

2026 SAFE Report for the Pribilof Islands Blue King Crab Fisheries of the Bering Sea and Aleutian Islands Regions

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2026-09-02

Update assessment to determine overfishing status for 2025/26

The last full assessment for the Pribilof Islands blue king crab (PIBKC) was conducted in 2025 ([Stockhausen 2025](#)). The 2025 SAFE Report determined the overfishing limit (OFL) for PIBKC to be 1.16 t, with an acceptable biological catch (ABC) of 0.87 t. Subsequent to the 2025 assessment, full assessments will be conducted on a quadrennial basis, at which time the OFL and ABC will be updated. However, 2025/26 is an “off” year in the current assessment cycle and thus this report is an update to the 2025 assessment that presents final retained catch and bycatch mortality estimates in the directed fishery, other crab fisheries, and the groundfish fisheries to determine whether overfishing occurred during the 2025/26 crab fishery year (July 1, 2025-June 30, 2026). Time series of estimated catch in the crab and groundfish fisheries updated through 2025/26 are presented in Appendix A. While not required to determine overfishing status, time series of survey biomass from the NMFS Eastern Bering Sea trawl survey, updated for this year’s survey, are presented in Appendix B.

Following completion of the 2025/26 crab fishery year, data on retained catch and bycatch in the crab fisheries was obtained from the Alaska Department of Fish and Game (ADFG), and from the NMFS Alaska Regional Office (via the Alaska Fisheries Information Network [AKFIN]) for bycatch in the groundfish fisheries. The PIBKC stock is in an overfished status with mature male biomass estimated to be below $\frac{1}{2} \cdot MSST$ and is under a rebuilding plan. The directed fishery has been closed since 1999/2000; thus no retained catch or bycatch occurred in the directed fishery in 2025/26. Also, no bycatch of PIBKC was observed in other crab fisheries (i.e., snow crab, Tanner crab west of 166°W longitude; Tyler Jackson, ADFG, pers. comm., July 8, 2026). Bycatch in the groundfish fisheries totaled 0.057 t across all gear types during 2025/26. After applying gear-specific discard mortality rates, this amounted to 0.029 t total catch mortality. Because total fishery-related mortality (0.029 t) was less than the OFL for 2025/26 (1.16 t), **overfishing did not occur** on this stock in 2025/26.

The following two tables (the first with units in metric tons, the second with units in million lbs) update the management performance tables presented in the SAFE Report ([Stockhausen 2025](#)) with the final fishing mortality estimates for 2025/26:

Table A. Historical status and catch specifications for Pribilof Islands blue king crab (t). Values for 2024/25 and later are estimates or projections based on the 2024/25 full assessment. Other table entries are based on historical assessments and are not updated except for total and retained catch. MMBmating: mature male biomass estimated at time of mating (nomminally Feb. 15 each year).

Crab Year	Year	MSST	Biomass (MMBmating)	TAC	Retained Catch	Total Catch Mortality	OFL	ABC
2021	2021/22	2098	180	closed	0	0.102	1.16	0.87
2022	2022/23	2098	180	closed	0	0.25	1.16	0.87
2023	2023/24	2073	61	closed	0	0.0906	1.16	0.87
2024	2024/25	2073	75	closed	0	0.03	1.16	0.87
2025	2025/26		162	closed	0	0.029	1.16	0.87
2026	2026/27		162				1.16	0.87
2027	2027/28		162				1.16	0.87
2028	2028/29		162				1.16	0.87

Table B. Historical status and catch specifications for Pribilof Islands blue king crab (million lb). Values for 2024/25 and later are estimates or projections based on the 2024/25 full assessment. Other table entries are based on historical assessments and are not updated except for total and retained catch. MMBmating: mature male biomass estimated at time of mating (nomminally Feb. 15 each year).

Crab Year	Year	MSST	Biomass (MMBmating)	TAC	Retained Catch	Total Catch Mortality	OFL	ABC
2021	2021/22	4.625	0.518	closed	0	0.002	0.0026	0.0019
2022	2022/23	4.625	0.397	closed	0	0.0006	0.0026	0.0019
2023	2023/24	4.571	0.135	closed	0	0.0002	0.0026	0.0019
2024	2024/25	4.571	0.165	closed	0	0.000063	0.0026	0.0019
2025	2025/26		0.358	closed	0	0.000064	0.0026	0.0019
2026	2026/27		0.358				0.0026	0.0019
2027	2027/28		0.358				0.0026	0.0019
2028	2028/29		0.358				0.0026	0.0019

Note that, because this is an “off” year assessment, MSST and Biomass have not been updated from the values determined in the last full assessment.

Prohibited species catch (PSC) abundance

Estimates for prohibited species catch (PSC) of blue king crab were downloaded from AKFIN on July 27, 2026. The estimated number was 11,644 for **calendar year** 2025 and 5,799 for **crab**

fishery year 2025/26.

Appendix A: Bycatch in the crab and groundfish fisheries

Crab fisheries

The Pribilof Islands blue king crab stock is considered to be blue king crab occurring in the Pribilof District of the Bering Sea registration Area Q, augmented by a column of 9 20 nmi $\times$ 20 nmi grid squares defining survey stations in the NMFS EBS bottom trawl survey to the east of the District (indicated by the dashed red line in Figure 1). Estimates of blue king crab captured by the crab and groundfish fisheries within the Pribilof District, either retained or discarded as bycatch, are used to determine fishing mortality on the PIBKC stock.

Retained catch

The directed fishery has been closed since 1999/2000. Historical retained catch data (Table 1, Figure 2) were obtained from Bowers et al. (2011). Retained catch data start in 1973, reaching a maximum of 4,976 t in 1980/1981 before dropping precipitously. In the 1995/96 to 1998/99 seasons, blue king crab and red king crab were fished under the same Guideline Harvest Level (GHL). Total allowable catch (TAC) for the directed fishery has been set at zero since 1999/2000; there will be no retained catch allowed during the 2026/27 crab fishing season.

Bycatch and discard mortality

Estimates for annual bycatch of PIBKC in the crab fisheries is provided by ADF&G for sublegal males (< 138 mm CL), legal males (≥ 138 mm CL), and females based on data collected by onboard observers in the snow crab and Tanner crab fisheries (aggregated across fisheries in Table 3 and Figure 2), although data may be incomplete for some of these fisheries. Prior to 1998/99, observer data exist only for catcher-processor vessels, so discarded catch before this date are not included here. Catch weight was calculated by first determining the mean weight for crabs in the three categories (legal non-retained, sublegal, and female). The average weight for each category was then calculated from length frequency tables, where the carapace length (z , in mm) was converted to weight (w , in g) using the following equation:

$$w = \alpha \cdot z^\beta \quad (1)$$

Values for the length-to-weight conversion parameters α and β were applied across the time period (males: $\alpha = 0.000508$, $\beta = 3.106409$; females: $\alpha = 0.02065$, $\beta = 2.27$; Daly et al. (2014)). Average weights ($\bar{W}$) for each category were calculated using the following equation:

$$\bar{W} = \frac{\sum w_z \cdot n_z}{\sum n_z} \quad (2)$$

where w_z is crab weight-at-size z (i.e., carapace length) using Equation 1, and n_z is the number of crabs observed at that size in the category. Finally, estimated total non-retained weights for each crab fishery were the product of average weight ($\bar{W}$), CPUE (numbers/observed pot) based on observer data, and total effort (pot lifts) in each crab fishery.

As in the previous assessment (Stockhausen 2025), a 20% handling mortality rate was applied to the bycatch estimates to calculate discard mortality on PIBKC in these pot fisheries. In assessments prior to 2017, a handling mortality rate of 50% was applied to bycatch in the pot fisheries. The revised value used here is now consistent with the rates used in other king crab assessments (e.g., Zheng 2016). Estimates of bycatch and discard mortality (Table 3 and Figure 2) reached a maximum of 1.950 t for discard mortality by 1999/00, after which they decline to near zero, with an average over the last five years for discard mortality of only 0 t.

For 2025/26, discard mortality in the crab fisheries was 0 t (Tyler Jackson, ADF&G, pers. comm. July 8, 2026).

Groundfish fisheries

Bycatch estimates of PIBKC in the groundfish fisheries are based on groundfish observer data sampling expanded to total catch. Historical estimates beginning in 1991/92 are available to 2008/09 from AKFIN using results from the old Catch Accounting System database. This data is limited in its spatial resolution to NMFS statistical areas, which do not conform to the PIBKC stock area. As with previous assessments, estimates of blue king crab bycatch in the groundfish fisheries from NMFS statistical area 513 are assumed to account for bycatch within the PIBKC stock area. More recent estimates, 2009/10-present, are available from AKFIN using results from the AKRO's Catch-In-Areas database, which provides standardized spatial resolution using ADF&G statistical areas (among other improvements over the older Catch Accounting System). In 2019, the algorithm used by AKFIN to expand observer data was changed from one based on retained groundfish catch weight to the one currently used by AKRO, which is based on total groundfish catch weight. This was applied retroactively to data from calendar year 2017 forward, affecting estimates for crab starting in crab year 2016.

Here, bycatch in the groundfish fisheries during 1991/92-2025/26 is documented. The data were downloaded from AKFIN on July 27, 2026 for the current assessment. In order to apply gear-specific discard mortality rates to the bycatch data, trawl gear types (pelagic and non-pelagic) have been aggregated as "trawl" gear, while hook-and-line (longline) and pot gear have been aggregated as "fixed" gear. As in previous assessments, a discard mortality rate of 0.8 was assumed to apply to bycatch by trawl gear type (Stockhausen 2021, 2023). In this assessment, to align with other king crab stock assessments, a discard mortality rate of 0.5 was assumed to apply to fixed gear bycatch (a rate of 0.2 equal to that assumed for discard mortality for crab bycatch) was previously applied. These rates were applied by gear type to the estimated PIBKC bycatch biomass to estimate fishing-related mortality for the discarded crab. Since 2009/10, the maximum annual bycatch of PIBKC in the groundfish fisheries was 1.552 t in 2015/16, while the maximum total discard mortality was 1.018 t in 2015/16. In contrast, the average bycatch over the last 5 years is 0.250 t, while the average discard mortality is 0.148 t.

Bycatch by gear type

Annual estimates of bycatch abundance, biomass, and discard mortality of PIBKC in the groundfish fisheries are presented in Table 4 and Figures 3 and 4 by (aggregated) gear type. In general, trawl gear takes more PIBKC than fixed gear, and with higher mortality, although exceptions occur (e.g.,

2011/12, 2013/14, 2014/15, and 2023/24). The average mortality on PIBKC taken by trawl gear over the last five years is 0.061 t while that taken by fixed gear is 0.087 t.

Bycatch by target type

Annual estimates of bycatch abundance, biomass, and discard mortality of PIBKC in the groundfish fisheries are presented by groundfish target type in Tables 5-7 and Figure 5. Groundfish targets with less than 10 kg bycatch over the 2009/10-2025/26 period have been dropped. PIBKC is primarily taken as bycatch in fisheries targeting flathead sole, yellowfin sole, northern rock sole, and Pacific cod. Although the Pacific cod fishery accounted for the highest bycatch of PIBKC by weight (in 2015) across the time series, it generally ranks below the other fisheries as a source of mortality because the bycatch occurs primarily with fixed gear. In 2023/24, however, it was the target fishery that accounted for the largest source of PIBKC mortality (Table 7, Figure 5).

Spatial patterns of bycatch

Spatial patterns of PIBKC bycatch, by ADF&G stat area, in the groundfish fisheries are illustrated by gear type in Figures 6 and 7. Bycatch taken with trawl gear tends to be concentrated along and to the northeast of the eastern boundary of the Habitat Conservation Zone (non-pelagic trawl gear is excluded from the Zone), although 2012 was an exception in which bycatch was concentrated along the western edge of the Zone. In contrast, bycatch taken by fixed gear is typically dispersed along the shelf edge, although it was concentrated within and near the Pribilof Islands Habitat Conservation Zone (area outlined in red in Figures 6 and 7) in 2015/16 and again in 2023/24.

Appendix B: Survey biomass trends

NMFS EBS bottom trawl shelf survey

Time series of annual estimates of area-swept abundance and biomass, as well as size composition data, are available for PIBKC from the summer NMFS EBS Shelf Bottom Trawl Survey based on the stock area first defined in the 2013 assessment (Foy 2013), which includes the Pribilof District and a 20 nm strip adjacent to the eastern edge of the District (Figure 1). The survey has been conducted annually since 1975, with the exception of 2020. In 2020, the survey was not conducted due to issues associated with the global COVID-19 pandemic. For a more complete discussion of recent survey operations and results as pertains to PIBKC, see (Zacher et al. 2026) or (Stockhausen 2025).

Male crab were characterized as immature, mature, sublegal, and legal based on the size categories in Table 8. Females were characterized as immature or mature based on abdominal flap morphology and egg presence (Zacher et al. 2023). Biomass estimates were calculated using weight-size relationships developed by the AFSC's Kodiak Laboratory (the same as those applied to fishery data: Equation 1; Zacher et al. (2023)) applied to individual male and female crab. Individual crab weights were calculated and summed within the legal male, sublegal male, mature, and immature size categories for each sex caught at a station. Total biomass was estimated by averaging crab density (biomass /area swept) from all stations within the area-augmented Pribilof District and multiplying by the total area (Zacher et al. 2023).

Forty-five stations were included in survey strata for PIBKC in 1975, increasing to 86 by 1983 and remaining essentially constant until 2024, at which point the number of stations decreased to 70 when the so-called “high density” stations were dropped (Tables 9 and 10). In the early 1980s, males were found at up to 38 of these stations and females were found at up to 24. This decreased in the 1990s when males occurred in a maximum of 22 stations, while females occurring at a maximum of 15 stations. Since 2010, the maximum number of stations at which males were caught is 9, with a median of 5, while females were caught at a maximum of 8 stations, with a median of 4. In similar fashion, the number of males caught declined from a maximum of 858 in 1975 to a since-2010 maximum of 22; for females, the corresponding numbers are 343 (in 1981) and 24. In most years, more mature crab were caught than immature, although there were exceptions (e.g., 1989 for both sexes). In 2024, no blue king crab were caught in any category. In 2025, no immature/sublegal males or immature females were caught. A single mature/legal male was caught at each of two stations in 2025 while three mature females were caught at a single station (Tables 9 and 10). However, more mature/legal males were caught in 2026 than in the preceding four years and more mature females were caught than in the preceding ten years.

Annual survey biomass for PIBKC has declined precipitously over the course of the 45 year time series (Tables 11-12 and Figures 8-13). On decadal scales, mean survey biomass has declined for males from 28.41 thousand t in the 1970s to 0.214 thousand t in the 2020s. Similarly, mean survey biomass has declined for females from 3.949 thousand t in the 1970s to 0.124 thousand t. Dampened oscillations in survey biomass have occurred on roughly decadal scales for this stock, with maxima exhibited at the start of the time series for males, followed by a decline to low values in the mid-to-late 1980s, an increase to a relative maximum in the early 1990s, followed by a decline to consistent low values since 1999 (a “blip” with large confidence intervals in 2005 was the exception). Females show a similar pattern, but lagged perhaps 5 years or so (without a “blip” in 2005). In 2019, apparent increases observed in mature and legal male biomass estimates relative

to 2018 were attributed primarily to an abbreviated, but “still valid,” tow that may have had the effect of artificially increasing the CPUE calculated for the affected station (Zacher et al. 2020). Subsequently, survey biomass declined and, as previously noted, no PIBKC (males or females) were caught in the 2024 survey (Zacher et al. 2025). In contrast, male biomass in the 2026 survey was the highest since 2015 and female biomass was the highest since 2003. While cause for (extremely cautious) optimism, it must be noted that the females, in particular, were taken in only three hauls in 2026 whereas they were caught across 9 hauls in 2003.

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Table 1. Retained catch and average CPUE (number of legal males/pot lift) of PIBKC in the directed pot fishery, 1973-1998/99. The directed fishery has been closed since the 1999/2000 fishing season. NA: not applicable (no directed fishery)

crab year	number	biomass (t)	avg. cpue (num. legal crab/pot lift)
1973/74	174,420	579	26
1974/75	908,072	3,224	20
1975/76	314,931	1,104	19

(continued)

crab year	number	biomass (t)	avg. cpue (num. legal crab/pot lift)
1976/77	855,505	2,999	12
1977/78	807,092	2,929	8
1978/79	797,364	2,901	8
1979/80	815,557	2,719	10
1980/81	1,497,101	4,976	9
1981/82	1,202,499	4,119	7
1982/83	587,908	1,998	5
1983/84	276,364	995	3
1984/85	40,427	139	3
1985/86	76,945	240	3
1986/87	36,988	117	2
1987/88	95,130	318	2
1988/89	0	0	NA
1989/90	0	0	NA
1990/91	0	0	NA
1991/92	0	0	NA
1992/93	0	0	NA
1993/94	0	0	NA
1994/95	0	0	NA
1995/96	190,951	628	5
1996/97	127,712	425	4
1997/98	68,603	232	3
1998/99	68,419	234	3
1999/00	0	0	NA

Table 2. Bycatch catch of PIBKC in the directed and other crab fisheries, as estimated from crab observer data. A discard mortality rate of 0.2 was applied to obtain discard mortalities. Units are t.

crab year	females	sublegal males	legal males	total catch	discard mortality
1996/97	0.000	0.807	0.000	0.807	0.161
1997/98	0.000	0.000	0.000	0.000	0.000
1998/99	3.715	0.467	2.295	6.477	1.295
1999/00	1.969	4.291	3.493	9.752	1.950
2000/01	0.000	0.000	0.000	0.000	0.000
2001/02	0.000	0.000	0.000	0.000	0.000
2002/03	0.000	0.000	0.000	0.000	0.000
2003/04	0.000	0.000	0.000	0.000	0.000
2004/05	0.000	0.000	0.000	0.000	0.000
2005/06	0.050	0.000	0.000	0.050	0.010
2006/07	0.104	0.000	0.000	0.104	0.021
2007/08	0.136	0.000	0.000	0.136	0.027
2008/09	0.000	0.000	0.000	0.000	0.000
2009/10	0.000	0.000	0.000	0.000	0.000
2010/11	0.000	0.186	0.000	0.186	0.037
2011/12	0.000	0.000	0.000	0.000	0.000
2012/13	0.000	0.000	0.000	0.000	0.000
2013/14	0.000	0.000	0.000	0.000	0.000
2014/15	0.000	0.000	0.000	0.000	0.000
2015/16	0.102	0.230	0.000	0.333	0.067
2016/17	0.000	0.000	0.000	0.000	0.000
2017/18	0.064	0.000	0.000	0.064	0.013
2018/19	0.000	0.101	0.000	0.101	0.020
2019/20	0.000	0.000	0.000	0.000	0.000
2020/21	0.000	0.000	0.000	0.000	0.000
2021/22	0.000	0.000	0.000	0.000	0.000
2022/23	0.000	0.000	0.000	0.000	0.000
2023/24	0.000	0.000	0.000	0.000	0.000
2024/25	0.000	0.000	0.000	0.000	0.000
2025/26	0.000	0.000	0.000	0.000	0.000

Table 3. Bycatch catch of PIBKC in the directed and other crab fisheries, as estimated from crab observer data. A discard mortality rate of 0.2 was applied to obtain discard mortalities. Units are t.

crab year	females	sublegal males	legal males	total catch	discard mortality
1996/97	0.000	0.807	0.000	0.807	0.161
1997/98	0.000	0.000	0.000	0.000	0.000
1998/99	3.715	0.467	2.295	6.477	1.295
1999/00	1.969	4.291	3.493	9.752	1.950
2000/01	0.000	0.000	0.000	0.000	0.000
2001/02	0.000	0.000	0.000	0.000	0.000
2002/03	0.000	0.000	0.000	0.000	0.000
2003/04	0.000	0.000	0.000	0.000	0.000
2004/05	0.000	0.000	0.000	0.000	0.000
2005/06	0.050	0.000	0.000	0.050	0.010
2006/07	0.104	0.000	0.000	0.104	0.021
2007/08	0.136	0.000	0.000	0.136	0.027
2008/09	0.000	0.000	0.000	0.000	0.000
2009/10	0.000	0.000	0.000	0.000	0.000
2010/11	0.000	0.186	0.000	0.186	0.037
2011/12	0.000	0.000	0.000	0.000	0.000
2012/13	0.000	0.000	0.000	0.000	0.000
2013/14	0.000	0.000	0.000	0.000	0.000
2014/15	0.000	0.000	0.000	0.000	0.000
2015/16	0.102	0.230	0.000	0.333	0.067
2016/17	0.000	0.000	0.000	0.000	0.000
2017/18	0.064	0.000	0.000	0.064	0.013
2018/19	0.000	0.101	0.000	0.101	0.020
2019/20	0.000	0.000	0.000	0.000	0.000
2020/21	0.000	0.000	0.000	0.000	0.000
2021/22	0.000	0.000	0.000	0.000	0.000
2022/23	0.000	0.000	0.000	0.000	0.000
2023/24	0.000	0.000	0.000	0.000	0.000
2024/25	0.000	0.000	0.000	0.000	0.000
2025/26	0.000	0.000	0.000	0.000	0.000

Table 4. Bycatch of PIBKC in the BSAI groundfish fisheries, by gear type. Biomass and (discard) mortality are in kilograms. Bycatch in numbers is only available after 2008/09. Discard mortality rates of 0.5 and 0.8 for fixed and trawl gear, respectively, were applied to the biomass estimates to obtain discard mortalities for all years.

year	number	fixed gear		trawl gear		
		biomass	mortality	number	biomass	mortality
1991/92	--	67	33	--	6199	4959
1992/93	--	879	440	--	60791	48633
1993/94	--	0	0	--	34232	27385
1994/95	--	35	18	--	6856	5485
1995/96	--	108	54	--	1284	1028
1996/97	--	31	16	--	67	54
1997/98	--	1462	731	--	130	104
1998/99	--	19800	9900	--	79	64
1999/00	--	795	398	--	20	16
2000/01	--	116	58	--	23	19
2001/02	--	833	416	--	29	24
2002/03	--	71	35	--	297	238
2003/04	--	345	172	--	227	181
2004/05	--	816	408	--	2	1
2005/06	--	353	177	--	1339	1071
2006/07	--	138	69	--	74	59
2007/08	--	3993	1996	--	132	106
2008/09	--	141	71	--	473	379
2009/10	87	216	108	193	207	165
2010/11	16	44	22	35	56	45
2011/12	54	112	56	8	7	6
2012/13	72	170	85	340	669	535
2013/14	41	65	32	0	0	0
2014/15	65	144	72	0	0	0
2015/16	352	744	372	257	808	646
2016/17	63	93	46	524	455	364
2017/18	2	4	2	265	378	303
2018/19	24	38	19	398	466	373
2019/20	10	18	9	226	522	418
2020/21	5	7	3	0	0	0
2021/22	22	30	15	46	109	87
2022/23	126	215	107	91	266	213
2023/24	260	425	213	0	7	5
2024/25	91	142	71	0	0	0
2025/26	37	56	28	0	1	1

Table 5. Estimated bycatch (numbers of crab, rounded to whole numbers) of PIBKC in the ground-fish fisheries, by target type (available only after 2008/09). Discard mortality rates have not been applied.

year	Flathead Sole number	Pacific Cod number	Pollock - bottom number	Rock Sole number	Yellowfin Sole number
2009/10	54	87	20	0	119
2010/11	35	14	0	0	0
2011/12	0	62	0	0	0
2012/13	12	72	0	0	328
2013/14	0	41	0	0	0
2014/15	0	64	0	0	0
2015/16	58	351	0	0	199
2016/17	0	63	0	432	92
2017/18	95	2	0	0	170
2018/19	0	24	97	0	300
2019/20	0	10	0	55	170
2020/21	0	5	0	0	0
2021/22	0	22	0	0	46
2022/23	0	126	0	23	68
2023/24	0	260	0	0	0
2024/25	0	91	0	0	0
2025/26	0	33	0	0	0

Table 6. Estimated bycatch (biomass, in kg) of PIBKC in the groundfish fisheries, by target type (available only after 2008/09). Discard mortality rates have not been applied.

year	Flathead Sole biomass	Pacific Cod biomass	Pollock - bottom biomass	Rock Sole biomass	Yellowfin Sole biomass
2009/10	71	216	7	0	129
2010/11	56	42	0	0	0
2011/12	0	119	0	0	0
2012/13	24	170	0	0	645
2013/14	0	64	0	0	0
2014/15	0	143	0	0	0
2015/16	147	742	0	0	661
2016/17	0	91	0	368	87
2017/18	227	4	0	0	151
2018/19	0	38	23	0	442
2019/20	0	18	1	189	332
2020/21	0	7	0	0	0
2021/22	0	30	0	0	109
2022/23	0	215	0	106	160
2023/24	0	425	0	0	6
2024/25	0	141	0	0	0
2025/26	0	50	0	1	0

Table 7. Estimated discard mortality (in kg) of PIBKC in the BSAI groundfish fisheries, by target type. Discard mortality rates of 0.5 and 0.8 for fixed and trawl gear, respectively, were applied to bycatch estimates to obtain discard mortalities for all years.

year	Flathead Sole mortality	Pacific Cod mortality	Pollock - bottom mortality	Rock Sole mortality	Yellowfin Sole mortality
2009/10	57	108	5	0	103
2010/11	45	21	0	0	0
2011/12	0	61	0	0	0
2012/13	19	85	0	0	516
2013/14	0	32	0	0	0
2014/15	0	72	0	0	0
2015/16	117	371	0	0	529
2016/17	0	46	0	294	70
2017/18	182	2	0	0	121
2018/19	0	19	19	0	354
2019/20	0	9	1	151	265
2020/21	0	3	0	0	0
2021/22	0	15	0	0	87
2022/23	0	107	0	84	128
2023/24	0	213	0	0	5
2024/25	0	71	0	0	0
2025/26	0	25	0	0	0

Table 8. Size groups for various male components of the PIBKC stock used here. Female maturity is based on abdominal flap morphology and egg presence.

sex	size.range	category
male	< 120 mm CL	immature male
male	> 119 mm CL	mature male
male	< 135 mm CL	sublegal male
male	> 134 mm CL	legal male

Table 9. Sample sizes (number of survey hauls, number hauls where crab were caught, number of crab caught) for male population components in the NMFS EBS trawl survey in the Pribilof District.

year	survey	immature males		mature males		sublegal males		legal males		all males	
	number of hauls	non-0 hauls	no. crab	non-0 hauls	no. crab	non-0 hauls	no. crab	non-0 hauls	no. crab	non-0 hauls	no. crab
1975	45	11	305	13	553	11	530	13	328	13	858
1976	59	3	105	11	91	9	122	10	74	12	196
1977	58	7	56	10	129	9	73	9	112	10	185
1978	58	8	60	11	130	10	112	10	78	12	190
1979	58	2	2	14	90	8	25	13	67	14	92
1980	70	10	41	21	133	12	64	21	110	21	174
1981	84	19	99	36	184	23	128	36	155	38	283
1982	84	19	70	35	114	21	84	31	100	38	184
1983	86	15	47	32	93	18	74	29	66	35	140
1984	86	10	27	20	37	17	37	16	27	25	64
1985	86	3	4	14	24	8	13	11	15	14	28
1986	86	1	1	13	26	2	2	13	25	13	27
1987	86	5	34	15	50	6	38	14	46	16	84
1988	85	5	52	5	12	5	52	5	12	9	64
1989	86	8	160	4	11	8	160	4	11	10	171
1990	86	8	90	10	59	11	126	7	23	14	149
1991	85	16	92	19	103	20	129	14	66	22	195
1992	86	12	89	14	73	13	119	12	43	17	162
1993	85	12	75	19	96	15	115	17	56	21	171
1994	86	8	32	18	68	12	51	18	49	19	100
1995	86	7	66	18	177	15	118	14	125	19	243
1996	86	7	32	19	87	11	54	19	65	20	119
1997	86	7	25	17	65	10	39	16	51	19	90
1998	85	12	56	20	56	15	66	17	46	21	112
1999	86	7	9	13	34	9	18	11	25	15	43
2000	85	4	9	16	40	9	20	13	29	16	49
2001	86	3	5	6	28	4	9	5	24	7	33
2002	86	0	0	6	12	1	1	6	11	6	12
2003	86	2	2	7	14	3	3	7	13	9	16

(continued)

year	survey number of hauls	immature males non-0 hauls	no. crab	mature males non-0 hauls	no. crab	sublegal males non-0 hauls	no. crab	legal males non-0 hauls	no. crab	all males non-0 hauls	no. crab
2004	85	3	5	3	3	5	7	1	1	6	8
2005	84	3	54	2	5	3	54	2	5	4	59
2006	86	4	7	3	3	4	8	2	2	6	10
2007	86	4	14	2	6	4	17	2	3	4	20
2008	86	2	13	1	1	2	13	1	1	3	14
2009	86	5	16	3	15	5	27	3	4	5	31
2010	86	2	6	5	8	3	10	4	4	5	14
2011	86	0	0	3	9	2	2	2	7	3	9
2012	86	1	9	4	13	1	14	4	8	4	22
2013	86	1	3	2	6	2	5	2	4	3	9
2014	86	3	5	2	5	3	5	2	5	4	10
2015	86	2	4	8	13	6	10	5	7	9	17
2016	86	4	5	3	3	5	7	1	1	5	8
2017	86	2	4	4	4	3	5	3	3	5	8
2018	86	4	6	3	3	4	6	3	3	5	9
2019	86	5	8	3	3	5	8	3	3	6	11
2021	86	1	1	5	9	3	4	4	6	5	10
2022	86	0	0	2	2	0	0	2	2	2	2
2023	86	2	2	0	0	2	2	0	0	2	2
2024	70	0	0	0	0	0	0	0	0	0	0
2025	70	0	0	2	2	0	0	2	2	2	2
2026	70	1	1	1	5	2	2	1	5	2	7

Table 10. Sample sizes (number of survey hauls, number hauls where crab were caught, number of crab caught) for female population components in the NMFS EBS trawl survey in the Pribilof District.

year	survey number of hauls	immature females non-0 hauls	no. crab	mature females non-0 hauls	no. crab	all females non-0 hauls	no. crab
1975	45	0	0	9	265	9	265
1976	59	3	81	4	11	7	92
1977	58	2	9	5	136	7	145
1978	58	1	1	8	107	9	108
1979	58	2	3	4	22	6	25
1980	70	3	6	11	337	14	343
1981	84	13	31	20	202	33	233
1982	84	5	35	23	264	28	299
1983	86	6	15	17	288	23	303
1984	86	6	24	14	145	20	169
1985	86	7	15	8	28	15	43
1986	86	2	2	8	106	10	108
1987	86	5	22	7	36	12	58
1988	85	5	38	8	20	13	58
1989	86	8	131	9	40	17	171
1990	86	5	75	9	90	14	165
1991	85	9	36	11	126	20	162
1992	86	4	66	9	76	13	142
1993	85	5	45	13	89	18	134
1994	86	3	8	12	271	15	279
1995	86	3	38	11	220	14	258
1996	86	7	13	10	213	17	226
1997	86	4	17	11	137	15	154
1998	85	8	29	11	107	19	136
1999	86	0	0	10	155	10	155
2000	85	0	0	13	74	13	74
2001	86	1	1	9	93	10	94
2002	86	1	1	6	66	7	67
2003	86	4	4	7	69	11	73

(continued)

year	survey number of hauls	immature females non-0 hauls	no. crab	mature females non-0 hauls	no. crab	all females non-0 hauls	no. crab
2004	85	3	5	3	4	6	9
2005	84	1	43	5	15	6	58
2006	86	4	6	3	22	7	28
2007	86	3	7	2	9	5	16
2008	86	3	19	4	24	7	43
2009	86	3	9	3	29	6	38
2010	86	5	9	4	15	9	24
2011	86	1	1	2	2	3	3
2012	86	1	1	5	15	6	16
2013	86	2	2	4	8	6	10
2014	86	1	1	3	4	4	5
2015	86	0	0	4	11	4	11
2016	86	4	5	7	19	11	24
2017	86	4	5	4	10	8	15
2018	86	1	1	3	6	4	7
2019	86	0	0	2	11	2	11
2021	86	0	0	3	12	3	12
2022	86	0	0	4	7	4	7
2023	86	0	0	1	7	1	7
2024	70	0	0	0	0	0	0
2025	70	0	0	1	3	1	3
2026	70	1	1	2	21	3	22

Table 11. Estimated annual biomass (1,000s t) of male PIBKC population components from the NMFS EBS trawl survey.

year	immature males		mature males		sublegal males		legal males		all males	
	est.	cv	est.	cv	est.	cv	est.	cv	est.	cv
1975	8.341	0.525	38.054	0.501	19.378	0.466	27.016	0.499	46.395	0.475
1976	4.129	0.944	14.059	0.451	5.539	0.811	12.649	0.468	18.188	0.452
1977	3.713	0.443	42.618	0.768	5.966	0.463	40.366	0.784	46.332	0.729
1978	2.765	0.509	17.370	0.558	6.618	0.412	13.517	0.642	20.135	0.506
1979	0.061	0.785	10.959	0.315	1.981	0.452	9.040	0.311	11.021	0.315
1980	2.084	0.492	23.553	0.430	4.958	0.464	20.679	0.446	25.637	0.417
1981	1.704	0.299	11.628	0.174	2.779	0.297	10.554	0.175	13.332	0.175
1982	1.152	0.232	7.389	0.187	1.647	0.217	6.893	0.192	8.541	0.175
1983	0.962	0.357	5.409	0.178	1.897	0.297	4.474	0.175	6.371	0.187
1984	0.130	0.362	2.216	0.229	0.521	0.268	1.824	0.247	2.345	0.222
1985	0.039	0.733	1.055	0.267	0.338	0.374	0.755	0.283	1.094	0.263
1986	0.004	1.000	1.505	0.303	0.035	0.897	1.473	0.307	1.508	0.302
1987	0.191	0.783	2.923	0.411	0.334	0.536	2.781	0.414	3.115	0.397
1988	0.170	0.707	0.842	0.529	0.170	0.707	0.842	0.529	1.012	0.457
1989	1.275	0.620	0.827	0.637	1.275	0.620	0.827	0.637	2.102	0.551
1990	2.004	0.661	3.078	0.600	3.567	0.665	1.514	0.515	5.082	0.610
1991	1.377	0.386	4.690	0.386	2.741	0.336	3.326	0.450	6.067	0.373
1992	1.801	0.512	4.391	0.423	3.157	0.446	3.035	0.446	6.192	0.432
1993	1.088	0.545	4.556	0.307	2.442	0.409	3.203	0.301	5.644	0.305
1994	0.619	0.388	3.410	0.345	1.224	0.350	2.806	0.351	4.029	0.343
1995	0.968	0.863	8.360	0.604	2.541	0.673	6.787	0.615	9.328	0.629
1996	0.745	0.605	4.641	0.269	1.512	0.524	3.873	0.265	5.386	0.279
1997	0.381	0.545	3.233	0.276	0.849	0.451	2.765	0.271	3.614	0.294
1998	0.692	0.413	2.798	0.249	0.980	0.354	2.510	0.255	3.490	0.252
1999	0.161	0.402	1.729	0.337	0.464	0.414	1.426	0.347	1.890	0.333
2000	0.113	0.679	2.091	0.296	0.459	0.373	1.746	0.305	2.205	0.304
2001	0.087	0.764	1.599	0.735	0.225	0.628	1.461	0.759	1.686	0.733
2002	0.000	0.000	0.680	0.506	0.033	1.000	0.647	0.525	0.680	0.506
2003	0.019	0.984	0.702	0.400	0.050	0.723	0.671	0.411	0.721	0.390
2004	0.036	0.649	0.107	0.583	0.094	0.487	0.048	1.000	0.143	0.455
2005	0.326	0.942	0.344	0.710	0.326	0.942	0.344	0.710	0.670	0.589

(continued)

	immature males		mature males		sublegal males		legal males		all males	
year	est.	cv	est.	cv	est.	cv	est.	cv	est.	cv
2006	0.087	0.585	0.166	0.603	0.114	0.616	0.139	0.699	0.253	0.462
2007	0.197	0.737	0.306	0.798	0.298	0.632	0.206	0.734	0.503	0.661
2008	0.212	0.952	0.046	1.000	0.212	0.952	0.046	1.000	0.258	0.797
2009	0.254	0.680	0.497	0.713	0.565	0.740	0.187	0.604	0.751	0.698
2010	0.092	0.853	0.303	0.461	0.205	0.702	0.190	0.483	0.395	0.522
2011	0.000	0.000	0.461	0.843	0.062	0.705	0.399	0.886	0.461	0.843
2012	0.165	1.000	0.644	0.735	0.350	1.000	0.459	0.643	0.809	0.786
2013	0.015	1.000	0.250	0.797	0.075	0.824	0.190	0.752	0.265	0.754
2014	0.083	0.623	0.233	0.699	0.083	0.623	0.233	0.699	0.317	0.567
2015	0.082	0.747	0.622	0.394	0.275	0.494	0.428	0.458	0.703	0.395
2016	0.071	0.486	0.130	0.613	0.133	0.495	0.068	1.000	0.201	0.515
2017	0.046	0.767	0.255	0.514	0.076	0.599	0.224	0.573	0.300	0.470
2018	0.096	0.540	0.154	0.571	0.096	0.540	0.154	0.571	0.249	0.522
2019	0.115	0.542	0.206	0.604	0.115	0.542	0.206	0.604	0.321	0.504
2021	0.015	1.000	0.405	0.503	0.122	0.653	0.298	0.576	0.420	0.512
2022	0.000	0.000	0.112	0.702	0.000	0.000	0.112	0.702	0.112	0.702
2023	0.024	1.000	0.000	0.000	0.024	1.000	0.000	0.000	0.024	1.000
2024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	0.000	0.000	0.203	0.704	0.000	0.000	0.203	0.704	0.203	0.704
2026	0.012	1.000	0.476	1.000	0.050	0.795	0.476	1.000	0.526	0.930

Table 12. Estimated annual biomass (1,000s t) of female PIBKC population components from the NMFS EBS trawl survey.

year	immature females		mature females		all females	
	est.	cv	est.	cv	est.	cv
1975	0.000	0.000	12.442	0.636	12.442	0.636
1976	4.968	0.972	0.824	0.532	5.792	1.504
1977	0.419	0.829	13.154	0.875	13.573	1.704
1978	0.076	1.000	6.416	0.725	6.492	1.725
1979	0.092	0.730	1.097	0.793	1.189	1.523
1980	0.699	0.865	211.604	0.984	212.303	1.849
1981	0.497	0.413	5.987	0.469	6.484	0.882
1982	0.553	0.572	8.824	0.678	9.377	1.250
1983	0.258	0.607	9.990	0.791	10.248	1.398
1984	0.015	0.688	3.070	0.381	3.085	1.069
1985	0.005	0.457	0.520	0.448	0.525	0.905
1986	0.011	0.727	2.420	0.901	2.431	1.628
1987	0.119	0.855	0.795	0.583	0.914	1.439
1988	0.190	0.788	0.528	0.491	0.718	1.279
1989	0.801	0.666	0.945	0.581	1.746	1.246
1990	1.118	0.928	1.810	0.508	2.928	1.436
1991	0.343	0.475	2.433	0.414	2.776	0.889
1992	0.802	0.961	1.848	0.480	2.650	1.441
1993	0.444	0.624	1.647	0.461	2.091	1.085
1994	0.087	0.570	4.806	0.447	4.893	1.016
1995	0.331	0.904	3.948	0.519	4.279	1.423
1996	0.177	0.415	5.408	0.502	5.585	0.917
1997	0.194	0.659	2.835	0.429	3.029	1.089
1998	0.267	0.425	1.914	0.441	2.181	0.866
1999	0.000	0.000	2.868	0.467	2.868	0.467
2000	0.000	0.000	1.462	0.460	1.462	0.460
2001	0.000	1.000	1.816	0.722	1.816	1.722
2002	0.000	1.000	1.401	0.776	1.401	1.776
2003	0.021	0.667	1.286	0.745	1.307	1.412
2004	0.025	0.821	0.098	0.597	0.123	1.418
2005	0.477	1.000	0.370	0.570	0.847	1.570

(continued)

year	immature females		mature females		all females	
	est.	cv	est.	cv	est.	cv
2006	0.038	0.602	0.538	0.760	0.576	1.362
2007	0.059	0.792	0.223	0.876	0.282	1.668
2008	0.222	0.901	0.450	0.635	0.672	1.537
2009	0.080	0.660	0.545	0.849	0.625	1.509
2010	0.084	0.578	0.310	0.660	0.394	1.238
2011	0.003	1.000	0.034	0.725	0.037	1.725
2012	0.009	1.000	0.229	0.660	0.238	1.660
2013	0.012	0.722	0.154	0.700	0.166	1.422
2014	0.016	1.000	0.091	0.605	0.107	1.605
2015	0.000	0.000	0.160	0.662	0.160	0.662
2016	0.050	0.490	0.354	0.493	0.404	0.983
2017	0.055	0.501	0.206	0.591	0.261	1.092
2018	0.013	1.000	0.108	0.725	0.121	1.725
2019	0.000	0.000	0.412	0.859	0.412	0.859
2021	0.000	0.000	0.262	0.632	0.262	0.632
2022	0.000	0.000	0.146	0.663	0.146	0.663
2023	0.000	0.000	0.119	1.000	0.119	1.000
2024	0.000	0.000	0.000	0.000	0.000	0.000
2025	0.000	0.000	0.102	1.000	0.102	1.000
2026	0.017	1.000	0.842	0.937	0.859	1.937

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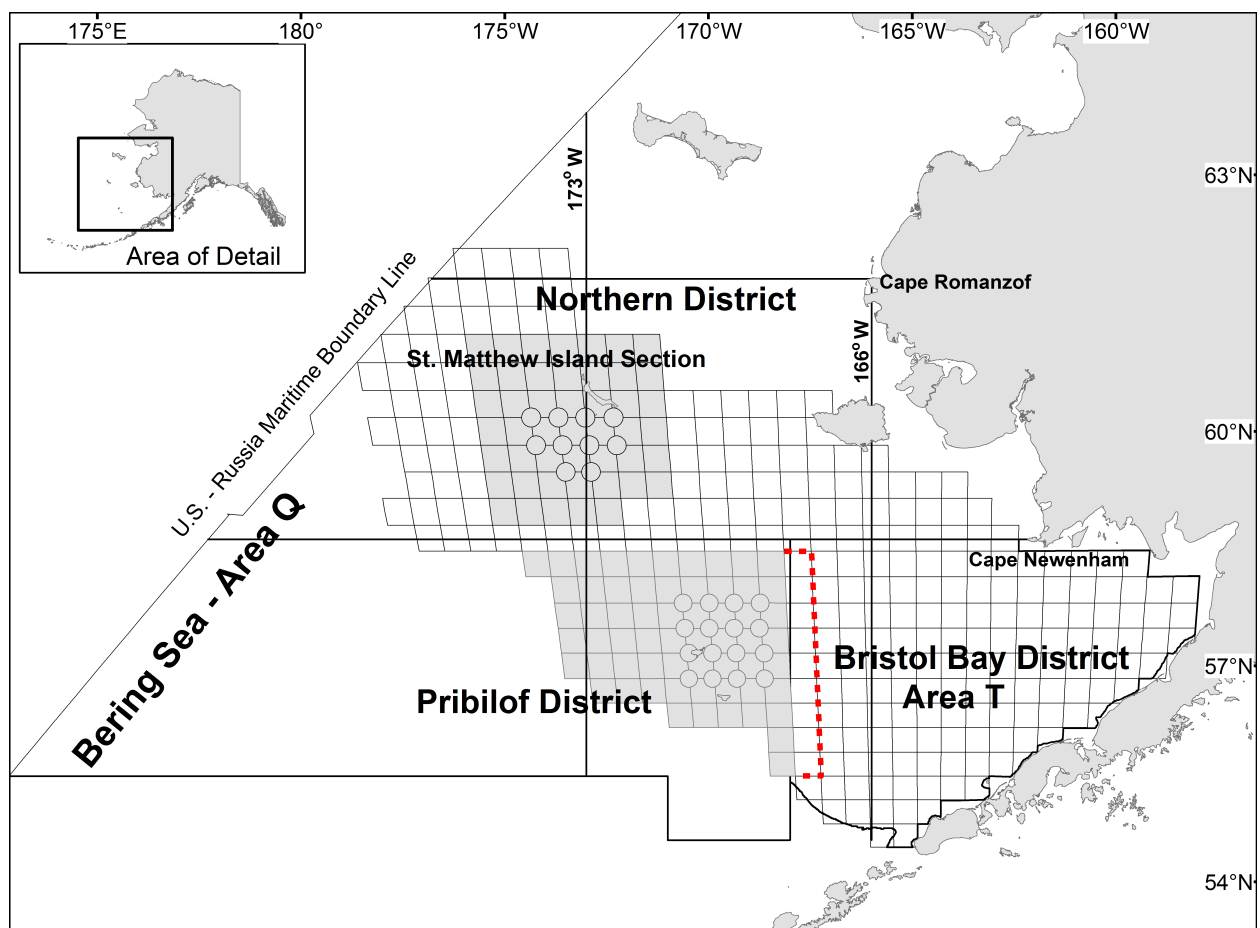


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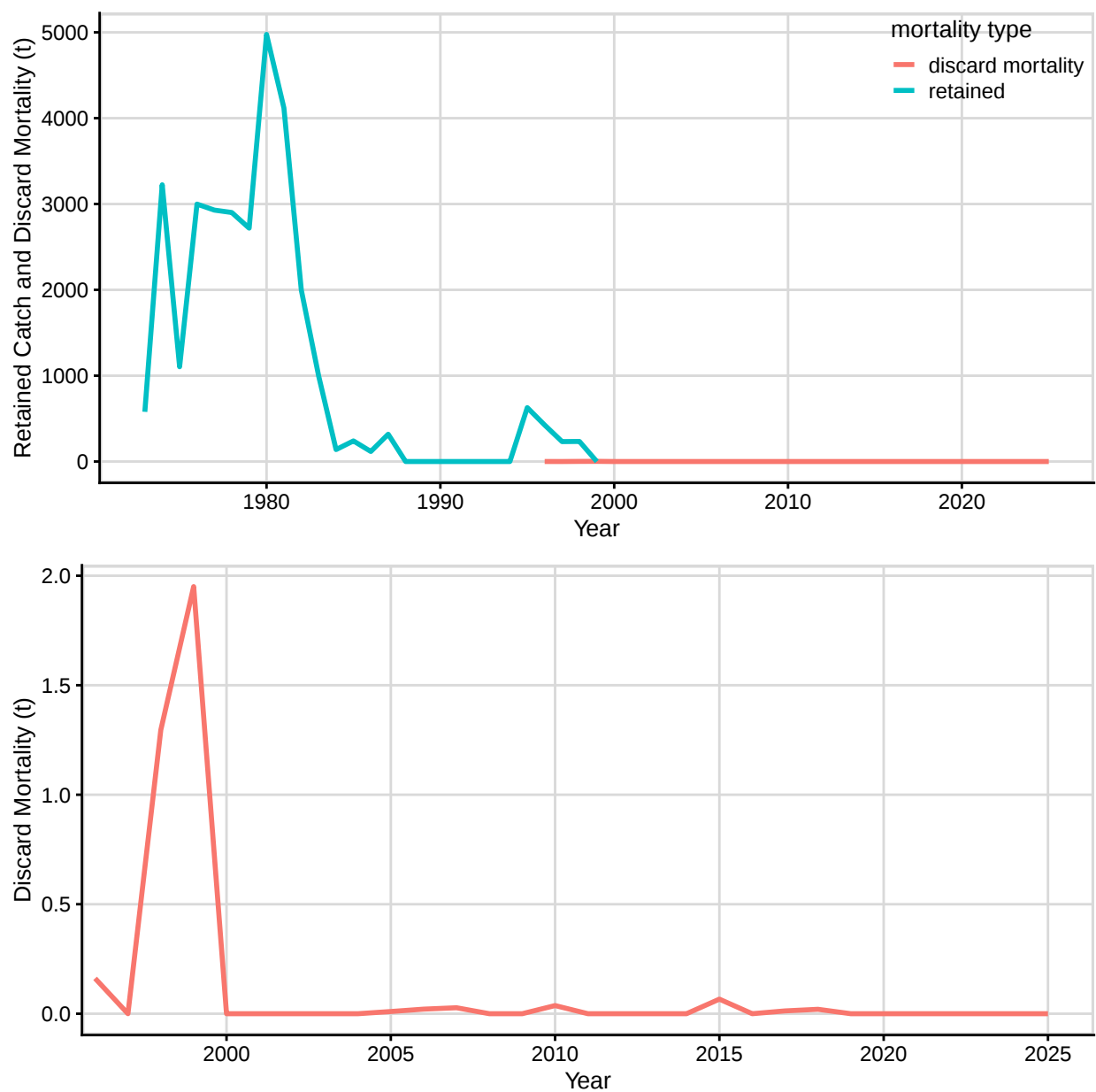


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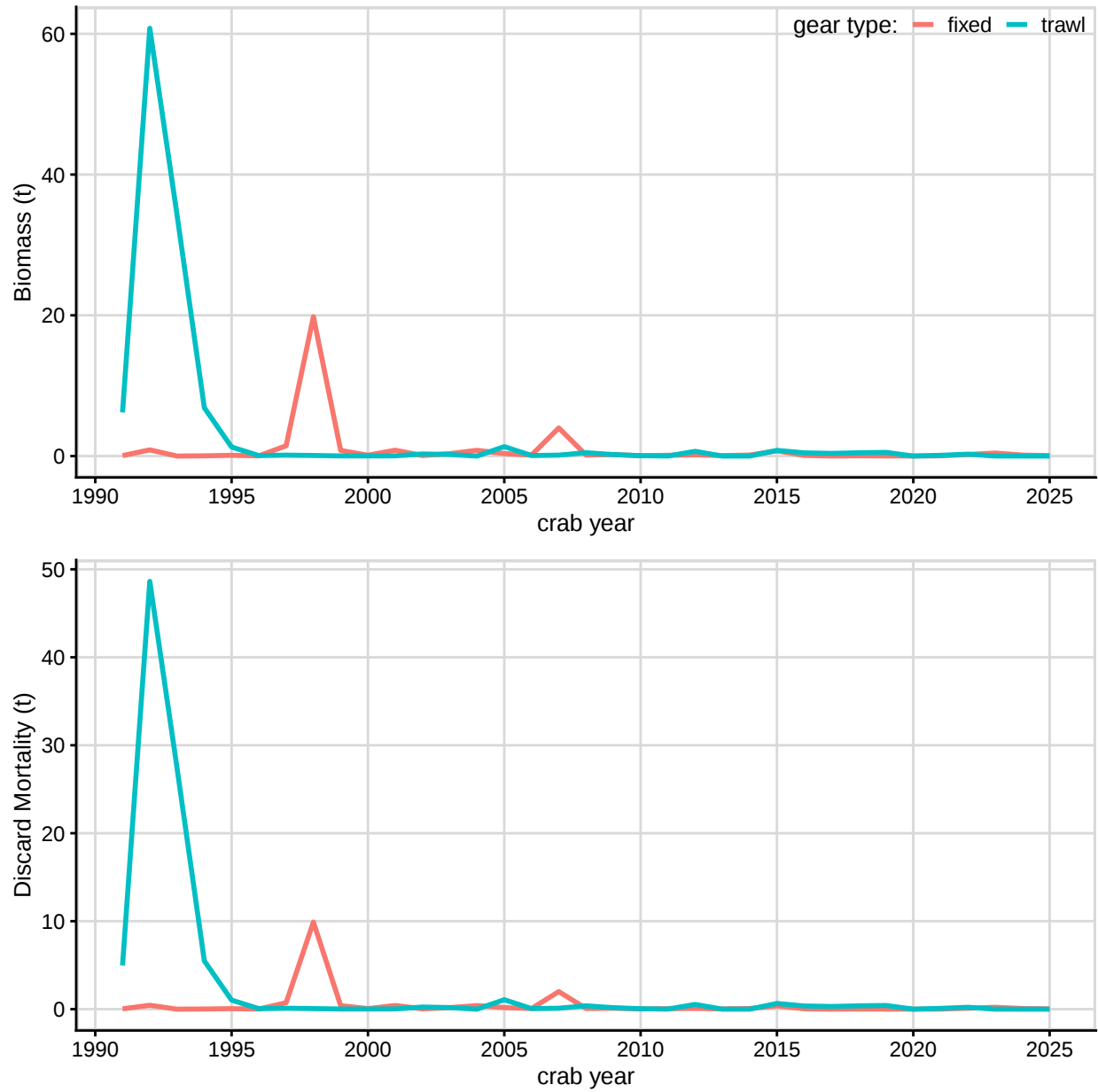


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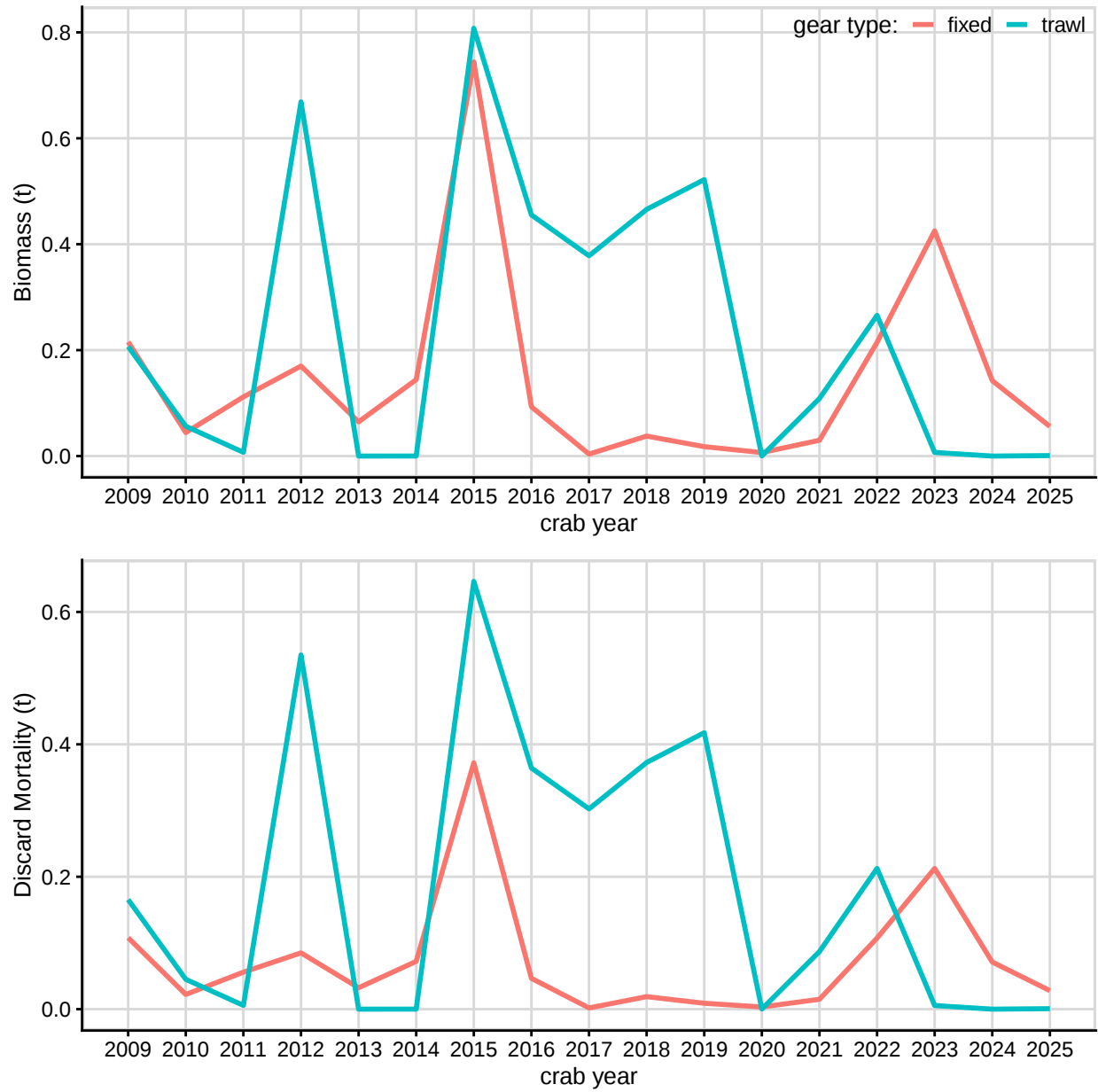


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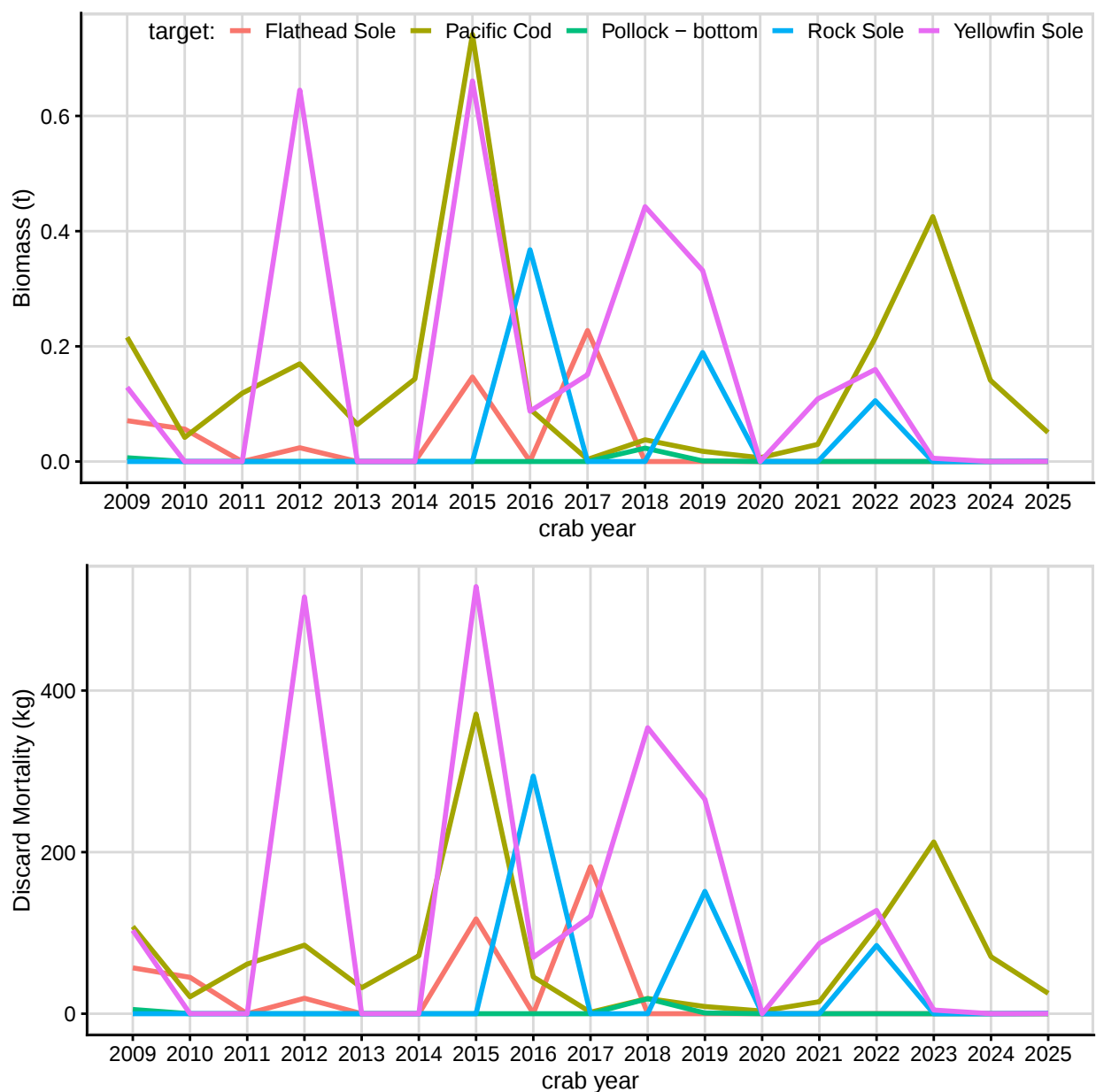


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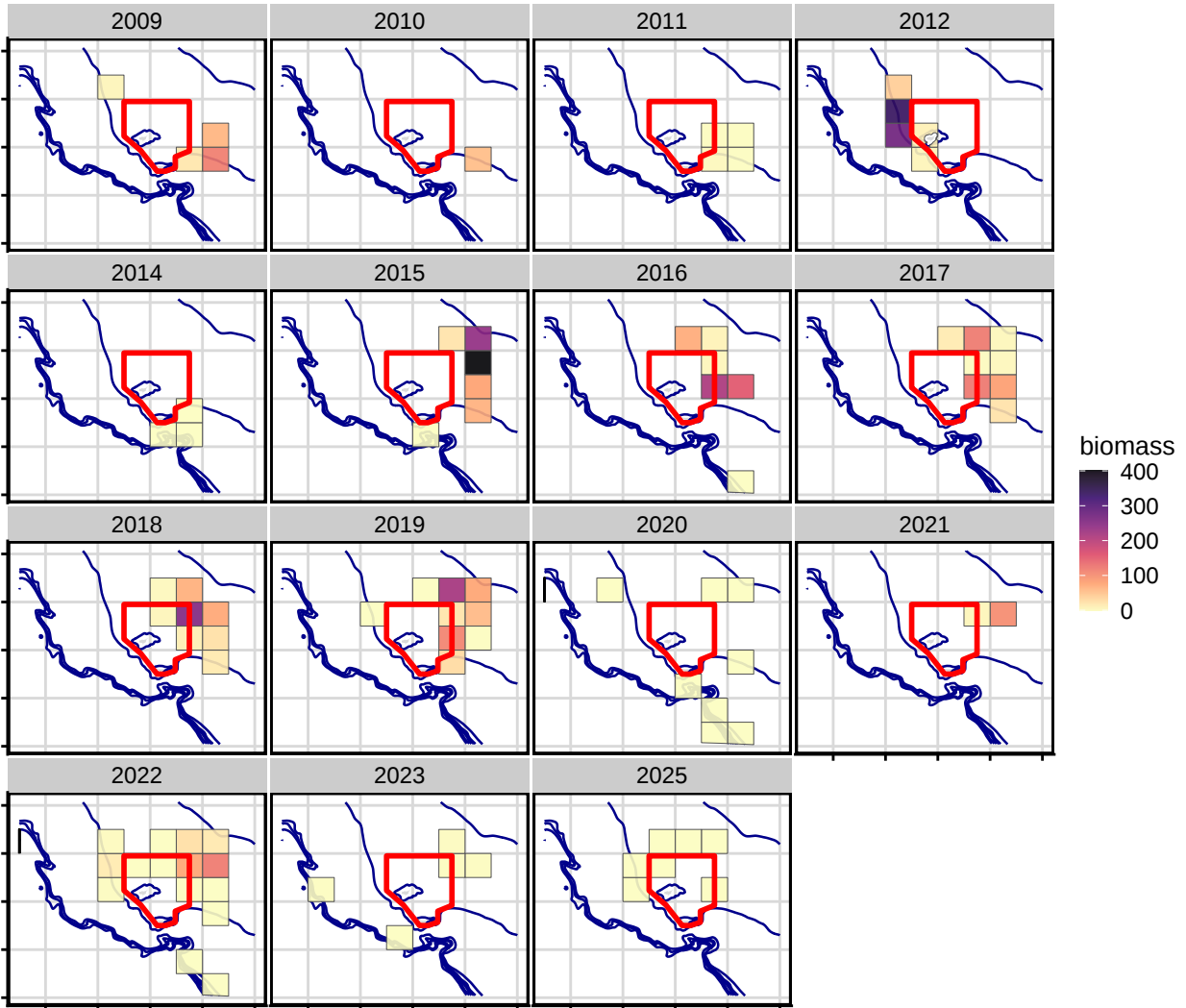


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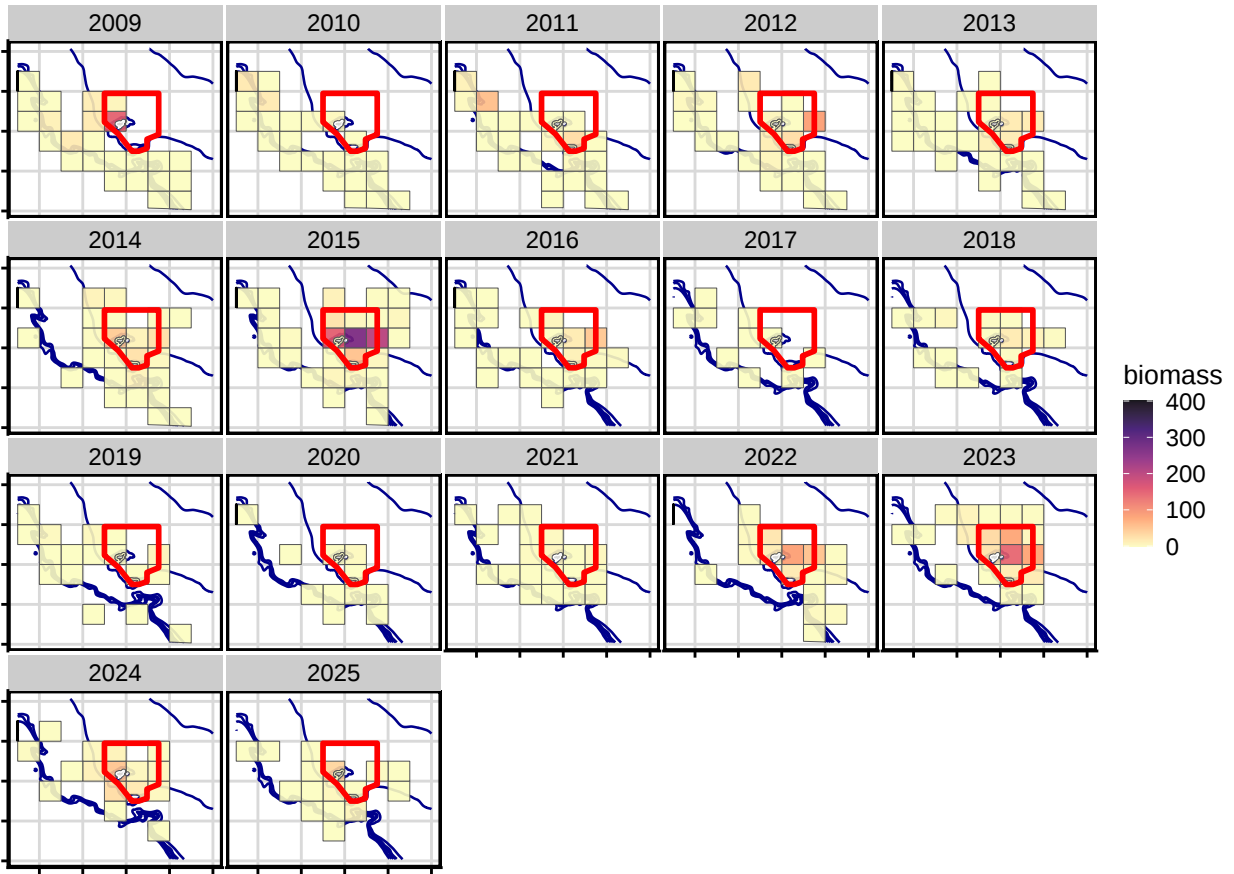


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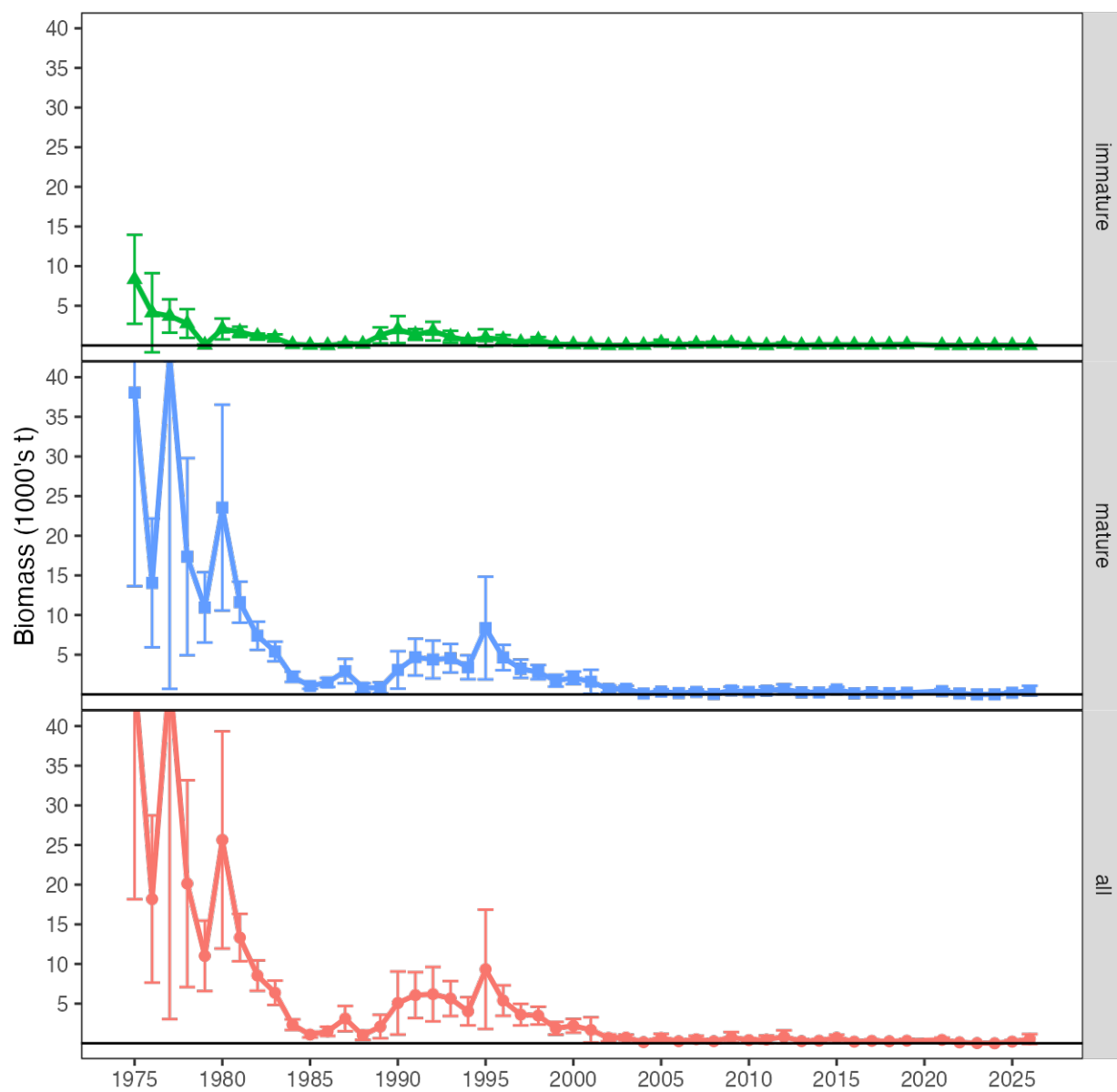


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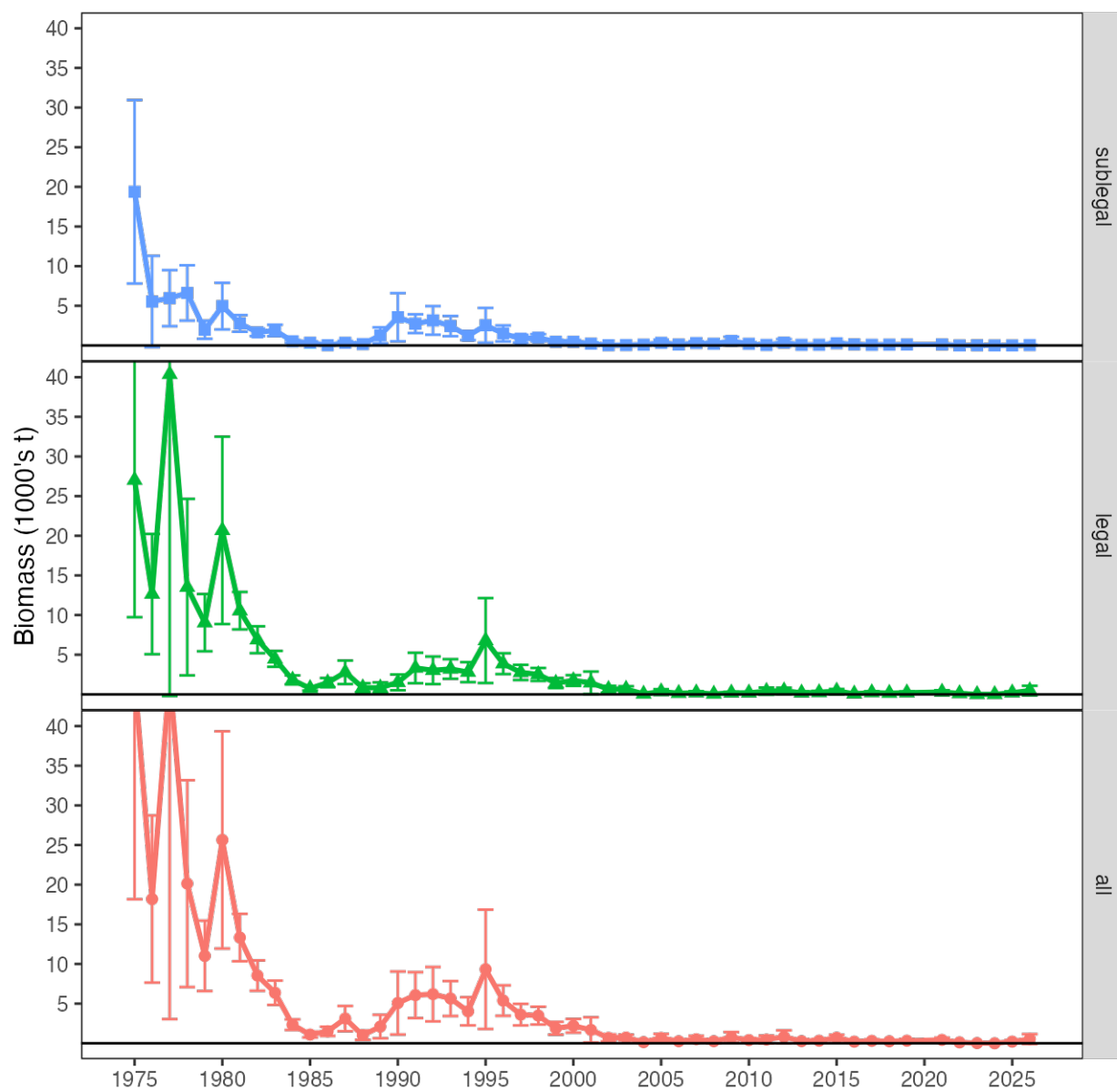


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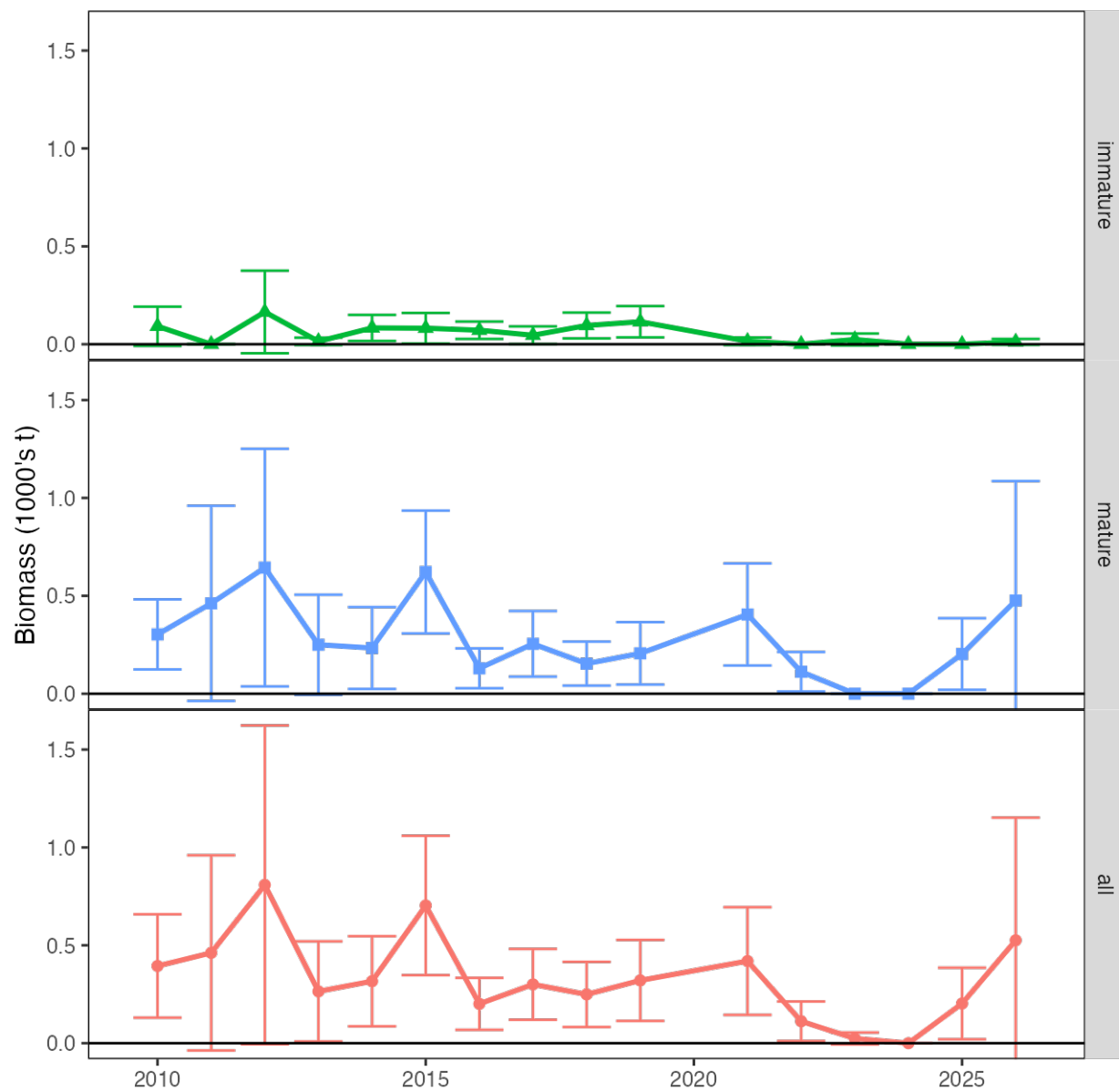


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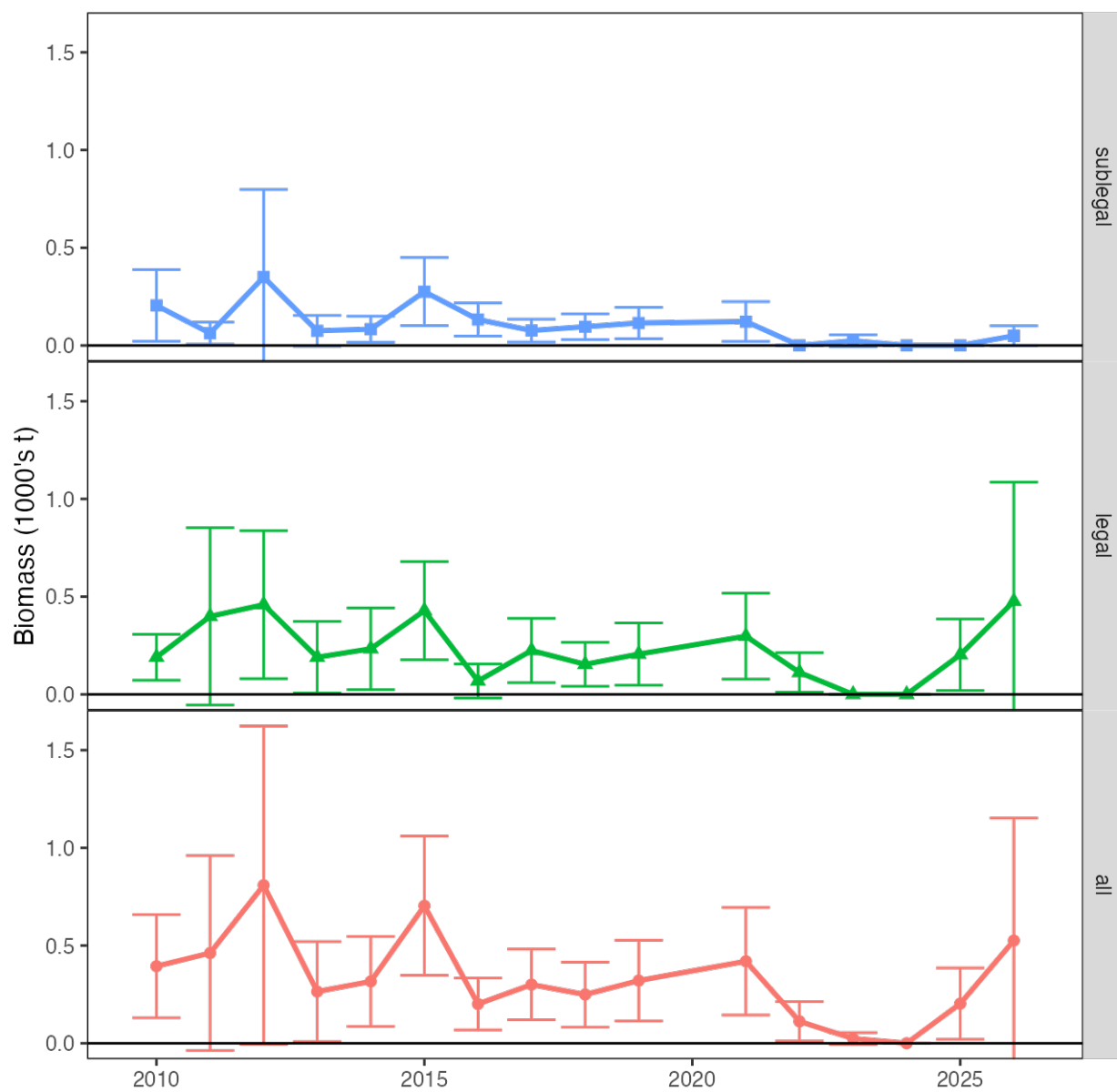


Figure 11. NMFS survey biomass time series for male PIBKC, by fishery category, from 2010.

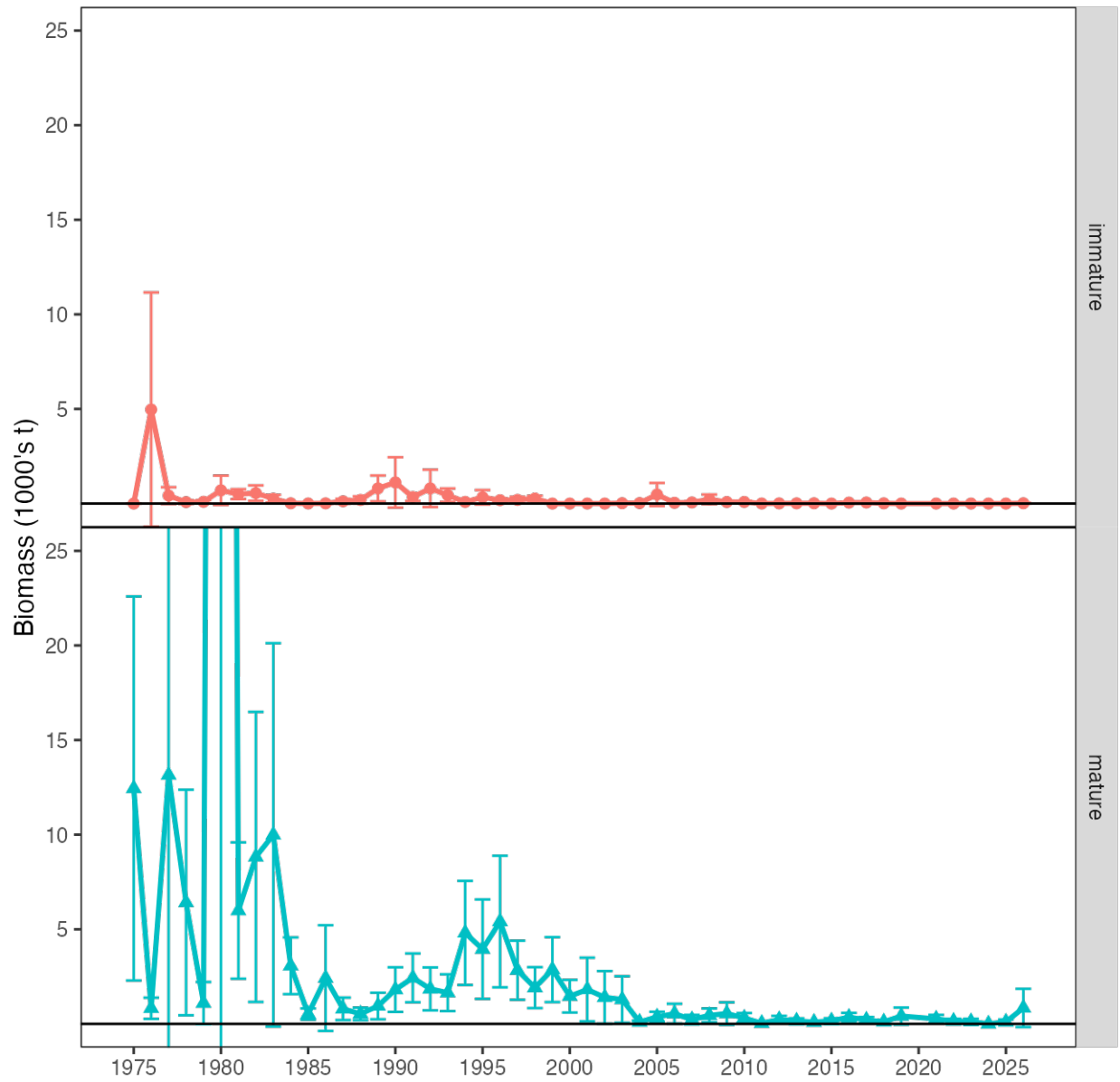


Figure 12. NMFS survey biomass time series for female PIBKC, by population category. The values for mature and all females for 1980 are off-scale to better show details of remaining values.

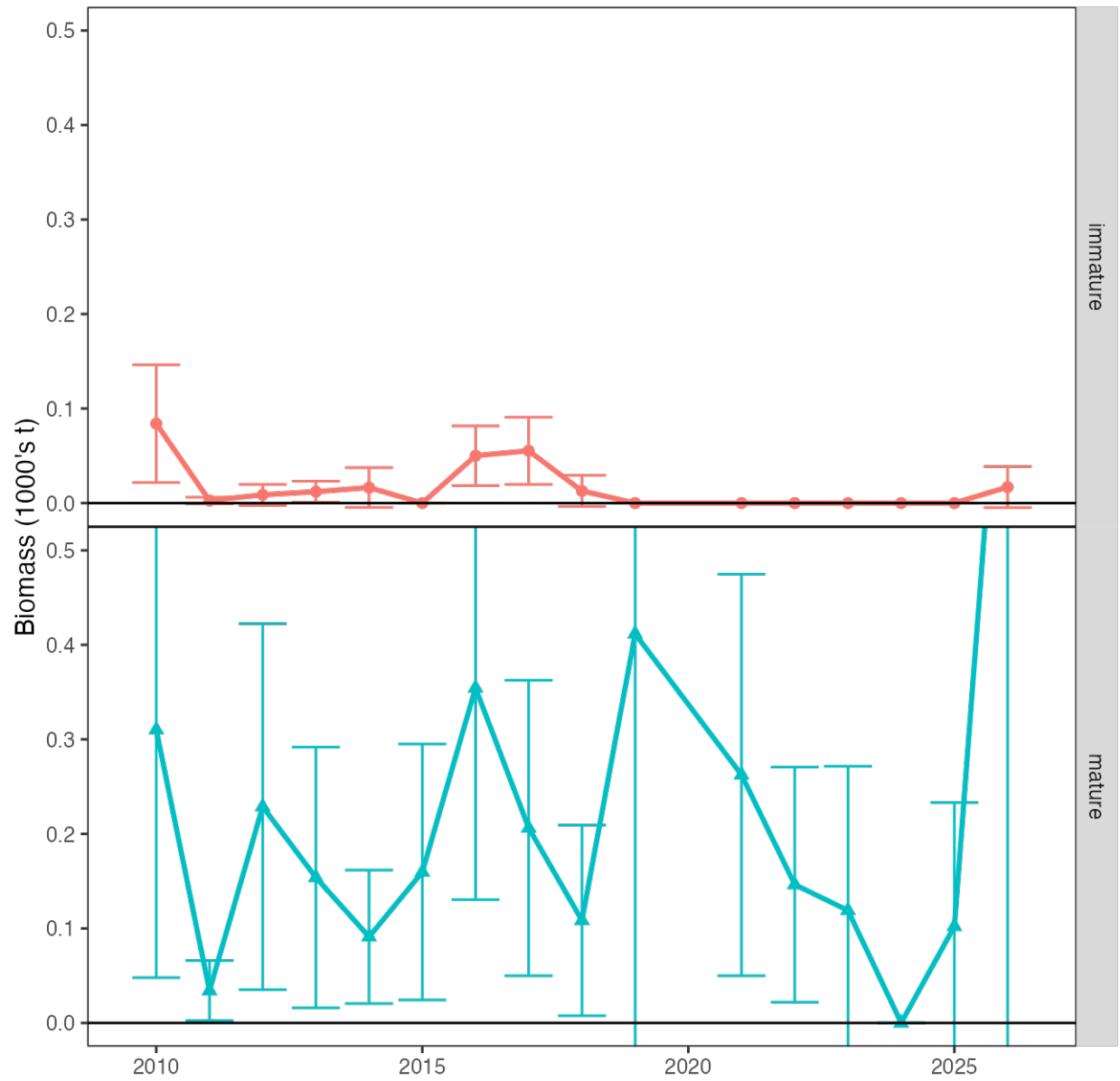


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