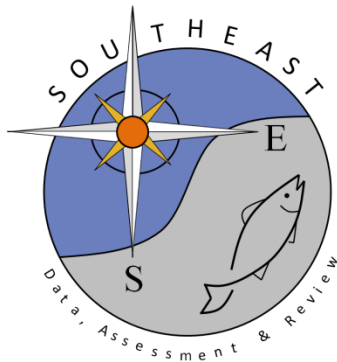


General Recreational Survey Data for Cobia in the Atlantic

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SEDAR107-DW-01

February 2026



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General Recreational Survey Data for Cobia in the Atlantic

NOAA Fisheries
Southeast Fisheries Science Center
Sustainable Fisheries Division
Data Analysis and Assessment Support Branch

Samantha M. Binion-Rock

February 18, 2026

General recreational catch estimates for Cobia are compiled from the Marine Recreational Information Program (MRIP). Details on MRIP can be found in SEDAR68-DW-13.

Parameters for data prepared for SEDAR 107 recreational catch data:

- Species: Cobia
- Year Range: 1981 - 2024
- Geographic Range: Atlantic states from Georgia to Maine
- Fishing Modes: Charter, Private, Shore, Headboat (Virginia to Maine)
- Weight Units: whole weight
- MRIP Calibration: Fully calibrated estimates that take into account the change in the Fishing Effort Survey (FES), the redesigned Access Point Angler Intercept Survey (APAIS), and the For Hire Survey (FHS). These calibrations allow for estimates in the entire time series to be compared to one another.
- MRIP Data Gaps from COVID: Missing 2020 intercepts were imputed from all APAIS data collected in 2018 and 2019 from the same strata as the 2020 data gap, with original sample weights reduced by a factor of two to account for using two years of data (Cody 2021).
- SEFSC Data QAQC: Size records above an allowable (max size) threshold are excluded from average weight estimation and the summary tables included in this working paper (Tables 5-8). For SEDAR 107 Cobia, this includes any weights heavier than 157.08 pounds.

Catch and Sample Size Information for Particular Domains:

Annual estimates that appear relatively large/small compared to the adjacent years were further investigated by identifying and summarizing which strata were disproportionately contributing to the estimate. Estimates investigated are more likely to be high given zero catch estimates that make it difficult to identify relatively small estimates.

- 1996 landings estimate: 94,001 fish
 - There were 36 MRIP dockside interviews that intercepted landed Cobia. Intercepts from the following strata are the primary contributors of the 1996 landings estimate.
 - Strata: South Carolina, Private, Wave 6, Ocean > 3 mi
 - Intercept Records: a total of 1 angler trip resulted in a landings estimate of 46,697 fish (49.7% of annual estimate)
 - One angler trip harvested 3 Cobia (*NOT* seen by interviewer)
 - Strata: Virginia, Private, Wave 4, Inland
 - Intercept Records: a total of 3 angler trips resulted in a landings estimate of 31,918 fish (34.0% of annual estimate)
 - Two angler trips each harvested 2 Cobia (*NOT* seen by interviewer)
 - One angler trip harvested 1 Cobia (*NOT* seen by interviewer)
- 2015 landings estimate: 110,291 fish
 - There were 102 MRIP dockside interviews that intercepted landed Cobia. No single intercept contributed more than 6.2% to the annual estimate.
- 2018 landings estimate: 113,938 fish
 - There were 114 MRIP dockside interviews that intercepted landed Cobia. Intercepts from the following strata are the primary contributors of the 2018 landings estimate.
 - Strata: Virginia, Shore, Wave 3, Inland
 - Intercept Records: a total of 1 angler trips resulted in a landings estimate of 19,727 fish (17.3% of annual estimate)
 - One angler trip harvested 1 Cobia (*NOT* seen by interviewer)
 - Strata: Virginia, Private, Wave 4, Inland
 - Intercept Records: a total of 21 angler trips resulted in a landings estimate of 42,316 fish (37.1% of annual estimate)
 - There were 21 MRIP dockside interviews in this specific domain intercepted Cobia. For 20 of the interviews, between 1-3 Cobia were harvested (and seen by the interviewer) and the resulting expanded catch estimate for each intercept ranges from 181-7,544 Cobia.

- There was 1 intercept at a high-pressure site where the trip harvested 2 Cobia (not seen by the interviewer). The expanded catch estimate for this trip is 22,631 Cobia (19.7% of annual estimate).
- Beginning in 2017, discard estimates show a large and sustained increase when compared to years earlier in the time series. Framework Amendment 4 went into effect on September 5, 2017 and resulted in an increase in the recreational minimum size limit to 36" FL and reduced the recreational bag limit from 2 fish per person per day to 1 fish per day per person (or 6 fish maximum per vessel). The increase in discards beginning in 2017 corresponds to changes in management regulations.

Select annual Shore mode landings and discard estimates were also further investigated.

- 1985 Shore discard estimate: 50,412 fish
 - There were 4 MRIP dockside interviews that intercepted discarded Cobia. Intercepts from the following strata are the primary contributors of the 1985 discards estimate.
 - Strata: New Jersey, Shore, Wave 5, Inland
 - Intercept Records: a total of 2 angler trips resulted in a discard estimate of 36,839 fish (73.1% of annual shore estimate)
 - One angler trip released 3 Cobia
 - One angler trip released 2 Cobia
- 2005 Shore landings estimate: 24,007 fish
 - There were 4 MRIP dockside interviews that intercepted landed Cobia. Intercepts from the following strata are the primary contributors of the 1998 landings estimate.
 - Strata: Virginia, Private, Wave 3, Inland
 - Intercept Records: a total of 1 angler trip resulted in a landings estimate of 20,683 fish (86.1% of annual shore estimate)
 - One angler trip harvested 1 Cobia (seen by interviewer)
- 2023 Shore discard estimate: 83,820 fish
 - There were 16 MRIP dockside interviews that intercepted discarded Cobia. Intercepts from the following strata are the primary contributors to the 2023 discard estimate.
 - Strata: North Carolina, Shore, Wave 5, Inland
 - Intercept Records: a total of 4 angler trips resulted in a discard estimate of 40,492 fish (48.3% of annual shore estimate)
 - One angler trip discarded 5 Cobia
 - One angler trip discarded 2 Cobia
 - Two angler trips each discarded 1 Cobia
 - Strata: North Carolina, Shore, Wave 5, Inland

- Intercept Records: a total of 1 angler trip resulted in a discard estimate of 11,363 fish (13.6% of annual shore estimate)
- One angler trip discarded 1 Cobia
- Strata: Virginia, Shore, Wave 5, Inland
 - Intercept Records: a total of 1 angler trip resulted in a discard estimate of 7,279 fish (8.7% of annual shore estimate)
 - One angler trip discarded 1 Cobia

Discussion

Some of the elevated landings estimates appear to be driven by elevated sample weights with single intercepts contributing >40% to the total annual estimate. Elevated discard estimates beginning in 2017 are well-sampled and appear to be indicative of increases in regulatory discards.

Appendices

Appendix A. Additional Details of Survey Data and SEFSC Estimation

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Table 1. Annual landings (AB1) and discards (B2) of Cobia in numbers of fish by mode and year (MRIP). MRIP Headboat estimates are included from Virginia to Maine.

Year	Cbt		Hbt		Priv		Shore		Total	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	0	0	0	0	2,631	7,507	0	0	2,631	7,507
1982	0	0	0	0	11,196	0	0	0	11,196	0
1983	4	0	1	0	1,611	0	0	9,464	1,616	9,464
1984	306	0	0	0	17,136	0	0	6,108	17,441	6,108
1985	2,377	65	463	30	12,706	8,096	0	50,412	15,547	58,603
1986	2,042	0	93	0	21,323	9,112	9,587	0	33,044	9,112
1987	1,270	0	0	0	5,898	736	17,585	0	24,753	736
1988	2,289	229	0	0	8,562	6,044	908	0	11,759	6,273
1989	1,340	68	49	0	16,959	2,821	3,234	10,877	21,583	13,767
1990	1,594	0	0	0	16,261	9,102	0	1,855	17,854	10,958
1991	2,435	585	62	156	11,352	22,750	7,291	19,839	21,141	43,331
1992	2,091	55	0	0	16,488	7,419	4,283	7,260	22,862	14,733
1993	7,065	48	0	0	6,668	2,771	1,804	1,674	15,536	4,493
1994	542	549	0	250	8,143	12,145	3,273	19,234	11,958	32,179
1995	3,064	336	0	0	20,406	6,612	3,912	1,758	27,382	8,706
1996	3,597	153	0	0	89,852	5,336	552	536	94,001	6,025
1997	574	0	0	0	13,382	9,549	4,674	26,513	18,631	36,062
1998	1,240	933	0	0	9,494	16,683	255	10,570	10,990	28,186
1999	817	0	0	0	21,346	44,619	1,469	25,179	23,633	69,798
2000	498	1,638	0	0	12,961	11,844	0	12,471	13,458	25,953
2001	1,297	0	0	0	9,699	27,242	424	8,222	11,421	35,464
2002	1,856	78	1	8	5,295	26,193	9,440	9,344	16,592	35,623
2003	3,521	1,242	0	0	47,537	46,996	793	16,409	51,852	64,647
2004	3,306	5,766	0	38	28,123	26,219	0	4,057	31,428	36,079
2005	1,957	1,394	0	0	31,221	36,954	24,007	12,221	57,186	50,569
2006	823	458	0	0	49,949	53,641	0	0	50,772	54,099
2007	2,833	121	0	0	32,921	41,542	0	8,652	35,754	50,315
2008	885	670	0	0	24,544	22,149	3,195	15,672	28,624	38,491
2009	820	961	0	0	45,222	51,407	6,462	35,669	52,504	88,037
2010	3,167	1,683	0	0	44,851	46,583	2,453	31,595	50,471	79,861
2011	557	595	0	0	24,641	77,698	6,166	30,021	31,364	108,314
2012	564	270	0	179	27,400	30,003	18,287	58,264	46,250	88,717
2013	3,010	1,169	0	0	62,971	66,796	0	12,180	65,981	80,144
2014	2,109	2,052	0	0	45,441	74,435	4,688	56,600	52,237	133,088

Year	Cbt		Hbt		Priv		Shore		Total	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
2015	2,473	539	0	0	100,668	73,195	7,150	24,276	110,291	98,011
2016	3,694	3,223	0	0	57,191	91,125	14,810	50,617	75,695	144,966
2017	1,209	3,742	0	0	38,448	160,983	0	53,899	39,657	218,623
2018	4,641	7,596	132	353	83,239	276,531	25,926	82,649	113,938	367,130
2019	2,235	9,649	0	84	54,045	211,059	12,032	81,462	68,312	302,253
2020	2,046	5,336	75	226	62,485	196,092	12,180	46,668	76,786	248,322
2021	11,918	63,683	0	40	78,889	178,438	0	58,307	90,806	300,468
2022	4,550	12,899	0	34	59,163	137,909	6,086	38,767	69,800	189,610
2023	1,412	5,161	0	40	91,109	159,869	5,790	83,820	98,311	248,890
2024	7,580	7,948	0	25	46,710	184,740	0	28,108	54,290	220,821

Table 2. Cobia landings in numbers of fish (AB1) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year (MRIP). Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (TRP) intercepted by dockside samplers and, in parentheses, the number of PSUs and TRPs that intercepted Cobia. MRIP Headboat estimates are included from Virginia to Maine.

Year	Shore				Hbt				Cbt				Priv			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
1981	0	0.00	934 (0)	5,456 (0)	0	0.00	0 (0)	0 (0)	0	0.00	34 (0)	304 (0)	2,631	0.74	760 (2)	6,245 (2)
1982	0	0.00	1,114 (0)	7,380 (0)	0	0.00	0 (0)	0 (0)	0	0.00	22 (0)	195 (0)	11,196	0.61	928 (6)	7,773 (6)
1983	0	0.00	1,329 (0)	8,955 (0)	1	1.00	368 (1)	4,395 (1)	4	1.00	427 (1)	4,988 (1)	1,611	1.00	966 (1)	8,968 (1)
1984	0	0.00	1,047 (0)	7,163 (0)	0	0.00	0 (0)	0 (0)	306	0.72	74 (2)	842 (2)	17,136	0.59	693 (3)	5,619 (7)
1985	0	0.00	1,774 (0)	10,568 (0)	463	1.00	420 (1)	4,713 (3)	2,377	0.67	509 (4)	5,491 (6)	12,706	0.37	1,298 (15)	9,785 (19)
1986	9,587	1.00	989 (1)	5,243 (1)	93	0.48	638 (3)	6,191 (4)	2,042	0.65	809 (5)	7,555 (9)	21,323	0.41	2,024 (16)	14,903 (20)
1987	17,585	0.90	1,152 (3)	6,791 (3)	0	0.00	0 (0)	0 (0)	1,270	0.38	324 (11)	3,135 (16)	5,898	0.29	1,856 (16)	15,193 (16)
1988	908	1.00	1,576 (1)	9,893 (1)	0	0.00	0 (0)	0 (0)	2,289	0.68	300 (7)	2,731 (7)	8,562	0.36	2,150 (16)	17,333 (17)
1989	3,234	0.58	2,111 (3)	14,194 (3)	49	0.62	907 (2)	9,015 (2)	1,340	0.84	1,210 (5)	12,407 (5)	16,959	0.32	2,846 (27)	23,120 (37)
1990	0	0.00	1,711 (0)	11,919 (0)	0	0.00	0 (0)	0 (0)	1,594	0.65	232 (5)	2,689 (5)	16,261	0.29	3,188 (24)	28,306 (37)
1991	7,291	0.45	2,211 (7)	18,044 (8)	62	0.99	852 (2)	7,264 (2)	2,435	0.90	1,128 (6)	10,432 (6)	11,352	0.32	3,159 (19)	28,436 (20)
1992	4,283	0.72	1,970 (3)	15,681 (3)	0	0.00	0 (0)	0 (0)	2,091	0.50	343 (11)	3,544 (12)	16,488	0.31	3,374 (20)	29,251 (22)
1993	1,804	1.00	2,291 (1)	17,115 (1)	0	0.00	0 (0)	0 (0)	7,065	0.68	249 (7)	3,203 (7)	6,668	0.42	3,109 (9)	25,764 (9)
1994	3,273	0.73	2,586 (2)	19,777 (2)	0	0.00	708 (0)	5,635 (0)	542	0.56	1,053 (4)	10,796 (4)	8,143	0.28	3,330 (21)	27,708 (21)
1995	3,912	0.58	2,540 (3)	20,522 (4)	0	0.00	0 (0)	0 (0)	3,064	0.50	314 (11)	4,524 (11)	20,406	0.52	3,014 (16)	24,904 (17)
1996	552	1.00	2,257 (1)	20,640 (1)	0	0.00	0 (0)	0 (0)	3,597	0.78	480 (12)	7,065 (14)	89,852	0.63	2,929 (17)	25,287 (21)
1997	4,674	1.00	2,563 (1)	20,338 (1)	0	0.00	0 (0)	0 (0)	574	0.46	531 (8)	7,059 (8)	13,382	0.54	3,202 (14)	28,026 (15)

Year	Shore				Hbt				Cbt				Priv			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
1998	255	1.00	2,515 (1)	20,493 (1)	0	0.00	0 (0)	0 (0)	1,240	0.45	527 (8)	6,586 (12)	9,494	0.45	3,087 (13)	26,649 (13)
1999	1,469	1.00	2,642 (1)	20,591 (1)	0	0.00	0 (0)	0 (0)	817	0.46	423 (6)	4,459 (7)	21,346	0.62	2,699 (9)	24,098 (14)
2000	0	0.00	2,464 (0)	18,869 (0)	0	0.00	0 (0)	0 (0)	498	0.54	423 (5)	5,446 (5)	12,961	0.48	2,878 (7)	23,666 (10)
2001	424	1.00	2,790 (1)	22,462 (1)	0	0.00	0 (0)	0 (0)	1,297	0.50	341 (7)	4,915 (9)	9,699	0.47	3,508 (12)	32,409 (15)
2002	9,440	0.59	2,893 (4)	21,129 (5)	1	1.00	864 (1)	6,873 (1)	1,856	0.65	1,249 (10)	11,204 (10)	5,295	0.49	3,174 (9)	27,165 (9)
2003	793	1.00	3,176 (1)	20,740 (1)	0	1.00	1,452 (1)	12,629 (1)	3,521	0.45	1,796 (10)	16,460 (14)	47,537	0.59	3,552 (13)	26,699 (19)
2004	0	0.00	1,923 (0)	15,088 (0)	0	0.00	875 (0)	9,327 (0)	3,306	0.53	942 (12)	7,400 (12)	28,123	0.35	2,585 (13)	21,445 (14)
2005	24,007	0.87	1,753 (3)	12,843 (4)	0	0.00	982 (0)	10,946 (0)	1,957	0.56	1,310 (8)	9,639 (8)	31,221	0.49	2,254 (10)	18,373 (14)
2006	0	0.00	1,621 (0)	11,788 (0)	0	0.00	890 (0)	8,639 (0)	823	0.50	1,206 (7)	8,421 (7)	49,949	0.43	2,479 (15)	20,639 (15)
2007	0	0.00	1,817 (0)	14,051 (0)	0	0.00	642 (0)	8,160 (0)	2,833	0.59	1,210 (8)	8,662 (9)	32,921	0.44	2,777 (17)	22,480 (23)
2008	3,195	0.71	1,872 (2)	15,011 (2)	0	0.00	677 (0)	8,757 (0)	885	0.68	1,247 (5)	8,825 (8)	24,544	0.46	2,695 (9)	22,049 (11)
2009	6,462	0.73	1,759 (2)	12,001 (2)	0	0.00	656 (0)	7,407 (0)	820	0.48	1,175 (8)	7,732 (9)	45,222	0.26	2,719 (26)	20,781 (26)
2010	2,453	1.00	2,265 (1)	16,500 (1)	0	0.00	676 (0)	8,361 (0)	3,167	0.37	1,336 (23)	9,304 (27)	44,851	0.23	3,063 (37)	23,931 (48)
2011	6,166	0.64	2,324 (4)	15,951 (4)	0	0.00	626 (0)	7,595 (0)	557	0.58	1,166 (7)	8,036 (14)	24,641	0.40	2,805 (13)	21,343 (15)
2012	18,287	1.00	2,518 (1)	17,573 (1)	0	0.00	477 (0)	5,786 (0)	564	0.44	1,048 (9)	7,813 (12)	27,400	0.52	2,851 (14)	23,175 (17)
2013	0	0.00	1,923 (0)	15,847 (0)	0	0.00	609 (0)	7,729 (0)	3,010	0.77	470 (8)	2,576 (9)	62,971	0.30	2,933 (37)	22,490 (59)
2014	4,688	0.71	1,689 (2)	14,546 (2)	0	0.00	546 (0)	7,301 (0)	2,109	0.45	893 (13)	5,832 (18)	45,441	0.29	3,181 (24)	23,087 (40)
2015	7,150	0.41	1,737 (7)	14,678 (7)	0	0.00	532 (0)	7,295 (0)	2,473	0.35	882 (21)	6,020 (27)	100,668	0.27	3,347 (38)	24,662 (68)
2016	14,810	0.77	2,267 (4)	14,503 (4)	0	0.00	572 (0)	8,689 (0)	3,694	0.35	1,061 (28)	7,646 (38)	57,191	0.47	3,318 (30)	23,924 (44)
2017	0	0.00	2,494 (0)	15,771 (0)	0	0.00	507 (0)	7,344 (0)	1,209	0.43	1,082 (10)	8,301 (13)	38,448	0.37	3,598 (21)	28,594 (30)

Year	Shore				Hbt				Cbt				Priv			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
2018	25,926	0.78	2,526 (4)	17,925 (4)	132	1.00	512 (1)	8,137 (2)	4,641	0.41	1,308 (34)	10,850 (49)	83,239	0.41	3,567 (47)	29,574 (86)
2019	12,032	0.73	2,562 (4)	17,837 (4)	0	0.00	503 (0)	8,599 (0)	2,235	0.30	1,351 (28)	10,140 (36)	54,045	0.24	3,648 (47)	30,659 (70)
2020	12,180	0.86	3,199 (3)	21,664 (3)	75	1.00	960 (1)	16,259 (2)	2,046	0.34	1,624 (41)	12,927 (59)	62,485	0.18	4,590 (70)	39,764 (127)
2021	0	0.00	3,037 (0)	19,147 (0)	0	0.00	631 (0)	10,791 (0)	11,918	0.53	1,642 (26)	12,661 (34)	78,889	0.18	4,316 (53)	35,019 (76)
2022	6,086	1.00	2,652 (1)	15,066 (1)	0	0.00	553 (0)	9,290 (0)	4,550	0.38	1,441 (21)	10,203 (27)	59,163	0.28	4,002 (33)	28,758 (39)
2023	5,790	0.79	2,847 (2)	17,040 (2)	0	0.00	454 (0)	7,235 (0)	1,412	0.52	1,441 (12)	9,811 (12)	91,109	0.33	4,154 (26)	30,387 (32)
2024	0	0.00	2,794 (0)	15,844 (0)	0	0.00	444 (0)	6,838 (0)	7,580	0.54	1,404 (17)	8,792 (24)	46,710	0.32	4,125 (24)	27,719 (26)

Table 3. Cobia discards in numbers of fish (B2) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year (MRIP). Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (TRP) intercepted by dockside samplers and, in parentheses, the number of PSUs and TRPs that intercepted Cobia. MRIP Headboat estimates are included from Virginia to Maine.

Year	Shore				Hbt				Cbt				Priv			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
1981	0	0.00	934 (0)	5,456 (0)	0	0.00	0 (0)	0 (0)	0	0.00	34 (0)	304 (0)	7,507	1.00	760 (1)	6,245 (1)
1982	0	0.00	1,114 (0)	7,380 (0)	0	0.00	0 (0)	0 (0)	0	0.00	22 (0)	195 (0)	0	0.00	928 (0)	7,773 (0)
1983	9,464	1.00	1,329 (1)	8,955 (1)	0	0.00	368 (0)	4,395 (0)	0	0.00	427 (0)	4,988 (0)	0	0.00	966 (0)	8,968 (0)
1984	6,108	1.00	1,047 (1)	7,163 (1)	0	0.00	0 (0)	0 (0)	0	0.00	74 (0)	842 (0)	0	0.00	693 (0)	5,619 (0)
1985	50,412	0.76	1,774 (3)	10,568 (4)	30	1.00	420 (1)	4,713 (1)	65	1.00	509 (1)	5,491 (1)	8,096	0.52	1,298 (6)	9,785 (7)
1986	0	0.00	989 (0)	5,243 (0)	0	0.00	638 (0)	6,191 (0)	0	0.00	809 (0)	7,555 (0)	9,112	1.00	2,024 (1)	14,903 (2)
1987	0	0.00	1,152 (0)	6,791 (0)	0	0.00	0 (0)	0 (0)	0	0.00	324 (0)	3,135 (0)	736	0.60	1,856 (3)	15,193 (3)
1988	0	0.00	1,576 (0)	9,893 (0)	0	0.00	0 (0)	0 (0)	229	1.00	300 (1)	2,731 (4)	6,044	0.43	2,150 (7)	17,333 (10)
1989	10,877	0.89	2,111 (2)	14,194 (2)	0	0.00	907 (0)	9,015 (0)	68	1.00	1,210 (1)	12,407 (1)	2,821	0.56	2,846 (4)	23,120 (4)
1990	1,855	1.00	1,711 (1)	11,919 (1)	0	0.00	0 (0)	0 (0)	0	0.00	232 (0)	2,689 (0)	9,102	0.46	3,188 (9)	28,306 (9)
1991	19,839	0.59	2,211 (8)	18,044 (11)	156	0.82	852 (2)	7,264 (2)	585	0.61	1,128 (4)	10,432 (4)	22,750	0.50	3,159 (15)	28,436 (18)
1992	7,260	0.64	1,970 (3)	15,681 (3)	0	0.00	0 (0)	0 (0)	55	1.00	343 (1)	3,544 (1)	7,419	0.65	3,374 (8)	29,251 (10)
1993	1,674	1.00	2,291 (1)	17,115 (1)	0	0.00	0 (0)	0 (0)	48	1.00	249 (1)	3,203 (1)	2,771	0.73	3,109 (2)	25,764 (3)
1994	19,234	0.82	2,586 (6)	19,777 (7)	250	1.00	708 (1)	5,635 (5)	549	0.96	1,053 (2)	10,796 (6)	12,145	0.48	3,330 (13)	27,708 (14)
1995	1,758	0.61	2,540 (3)	20,522 (3)	0	0.00	0 (0)	0 (0)	336	0.68	314 (3)	4,524 (3)	6,612	0.45	3,014 (10)	24,904 (11)
1996	536	1.00	2,257 (1)	20,640 (1)	0	0.00	0 (0)	0 (0)	153	0.73	480 (2)	7,065 (4)	5,336	0.46	2,929 (9)	25,287 (11)
1997	26,513	0.40	2,563 (8)	20,338 (9)	0	0.00	0 (0)	0 (0)	0	0.00	531 (0)	7,059 (0)	9,549	0.42	3,202 (14)	28,026 (15)

Year	Shore				Hbt				Cbt				Priv			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
1998	10,570	0.59	2,515 (5)	20,493 (6)	0	0.00	0 (0)	0 (0)	933	0.71	527 (3)	6,586 (7)	16,683	0.41	3,087 (14)	26,649 (15)
1999	25,179	0.55	2,642 (6)	20,591 (8)	0	0.00	0 (0)	0 (0)	0	0.00	423 (0)	4,459 (0)	44,619	0.44	2,699 (12)	24,098 (19)
2000	12,471	0.74	2,464 (3)	18,869 (3)	0	0.00	0 (0)	0 (0)	1,638	0.75	423 (3)	5,446 (4)	11,844	0.49	2,878 (10)	23,666 (12)
2001	8,222	0.59	2,790 (3)	22,462 (4)	0	0.00	0 (0)	0 (0)	0	0.00	341 (0)	4,915 (0)	27,242	0.32	3,508 (21)	32,409 (23)
2002	9,344	0.52	2,893 (4)	21,129 (4)	8	1.00	864 (1)	6,873 (5)	78	0.86	1,249 (2)	11,204 (6)	26,193	0.33	3,174 (16)	27,165 (17)
2003	16,409	0.36	3,176 (9)	20,740 (10)	0	0.00	1,452 (0)	12,629 (0)	1,242	0.74	1,796 (3)	16,460 (3)	46,996	0.27	3,552 (22)	26,699 (25)
2004	4,057	0.86	1,923 (3)	15,088 (3)	38	1.00	875 (1)	9,327 (1)	5,766	0.99	942 (2)	7,400 (2)	26,219	0.33	2,585 (17)	21,445 (18)
2005	12,221	0.65	1,753 (3)	12,843 (3)	0	0.00	982 (0)	10,946 (0)	1,394	0.77	1,310 (4)	9,639 (5)	36,954	0.33	2,254 (17)	18,373 (22)
2006	0	0.00	1,621 (0)	11,788 (0)	0	0.00	890 (0)	8,639 (0)	458	0.69	1,206 (3)	8,421 (4)	53,641	0.35	2,479 (20)	20,639 (26)
2007	8,652	0.70	1,817 (3)	14,051 (3)	0	0.00	642 (0)	8,160 (0)	121	0.87	1,210 (2)	8,662 (2)	41,542	0.53	2,777 (18)	22,480 (26)
2008	15,672	0.55	1,872 (6)	15,011 (6)	0	0.00	677 (0)	8,757 (0)	670	0.45	1,247 (7)	8,825 (10)	22,149	0.41	2,695 (17)	22,049 (21)
2009	35,669	0.40	1,759 (13)	12,001 (14)	0	0.00	656 (0)	7,407 (0)	961	0.81	1,175 (3)	7,732 (4)	51,407	0.44	2,719 (18)	20,781 (23)
2010	31,595	0.42	2,265 (12)	16,500 (12)	0	0.00	676 (0)	8,361 (0)	1,683	0.59	1,336 (6)	9,304 (14)	46,583	0.24	3,063 (34)	23,931 (46)
2011	30,021	0.34	2,324 (16)	15,951 (21)	0	0.00	626 (0)	7,595 (0)	595	0.48	1,166 (6)	8,036 (10)	77,698	0.42	2,805 (26)	21,343 (33)
2012	58,264	0.35	2,518 (24)	17,573 (31)	179	1.00	477 (2)	5,786 (2)	270	0.47	1,048 (5)	7,813 (7)	30,003	0.26	2,851 (28)	23,175 (32)
2013	12,180	0.48	1,923 (6)	15,847 (8)	0	0.00	609 (0)	7,729 (0)	1,169	0.66	470 (4)	2,576 (6)	66,796	0.35	2,933 (33)	22,490 (57)
2014	56,600	0.59	1,689 (9)	14,546 (10)	0	0.00	546 (1)	7,301 (1)	2,052	0.63	893 (4)	5,832 (14)	74,435	0.33	3,181 (29)	23,087 (43)
2015	24,276	0.55	1,737 (7)	14,678 (7)	0	0.00	532 (0)	7,295 (0)	539	0.51	882 (5)	6,020 (7)	73,195	0.40	3,347 (31)	24,662 (58)
2016	50,617	0.38	2,267 (11)	14,503 (13)	0	0.00	572 (0)	8,689 (0)	3,223	0.58	1,061 (14)	7,646 (20)	91,125	0.22	3,318 (49)	23,924 (77)
2017	53,899	0.39	2,494 (12)	15,771 (14)	0	0.00	507 (0)	7,344 (0)	3,742	0.56	1,082 (19)	8,301 (37)	160,983	0.35	3,598 (61)	28,594 (94)

Year	Shore				Hbt				Cbt				Priv			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
2018	82,649	0.34	2,526 (17)	17,925 (24)	353	0.79	512 (3)	8,137 (7)	7,596	0.44	1,308 (39)	10,850 (77)	276,531	0.24	3,567 (87)	29,574 (187)
2019	81,462	0.51	2,562 (17)	17,837 (27)	84	0.94	503 (2)	8,599 (2)	9,649	0.52	1,351 (23)	10,140 (37)	211,059	0.18	3,648 (91)	30,659 (194)
2020	46,668	0.46	3,199 (18)	21,664 (29)	226	0.71	960 (5)	16,259 (9)	5,336	0.28	1,624 (44)	12,927 (92)	196,092	0.15	4,590 (116)	39,764 (275)
2021	58,307	0.41	3,037 (10)	19,147 (11)	40	0.89	631 (2)	10,791 (2)	63,683	0.75	1,642 (39)	12,661 (65)	178,438	0.29	4,316 (77)	35,019 (128)
2022	38,767	0.32	2,652 (13)	15,066 (14)	34	0.78	553 (3)	9,290 (3)	12,899	0.49	1,441 (27)	10,203 (43)	137,909	0.34	4,002 (49)	28,758 (75)
2023	83,820	0.46	2,847 (12)	17,040 (16)	40	1.00	454 (1)	7,235 (1)	5,161	0.61	1,441 (19)	9,811 (28)	159,869	0.30	4,154 (46)	30,387 (65)
2024	28,108	0.41	2,794 (8)	15,844 (9)	25	1.00	444 (1)	6,838 (1)	7,948	0.51	1,404 (21)	8,792 (31)	184,740	0.56	4,125 (38)	27,719 (48)

Table 4. Cobia landings (AB1) and discards (B2), in numbers of fish, with associated coefficients of variation (CV; Dettloff et al. 2020) by year for all modes combined (MRIP). Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (TRP) intercepted by dockside samplers and, in parentheses, the number of PSUs and TRPs that intercepted Cobia.

Year	AB1				B2			
	Total	CV	PSU	Trp	Total	CV	PSU	Trp
1981	2,631	0.74	2,123 (2)	15,765 (2)	7,507	1.00	2,123 (1)	15,765 (1)
1982	11,196	0.61	2,274 (6)	17,549 (6)	0	0.00	2,274 (0)	17,549 (0)
1983	1,616	1.00	2,722 (2)	22,911 (2)	9,464	1.00	2,722 (1)	22,911 (1)
1984	17,441	0.58	2,098 (5)	17,046 (9)	6,108	1.00	2,098 (1)	17,046 (1)
1985	15,547	0.33	3,581 (19)	25,844 (25)	58,603	0.65	3,581 (10)	25,844 (12)
1986	33,044	0.39	3,822 (22)	27,701 (30)	9,112	1.00	3,822 (1)	27,701 (2)
1987	24,753	0.64	3,759 (30)	28,818 (35)	736	0.60	3,759 (3)	28,818 (3)
1988	11,759	0.30	4,606 (24)	35,381 (25)	6,273	0.41	4,606 (8)	35,381 (14)
1989	21,583	0.27	6,167 (35)	49,721 (45)	13,767	0.71	6,167 (7)	49,721 (7)
1990	17,854	0.27	5,929 (29)	49,619 (42)	10,958	0.42	5,929 (10)	49,619 (10)
1991	21,141	0.25	6,498 (32)	56,912 (34)	43,331	0.38	6,498 (27)	56,912 (33)
1992	22,862	0.26	6,492 (34)	55,234 (37)	14,733	0.46	6,492 (12)	55,234 (14)
1993	15,536	0.36	6,344 (17)	51,898 (17)	4,493	0.58	6,344 (4)	51,898 (5)
1994	11,958	0.28	6,969 (27)	58,281 (27)	32,179	0.52	6,969 (21)	58,281 (27)
1995	27,382	0.40	6,521 (30)	55,212 (32)	8,706	0.36	6,521 (16)	55,212 (17)
1996	94,001	0.60	6,359 (30)	58,335 (36)	6,025	0.41	6,359 (12)	58,335 (16)
1997	18,631	0.46	7,117 (23)	61,741 (24)	36,062	0.32	7,117 (22)	61,741 (24)
1998	10,990	0.39	7,079 (22)	60,525 (26)	28,186	0.33	7,079 (22)	60,525 (28)
1999	23,633	0.55	6,528 (16)	55,310 (22)	69,798	0.34	6,528 (18)	55,310 (27)
2000	13,458	0.46	6,564 (12)	53,720 (15)	25,953	0.42	6,564 (16)	53,720 (19)
2001	11,421	0.40	7,571 (20)	67,736 (25)	35,464	0.28	7,571 (24)	67,736 (27)
2002	16,592	0.38	7,316 (23)	59,498 (24)	35,623	0.28	7,316 (22)	59,498 (27)
2003	51,852	0.53	8,524 (24)	63,899 (34)	64,647	0.21	8,524 (34)	63,899 (38)
2004	31,428	0.31	6,325 (25)	53,227 (26)	36,079	0.30	6,325 (23)	53,227 (24)
2005	57,186	0.45	6,299 (21)	51,766 (26)	50,569	0.28	6,299 (24)	51,766 (30)
2006	50,772	0.41	6,196 (22)	49,381 (22)	54,099	0.35	6,196 (23)	49,381 (30)
2007	35,754	0.41	6,446 (25)	53,228 (32)	50,315	0.45	6,446 (23)	53,228 (31)
2008	28,624	0.41	6,491 (16)	54,497 (21)	38,491	0.33	6,491 (30)	54,497 (37)
2009	52,504	0.23	6,309 (36)	47,784 (37)	88,037	0.30	6,309 (34)	47,784 (41)
2010	50,471	0.21	7,340 (61)	57,973 (76)	79,861	0.22	7,340 (52)	57,973 (72)
2011	31,364	0.34	6,921 (24)	52,843 (33)	108,314	0.32	6,921 (48)	52,843 (64)
2012	46,250	0.50	6,894 (24)	54,259 (30)	88,717	0.24	6,894 (59)	54,259 (72)

Year	AB1				B2			
	Total	CV	PSU	Trp	Total	CV	PSU	Trp
2013	65,981	0.27	5,935 (45)	48,642 (68)	80,144	0.30	5,935 (43)	48,642 (71)
2014	52,237	0.26	6,309 (39)	50,766 (60)	133,088	0.31	6,309 (43)	50,766 (68)
2015	110,291	0.24	6,498 (66)	52,655 (102)	98,011	0.32	6,498 (43)	52,655 (72)
2016	75,695	0.38	7,218 (62)	54,679 (86)	144,966	0.18	7,218 (74)	54,679 (110)
2017	39,657	0.36	7,681 (31)	59,947 (43)	218,623	0.27	7,681 (92)	59,947 (145)
2018	113,938	0.34	7,913 (86)	66,412 (141)	367,130	0.20	7,913 (146)	66,412 (295)
2019	68,312	0.23	8,064 (79)	67,173 (110)	302,253	0.18	8,064 (133)	67,173 (260)
2020	76,786	0.20	10,373 (115)	90,564 (191)	248,322	0.15	10,373 (183)	90,564 (405)
2021	90,806	0.17	9,626 (79)	77,562 (110)	300,468	0.25	9,626 (128)	77,562 (206)
2022	69,800	0.25	8,648 (55)	63,258 (67)	189,610	0.26	8,648 (92)	63,258 (135)
2023	98,311	0.31	8,896 (40)	64,419 (46)	248,890	0.24	8,896 (78)	64,419 (110)
2024	54,290	0.28	8,767 (41)	59,124 (50)	220,821	0.46	8,767 (68)	59,124 (89)

Table 5. Cobia landings in pounds whole weight (LBS) with associated coefficients of variation (CV; Approach 2 described in Nuttall and Dettloff 2022) by year and mode (MRIP). MRIP Headboat estimates are included from Virginia to Maine.

Year	Shore		Hbt		Cbt		Priv		Total	
	LBS	CV	LBS	CV	LBS	CV	LBS	CV	LBS	CV
1981	0	0.00	0	0.00	0	0.00	71,823	0.81	71,823	0.81
1982	0	0.00	0	0.00	0	0.00	178,375	0.73	178,375	0.73
1983	0	0.00	43	1.00	129	1.00	41,908	1.00	42,080	1.00
1984	0	0.00	0	0.00	7,653	0.74	429,161	0.60	436,814	0.60
1985	0	0.00	8,981	1.00	48,981	0.68	272,946	0.38	330,908	0.34
1986	176,362	1.00	2,742	0.48	39,704	0.65	505,118	0.43	723,927	0.40
1987	350,505	0.95	0	0.00	28,643	0.38	110,569	0.34	489,718	0.64
1988	22,899	1.00	0	0.00	57,752	0.70	216,045	0.42	296,696	0.34
1989	58,320	0.77	1,454	0.62	25,299	0.87	389,334	0.33	474,407	0.28
1990	0	0.00	0	0.00	30,089	0.68	380,389	0.30	410,478	0.28
1991	155,056	0.50	1,850	0.99	53,009	0.90	285,941	0.37	495,856	0.28
1992	121,432	0.73	0	0.00	57,470	0.51	454,496	0.32	633,398	0.27
1993	46,384	1.00	0	0.00	181,682	0.69	191,141	0.45	419,207	0.37
1994	87,428	0.75	0	0.00	14,466	0.58	220,724	0.30	322,618	0.29
1995	125,487	0.59	0	0.00	98,144	0.51	613,843	0.53	837,474	0.41
1996	10,386	1.00	0	0.00	57,736	0.79	2,164,636	0.64	2,232,758	0.61
1997	138,362	1.00	0	0.00	17,726	0.47	408,307	0.54	564,395	0.46
1998	9,977	1.00	0	0.00	52,614	0.45	302,442	0.48	365,033	0.39
1999	43,591	1.00	0	0.00	24,238	0.49	632,875	0.65	700,705	0.57
2000	0	0.00	0	0.00	13,984	0.57	380,346	0.50	394,330	0.47
2001	12,418	1.00	0	0.00	37,974	0.54	283,158	0.48	333,550	0.41
2002	296,952	0.62	40	1.00	53,434	0.66	163,933	0.50	514,358	0.39
2003	19,630	1.00	9	1.00	76,670	0.47	1,331,209	0.59	1,427,518	0.53
2004	0	0.00	0	0.00	115,168	0.54	941,764	0.36	1,056,932	0.32
2005	708,372	0.89	0	0.00	56,812	0.57	800,490	0.50	1,565,674	0.46
2006	0	0.00	0	0.00	24,917	0.51	1,457,925	0.45	1,482,842	0.42
2007	0	0.00	0	0.00	75,959	0.61	956,704	0.45	1,032,662	0.42
2008	91,087	0.80	0	0.00	24,475	0.69	692,545	0.47	808,107	0.42
2009	165,106	0.80	0	0.00	20,568	0.49	1,216,911	0.27	1,402,585	0.24
2010	81,505	1.00	0	0.00	102,275	0.37	1,512,779	0.24	1,696,559	0.21
2011	255,595	0.72	0	0.00	17,704	0.59	765,650	0.43	1,038,948	0.36
2012	541,349	1.00	0	0.00	19,827	0.46	880,302	0.52	1,441,478	0.51

Year	Shore		Hbt		Cbt		Priv		Total	
	LBS	CV	LBS	CV	LBS	CV	LBS	CV	LBS	CV
2013	0	0.00	0	0.00	75,064	0.77	1,549,750	0.30	1,624,814	0.27
2014	121,997	0.71	0	0.00	54,739	0.45	1,223,172	0.29	1,399,908	0.26
2015	262,934	0.43	0	0.00	76,172	0.35	3,646,214	0.28	3,985,321	0.25
2016	489,475	0.77	0	0.00	115,339	0.35	1,876,229	0.47	2,481,044	0.38
2017	0	0.00	0	0.00	39,683	0.44	1,370,226	0.37	1,409,908	0.36
2018	700,316	0.79	3,496	1.00	127,003	0.41	2,220,260	0.41	3,051,075	0.34
2019	346,514	0.73	0	0.00	59,587	0.30	1,601,905	0.24	2,008,005	0.23
2020	339,840	0.87	2,089	1.00	55,417	0.34	1,716,328	0.18	2,113,675	0.20
2021	0	0.00	0	0.00	322,223	0.53	2,202,401	0.18	2,524,623	0.17
2022	161,508	1.00	0	0.00	111,401	0.38	1,520,495	0.28	1,793,404	0.25
2023	143,904	0.79	0	0.00	35,651	0.52	2,375,615	0.33	2,555,170	0.31
2024	0	0.00	0	0.00	247,422	0.54	1,458,125	0.33	1,705,547	0.28

Table 6. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Cobia by mode and year. Summaries include the number of fish weighed by MRIP and, in parentheses, the number of angler trips from which those fish were weighed (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish weights. Summaries include observed and imputed weights. MRIP Headboat estimates are included from Virginia to Maine.

Year	Cbt					Hbt					Priv					Shore				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
1981	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0	2 (2)	2.2	4.2	2.8	6.2	0 (0)	0.0	0.0	0.0	0.0
1982	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0	6 (6)	1.3	12.3	15.4	35.2	0 (0)	0.0	0.0	0.0	0.0
1983	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0	2 (1)	36.4	45.6	13.1	54.9	0 (0)	0.0	0.0	0.0	0.0
1984	2 (2)	9.9	13.2	4.7	16.5	0 (0)	0.0	0.0	0.0	0.0	8 (7)	17.6	32.8	14.0	62.5	0 (0)	0.0	0.0	0.0	0.0
1985	3 (3)	17.4	20.3	2.9	23.1	15 (3)	1.1	19.4	12.5	38.4	25 (19)	1.5	23.2	12.5	56.0	0 (0)	0.0	0.0	0.0	0.0
1986	7 (7)	22.0	30.8	12.3	50.8	2 (2)	0.9	15.0	19.9	29.1	23 (20)	1.6	20.1	13.8	50.9	1 (1)	41.0	41.0	0.0	41.0
1987	20 (16)	12.1	25.2	7.2	48.6	0 (0)	0.0	0.0	0.0	0.0	16 (16)	0.4	16.5	12.5	34.1	3 (3)	0.3	1.3	1.6	3.2
1988	6 (5)	9.9	23.5	13.8	43.0	0 (0)	0.0	0.0	0.0	0.0	9 (8)	1.2	26.1	18.5	50.5	1 (1)	49.0	49.0	0.0	49.0
1989	5 (5)	1.0	12.6	10.7	28.9	0 (0)	0.0	0.0	0.0	0.0	43 (37)	0.5	22.5	13.9	71.6	3 (3)	0.9	24.8	26.8	53.8
1990	8 (5)	3.2	22.8	17.2	56.5	0 (0)	0.0	0.0	0.0	0.0	47 (37)	0.2	19.4	11.9	65.5	0 (0)	0.0	0.0	0.0	0.0
1991	6 (5)	17.2	28.0	9.2	44.1	1 (1)	96.1	96.1	0.0	96.1	23 (20)	0.2	19.5	17.9	80.2	9 (8)	0.9	29.9	22.0	71.9
1992	13 (12)	10.6	21.4	8.5	38.1	0 (0)	0.0	0.0	0.0	0.0	30 (22)	5.1	29.4	11.8	56.7	3 (3)	28.2	40.2	12.2	52.6
1993	14 (7)	7.7	23.0	11.2	40.8	0 (0)	0.0	0.0	0.0	0.0	9 (9)	15.9	27.5	13.8	61.3	1 (1)	33.6	33.6	0.0	33.6
1994	5 (4)	22.2	34.7	13.2	52.6	0 (0)	0.0	0.0	0.0	0.0	26 (21)	1.7	35.3	17.9	67.0	2 (2)	18.3	24.5	8.8	30.7
1995	15 (11)	13.9	32.0	14.4	60.2	0 (0)	0.0	0.0	0.0	0.0	18 (17)	7.9	30.8	17.9	69.7	4 (4)	27.7	38.8	10.7	51.3
1996	32 (14)	2.0	17.2	17.2	66.8	0 (0)	0.0	0.0	0.0	0.0	28 (21)	0.1	28.0	18.4	62.6	1 (1)	32.0	32.0	0.0	32.0
1997	11 (8)	20.6	31.5	11.5	56.3	0 (0)	0.0	0.0	0.0	0.0	19 (15)	20.0	34.3	11.0	57.2	1 (1)	36.7	36.7	0.0	36.7
1998	35 (12)	13.1	39.8	14.2	69.1	0 (0)	0.0	0.0	0.0	0.0	14 (13)	10.8	35.6	23.1	80.1	1 (1)	52.0	52.0	0.0	52.0
1999	10 (7)	10.5	36.4	20.4	68.4	0 (0)	0.0	0.0	0.0	0.0	17 (14)	1.8	16.7	18.4	60.8	1 (1)	48.1	48.1	0.0	48.1

Year	Cbt					Hbt					Priv					Shore				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
2000	8 (5)	13.9	32.6	19.9	62.4	0 (0)	0.0	0.0	0.0	0.0	12 (10)	6.9	36.6	20.8	71.6	0 (0)	0.0	0.0	0.0	0.0
2001	10 (9)	10.6	25.5	18.0	58.6	0 (0)	0.0	0.0	0.0	0.0	18 (15)	13.2	33.6	14.6	69.1	1 (1)	67.3	67.3	0.0	67.3
2002	15 (10)	11.5	30.9	19.8	74.9	0 (0)	0.0	0.0	0.0	0.0	12 (9)	18.1	37.3	12.4	56.1	5 (5)	19.6	42.8	21.6	73.2
2003	21 (14)	10.8	24.1	16.2	71.2	0 (0)	0.0	0.0	0.0	0.0	20 (19)	18.2	29.1	11.7	65.4	1 (1)	39.6	39.6	0.0	39.6
2004	19 (12)	14.6	36.0	13.6	61.7	0 (0)	0.0	0.0	0.0	0.0	23 (14)	13.7	32.6	15.9	69.1	0 (0)	0.0	0.0	0.0	0.0
2005	16 (8)	13.8	41.6	15.4	77.2	0 (0)	0.0	0.0	0.0	0.0	26 (14)	2.9	26.9	13.7	57.0	4 (4)	0.7	20.0	15.8	39.1
2006	9 (7)	14.8	27.2	8.0	38.9	0 (0)	0.0	0.0	0.0	0.0	17 (15)	14.8	34.6	19.1	77.7	0 (0)	0.0	0.0	0.0	0.0
2007	11 (9)	14.8	28.7	16.6	58.7	0 (0)	0.0	0.0	0.0	0.0	28 (23)	15.4	34.2	14.9	65.0	0 (0)	0.0	0.0	0.0	0.0
2008	11 (8)	10.7	25.5	15.5	60.1	0 (0)	0.0	0.0	0.0	0.0	20 (11)	13.4	29.0	12.4	55.1	2 (2)	20.1	40.9	29.5	61.7
2009	10 (9)	15.2	27.9	9.5	44.2	0 (0)	0.0	0.0	0.0	0.0	27 (26)	4.6	25.3	10.8	55.1	2 (2)	11.2	21.6	14.7	32.0
2010	64 (27)	10.1	31.2	10.2	60.1	0 (0)	0.0	0.0	0.0	0.0	58 (48)	4.6	34.1	15.7	81.6	1 (1)	19.8	19.8	0.0	19.8
2011	25 (14)	9.3	29.7	18.8	80.0	0 (0)	0.0	0.0	0.0	0.0	20 (15)	11.9	51.9	42.2	131.6	4 (4)	1.3	22.4	18.9	44.1
2012	17 (12)	3.3	45.5	24.7	85.0	0 (0)	0.0	0.0	0.0	0.0	25 (17)	11.9	27.4	8.9	44.8	1 (1)	3.3	3.3	0.0	3.3
2013	20 (9)	14.3	26.1	9.3	46.3	0 (0)	0.0	0.0	0.0	0.0	92 (59)	0.7	23.5	10.3	52.0	0 (0)	0.0	0.0	0.0	0.0
2014	45 (18)	13.7	26.1	12.0	60.6	0 (0)	0.0	0.0	0.0	0.0	46 (40)	14.1	23.7	6.6	38.6	2 (2)	30.3	32.8	3.5	35.3
2015	51 (27)	11.0	28.9	12.0	71.0	0 (0)	0.0	0.0	0.0	0.0	101 (68)	7.3	39.2	27.7	135.0	7 (7)	19.4	36.4	13.5	60.4
2016	53 (38)	5.5	32.2	11.0	59.5	0 (0)	0.0	0.0	0.0	0.0	55 (44)	18.1	31.7	8.2	53.2	4 (4)	22.6	32.4	8.1	41.9
2017	25 (13)	14.8	33.4	17.3	82.1	0 (0)	0.0	0.0	0.0	0.0	37 (30)	18.7	34.7	10.4	54.7	0 (0)	0.0	0.0	0.0	0.0
2018	85 (39)	16.5	26.8	11.9	90.4	3 (1)	19.1	20.0	1.0	21.2	99 (51)	7.3	27.4	9.3	54.9	4 (2)	18.4	39.1	14.7	50.0
2019	46 (28)	14.6	25.2	8.3	58.2	0 (0)	0.0	0.0	0.0	0.0	85 (58)	15.9	30.1	7.5	49.6	4 (3)	17.4	20.5	3.2	24.3
2020	90 (37)	14.3	27.1	12.6	90.4	3 (1)	19.1	20.0	1.0	21.2	140 (81)	7.3	27.8	8.6	50.7	3 (3)	24.3	37.7	12.9	50.0
2021	45 (34)	11.7	26.2	8.5	45.2	0 (0)	0.0	0.0	0.0	0.0	86 (76)	12.1	28.4	9.9	61.7	0 (0)	0.0	0.0	0.0	0.0
2022	39 (27)	14.3	27.1	11.2	56.2	0 (0)	0.0	0.0	0.0	0.0	46 (39)	13.4	27.2	9.4	51.8	1 (1)	20.7	20.7	0.0	20.7
2023	16 (12)	12.1	20.0	5.9	35.8	0 (0)	0.0	0.0	0.0	0.0	38 (31)	15.2	25.0	9.0	48.3	2 (2)	15.7	17.7	3.0	19.8
2024	33 (24)	15.0	31.4	14.1	68.3	0 (0)	0.0	0.0	0.0	0.0	36 (26)	16.3	29.8	11.0	49.6	0 (0)	0.0	0.0	0.0	0.0

Table 7. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Cobia by year. Summaries include the number of fish for which size information was collected by MRIP and, in parentheses, the number of angler trips from which those fish were sampled (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish lengths and weights.

Year	Weight				
	N	Min	Avg	SD	Max
1981	2 (2)	2.2	4.2	2.8	6.2
1982	6 (6)	1.3	12.3	15.4	35.2
1983	2 (1)	36.4	45.6	13.1	54.9
1984	10 (9)	9.9	28.9	15.0	62.5
1985	43 (25)	1.1	21.7	12.1	56.0
1986	33 (30)	0.9	22.7	14.3	50.9
1987	39 (35)	0.3	19.8	11.6	48.6
1988	16 (14)	1.2	26.5	16.8	50.5
1989	51 (45)	0.5	21.7	14.5	71.6
1990	55 (42)	0.2	19.9	12.7	65.5
1991	39 (34)	0.2	25.2	21.4	96.1
1992	46 (37)	5.1	27.9	11.8	56.7
1993	24 (17)	7.7	25.1	12.0	61.3
1994	33 (27)	1.7	34.5	16.8	67.0
1995	37 (32)	7.9	32.2	15.7	69.7
1996	61 (36)	0.1	22.4	18.3	66.8
1997	31 (24)	20.0	33.4	10.9	57.2
1998	50 (26)	10.8	38.9	17.0	80.1
1999	28 (22)	1.8	24.8	21.2	68.4
2000	20 (15)	6.9	35.0	20.0	71.6
2001	29 (25)	10.6	32.0	17.2	69.1
2002	32 (24)	11.5	35.2	17.7	74.9
2003	42 (34)	10.8	26.8	14.2	71.2
2004	42 (26)	13.7	34.1	14.8	69.1
2005	46 (26)	0.7	31.4	16.1	77.2
2006	26 (22)	14.8	32.1	16.4	77.7
2007	39 (32)	14.8	32.7	15.4	65.0
2008	33 (21)	10.7	28.6	14.4	61.7
2009	39 (37)	4.6	25.8	10.5	55.1
2010	123 (76)	4.6	32.5	13.1	81.6
2011	49 (33)	1.3	38.1	32.3	131.6
2012	43 (30)	3.3	34.0	19.5	85.0

Year	Weight				
	N	Min	Avg	SD	Max
2013	112 (68)	0.7	24.0	10.1	52.0
2014	93 (60)	13.7	25.0	9.7	60.6
2015	159 (102)	7.3	35.8	23.7	135.0
2016	112 (86)	5.5	32.0	9.6	59.5
2017	62 (43)	14.8	34.2	13.5	82.1
2018	191 (93)	7.3	27.3	10.7	90.4
2019	135 (87)	14.6	28.2	8.1	58.2
2020	236 (124)	7.3	27.5	10.4	90.4
2021	131 (110)	11.7	27.7	9.5	61.7
2022	86 (67)	13.4	27.1	10.2	56.2
2023	56 (45)	12.1	23.3	8.4	48.3
2024	69 (50)	15.0	30.6	12.5	68.3

Table 8. Estimated average weights of landed Cobia in pounds whole weight (WGT) with associated coefficients of variation (CV; Approach 2 described in Nuttall and Dettloff 2022) by year and mode (MRIP). Average weight estimates are calculated from annual estimates (by-mode) of landings-in-weight (whole, Table 7) divided by estimates of landings-in-number (Table 2). Sample size (N) is provided as the total number of angler trips and, in parentheses, number of fish from which weight information was collected. MRIP Headboat estimates are included from Virginia to Maine.

Year	Shore			Hbt			Cbt			Priv			Total		
	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N
1981	0.00	0.00	0 (0)	0.00	0.00	0 (0)	0.00	0.00	0 (0)	27.30	0.47	2 (2)	27.30	0.47	2 (2)
1982	0.00	0.00	0 (0)	0.00	0.00	0 (0)	0.00	0.00	0 (0)	15.93	0.51	6 (6)	15.93	0.51	6 (6)
1983	0.00	0.00	0 (0)	29.60	0.00	0 (0)	29.60	0.00	0 (0)	26.02	0.20	1 (2)	26.03	0.20	1 (2)
1984	0.00	0.00	0 (0)	0.00	0.00	0 (0)	25.04	0.25	2 (2)	25.04	0.15	7 (8)	25.04	0.16	9 (10)
1985	0.00	0.00	0 (0)	19.40	0.00	0 (0)	20.60	0.08	3 (3)	21.48	0.11	19 (25)	21.29	0.08	25 (43)
1986	18.40	0.00	1 (1)	29.60	0.00	0 (0)	19.45	0.02	5 (5)	23.69	0.14	20 (23)	21.91	0.11	30 (33)
1987	19.93	0.72	3 (3)	0.00	0.00	0 (0)	22.56	0.06	16 (20)	18.75	0.19	16 (16)	19.78	0.09	35 (39)
1988	25.23	0.00	1 (1)	0.00	0.00	0 (0)	25.23	0.24	5 (6)	25.23	0.24	8 (9)	25.23	0.16	14 (16)
1989	18.03	0.63	3 (3)	29.60	0.00	0 (0)	18.88	0.45	3 (3)	22.96	0.09	37 (43)	21.98	0.09	45 (51)
1990	0.00	0.00	0 (0)	0.00	0.00	0 (0)	18.88	0.27	5 (8)	23.39	0.09	37 (47)	22.99	0.09	42 (55)
1991	21.27	0.25	8 (9)	29.60	0.00	0 (0)	21.77	0.12	4 (4)	25.19	0.19	20 (23)	23.45	0.14	34 (39)
1992	28.35	0.18	3 (3)	0.00	0.00	0 (0)	27.49	0.11	12 (13)	27.57	0.07	22 (30)	27.71	0.06	37 (46)
1993	25.72	0.00	1 (1)	0.00	0.00	0 (0)	25.72	0.13	7 (14)	28.66	0.17	9 (9)	26.98	0.10	17 (24)
1994	26.71	0.25	2 (2)	0.00	0.00	0 (0)	26.71	0.17	4 (5)	27.11	0.10	21 (26)	26.98	0.08	27 (33)
1995	32.08	0.14	4 (4)	0.00	0.00	0 (0)	32.03	0.12	11 (15)	30.08	0.14	17 (18)	30.58	0.08	32 (37)
1996	18.82	0.00	1 (1)	0.00	0.00	0 (0)	16.05	0.18	14 (32)	24.09	0.12	21 (28)	23.75	0.10	36 (61)
1997	29.60	0.00	1 (1)	0.00	0.00	0 (0)	30.86	0.11	8 (11)	30.51	0.07	15 (19)	30.29	0.06	24 (31)
1998	39.07	0.00	1 (1)	0.00	0.00	0 (0)	42.43	0.06	12 (35)	31.86	0.17	13 (14)	33.22	0.06	26 (50)
1999	29.67	0.00	1 (1)	0.00	0.00	0 (0)	29.67	0.18	7 (10)	29.65	0.27	14 (17)	29.65	0.16	22 (28)
2000	0.00	0.00	0 (0)	0.00	0.00	0 (0)	28.10	0.22	5 (8)	29.35	0.16	10 (12)	29.30	0.13	15 (20)
2001	29.28	0.00	1 (1)	0.00	0.00	0 (0)	29.28	0.22	9 (10)	29.19	0.10	15 (18)	29.21	0.10	25 (29)

Year	Shore			Hbt			Cbt			Priv			Total		
	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N
2002	31.46	0.23	5 (5)	29.60	0.00	0 (0)	28.80	0.18	9 (14)	30.96	0.10	9 (12)	31.00	0.09	24 (32)
2003	24.74	0.00	1 (1)	29.60	0.00	0 (0)	21.78	0.15	13 (20)	28.00	0.09	19 (20)	27.53	0.08	34 (42)
2004	0.00	0.00	0 (0)	0.00	0.00	0 (0)	34.84	0.09	12 (19)	33.49	0.10	14 (23)	33.63	0.07	26 (42)
2005	29.51	0.40	4 (4)	0.00	0.00	0 (0)	29.03	0.09	8 (16)	25.64	0.10	14 (26)	27.38	0.08	26 (46)
2006	0.00	0.00	0 (0)	0.00	0.00	0 (0)	30.26	0.10	7 (9)	29.19	0.13	15 (17)	29.21	0.10	22 (26)
2007	0.00	0.00	0 (0)	0.00	0.00	0 (0)	26.82	0.17	9 (11)	29.06	0.08	23 (28)	28.88	0.08	32 (39)
2008	28.51	0.51	2 (2)	0.00	0.00	0 (0)	27.65	0.18	8 (11)	28.22	0.10	11 (20)	28.23	0.09	21 (33)
2009	25.55	0.48	2 (2)	0.00	0.00	0 (0)	25.08	0.11	9 (10)	26.91	0.08	26 (27)	26.71	0.07	37 (39)
2010	33.23	0.00	1 (1)	0.00	0.00	0 (0)	32.30	0.04	27 (64)	33.73	0.06	48 (58)	33.61	0.04	76 (123)
2011	41.45	0.42	4 (4)	0.00	0.00	0 (0)	31.77	0.13	14 (25)	31.07	0.18	15 (20)	33.13	0.12	33 (49)
2012	29.60	0.00	1 (1)	0.00	0.00	0 (0)	35.17	0.13	12 (17)	32.13	0.07	17 (25)	31.17	0.09	30 (43)
2013	0.00	0.00	0 (0)	0.00	0.00	0 (0)	24.94	0.08	9 (20)	24.61	0.05	59 (92)	24.63	0.04	68 (112)
2014	26.02	0.08	2 (2)	0.00	0.00	0 (0)	25.96	0.07	18 (45)	26.92	0.04	40 (46)	26.80	0.04	60 (93)
2015	36.78	0.14	7 (7)	0.00	0.00	0 (0)	30.80	0.06	27 (51)	36.22	0.07	68 (101)	36.13	0.05	102 (159)
2016	33.05	0.12	4 (4)	0.00	0.00	0 (0)	31.22	0.05	38 (53)	32.81	0.04	44 (55)	32.78	0.03	86 (112)
2017	0.00	0.00	0 (0)	0.00	0.00	0 (0)	32.83	0.10	13 (25)	35.64	0.05	30 (37)	35.55	0.05	43 (62)
2018	27.01	0.19	4 (4)	26.51	0.03	2 (3)	27.37	0.05	49 (85)	26.67	0.03	86 (99)	26.78	0.03	141 (191)
2019	28.80	0.08	4 (4)	0.00	0.00	0 (0)	26.66	0.05	36 (46)	29.64	0.03	70 (85)	29.39	0.02	110 (135)
2020	27.90	0.20	3 (3)	27.72	0.03	2 (3)	27.08	0.05	59 (90)	27.47	0.03	127 (140)	27.53	0.02	191 (236)
2021	0.00	0.00	0 (0)	0.00	0.00	0 (0)	27.04	0.05	34 (45)	27.92	0.04	76 (86)	27.80	0.03	110 (131)
2022	26.54	0.00	1 (1)	0.00	0.00	0 (0)	24.48	0.07	27 (39)	25.70	0.05	39 (46)	25.69	0.04	67 (86)
2023	24.85	0.12	2 (2)	0.00	0.00	0 (0)	25.24	0.07	12 (16)	26.07	0.06	31 (38)	25.99	0.05	45 (56)
2024	0.00	0.00	0 (0)	0.00	0.00	0 (0)	32.64	0.08	24 (33)	31.22	0.06	26 (36)	31.42	0.05	50 (69)

Table 9. Recreational Fishing Effort (in angler trips) for Atlantic anglers by mode and year (MRIP). These effort estimates depict all (general) recreational fishing activity in the Atlantic and are not specific to Cobia. MRIP Headboat estimates are included from Virginia to Maine.

Year	Cbt	Hbt	Priv	Shore	Total
1981	1,884,506	1,009,349	17,765,901	34,007,002	54,666,758
1982	1,953,364	2,172,315	18,293,526	35,488,354	57,907,559
1983	1,568,556	1,758,930	18,960,548	37,465,725	59,753,759
1984	1,109,728	1,393,770	20,039,286	35,880,449	58,423,233
1985	1,355,111	1,164,076	22,500,116	34,287,470	59,306,773
1986	1,556,425	1,236,059	22,487,902	34,364,897	59,645,283
1987	1,376,758	621,674	21,588,527	34,419,954	58,006,913
1988	1,112,402	906,085	21,497,141	36,138,703	59,654,331
1989	1,094,730	738,940	21,664,812	36,751,891	60,250,373
1990	946,923	961,811	22,693,637	40,113,617	64,715,988
1991	1,266,747	809,359	22,754,553	40,799,495	65,630,154
1992	1,156,247	665,059	23,096,869	41,037,935	65,956,110
1993	1,181,806	1,266,815	23,568,468	41,906,506	67,923,595
1994	1,287,664	832,466	24,079,060	42,505,393	68,704,583
1995	1,341,895	900,293	24,291,643	42,437,852	68,971,683
1996	1,295,077	624,837	25,613,101	43,167,914	70,700,929
1997	1,266,260	735,581	27,780,753	45,284,094	75,066,688
1998	1,140,452	604,384	28,217,416	45,083,354	75,045,606
1999	1,128,883	572,787	29,971,784	49,827,082	81,500,536
2000	1,113,101	686,028	32,467,729	54,271,568	88,538,426
2001	1,265,827	596,059	33,503,927	56,328,542	91,694,355
2002	1,044,007	657,798	34,002,275	55,374,503	91,078,583
2003	1,180,164	667,510	35,092,246	57,716,219	94,656,139
2004	1,015,109	674,260	36,623,026	59,354,499	97,666,894
2005	1,222,234	767,540	37,161,398	60,477,945	99,629,117
2006	998,467	649,374	37,423,372	62,721,146	101,792,359
2007	1,467,926	971,084	38,139,032	60,228,146	100,806,188
2008	1,055,062	871,784	38,625,010	63,611,011	104,162,867
2009	1,024,916	790,333	39,264,641	63,911,446	104,991,336
2010	831,727	580,114	41,666,922	67,239,285	110,318,048
2011	1,029,257	600,817	40,156,011	65,577,692	107,363,777
2012	931,164	628,596	39,335,516	64,427,619	105,322,895
2013	1,088,554	968,396	37,872,952	62,103,965	102,033,867

Year	Cbt	Hbt	Priv	Shore	Total
2014	1,087,502	831,745	36,807,698	63,121,977	101,848,922
2015	1,196,358	696,087	34,715,854	61,414,441	98,022,740
2016	698,979	470,309	34,597,161	64,448,600	100,215,049
2017	772,746	596,982	35,192,629	62,657,638	99,219,995
2018	818,730	535,555	28,798,072	55,095,930	85,248,287
2019	905,712	598,715	31,572,749	60,506,883	93,584,059
2020	701,572	496,200	33,856,675	60,106,986	95,161,433
2021	1,078,369	495,785	31,747,899	61,557,114	94,879,167
2022	841,655	443,293	35,475,818	65,249,468	102,010,234
2023	941,067	488,299	33,619,048	59,102,347	94,150,761
2024	707,941	411,071	34,112,207	57,343,894	92,575,113

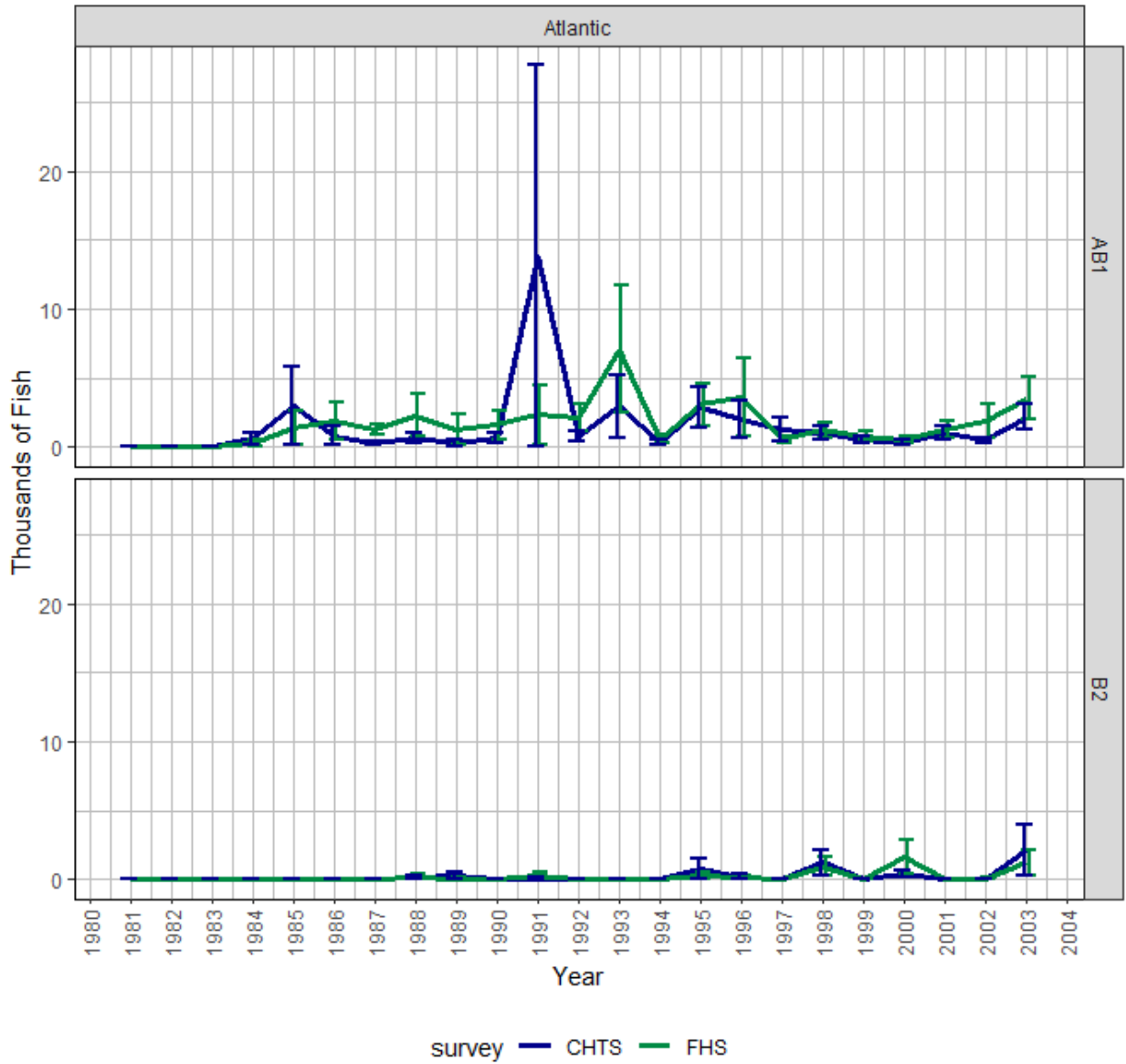


Figure 1. Comparison of Charterboat landings (AB1) and discard (B2) estimates (with standard error intervals shown) for Cobia from the Coastal Household Telephone Survey (CHTS) and For-Hire Survey (FHS) from the Atlantic between 1981 and 2003 (MRIP). The Charterboat calibration approach is discussed in Dettloff and Matter (2019a).

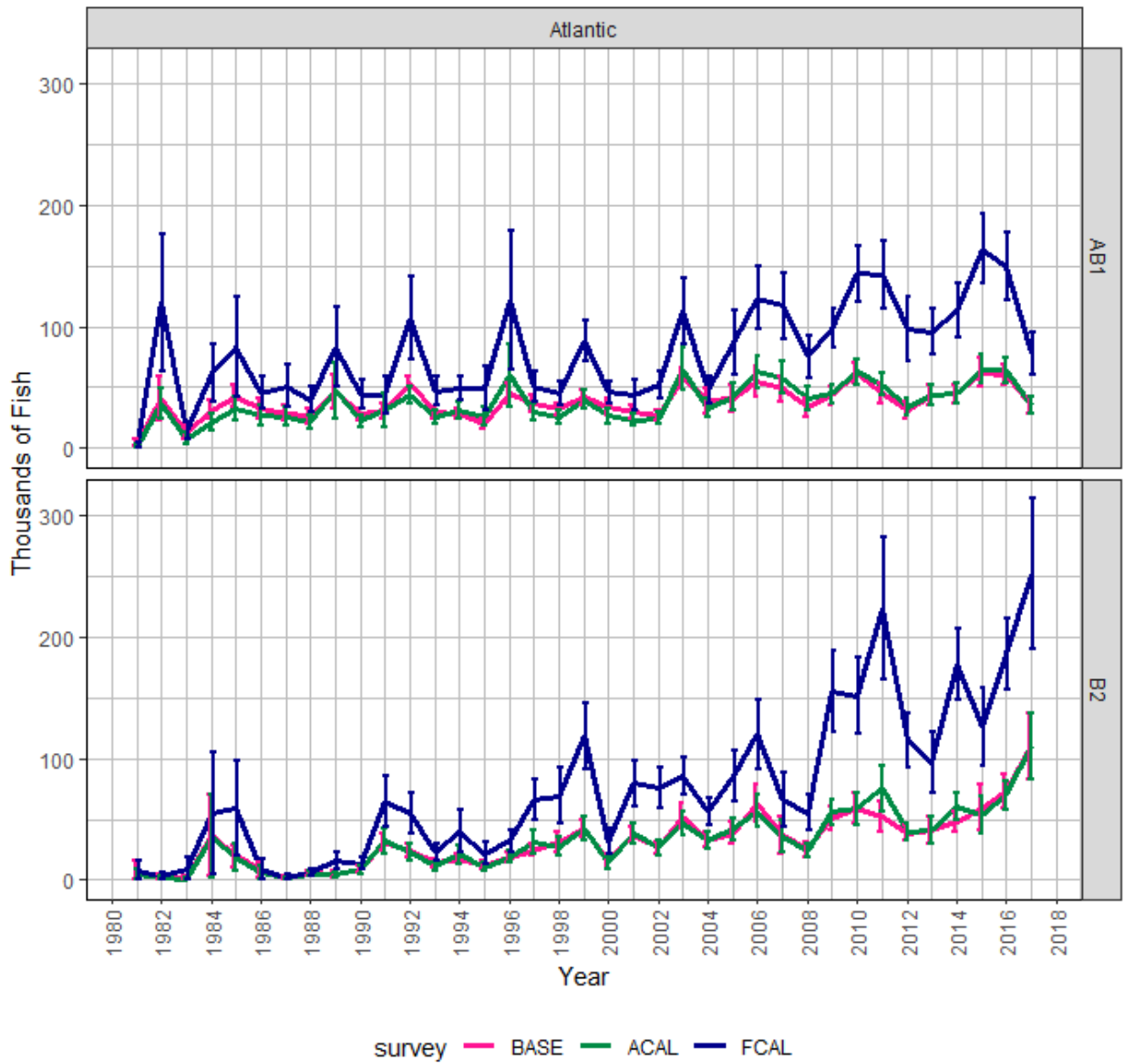


Figure 2. MRIP Base (BASE), APAIS Calibrated (ACAL), and Fully Calibrated APAIS and FES (FCAL) estimates for Cobia in the Atlantic between 1981 and 2017. Estimates in this figure include East Florida as these domains are not separable from those used by the MRIP online comparison tool for the Atlantic (NMFS pers comm).

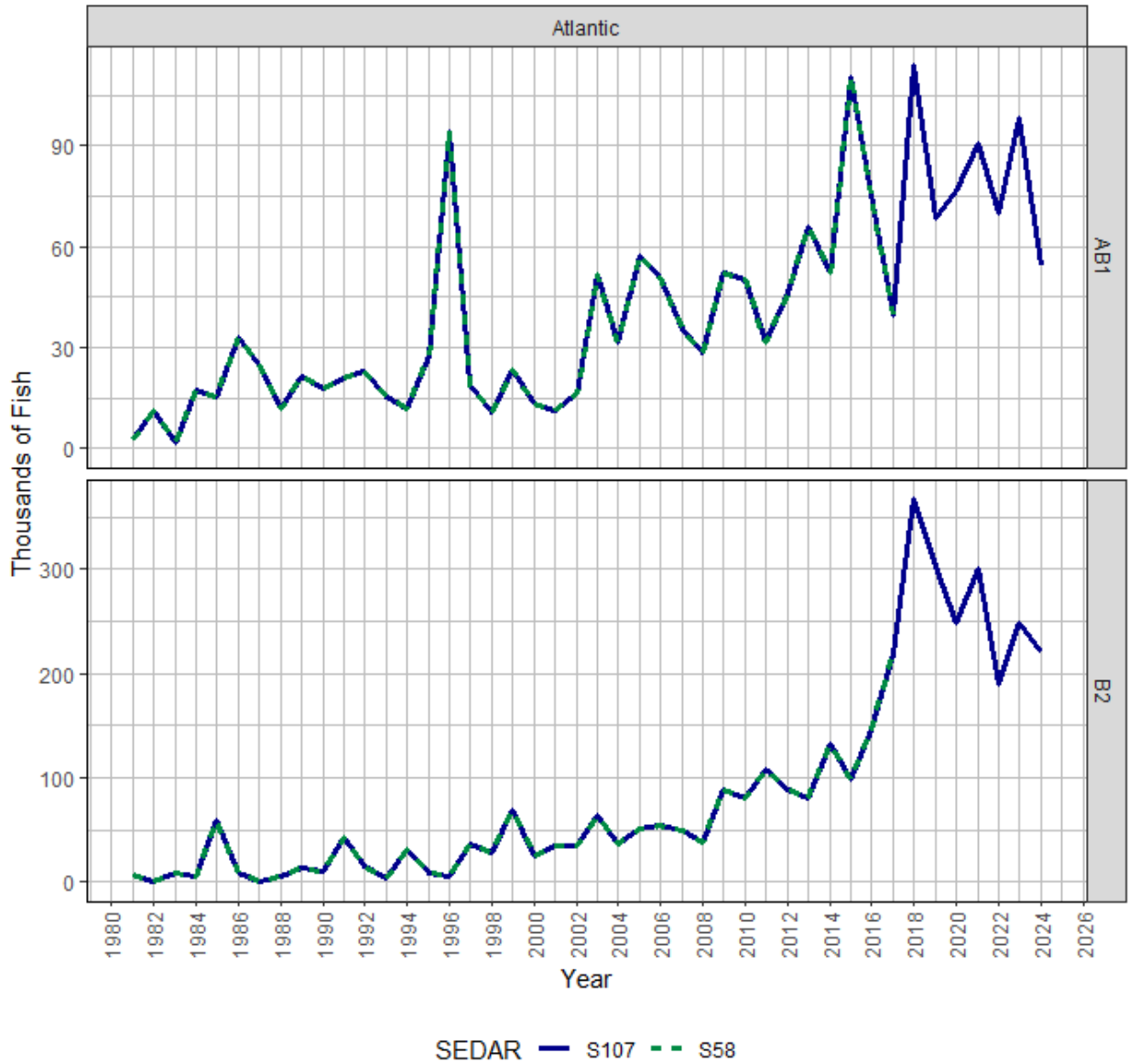


Figure 3. Comparison of total general recreational landings (AB1) and discard estimates (B2) for Atlantic Cobia between SEDAR 107 and SEDAR 58, the terminal years of which are 2024 and 2017 respectively.

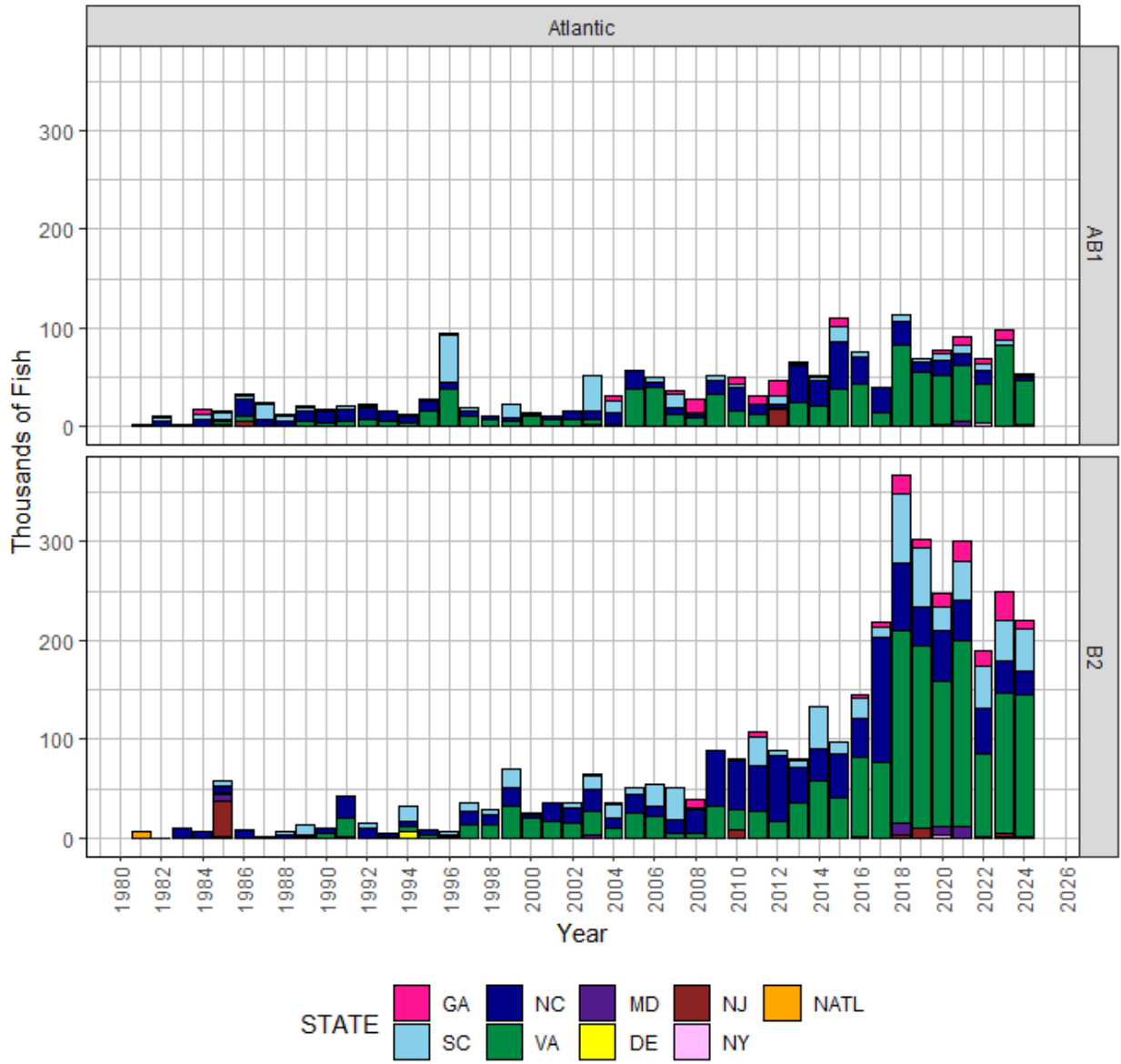


Figure 4. Annual Cobia landings (AB1) and discards (B2), in thousands of fish, by state from 1981 to 2024 (MRIP). North Atlantic (NATL; CT to ME) states contributed less than ten percent to the total catch (Table1, Fig4a) and were combined for plotting purposes.

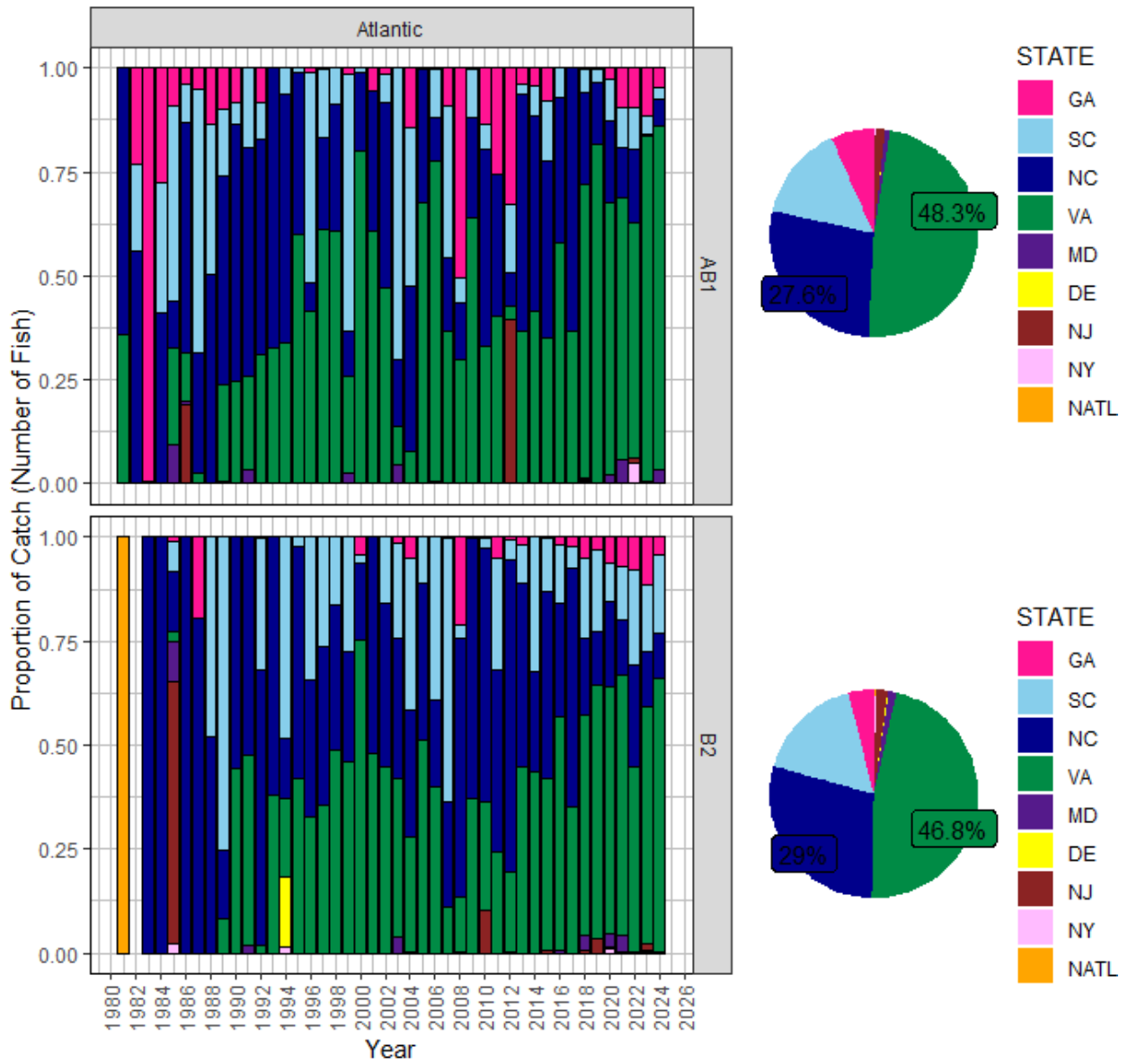


Figure 4a. Proportion of Cobia landings (AB1) and discards (B2), in numbers of fish, from each state by year (bar graph) and overall (pie chart) between 1981 and 2024 (MRIP). North Atlantic (NATL; CT to ME) states were combined for plotting purposes.

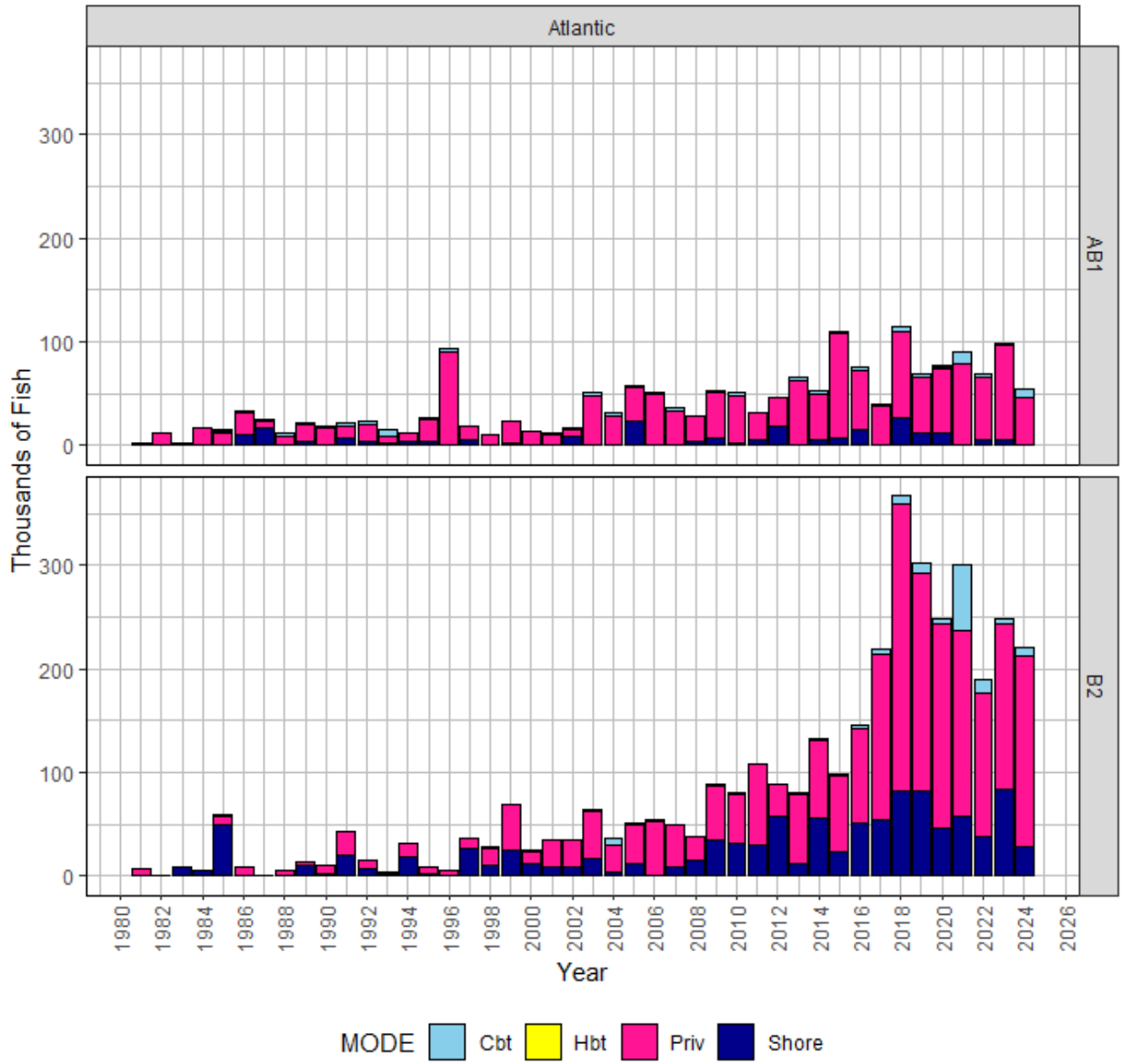


Figure 5. Annual Cobia landings (AB1) and discards (B2), in thousands of fish, by mode from 1981 to 2024 (MRIP). MRIP Headboat estimates are included from Virginia to Maine.

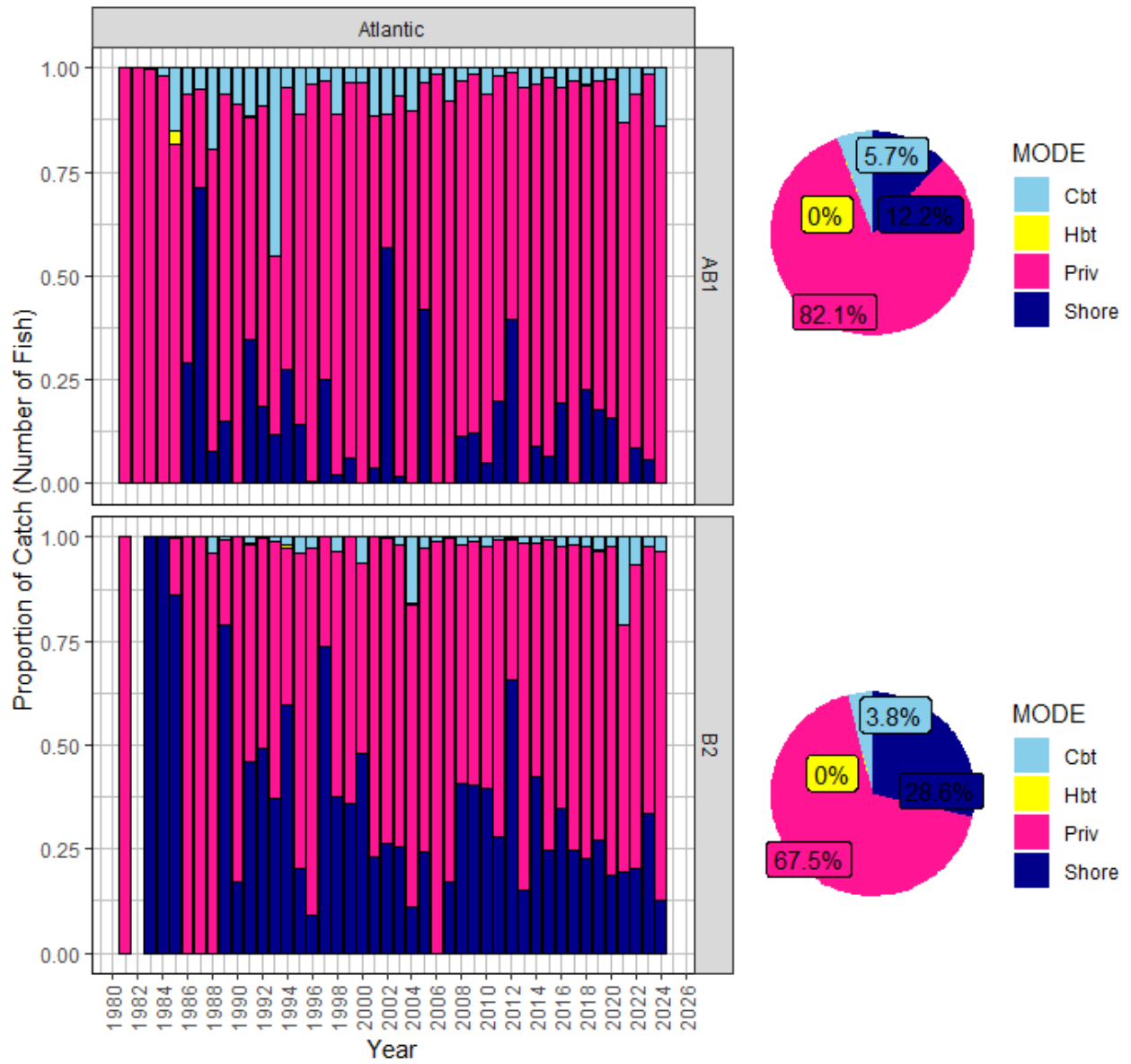


Figure 5a. Proportion of Cobia landings (AB1) and discards (B2), in numbers of fish, from each mode by year (bar graph) and overall (pie chart) between 1981 and 2024 (MRIP). MRIP Headboat estimates are included from Virginia to Maine.

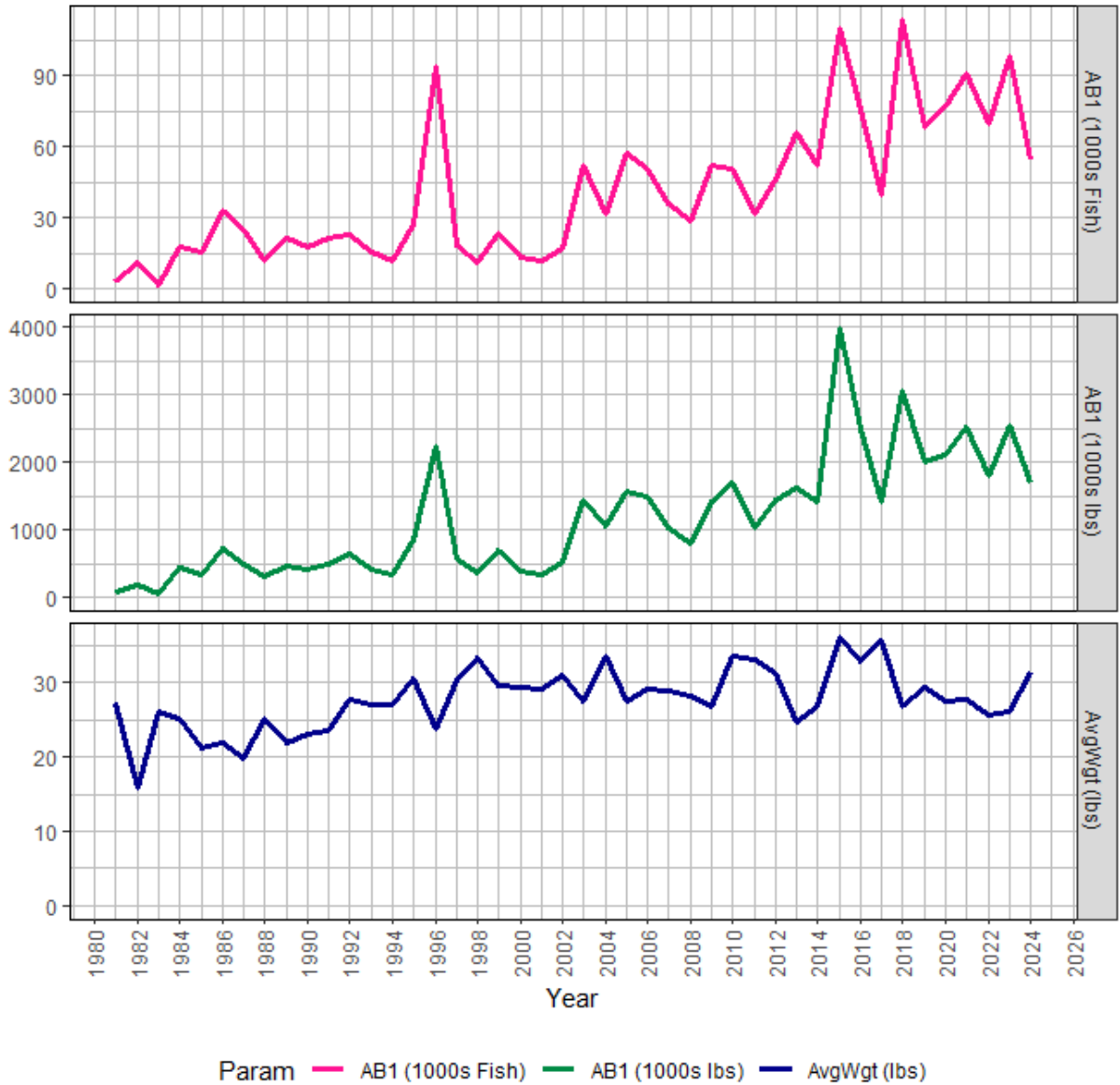


Figure 6. Estimates of annual landings for Cobia in the Atlantic (MRIP): estimated landings in thousands of fish (top), estimated landings in thousands of pounds whole weight (middle), and average weight of landed fish (estimated lbs/estimated fish) (bottom). See Appendix for average weight calculation methods.

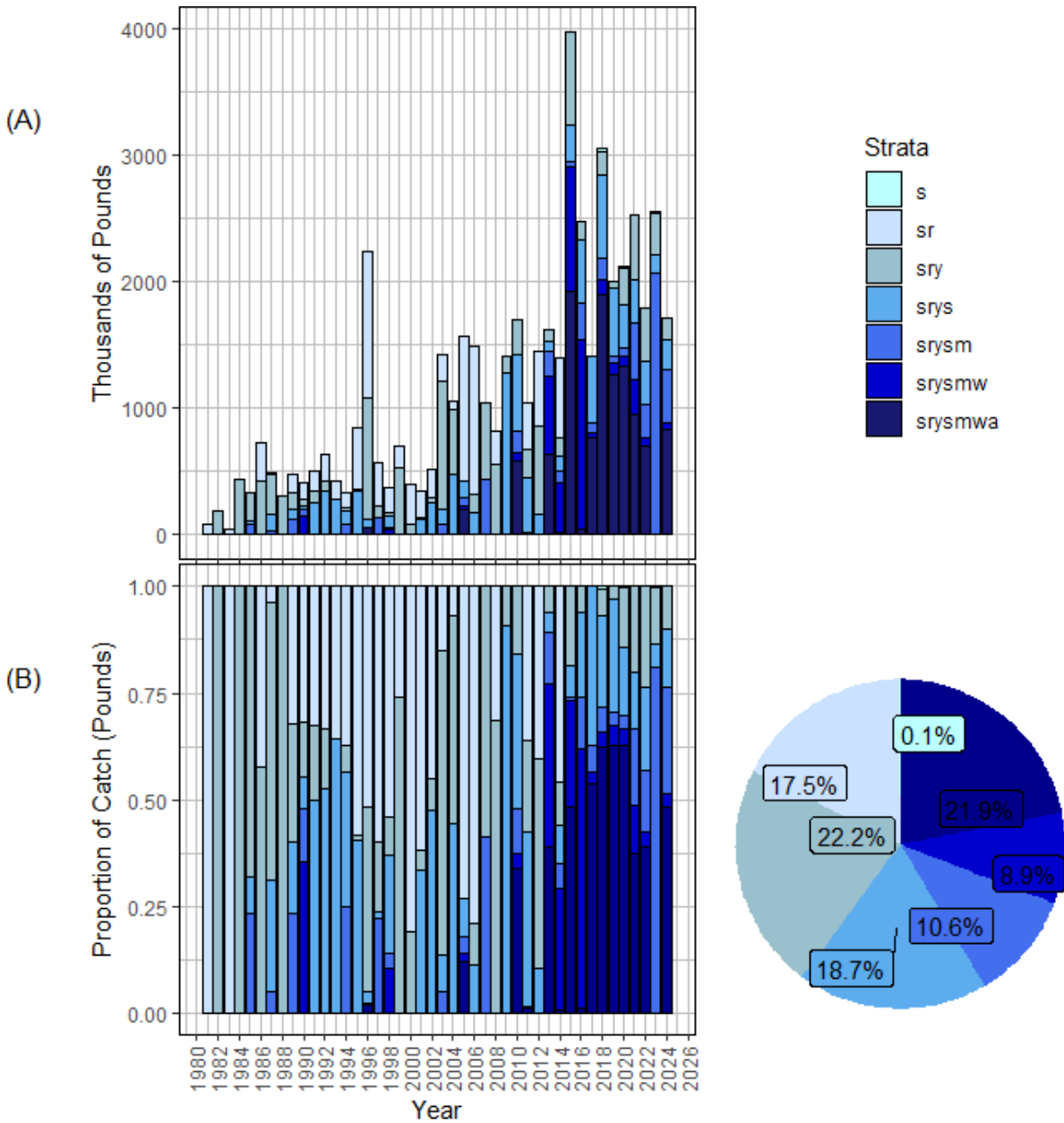


Figure 8. Annual landings estimates of Atlantic Cobia in thousands of pounds whole weight by hierarchy level (MRIP), defined by species, **r**egion, **y**ear, **s**tate, **m**ode, **w**ave, and **a**rea. Landings are grouped by the strata at which average weights were estimated. As an example, (srysmw) summarizes those landings-in-weight estimates originating from cells where average weights are specific to a particular species, **r**egion, **y**ear, **s**tate, **m**ode, and **w**ave (i.e., weight observations collapsed across areas). Annual summaries include the number of fish and angler trips from which weight information was collected (*N*) and the landings-in-weight estimates (AB1.lbs) by hierarchy level. Landings are provided (A) in absolute pounds and (B) as a percentage of total landings-in-weight, which is summarized by year (stacked bar graph) and across all years (pie chart).

(A) Wave	Cbt		Hbt	Priv		Shore	
	IMP	RAW	IMP	IMP	RAW	IMP	RAW
2	3			4			
3	72	92	4	186	149	23	17
4	2	105	6	55	260		23
5		35	5		62		12
6		2			1		1

Frequency Distribution for Catch Observations

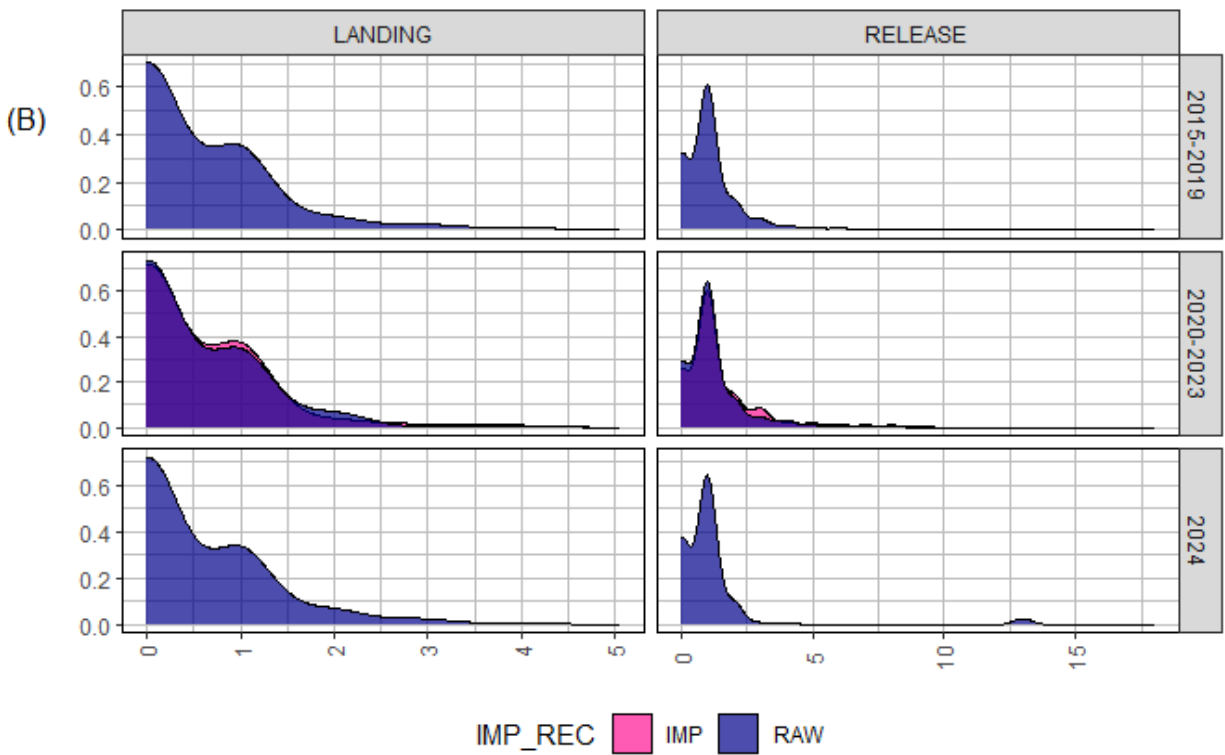


Figure 9. COVID data gaps in the MRIP APAIS and associated imputations for (positive) fishing trips that intercepted Atlantic Cobia. No 2020 data were imputed for the FES or FHS. (A) Number of positive intercepts in 2020-2021-2022-2023 from the APAIS (RAW) vs. those imputed from intercepts in adjacent years (IMP). (B) Distribution of APAIS catch observations in years with no imputed catch data (in 2015-2019 and 2020-2023 and 2024), in raw 2020-2021-2022-2023 APAIS data, and in 2020-2021-2022-2023 imputations. Refer to Cody (2021) for more information on COVID data gaps in MRIP.

Appendix A

Additional Details of Survey Data and SEFSC Estimation

- **MRIP Calibrations:** Fully calibrated estimates that take into account the change in the Fishing Effort Survey (FES; 2018), the redesigned Access Point Angler Intercept Survey (APAIS; 2013), and the For Hire Survey (FHS; 2004 for all Atlantic states north of Florida).
 - Papacostas and Foster (2021) provide descriptions of the approaches used by the Office of Science and Technology to calibrate MRIP (1) effort estimates derived from the legacy Coastal Household Telephone Survey (CHTS) into FES units for the private and shore modes and (2) catch rate estimates between the original and redesigned APAIS for all modes.
 - SEFSC calibrations of catch and effort estimates between CHTS and FHS units are calculated for the For-Hire mode by year, region, state, wave, and area fished according to Dettloff and Matter (2019a). Figure 1 summarizes the resultant scaling of CHTS catch estimates under the FHS calibration ratios.
- **SEFSC Weight Estimation:** Average (fish) weight estimates are calculated in whole weight by strata using the following hierarchy: species, region, year, state, mode, wave, and area (Matter and Rios 2013). The minimum number of weights used at each level of substitution is fifteen fish, except for the final species level where the minimum is one fish (Dettloff and Matter 2019b). Size records above an allowable (max size) threshold are excluded from weight estimation and the summary tables included in this working paper (Tables 5-8). For SEDAR 107 Cobia, this includes any weights heavier than 157.08 pounds.
- **SEFSC Estimates derived using SEDAR best practices (SEDAR-PW-07):**
 - To ensure sampling can support MRIP estimates at finer stratifications than for which the survey was designed, (sub-state) domain estimates are only generated for established geographic domains. For North Carolina, this includes domains north and south of Cape Hatteras.
 - Between 1981 and 1985 in the South Atlantic, MRIP charter and headboat modes were combined into a single (for-hire) mode for estimation purposes. Since the NMFS Southeast Region Headboat Survey (SRHS) began in 1981 in the South Atlantic, the MRIP combined for-hire mode must be split to avoid double counting of estimated headboat landings in these early years. Estimates for the MRIP for-hire mode (1981-1985) were split using a ratio of SRHS headboat angler trip estimates to MRIP charterboat angler trip estimates for 1986-1990, calculated by state (or state equivalent to match SRHS areas to MRIP states).
 - Between 1981 and 2003 in the Mid and North-Atlantic, MRIP charter and headboat modes were combined into a single (for-hire) mode for estimation purposes. To provide complete time series for both the charter and MRIP headboat modes, the MRIP for-hire mode in the Mid and North-Atlantic using ratios of MRIP charterboat:headboat effort from raw MRIP intercept data. These effort-based ratios were calculated by year (1981-2003), state, and

mode and applied to the combined for-hire estimates for both catch and effort.