AKRO Catch Accounting System (CAS; PSC is not estimated on trips where halibut is retained). This *observer-based discard estimate* methodology allows the calculation to be derived from all observed trips that did not target halibut regardless of whether halibut was retained. As a result, the number of vessels contributing to the estimate increased from 4 to 26 and the number of assessments from 35 to 226. The new methodology utilizes the same sampling-hierarchy structure and operational grouping as explained in the [2017-2018 Halibut DMR Recommendations](#). The goal remains to use the hierarchical *CAS-based PSC estimate* methodology when practical.

Workgroup recommendations:

The workgroup recommends the DMRs provided in Table 1 be used for in-season management of halibut PSC in 2025, noting that groundfish harvest specifications are for two-year periods, and these DMRs would also be specified for 2026 until recalculated for the 2026/2027 harvest specifications. Annual DMR estimates and additional supporting information (numbers of vessels, trips, hauls, and condition assessments) for the selected operational groups are provided in Tables 2-7. Note that pelagic trawl DMRs are not estimated, but are instead specified at 100%. In cases where data from very few vessels contributed to DMR estimates, proxy operational groupings with similar halibut handling characteristics were identified (see footnotes in Table 1).

Proxy rates

For the BSAI hook-and-line CV operational group neither estimation methodology had large enough sample size to support an estimate, consistent with previous years. The recommendation is for the BSAI hook-and-line CV operational group to continue to use the rate estimated for BSAI hook-and-line CPs as a proxy. Halibut PSC for the CV group was 0.3 tons in 2023.

Deck sorting

As in previous years, the DMR estimates provided here do not pertain to deck-sorted halibut. PSC mortalities for deck-sorted halibut are estimated through an independent process that is not part of the

Council specification cycle. Because deck-sorted halibut do not enter the factory and are discarded relatively quickly, discarded halibut are presumed to have lower post-capture mortality. DMRs for deck sorted halibut are calculated based on real-time observer collected data and applied on a haul-specific basis.

Directed halibut fishery

Halibut DMRs needed for calculating discards in the directed halibut fishery are addressed independently as part of the IPHC 's stock assessment process. Table 8 presents the DMRs for all vessels targeting halibut in the BSAI and GOA (using observer-based discard estimate methods for halibut targets).

Pelagic trawl samples

For the pelagic trawl gear operational group, the DMR is fixed at 100% and samples from hauls on these vessels are not used in the DMR estimation process. The workgroup concluded that these data collections were no longer necessary and therefore in 2022 observers discontinued the collection of halibut condition data on pelagic trawl vessels; however, all other data related to halibut continue to be collected (e.g., counts and length data).

Model based DMRs

The Workgroup supports continued research into the feasibility of modeling DMRs based on variables expected to impact post-capture survival (hook-release method, time-out-of-water). Using modeled DMRs would reduce the data collection burden on observers and would dovetail with the expansion of Electronic Monitoring.

Research related to halibut discard mortality

The workgroup looks forward to reporting on any research findings that could be incorporated into alternative calculations of DMR. The IPHC is currently conducting research in support of improved estimation of DMRs and halibut post-capture mortality. Current projects are summarized below.

1. The IPHC recently completed research using pop-up archival tags to study Pacific halibut viability and mortality rates for fish captured and discarded in the directed longline fishery. This study also included evaluation of the environmental and physical conditions of the fish and the method of release. The results have been published in Loher et al. (2022) and Dykstra et al. (2024), and are consistent with current DMRs used in longline fisheries. Release method strongly influenced viability, with careful shake and gangion cut resulting in minimal injuries leading to discarded fish characterized as having excellent viability. In contrast, hook stripping resulted in most released fish having moderate or poor viability across fish of all sizes, and particularly for smaller fish. This work suggests the potential for release method to be used as a proxy or as part of a model-based approach to DMR estimation complementing or replacing viability assessment, which may reduce observer workload and be compatible with electronic monitoring.
2. In a second study, IPHC also used pop-up archival and traditional tags to estimate DMRs for fish captured using common charter recreational gear (12/0 and 16/0 circle hooks) and fishing and handling practices aboard charter vessels operating out of Sitka and Seward, AK. The results of this work are still in preparation; however, they show a mortality rate estimate of 1.35% with a 95% CI of 0.0-3.95% for Pacific halibut captured on circle hooks and released in the 'Excellent' viability category. This estimate is lower than the currently used value of 3.5% for 'Excellent' viability fish released in the commercial fishery which serves as the basis for the recreational fishery DMRs (Meyer 2007). Analysis of physical properties, blood stress parameters, and environmental influences are ongoing. The results of this study will be used to evaluate an updated DMR for charter and non-charter recreational fisheries.

3. In 2024, FMA initiated an observer research study to assess whether halibut condition data could be collected at the observer sample station on non-pelagic trawl CPs instead of at the point of discard. On some vessels, observers do not have access to the last point of discard because of obstructions in the factory such as conveyor and incline belts, factory machinery, and/or discard exits that are obscured from view; hence halibut condition data are not collected. On other vessels, the point of discard may be far from the observer sample station and could create additional sampling burdens and safety hazards for the observer. Conducting halibut condition assessments at the observer sample station instead of the point of discard would 1) increase the observer's ability to collect more halibut condition data than currently possible, 2) decrease the effort required to collect data and the disruption to other observer sampling duties, and 3) provide consistency in data collection locations. This study is currently ongoing and is expected to continue through early 2025 with results available in late 2025. Should changes in the location of halibut condition data be supported, the change would be implemented in January 2026.

References

- (AFSC) Alaska Fisheries Science Center. 2023. 2024 Observer Sampling Manual. Fisheries Monitoring and Analysis Division, North Pacific Groundfish Observer Program. AFSC, 7600 Sand Point Way N.E., Seattle, Washington, 98115. Current manual available at <https://www.fisheries.noaa.gov/resource/document/north-pacific-observer-sampling-manual>
- Clark, W. G., Hoag, S. H., Trumble, R. J., and Williams, G. H. 1992. Re-estimation of survival for trawl caught halibut released in different condition factors. *Int. Pac. Halibut Comm. Report of Assessment and Research Activities 1992*: 197-206.
- Kaimmer, S. M. and R. J. Trumble. 1998. Injury, condition, and mortality of Pacific halibut bycatch following careful release by Pacific cod and sablefish longline fisheries. *Fish. Res.* 38:131-144.
- Williams, Gregg H. 1997. Pacific halibut discard mortality rates in the 1990-1995 Alaskan groundfish fisheries, with recommendations for monitoring in 1997. *Int. Pac. Halibut Comm. Report of Assessment and Research Activities 1996*: 173-183.
- Dykstra, C.L., Wolf, N., Harris, B., Stewart, I.J., Hicks, A.C., Restrepo, F., and Planas, J.V. 2024. Relating capture and physiological conditions to viability and survival of Pacific halibut discarded from commercial longline gear. *Ocean & Coastal Management* 249. doi:10.1016/j.ocecoaman.2024.107018.
- Loher, T., Dykstra, C.L., Hicks, A.C., Stewart, I.J., Wolf, N., Harris, B.P., and Planas, J.V. 2022. Estimation of Postrelease Longline Mortality in Pacific Halibut Using Acceleration-Logging Tags. *North American Journal of Fisheries Management* 42(1): 37-49. doi:10.1002/nafm.10711.
- Meyer, S. 2007. Halibut Discard Mortality in Recreational Fisheries in IPHC Areas 2C and 3A. Discussion paper for the NPFMC. September 17, 2007. 30 p.

Tables

Table 1. Halibut DMRs specified for fishery operational types defined for halibut PSC management in GOA and BSAI groundfish fisheries in 2023 and workgroup recommendations for application in 2025 and 2026.

Area	Gear	Operation	2024 DMRs (specified)	2025/26 DMRs (recommended)
BSAI	Pot	All	26% ^b	21% ^b
	Hook-and-line	CP	7%	9%
	Hook-and-line	CV	7% ^a	9% ^a
	Non-pelagic trawl	Mothership / CP	85%	86%
	Non-pelagic trawl	CV	63%	67%
GOA	Pot	All	26% ^b	32% ^b
	Hook-and-line	CP	11%	10%
	Hook-and-line	CV	10% ^b	19% ^c
	Non-pelagic trawl	Mothership / CP	83%	76%
	Non-pelagic trawl	CV	69%	74%
	Non-pelagic trawl	CV-Rockfish Prog	56% ^b	56% ^b
All	Pelagic trawl	All	100%*	100%*

^a Based on BSAI HAL CP

^b 4-year average

^c Observer Estimate methodology

*Fixed, not estimated

Table 2. **BSAI hook and line** vessels, trips, hauls, injury assessments and corresponding DMRs from 2014– 2023 observer data. The bottom rows for each panel provides the recommended specified DMRs based on two-year averages or proxy values (*) from similar operations. Source: AKFIN Data.

BSAI Hook and Line CPs						
Year	Vessels	Trips	Hauls	Conditions	Spec DMR	Est DMR
2014	29	223	2,966	11,055		8.1%
2015	28	259	2,884	10,224		7.8%
2016	28	242	2,242	7,130		7.8%
2017	27	221	1,931	6,345		9.1%
2018	23	141	1,065	3,617	8%	9.1%
2019	20	125	694	1,925	8%	8.1%
2020	18	95	441	1,190	9%	10.5%
2021	16	92	550	1,422	9%	6.7%
2022	18	141	1054	4,041	10%	8.0%
2023	17	127	921	3,481	9%	10.4%
2024 Specs					7%	
WG recom. for 2025 Specs					9%	

BSAI Hook and Line CVs						
Year	Vessels	Trips	Hauls	Conditions	Spec DMR	Est DMR
2014	1	2	5	21		21%
2015	1	1	1	6		4%
2016						
2017	1	1	1	2		4%
2018	2	4	17	83	17%	4%
2019	1	1	5	15	4%	11%
2020					9%*	
2021					9%*	
2022					10%*	
2023					9%*	
2024 Specs					7%*	
WG recom. for 2025 Specs					9%*	

Table 3. **BSAI non-pelagic trawl** vessels, trips, hauls, viability assessments and corresponding DMRs from 2014-2023 observer data. The bottom rows for each panel provides the recommended specified DMRs based on either two-year average. Source: AKFIN Data.

BSAI Nonpelagic Trawl CPs						
Year	Vessels	Trips	Hauls	Assessments	Spec DMR	Est DMR
2014	20	66	535	1,928		85.6%
2015	10	22	186	463		81.2%
2016	14	96	881	3685		83.7%
2017	11	61	517	2,003		73.8%
2018	20	165	1049	2,426	84%	84.7%
2019	20	164	1,101	2,879	78%	83.6%
2020	15	114	945	2,578	75%	85.2%
2021	16	106	744	2,167	84%	85.1%
2022	18	84	585	1,768	84%	85.5%
2023	14	78	568	1,696	85%	85.8%
2024 Specs					85%	
WG recom. for 2025 Specs					86%	

BSAI Nonpelagic Trawl CVs						
Year	Vessels	Trips	Hauls	Assessments	Spec DMR	Est DMR
2014	22	169	581	2,780		52.9%
2015	34	146	446	1,977		58.0%
2016	43	163	660	2,677		64.9%
2017	49	205	1555	10,199		53.7%
2018	40	165	1,389	11,085	60%	61.6%
2019	47	177	2,093	16,781	59%	56.6%
2020	35	139	1,100	9,063	58%	67.7%
2021	29	62	524	3,668	59%	56.8%
2022	38	101	573	4,740	62%	69.9%
2023	31	69	485	4,790	62%	64.4%
2024 Specs					63%	
WG recom. for 2025 Specs					67%	

Table 4. **GOA hook and line** vessels, trips, hauls, injury assessments and corresponding DMRs from 2014–2023 observer data. CV group shows Observer estimate methodology while the CP represents the PSC estimate methodology. The bottom row for each panel provides the recommended specified DMRs based on either two-year or four-year averages. Source: AKFIN Data.

GOA Hook and Line CVs						
Year	Vessels	Trips	Hauls	Assessments	Spec DMR	Est DMR
2014	53	86	256	1113		13.3%
2015	45	58	187	799		11.4%
2016	49	63	171	801		17.1%
2017	41	56	161	632		16.2%
2018	40	45	143	686	17%	11.7%
2019	37	45	130	620	21%	15.6%
2020	11	12	21	77	13%	26.9%
2021	23	30	89	301	13%	16.1%
2022	13	15	51	205	12%	10.7%
2023	26	27	60	226	9%	23.8%
2024 Specs					10% ^b	
WG recom. for 2025 Specs					19% ^{bc}	

^b 4-year average

^c Observer Estimate methodology

GOA Hook and Line CPs						
Year	Vessels	Trips	Hauls	Assessments	Spec DMR	Est DMR
2014	8	17	285	1345		9.1%
2015	6	25	382	1570		8.5%
2016	9	18	185	1399		10.1%
2017	8	21	217	1539		14.9%
2018	2	3	29	232	10%	18.7%
2019	3	5	15	106	11%	18.6%
2020					11%	
2021	2	4	16	147	15%	15.7%
2022	5	8	38	309	15%	5.8%
2023	3	5	48	369	13%	15.0%
2024 Specs					11%	
WG recom. for 2025 Specs					10%	

Table 5. **GOA non-pelagic trawl** vessels, trips, hauls, viability assessments and corresponding DMRs from 2014–2023 observer data. The bottom row for each panel provides the recommended specified DMRs based on either two-year averages or interpolated values (*) from similar operations. Source: AKFIN Data

GOA Nonpelagic Trawl CPs						
Year	Vessels	Trips	Hauls	Assessments	Spec DMR	Est DMR
2014	2	12	73	164		73.7%
2015	1	1	1	1		90.0%
2016	7	13	76	232		84.0%
2017	5	38	424	2,367		75.0%
2018	4	25	114	709	84%	82.9%
2019	5	40	359	1,669	79%	85.9%
2020	5	30	170	988	75%*	85.5%
2021	5	26	260	576	84%*	77.9%
2022	4	11	95	230	83%*	88.1%
2023	4	11	76	175	83%	63.3%
2024 Specs					83%	
WG recom. for 2025 Specs					76%	

GOA Nonpelagic Trawl CVs						
Year	Vessels	Trips	Hauls	Assessments	Spec DMR	Est DMR
2014	21	35	99	487		65.4%
2015	19	33	66	346		64.9%
2016	36	94	239	1,433		63.5%
2017	28	59	144	778		65.2%
2018	25	46	105	641	67%	65.7%
2019	24	65	153	1,034	67%	69.1%
2020	13	35	93	515	68%	66.5%
2021	13	31	52	279	69%	71.3%
2022	16	30	42	237	69%	67.1%
2023	19	28	48	241	74%	78.4%
2024 Specs					69%	
WG recom. for 2025 Specs					74%	

Table 6. **BSAI and GOA pot** vessels, trips, hauls, viability assessments and corresponding DMRs from 2013 – 2022 observer data. The bottom rows for each panel provides the recommended specified DMRs based on either two-year or four-year averages. Source: AKFIN Data

BSAI Pot CPs and CVs						
Year	Vessels	Trips	Hauls	Assessments	Spec DMR	DMR
2014	20	52	264	498		6.5%
2015	24	78	310	723		5.8%
2016	24	66	245	424		10.8%
2017	14	33	191	335		25.5%
2018	22	34	101	197	9%	7.9%
2019	19	28	73	140	19%	39.0%
2020	9	13	51	60	27%	27.9%
2021	7	21	83	181	32%	20.0%
2022	17	51	176	441	33%	15.6%
2023	18	42	189	315	26%	19.3%
2024 Specs					26%*	
WG recom. for 2025 Specs					21%*	

*4-year average

GOA Pot CPs and CVs						
Year	Vessels	Trips	Hauls	Assessments	Spec DMR	DMR
2014	17	31	68	179		15.0%
2015	32	82	210	895		5.4%
2016	37	62	158	732		8.4%
2017	20	25	50	168		0.0%
2018	9	11	20	69	7%	0.0%
2019	11	16	40	82	4%	21.4%
2020	6	10	33	128	0%	42.9%
2021	38	62	220	730	10%	12.0%
2022	42	55	168	405	29%	37.7%
2023	42	64	148	410	27%	34.4%
2024 Specs					28%*	
WG recom. for 2025 Specs					32%*	

*4-year average

Table 7. **Rockfish Program GOA non-pelagic trawl** vessels, trips, hauls, viability assessments and corresponding DMRs from 2014 – 2023 observer data. The bottom rows for each panel provides the recommended specified DMRs based on either two year or four-year averages. Source: AKFIN Data

GOA Nonpelagic Trawl Rockfish Program CVs						
Year	Vessels	Trips	Hauls	Assessments	Spec DMR	Est DMR
2014	12	16	23	58		44.4%
2015	10	17	30	94		69.8%
2016	16	46	108	375		41.1%
2017	17	47	99	400		57.7%
2018	14	23	57	246	62%	46.7%
2019	13	18	28	61	49%	73.2%
2020	12	13	29	105	52%	59.5%
2021	6	15	33	115	60%	72.6%
2022	3	9	13	35	66%	20.0%
2023	3	4	10	57	55%	71.7%
2024 Specs					56%*	
WG recom. for 2025 Specs					56%*	

*4-year average

Table 8. **Halibut IFQ hook and line** vessels, trips, hauls, viability assessments and corresponding DMR estimates from 2014 – 2023 observer data. The annual DMR is specified by IPHC. Source: AKFIN Data

Halibut IFQ Hook and Line CVs					
Year	Vessels	Trips	Hauls	Assessments	Est DMR
2014	128	204	1251	4359	23.3%
2015	145	167	906	2796	20.4%
2016	172	200	1189	2998	14.4%
2017	99	124	687	1651	12.9%
2018	130	169	1059	2886	15.6%
2019	125	155	901	2218	15.0%
2020	42	61	415	1035	11.6%
2021	79	127	893	2207	18.0%
2022	74	106	637	2476	10.6%
2023	96	155	1221	3665	16.3%

*rate specified by IPHC at 16%