General Recreational Survey Data for HMS Sandbar Shark

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April 14, 2026

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General recreational catch estimates for Sandbar Shark are compiled from the following separate sampling programs:
1. Marine Recreational Information Program (MRIP) (SEDAR68-DW-13)
2. Texas Parks and Wildlife Department (TPWD) Creel survey (SEDAR70-WP-03)
3. Louisiana Creel survey program (LA Creel; 2014+) (SEDAR98-DW-18)

– No Sandbar Shark recreational catch (landings or discards) was reported in the LA Creel dataset for the years evaluated.

As part of the SEDAR stock assessment process, the data/estimates provided in this working paper may be updated based on discussions and recommendations of the Recreational Working Group. Please refer to the recreational section of the Data Workshop report for details on the estimates ultimately used in this assessment.

Parameters for data prepared for SEDAR 101 recreational catch data:

- Species: Sandbar Shark
    - Catch estimates provided in this report do not allocate unidentified requiem shark catch (i.e., requiem shark family and requiem shark genus) into Sandbar Shark landings or discards. For this working paper, unidentified catch is presented separately for review purposes, including annual summaries and species composition ratios. This approach allows the Recreational Working Group to evaluate the relative contribution of Sandbar Shark within the broader requiem shark pool before determining whether allocation is appropriate.
- Year Range: 1981 - 2024
- Geographic Range: U.S. Atlantic and Gulf of America states from Maine to Texas. Spatial summaries for this working paper are presented across the full assessment domain. Caribbean landings and discards were not incorporated due to only a single data point being available, which was insufficient to support meaningful contribution to the assessment.

- Fishing Modes: Charter, Private, Headboat, Shore
    - In the Mid-Atlantic and North Atlantic, combined for-hire catch estimates were manually separated into charter and headboat modes to maintain consistency with the defined fishing mode categories.
- 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). OST reevaluated this approach when more years of data became available (i.e., 2021+), but found it did not substantially change the imputed estimates and estimates did not need to be updated.
- 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 7-9).

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.

LANDINGS

- **1983 landings estimate: 664,625 fish**
    - *Stratum: SC, Private, Wave 3, and Inland*
    - Intercept Records: a total of 2 angler trips that resulted in a landings estimate of 238,681 fish (35.9% of the total annual estimate)
        - Both of the angler trips had harvest seen by the dockside interviewer. These trips had retained catches of 9 and 14 Sandbar Shark. These fish were all seen by the dockside sampler, suggesting species identifications were not influenced by angler recall, and the number of fish harvested was accurately recorded.
    - *Stratum: SC, Private, Wave 3, and Ocean <= 3 mi*
    - Intercept Records: a total of 1 angler trip that resulted in a landings estimate of 129,219 fish (19.4% of the total annual estimate)
        - The angler trip had harvest seen by the dockside interviewer. This trip had retained catches of 16 Sandbar Shark. These fish were all seen by the dockside sampler, suggesting species identifications were not influenced

by angler recall, and the number of fish harvested was accurately recorded.

- **1986 landings estimate: 183,379 fish**
  - *Stratum: DE, Private, Wave 4, and Ocean <= 3 mi*
  - Intercept Records: a total of 4 angler trips that resulted in a landings estimate of 74,705 fish (40.7% of the total annual estimate)
    - All four of the angler trips had Sandbar Shark catch that was not seen by the dockside interviewer. The number of Sandbar Shark reported for these trips is 8, 7, 3, and 1.

DISCARDS

- **1983 discards estimate: 727,043 fish**
  - *Stratum: DE, Man-made, Wave 4, and Ocean <= 3 mi*
  - Intercept Records: a total of 8 angler trips that resulted in a discard estimate of 166,493 fish (22.9% of the total annual estimate)
    - Two angler trips each reported 4 discarded Sandbar Shark. Another two angler trips each reported 1 discarded Sandbar Shark. The remaining four angler trips reported 9, 6, 3, and 2 discarded Sandbar Shark.
    - This sample weight for the associated sites are elevated.
  - *Stratum: DE, Shore, Wave 3, and Ocean <= 3 mi*
  - Intercept Records: a total of 21 angler trips that resulted in a discard estimate of 92,182 fish (12.7% of the total annual estimate)
    - Seven angler trips each reported 1 discarded Sandbar Shark. Four angler trips each reported 2 discarded Sandbar Shark. Another four angler trips each reported 12 discarded Sandbar Shark. Three angler trips each reported 6 discarded Sandbar Shark. Two angler trips each reported 3 discarded Sandbar Shark. One angler trip reported 4 discarded Sandbar Shark.

- **1986 discards estimate: 455,392 fish**
  - *Stratum: FL, Shore, Wave 1, and Ocean <= 3 mi*
  - Intercept Records: a total of 1 angler trip that resulted in a discard estimate of 145,495 fish (31.9% of the total annual estimate)
    - One angler trip reported 2 discarded Sandbar Shark.
    - The sample weight for the associated site is elevated.
  - *Stratum: DE, Private, Wave 4, and Ocean <= 3 mi*

- Intercept Records: a total of 7 angler trips that resulted in a discard estimate of 78,214 fish (17.2% of the total annual estimate)
    - Two angler trips each reported 2 discarded Sandbar Shark. Another two angler trips each reported 5 discarded Sandbar Shark. The remaining three angler trips reported 1, 3, and 4 discarded Sandbar Shark.
    - The sample weight for the associated sites are elevated.

- **1998 discards estimate: 370,260 fish**
    - *Stratum: SC, Shore, Wave 3, and Inland*
    - Intercept Records: a total of 3 angler trips that resulted in a discard estimate of 127,753 fish (34.5% of the total annual estimate)
        - The three angler trips reported 1, 2, and 12 discarded Sandbar Shark.
        - The sample weight for the associated sites are elevated.
    - *Stratum: VA, Private, Wave 4, and Inland*
    - Intercept Records: a total of 16 angler trips that resulted in a discard estimate of 57, 040 fish (15.4 % of the total annual estimate)
        - Nine angler trips each reported 1 discarded Sandbar Shark. Five angler trips each reported 2 discarded Sandbar Shark. One angler trip reported 3 discarded Sandbar Shark, and another trip reported 6 discarded Sandbar Shark.
        - The sample weight for the associated sites are elevated.

- **2002 discards estimate: 569,181 fish**
    - *Stratum: NJ, Private, Wave 5, and Inland*
    - Intercept Records: a total of 12 angler trips that resulted in a discard estimate of 79,165 fish (13.9% of the total annual estimate)
        - Six angler trips each reported 2 discarded Sandbar Shark. Two angler trips each reported 4 discarded Sandbar Shark, and an additional two angler trips each reported 10 discarded Sandbar Shark. One angler trip reported 1 discarded Sandbar Shark, and an additional angler trip reported 3 discarded Sandbar Shark.
        - The sample weight for the associated sites are elevated.
    - *Stratum: NJ, Private, Wave 5, and Ocean > 3 mi*
    - Intercept Records: a total of 3 angler trips that resulted in a discard estimate of 78,813 fish (13.8 % of the total annual estimate)
        - Two angler trips each reported 3 discarded Sandbar Shark. One angler trip reported 5 discarded Sandbar Shark.

- The sample weight for the associated sites are elevated.

- *Stratum: SC, Shore, Wave 4, and Ocean <= 3 mi*
- Intercept Records: a total of 7 angler trips that resulted in a discard estimate of 68,467 fish (12% of the total annual estimate)
  - Five angler trips each reported 1 discarded Sandbar Shark. One angler trip reported 3 discarded Sandbar Shark, and another angler trip reported 4 discarded Sandbar Shark.
  - The sample weight for the associated sites are elevated.

- *Stratum: NJ, Private, Wave 4, and Inland*
- Intercept Records: a total of 13 angler trips that resulted in a discard estimate of 60,138 fish (10.6 % of the total annual estimate)
  - Five angler trips each reported 1 discarded Sandbar Shark. Two angler trips each reported 4 discarded Sandbar Shark, and another two angler trips each reported 5 discarded Sandbar Shark. The remaining angler trips reported 2, 3, 6, and 10 discarded Sandbar Shark.
  - The sample weight for the associated sites are elevated.

- **2009 discards estimate: 624,858 fish**
  - *Stratum: NJ, Private, Wave 4, and Inland*
  - Intercept Records: a total of 13 angler trips that resulted in a discard estimate of 167,950 fish (26.9% of the total annual estimate)
    - Four angler trips each reported 1 discarded Sandbar Shark, and another four angler trips each reported 2 discarded Sandbar Shark. Two angler trips each reported 3 discarded Sandbar Shark. The remaining angler trips reported 4, 7, and 8 discarded Sandbar Shark.
    - The sample weight for the associated sites are elevated.

- **2022 discards estimate: 354,696 fish**
  - *Stratum: NJ, Private, Wave 4, and Inland*
  - Intercept Records: a total of 2 angler trips that resulted in a discard estimate of 131,167 fish (37.0% of the total annual estimate)
    - Two angler trips each reported 7 discarded Sandbar Shark.
    - The sample weight for the associated sites are elevated.

Discussion

Sandbar Shark appear to represent a relatively rare-event species in the recreational dataset, with fluctuations in catch heavily influenced by relatively high expansion factors in certain strata.

Elevated landings estimates in the early portion of the time series, particularly in 1983, are driven by a small number of intercept trips with relatively high expansion factors and relatively high catch observations. In 1983, a single stratum (South Carolina, private mode, wave 3, inland) accounted for approximately 35.9% of the total annual landings estimate, based on only two intercepted angler trips. A second stratum in the same state, mode, and wave but in nearshore ocean waters (≤ 3 mi) contributed an additional 19.4% of the total estimate from a single intercept. In both cases, retained catches were observed directly by dockside interviewers, with reported harvests ranging from 9 to 16 Sandbar Shark per trip. This suggests that species identification and reported catch were reliable. However, the large contribution of these few trips to the annual total reflects elevated sample weights rather than widespread high catch rates across the fishery.

A similar pattern is observed for landings in 1986, where approximately 40.7% of the total annual estimate is attributed to four intercept trips in Delaware (private mode, wave 4, nearshore ocean). In contrast to 1983, these trips were not observed by dockside interviewers, and reported catches ranged from 1 to 8 Sandbar Shark. The unvalidated catch suggests increased uncertainty in these estimates, and the magnitude of the landings in this year is likely influenced by limited sampling rather than consistent high catch rates.

Elevated discard estimates throughout the time series are consistently associated with strata that have low sample sizes and high expansion factors. In 1983, approximately 22.9% of total discards were attributed to eight intercept trips in Delaware (man-made mode, wave 4, nearshore ocean), while an additional 12.7% were attributed to 21 trips in Delaware shore mode (wave 3). Reported discards per trip were relatively low (generally between 1 and 12 fish), indicating that the high total estimates are primarily driven by the weighting applied to these observations rather than unusually large discard events.

In 1986, a single intercept trip in Florida shore mode (wave 1, nearshore ocean) accounted for 31.9% of total annual discards, with only two fish reported. Similarly, in 1998, 2002, and 2022, large portions of annual discard estimates are attributable to a small number of trips with modest reported discards but elevated sample weights. For example, in 2022, two intercept trips in New Jersey private mode (wave 4, inland) accounted for approximately 37.0% of total discards, despite each trip reporting seven discarded Sandbar Shark. In 2009, a single stratum (New Jersey, private mode, wave 4, inland) accounts for a substantial proportion of the total annual discard estimate. Reported discards per trip were generally low, with most trips reporting between 1 and 3 Sandbar Shark. However, the elevated expansion factor for the associated sites could contribute to the significant contribution to the annual estimate. Additionally, the prohibition on the retention of Sandbar Shark within the recreational sector was implemented in July 2008. It is possible that this management action contributed to an increase in discards beginning in 2009, as previously retained catch would instead be released.

Discussion topics for data workshop:

This section outlines key data considerations and decision points identified during preparation of the recreational data streams for Sandbar Shark. No imputations or allocations have been applied

in advance of the Data Workshop. Instead, the following topics are presented for discussion and consensus on appropriate approaches for Sandbar Shark.

MRIP Wave 1 Imputation

The MRFSS survey did not begin until March 1981 (Wave 2). As a result, MRIP catch and effort estimates are unavailable for 1981 Wave 1 (January-February).

In accordance with SEDAR best practices (SEDAR-PW-07) and consistent with previous SEDAR assessments in the Southeast region, this gap may be addressed through imputation using information from adjacent years. In prior analyses, two primary approaches have been applied.

Using the ratio-based method, which is the preferred method and applied when ratios are reasonably stable from year to year, the proportion of the Wave 1 estimate to that from other waves (2-6) in years 1982-1984 (by fishing mode and area) is multiplied by the total estimate from waves 2-6 in 1981. These proportions are then applied to the total catch from waves 2-6 in 1981 to estimate the 1981 Wave 1 catch and effort. Using the average-based method, the average Wave 1 estimates across years 1982-1984 are used as a proxy for that in 1981.

For the current assessment, it must be decided whether to impute the Wave 1 estimates from MRIP for 1981, and if so, whether to use the ratio-based method or the average-based method. Evaluation of catch in adjacent years (1982-1984) indicates that Wave 1 catch is negligible relative to catches observed in Waves 2-6 (Table 13; Figure 7). Additionally, Wave 1 catch ratios are consistently near zero across fishing modes and areas (Table 14). These results suggest that imputing Wave 1 catch for 1981 would have a negligible effect on total catch estimates.

TPWD 1981-May 1983 Imputation

The Texas Parks and Wildlife Department (TPWD) recreational survey did not begin until May 1983 (Wave 3), resulting in missing data for Texas recreational catch and effort in Waves 1–2 for 1981–1983 and Waves 3–6 for 1981–1982. To produce a continuous time series for stock assessment applications, imputation of these missing values has been proposed in accordance with SEDAR best practices (SEDAR-PW-07) and following approaches applied in previous SEDAR assessments.

The proposed method uses average TPWD estimates (by mode and wave) from 1984–1985 to impute Waves 1–2 for 1981–1983, and from 1983–1985 to impute Waves 3–6 for 1981–1982. These averages would be applied to both catch and effort estimates.

For the current assessment, it must be decided whether imputation is necessary based on Texas landings during this period. Evaluation of available data indicates that Texas contributes a negligible proportion of total Gulf-wide recreational harvest relative to other states (Table 15; Figure 8.1). These results suggest that imputing missing TPWD data for 1981-May 1983 would have a negligible effect on total catch estimates.

TPWD Discards Imputation

The Texas Parks and Wildlife Department (TPWD) recreational survey does not collect information on live discards (B2), resulting in a complete absence of discard estimates for Texas across all years. To address this data gap, a proxy approach is required to estimate recreational discards for use in stock assessments.

The proposed method applies discard-to-landings ratios (B2:AB1), calculated by year and mode, to TPWD landings estimates. In accordance with SEDAR best practices (SEDAR-PW-07), these ratios can be derived from either: (1) Louisiana-specific catch estimates or (2) Gulf-wide catch estimates. The preferred approach is to use Louisiana-based ratios, as they are expected to better reflect fishing practices and conditions relevant to Texas. However, the reliability of this approach depends on the availability and quality of Louisiana data.

For the current assessment, it must be decided whether Louisiana data are sufficient to support ratio-based estimation, whether Gulf-wide ratios should be used as an alternative, or whether TPWD discards should not be imputed altogether. Evaluation of B2:AB1 ratios across Gulf states indicates variability in both magnitude and stability over time (Figure 9.2). This suggests that relying on Louisiana-specific ratios may introduce additional uncertainty. Gulf-wide ratios may provide a more robust alternative for estimating TPWD discards. However, given the overall uncertainty in discard estimates, the necessity of imputing TPWD discards should be considered.

TPWD Calibration

The Texas Parks and Wildlife Department's (TPWD) Coastal Creel Surveys (CCS) program has provided annual estimates of private and charter boat effort and catch from May 1983 through the present. TPWD uses a fishing access site creel survey design to estimate recreational catch and effort, which differs from the multi-component designs used by MRIP and other state surveys in the Gulf of America region. In 2016, MRIP conducted its Fishing Effort Survey (FES) in Texas to produce effort estimates of private boat angler trips for comparison purposes (SEDAR 74-RD-110). Results revealed large and significant differences between TPWD and MRIP private boat effort estimates. To address this, a ratio estimator was developed to calibrate TPWD catch and effort estimates for private anglers into MRIP-FES units (SEDAR 74-DW-10). Charter estimates between these two surveys are assumed equivalent and were also not adjusted (SEDAR 74-DW-4).

For the current assessment, it must be decided whether the application of this TPWD calibration is appropriate.

LA Creel Discards Imputation

The Louisiana Department of Wildlife and Fisheries LA Creel survey replaced MRIP sampling in Louisiana beginning in 2014. However, live discard (B2) information was not collected until

2016 and is only available for a subset of species. As a result, there are two primary data gaps: (1) missing discard estimates for all species in 2014–2015, and (2) missing discard estimates for certain species across all years (2014+). Sandbar Shark were not selected for additional sampling in LA Creel and so discard data is lacking throughout the time series (2014+). These gaps necessitate consideration of an imputation approach for Louisiana discards.

Unlike TPWD discards, there are no established SEDAR best practices for imputing LA Creel discard estimates. However, a similar proxy-based approach is proposed, wherein LA Creel landings (AB1), by year and mode, are multiplied by B2:AB1 ratios to estimate discards. These ratios tend to be calculated from Louisiana catch rates, but Gulf-wide ratios can be used if such data is insufficient (e.g., highly variable).

For species for which LA Creel collects discard information and the catch data is sufficient, the ratios are calculated from Louisiana catch estimates in adjacent years. If Louisiana catch data is insufficient, Gulf-wide ratios are applied. In this case, ratios are calculated for the same years over which the LA Creel discards are imputed.

Therefore, for the current assessment, it must be decided whether imputation of LA Creel discards should occur, and if so, how these ratios should be calculated, including the choice of data and the appropriate years over which ratios should be derived. Evaluation of B2:AB1 ratios indicate that Louisiana-specific ratios are often variable (Figure 9.2). Given that Sandbar Shark discard data are absent from the LA Creel time series, reliance on Louisiana-specific ratios may introduce additional uncertainty. Gulf-wide ratios may provide a more robust alternative. However, the overall necessity of imputing LA Creel discards should be considered.

Allocation of Unidentified Catch

Unidentified catch within the requiem shark complex presents an important source of uncertainty in the recreational time series and requires a consensus on how best to approach allocation. To inform this process, proportional contributions of identified species to the unidentified pools have been evaluated.

At the genus level, results indicate that Sandbar Shark and Blacktip Shark comprise the largest proportions of the unidentified requiem shark genus pool (Table 11; Figure 11.5). At the family level, Atlantic Sharpnose Shark, Blacktip Shark, and Sandbar Shark represent the largest proportional contributors within the unidentified requiem shark family pool (Table 12; Figure 11.4).

For the current assessment, an appropriate allocation approach should be determined. Given the prohibition on the retention of Sandbar Shark within the recreational sector in July 2008, separate methods for allocating unidentified catch to Sandbar Shark pre- and post-prohibition should be considered.

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Table 1.1. Annual landings (AB1) and discards (B2) of Sandbar Shark in numbers of fish by state and year from all data sources for the North Atlantic.

Year	NH		MA		RI		CT	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	0	0	0	0	0	0	0	0
1982	0	819	0	12,243	0	0	0	35,679
1983	0	0	0	0	0	0	2,238	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	4,673	0	4,743
1986	0	0	0	13,862	0	0	0	7,551
1987	801	0	0	0	0	0	0	0
1988	0	0	0	0	0	1,539	0	0
1989	0	0	0	0	0	2,605	0	0
1,990	0	0	0	63	0	0	0	0
1991	0	0	0	2,002	0	560	0	0
1992	0	0	0	0	173	300	0	0
1993	0	0	0	0	0	385	0	0
1994	0	0	0	0	0	13	0	1,514
1,995	0	0	0	10,392	0	324	0	0
1996	0	0	0	0	0	1,259	0	3,000
1997	0	0	0	278	0	273	0	0

Year	NH		MA		RI		CT	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1998	0	0	0	0	0	2,335	0	0
1999	0	0	983	8,891	0	0	0	0
2000	0	0	0	0	0	593	0	0
2001	0	0	0	21,541	0	782	0	0
2002	0	0	0	350	0	0	0	0
2003	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	0	0	0	743	0	0	0	0
2,008	0	0	0	0	0	0	0	0
2009	0	0	0	1,446	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011	0	0	0	9,946	0	0	0	0
2012	0	0	0	0	0	0	0	0
2013	0	0	0	1,013	0	0	0	492
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	8,915	0	6,991

Year	NH		MA		RI		CT	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
2016	0	0	0	1,106	0	0	0	0
2017	0	0	0	0	0	9	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	1,074	0	0	0	0
2020	0	0	0	8,296	0	0	0	0
2021	0	0	0	0	0	0	0	1
2022	0	0	0	16,769	0	0	0	223
2023	0	0	0	855	0	500	0	0
2024	0	0	0	59,129	0	79,534	0	866

Table 1.2. Annual landings (AB1) and discards (B2) of Sandbar Shark in numbers of fish by state and year from all data sources for the Mid-Atlantic.

Year	NY		NJ		DE		MD		VA	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	0	0	2,516	5,306	101	3,880	22,042	1,649	203	58,133
1982	2,728	6,732	0	0	5,530	75,657	0	5,146	11,791	76,757
1983	0	0	83,611	30,646	14,151	371,157	3,004	1,989	92,822	72,559
1984	0	18,103	0	0	5,351	51,683	2,651	6,991	1,199	63,442
1985	9,386	32,839	0	0	19,672	56,256	0	0	2,623	1,861
1986	2,784	14,321	0	0	81,298	160,794	73	1,168	14,704	10,439
1987	0	5,309	3,282	70,120	78	1,776	1,038	3,323	3,163	79,941
1988	0	8,806	8,486	1,084	7,336	55,772	0	0	9,539	20,478
1989	1,212	18,191	0	0	1,200	11,330	0	0	203	2,008
1990	0	23,549	4,217	18,412	20,455	33,543	0	255	449	1,547
1991	821	19,025	0	5,332	14,214	12,249	0	0	0	11,367
1992	1,098	10,300	0	7,496	38,267	73,948	1,566	5,357	23,113	7,777
1993	0	2,145	0	0	20,204	68,140	0	25,855	1,310	38,763
1994	0	26,907	0	0	8,880	25,649	0	0	3,394	25,392
1995	0	0	2,956	18,130	16,147	47,981	2,209	0	1,897	5,730
1996	0	0	0	6,211	6,986	40,121	0	0	3,654	11,831
1997	0	0	0	0	26,365	95,355	0	87	567	60,525

Year	NY		NJ		DE		MD		VA	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1998	934	0	0	25,835	14,458	46,764	0	0	13,374	90,537
1999	0	8,527	0	8,205	3,588	46,937	1,569	0	11,798	59,420
2000	0	0	0	0	0	1,921	0	0	13,155	58,965
2001	3,263	16,859	104	41,890	3,053	24,795	0	0	27,612	41,873
2002	0	31,994	1,795	312,199	0	16,098	0	0	8,137	43,365
2003	0	0	3,631	263,754	0	14,559	0	1,832	1,887	17,747
2004	0	0	0	64,963	0	2,258	0	0	2,733	7,951
2005	0	0	0	89,508	0	373	0	0	999	146,402
2006	0	0	0	7,028	7	8,925	0	115	0	15,780
2007	0	0	3,138	213,249	0	25,113	0	1,661	0	28,271
2008	0	0	0	24,096	1,644	4,051	0	0	3,194	96,742
2009	0	0	0	313,138	0	147,977	0	14,126	14,697	146,860
2010	0	0	0	23,413	0	15,795	0	1,512	3,735	149,742
2011	0	0	0	43,882	0	21,500	0	16,182	0	22,086
2012	0	54,861	0	9,010	0	24,304	0	4,429	998	7,957
2013	0	44,294	505	37,842	0	14,711	0	35	304	70
2014	0	8,115	0	117,387	0	23,770	0	0	992	112
2015	0	10,012	0	96,229	0	22,002	0	0	0	3,346

Year	NY		NJ		DE		MD		VA	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
2016	0	7,863	0	60,751	0	7,874	0	0	0	92,761
2017	0	179,553	0	32,150	0	8,103	0	21	1,907	21,256
2018	0	0	0	60,788	0	13,872	0	925	0	1,328
2019	0	4,166	0	38,015	0	7,464	0	8,080	792	60,670
2020	0	23,012	0	20,452	0	11,554	0	116,444	237	27,739
2021	0	1,945	0	3,782	0	23,631	0	516	0	6,665
2022	0	572	0	34,677	0	5,415	0	13,973	0	7,516
2023	0	17,936	0	40,864	0	8,338	0	150,046	0	9,615
2024	0	0	0	16,588	0	34,756	0	2,705	0	23,844

Table 1.3. Annual landings (AB1) and discards (B2) of Sandbar Shark in numbers of fish by state and year from all data sources for the South Atlantic.

Year	NC		SC		GA		FLE	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	26,046	107,964	0	0	0	0	9,232	4,060
1982	479	10,140	502	594	368	0	10,619	6,533
1983	0	0	382,891	114,819	13,456	0	39,281	88,705
1984	0	4,361	26,139	197,056	8,283	382	134,075	0
1985	5,016	31,943	41,528	12,042	8,170	2,415	9,333	8,805
1986	0	42,841	47,727	2,430	6,481	12,040	3,341	145,496
1987	74	9,045	1,813	10,241	2,198	1,442	5,484	5,965
1988	14,914	5,296	32	0	2,309	2,122	7,330	0
1989	7,429	6,333	200	0	15,028	1,278	31,257	0
1990	725	6,188	0	0	0	1,456	31,313	0
1991	11,009	16,040	4,592	103,880	0	9,770	9,455	2,349
1992	1,361	56,712	2,533	0	12,519	19,054	25,258	19,962
1993	2,877	33,911	0	0	12,511	20,760	4,051	15,798
1994	738	3,309	0	0	2,087	24,853	7,817	9,969
1995	3,663	46,367	0	0	0	0	8,007	12,160
1996	2,299	22,265	24,165	54,041	672	983	1,425	0
1997	0	27,467	30,735	54,249	0	784	0	0

Year	NC		SC		GA		FLE	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1998	3,668	2,874	48,191	186,032	0	4,649	15,564	5,976
1999	513	0	11,106	113,199	128	1,496	68	4,614
2000	0	0	4,089	57,623	7	28,627	0	3,220
2001	1,904	0	2,885	107,939	608	18,119	6,799	15,700
2002	0	0	0	139,856	0	26,379	22	25
2003	0	0	4,602	83,436	0	288	0	0
2004	0	0	0	16,531	0	1,026	550	814
2005	0	1,000	0	0	0	4,931	29	0
2006	0	4,704	0	21	0	13,698	753	0
2007	1,503	22,386	0	14,010	1,809	0	621	1,361
2008	0	0	352	8,347	654	5,893	162	0
2009	0	0	0	1,170	0	15	0	0
2010	0	4,030	0	1,960	0	2,618	0	0
2011	474	0	747	6,579	0	304	0	0
2012	0	0	0	0	0	739	0	0
2013	0	618	0	0	0	4,047	0	0
2014	0	0	0	9	0	14,545	0	1,275
2015	10	0	0	264	0	20,967	247	3,036

Year	NC		SC		GA		FLE	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
2016	0	0	0	845	0	15,985	0	14
2017	697	1,137	0	0	0	3,422	0	0
2018	0	0	0	1,264	0	43,770	0	21,144
2019	0	8,629	0	3,181	0	8,811	0	48,913
2020	0	0	0	796	0	1,987	0	0
2021	0	0	0	0	0	11,093	0	213
2022	0	657	0	0	0	273,031	0	0
2023	0	0	0	0	0	8,254	0	240
2024	0	0	0	1,488	0	25,991	3,106	0

Table 1.4. Annual landings (AB1) and discards (B2) of Sandbar Shark in numbers of fish by state and year from all data sources for the Gulf of America.

Year	TX		LA		MS		AL		FLW	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	0	0	842	9,355	0	0	0	0	43,872	25,143
1982	0	0	0	0	775	7,481	0	0	9,923	10,991
1983	106	0	0	0	8,496	2,066	0	4,563	23,135	38,519
1984	104	0	0	0	0	0	0	15,706	0	0
1985	0	0	6,201	0	0	0	0	633	12,386	0
1986	0	0	7,061	19,472	0	0	0	0	16,395	10,336
1987	0	0	0	1,611	0	0	112	6,736	15,947	10,825
1988	257	0	10,694	7,748	10,108	3,560	0	0	14,549	3,672
1989	0	0	2,396	0	616	0	0	0	0	4,494
1990	0	0	0	6,708	0	0	0	0	43,329	6,601
1991	0	0	0	0	0	0	0	0	0	7,276
1992	68	0	0	588	0	971	0	0	0	3,949
1993	132	0	0	0	0	0	0	0	9,384	6,597
1994	0	0	0	0	0	0	0	0	757	0
1995	47	0	0	1,072	427	0	0	0	0	0
1996	0	0	60,551	23,862	2,400	0	14,744	13,815	0	0
1997	51	0	0	0	0	1,035	0	0	3,940	35,831

Year	TX		LA		MS		AL		FLW	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1998	0	0	0	0	0	0	3,122	875	8,657	3,370
1999	345	0	4,674	0	0	0	0	1,630	0	0
2000	89	0	0	0	0	0	0	3,275	18	72,332
2001	0	0	0	0	0	0	0	0	539	0
2002	123	0	0	0	0	0	0	0	154	62
2003	0	0	0	0	0	0	575	1,664	31	56
2004	168	0	0	0	0	0	0	0	2,123	0
2005	202	0	0	0	0	0	0	0	159	0
2006	127	0	0	10,395	0	0	0	974	161	0
2007	106	0	0	0	0	0	0	0	417	30
2008	0	0	0	846	0	0	0	113	0	0
2009	23	0	0	0	0	0	0	0	642	128
2010	0	0	0	0	0	0	0	3,486	2,610	11,918
2011	57	0	0	0	0	0	0	15,737	94	0
2012	0	0	0	0	0	0	0	0	26	4,832
2013	46	0	0	4,034	0	0	0	2,795	2,412	0
2014	0	0	0	0	0	0	0	6,663	69	118
2015	135	0	0	0	0	0	0	4,654	0	0

Year	TX		LA		MS		AL		FLW	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
2016	0	0	0	0	0	0	0	0	282	0
2017	27	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	2,519	205	0
2019	0	0	0	0	0	0	0	1,670	0	0
2020	0	0	0	0	0	4,469	0	53	0	0
2021	33	0	0	0	0	764	287	15,957	0	0
2022	0	0	0	0	0	0	0	933	332	0
2023	0	0	0	0	0	87	0	0	3,401	0
2024	14	0	0	0	0	0	0	2,208	0	1,097

Table 2. Annual landings (AB1) and discards (B2) of Sandbar Shark in numbers of fish by mode and year from all data sources.

Year	Hbt		Cbt		Priv		Shore	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	106	645	838	1,753	85,697	105,127	18,214	107,964
1982	0	37,883	498	8,727	29,493	143,239	12,723	58,922
1983	460	449	1,337	396	597,910	428,056	63,482	296,124
1984	26	0	231	382	15,803	184,801	161,742	172,540
1985	1,075	5,093	18,331	7,697	86,431	77,502	8,479	65,920
1986	304	4,762	1,687	4,676	166,029	219,421	11,844	211,891
1987	11	214	3,192	558	23,248	187,007	7,537	18,553
1988	81	5,873	343	8,213	62,234	85,138	22,897	10,853
1989	277	487	916	714	25,346	41,532	33,001	3,506
1990	166	621	354	549	89,741	90,264	10,226	6,886
1991	182	53	233	292	24,890	63,471	14,786	126,033
1992	19	0	611	1,464	46,150	105,873	59,176	99,077
1993	87	283	805	209	32,193	157,678	17,384	54,185
1994	0	3	1,110	10	20,476	112,198	2,087	5,396
1995	196	1,469	2,349	2,395	23,067	90,425	9,742	47,868
1996	191	33	1,041	5,827	49,207	153,235	66,457	18,293
1997	114	683	442	2,371	53,850	193,311	7,253	79,520

Year	Hbt		Cbt		Priv		Shore	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1998	28	306	2,642	2,917	31,795	223,724	73,503	142,300
1999	46	591	872	1,646	18,609	165,424	15,244	85,258
2000	0	269	382	2,788	16,976	103,472	0	120,027
2001	30	914	312	9,535	36,209	193,220	10,216	85,829
2002	225	738	524	1,059	9,482	405,626	0	162,903
2003	808	8,536	1,789	18,804	3,527	237,785	4,602	118,213
2004	0	50	747	2	4,827	48,498	0	44,993
2005	104	1,757	188	1,617	1,097	230,117	0	8,724
2006	0	15	921	746	127	44,898	0	15,980
2007	0	969	473	7,288	5,617	181,769	1,503	116,799
2008	2	10	162	2,918	4,198	113,308	1,644	23,852
2009	0	573	642	1,649	11,548	519,146	3,172	103,490
2010	0	3	222	1,929	6,123	178,004	0	34,538
2011	0	18	94	381	1,278	110,114	0	25,703
2012	0	87	26	198	998	105,847	0	0
2013	127	1,063	735	822	2,406	67,163	0	40,903
2014	0	153	69	3,043	992	157,102	0	11,698
2015	0	101	266	5,941	126	151,687	0	18,688

Year	Hbt		Cbt		Priv		Shore	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
2016	0	12	282	308	0	159,603	0	27,277
2017	0	5	0	360	1,465	237,530	1,166	7,754
2018	0	367	205	2,772	0	94,939	0	47,532
2019	0	401	0	1,221	792	122,779	0	66,272
2020	0	218	0	292	237	68,099	0	146,194
2021	0	179	0	1,117	320	36,692	0	26,580
2022	0	158	332	780	0	78,569	0	274,259
2023	0	206	0	1,022	3,401	69,200	0	166,306
2024	0	0	14	4,367	3,106	57,589	0	186,252

Table 3. Sandbar Shark landings in numbers of fish (AB1) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year from all data sources. 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 Sandbar Shark.

Year	Cbt				Hbt				Priv				Shore				TOTAL			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
1981	838	0.93	471 (2)	4,451 (2)	106	0.73	1,160 (11)	9,613 (12)	85,697	0.41	139 (1)	1,193 (1)	18,214	1.00	1,422 (1)	8,444 (2)	104,855	0.37	3,040 (13)	22,319 (15)
1982	498	1.00	286 (1)	2,861 (1)	0	0.00	1,706 (19)	14,408 (23)	29,493	0.33	133 (1)	1,117 (1)	12,723	0.61	1,973 (3)	13,774 (3)	42,714	0.29	3,946 (22)	30,842 (26)
1983	1,337	0.68	600 (6)	6,224 (6)	460	0.37	1,445 (26)	13,719 (34)	597,910	0.64	828 (4)	8,672 (4)	63,482	0.41	2,012 (10)	14,251 (10)	663,190	0.58	4,538 (44)	39,614 (52)
1984	231	0.83	474 (2)	5,348 (2)	26	0.84	1,184 (9)	11,375 (10)	15,803	0.43	1,428 (7)	10,930 (9)	161,742	0.78	1,708 (5)	13,007 (8)	177,802	0.71	3,953 (20)	33,698 (25)
1985	18,331	0.52	616 (8)	6,283 (13)	1,075	0.40	1,793 (27)	15,371 (32)	86,431	0.40	858 (7)	7,800 (12)	8,479	0.51	2,490 (6)	16,813 (6)	114,316	0.32	5,479 (46)	43,559 (59)
1986	1,687	0.52	758 (10)	6,417 (13)	304	0.29	3,435 (53)	27,855 (63)	166,029	0.39	1,184 (7)	9,572 (12)	11,844	1.00	1,484 (1)	8,162 (1)	179,864	0.35	6,749 (71)	52,006 (89)
1987	3,192	0.74	562 (1)	3,929 (1)	11	1.00	3,305 (18)	27,736 (20)	23,248	0.33	1,371 (7)	12,534 (8)	7,537	0.90	1,612 (2)	9,866 (2)	33,988	0.31	6,724 (28)	54,065 (31)
1988	343	0.57	711 (1)	5,709 (2)	81	1.00	3,725 (26)	30,300 (31)	62,234	0.34	1,390 (8)	11,467 (10)	22,897	0.50	2,457 (5)	15,518 (8)	85,555	0.28	8,156 (40)	62,994 (51)
1989	916	0.70	1,059 (3)	9,362 (3)	277	0.70	3,958 (15)	32,651 (20)	25,346	0.59	1,311 (1)	10,671 (7)	33,001	0.95	2,711 (2)	18,730 (2)	59,541	0.58	8,900 (21)	71,412 (32)
1990	354	0.84	914 (2)	6,930 (5)	166	0.94	4,128 (26)	36,765 (42)	89,741	0.48	1,041 (1)	7,893 (1)	10,226	1.00	2,288 (1)	16,043 (1)	100,487	0.44	8,266 (30)	67,631 (49)
1991	233	1.00	1,005 (1)	7,592 (1)	182	1.00	4,216 (20)	38,285 (29)	24,890	0.30	1,210 (0)	10,222 (0)	14,786	0.57	2,895 (6)	22,887 (8)	40,091	0.28	9,181 (27)	78,986 (38)

Year	Cbt				Hbt				Priv				Shore				TOTAL			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
1992	611	0.47	972 (1)	7,254 (2)	19	1.00	5,288 (25)	50,333 (35)	46,150	0.34	1,624 (5)	14,110 (5)	59,176	0.62	3,266 (5)	25,591 (8)	105,955	0.38	10,990 (36)	97,288 (50)
1993	805	0.44	860 (1)	6,285 (1)	87	1.00	4,574 (19)	42,208 (28)	32,193	0.36	2,038 (9)	19,282 (9)	17,384	0.69	3,973 (4)	32,482 (5)	50,469	0.33	10,561 (31)	93,464 (41)
1994	1,110	0.72	910 (0)	6,137 (0)	0	0.00	4,821 (18)	47,010 (22)	20,476	0.30	1,478 (3)	15,274 (3)	2,087	1.00	4,263 (1)	37,227 (1)	23,673	0.27	11,283 (22)	105,648 (26)
1995	2,349	0.40	845 (2)	5,808 (2)	196	0.99	4,357 (24)	41,965 (30)	23,067	0.28	1,407 (8)	14,158 (9)	9,742	0.52	4,024 (5)	36,565 (5)	35,353	0.23	10,449 (39)	98,496 (46)
1996	1,041	0.41	925 (2)	5,965 (5)	191	0.94	4,671 (22)	46,299 (29)	49,207	0.39	1,620 (8)	16,430 (9)	66,457	0.88	3,466 (4)	31,001 (6)	116,896	0.53	10,463 (36)	99,695 (49)
1997	442	0.91	1,056 (3)	6,956 (4)	114	0.91	4,886 (30)	49,038 (45)	53,850	0.36	1,915 (0)	18,289 (0)	7,253	0.86	3,682 (2)	30,854 (2)	61,658	0.33	11,316 (35)	105,137 (51)
1998	2,642	0.62	1,204 (3)	7,491 (3)	28	0.45	4,975 (22)	50,735 (28)	31,795	0.39	2,275 (5)	21,153 (5)	73,503	0.64	3,732 (5)	31,941 (6)	107,968	0.45	11,948 (35)	111,320 (42)
1999	872	0.59	1,066 (6)	6,977 (6)	46	0.47	5,305 (15)	55,625 (16)	18,609	0.37	4,253 (20)	41,505 (20)	15,244	0.62	4,173 (4)	35,491 (4)	34,771	0.34	12,908 (35)	122,912 (36)
2000	382	0.51	1,109 (0)	6,665 (0)	0	0.00	5,126 (3)	51,323 (4)	16,976	0.68	2,714 (9)	28,236 (14)	0	0.00	3,777 (0)	30,953 (0)	17,358	0.65	12,435 (12)	117,166 (18)
2001	312	0.44	1,240 (1)	8,911 (1)	30	1.00	5,658 (19)	62,754 (23)	36,209	0.35	2,423 (6)	25,708 (6)	10,216	0.69	4,089 (3)	35,375 (3)	46,768	0.30	13,118 (29)	132,748 (33)
2002	524	0.69	1,157 (1)	7,699 (1)	225	1.00	5,392 (5)	59,404 (6)	9,482	0.49	2,443 (7)	25,277 (7)	0	0.00	4,171 (0)	35,552 (0)	10,231	0.46	12,897 (13)	127,932 (14)
2003	1,789	0.70	1,756 (3)	13,519 (3)	808	0.71	5,876 (4)	57,058 (4)	3,527	0.52	2,487 (1)	25,724 (1)	4,602	1.00	4,592 (1)	34,992 (1)	10,726	0.49	14,434 (9)	131,293 (9)
2004	747	0.69	314 (0)	893 (0)	0	0.00	4,559 (3)	48,147 (3)	4,827	0.57	2,892 (11)	28,487 (12)	0	0.00	2,961 (0)	25,842 (0)	5,574	0.49	11,306 (14)	112,663 (15)

Year	Cbt				Hbt				Priv				Shore				TOTAL			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
2005	188	0.74	311 (0)	862 (0)	104	1.00	4,031 (1)	43,252 (1)	1,097	0.82	3,809 (11)	35,127 (11)	0	0.00	2,747 (0)	23,846 (0)	1,389	0.66	10,813 (9)	107,178 (9)
2006	921	0.59	357 (0)	1,035 (0)	0	0.00	4,716 (0)	50,093 (0)	127	0.08	3,588 (12)	32,720 (12)	0	0.00	2,707 (0)	23,073 (0)	1,048	0.52	11,132 (9)	108,035 (9)
2007	473	0.40	343 (0)	1,059 (0)	0	0.00	4,927 (3)	51,377 (4)	5,617	0.65	3,652 (13)	31,796 (13)	1,503	1.00	2,936 (1)	25,772 (1)	7,593	0.52	11,395 (15)	111,247 (16)
2008	162	1.00	323 (0)	938 (0)	2	1.00	4,899 (5)	50,633 (5)	4,198	0.51	2,885 (1)	24,247 (1)	1,644	1.00	2,951 (1)	25,719 (1)	6,006	0.45	11,426 (8)	110,149 (8)
2009	642	0.66	317 (0)	938 (0)	0	0.00	4,856 (2)	49,207 (2)	11,548	0.73	2,731 (5)	22,188 (5)	3,172	1.00	2,888 (1)	23,881 (1)	15,361	0.58	11,148 (8)	103,484 (8)
2010	222	0.46	322 (0)	991 (0)	0	0.00	5,278 (5)	51,521 (5)	6,123	0.52	2,858 (5)	23,552 (6)	0	0.00	3,318 (0)	28,051 (0)	6,345	0.50	12,142 (10)	112,353 (11)
2011	94	0.87	360 (0)	1,033 (0)	0	0.00	5,112 (2)	48,348 (2)	1,278	0.69	2,853 (4)	24,663 (4)	0	0.00	3,423 (0)	26,963 (0)	1,372	0.65	12,039 (6)	108,520 (6)
2012	26	0.78	362 (0)	1,038 (0)	0	0.00	5,359 (1)	51,579 (1)	998	1.00	2,844 (2)	24,954 (2)	0	0.00	3,653 (0)	28,965 (0)	1,024	0.97	12,350 (3)	112,234 (3)
2013	735	0.58	668 (4)	1,948 (4)	127	0.73	5,035 (3)	44,417 (3)	2,406	0.75	1,822 (4)	14,273 (4)	0	0.00	2,805 (0)	24,839 (0)	3,268	0.57	10,291 (11)	92,232 (11)
2014	69	1.00	787 (0)	2,263 (0)	0	0.00	5,229 (1)	46,319 (1)	992	1.00	3,882 (1)	30,590 (1)	0	0.00	2,312 (0)	21,151 (0)	1,060	0.94	12,057 (2)	107,624 (2)
2015	266	0.93	872 (1)	2,877 (1)	0	0.00	5,498 (0)	47,920 (0)	126	0.20	4,019 (4)	30,187 (4)	0	0.00	2,389 (0)	20,819 (0)	392	0.63	12,569 (5)	109,098 (5)
2016	282	1.00	893 (0)	2,599 (0)	0	0.00	5,440 (0)	44,917 (0)	0	0.00	4,288 (1)	31,473 (1)	0	0.00	3,209 (0)	21,032 (0)	282	1.00	13,652 (1)	108,627 (1)
2017	0	0.00	916 (0)	2,971 (0)	0	0.00	5,332 (1)	47,145 (1)	1,465	0.98	4,141 (1)	31,567 (1)	1,166	0.72	3,279 (2)	21,765 (2)	2,631	0.63	13,417 (4)	110,729 (4)

Year	Cbt				Hbt				Priv				Shore				TOTAL			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
2018	205	1.00	953 (0)	3,580 (0)	0	0.00	5,230 (0)	45,433 (0)	0	0.00	4,371 (1)	32,864 (1)	0	0.00	3,274 (0)	23,749 (0)	205	1.00	13,544 (1)	113,689 (1)
2019	0	0.00	1,039 (0)	3,698 (0)	0	0.00	5,300 (2)	45,951 (2)	792	0.73	4,383 (0)	31,915 (0)	0	0.00	3,346 (0)	23,503 (0)	792	0.73	13,720 (2)	113,604 (2)
2020	0	0.00	919 (0)	3,202 (0)	0	0.00	6,486 (1)	56,892 (1)	237	1.00	4,682 (0)	37,005 (0)	0	0.00	4,090 (0)	27,681 (0)	237	1.00	16,374 (1)	140,989 (1)
2021	0	0.00	1,067 (0)	4,034 (0)	0	0.00	6,279 (1)	50,671 (1)	320	0.90	4,848 (1)	35,974 (1)	0	0.00	4,193 (0)	28,229 (0)	320	0.90	16,190 (2)	129,643 (2)
2022	332	1.00	1,005 (0)	3,695 (0)	0	0.00	5,915 (0)	42,663 (0)	0	0.00	4,544 (1)	29,870 (1)	0	0.00	3,694 (0)	22,076 (0)	332	1.00	14,924 (1)	107,535 (1)
2023	0	0.00	1,114 (0)	4,134 (0)	0	0.00	6,188 (1)	46,284 (1)	3,401	1.00	4,816 (0)	34,233 (0)	0	0.00	4,033 (0)	25,793 (0)	3,401	1.00	15,750 (1)	117,625 (1)
2024	14	0.19	1,103 (1)	3,863 (1)	0	0.00	6,037 (1)	43,225 (1)	3,106	1.00	4,597 (0)	31,623 (0)	0	0.00	3,977 (0)	25,168 (0)	3,120	0.99	15,357 (2)	110,648 (2)

Table 4. Sandbar Shark discards in numbers of fish (B2) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year from all data sources. 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 Sandbar Shark.

Year	Cbt				Hbt				Priv				Shore				TOTAL			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
1981	1,753	0.59	471 (3)	4,451 (4)	645	0.61	1,160 (12)	9,613 (18)	105,127	0.44	139 (0)	1,193 (0)	107,964	1.00	1,422 (1)	8,444 (6)	215,489	0.55	3,040 (16)	22,319 (28)
1982	8,727	0.89	286 (3)	2,861 (5)	37,883	0.99	1,706 (27)	14,408 (41)	143,239	0.32	133 (2)	1,117 (2)	58,922	0.42	1,973 (8)	13,774 (12)	248,772	0.28	3,946 (36)	30,842 (56)
1983	396	0.51	600 (3)	6,224 (4)	449	0.50	1,445 (28)	13,719 (46)	428,056	0.34	828 (0)	8,672 (0)	296,124	0.29	2,012 (20)	14,251 (54)	725,026	0.22	4,538 (51)	39,614 (104)
1984	382	0.82	474 (0)	5,348 (0)	0	0.00	1,184 (27)	11,375 (46)	184,801	0.38	1,428 (2)	10,930 (2)	172,540	0.51	1,708 (8)	13,007 (17)	357,723	0.29	3,953 (37)	33,698 (65)
1985	7,697	0.83	616 (4)	6,283 (9)	5,093	0.80	1,793 (28)	15,371 (74)	77,502	0.25	858 (5)	7,800 (6)	65,920	0.41	2,490 (12)	16,813 (16)	156,211	0.21	5,479 (49)	43,559 (105)
1986	4,676	0.36	758 (12)	6,417 (26)	4,762	0.45	3,435 (51)	27,855 (160)	219,421	0.36	1,184 (5)	9,572 (12)	211,891	0.72	1,484 (6)	8,162 (6)	440,751	0.39	6,749 (74)	52,006 (204)
1987	558	0.57	562 (2)	3,929 (3)	214	0.80	3,305 (47)	27,736 (104)	187,007	0.29	1,371 (3)	12,534 (3)	18,553	0.68	1,612 (3)	9,866 (4)	206,333	0.26	6,724 (55)	54,065 (114)
1988	8,213	0.33	711 (7)	5,709 (17)	5,873	0.42	3,725 (41)	30,300 (126)	85,138	0.41	1,390 (2)	11,467 (2)	10,853	0.48	2,457 (5)	15,518 (5)	110,077	0.33	8,156 (55)	62,994 (150)
1989	714	0.33	1,059 (11)	9,362 (14)	487	0.34	3,958 (33)	32,651 (46)	41,532	0.25	1,311 (0)	10,671 (0)	3,506	1.00	2,711 (1)	18,730 (2)	46,239	0.23	8,900 (45)	71,412 (62)
1990	549	0.33	914 (9)	6,930 (11)	621	0.39	4,128 (36)	36,765 (70)	90,264	0.25	1,041 (0)	7,893 (0)	6,886	1.00	2,288 (1)	16,043 (1)	98,320	0.24	8,266 (46)	67,631 (82)

Year	Cbt				Hbt				Priv				Shore				TOTAL			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
1991	292	0.59	1,005 (3)	7,592 (3)	53	0.73	4,216 (39)	38,285 (64)	63,471	0.25	1210 (1)	10,222 (1)	126,033	0.83	2,895 (9)	22,887 (12)	189,850	0.55	9,181 (52)	78,986 (80)
1992	1,464	0.87	972 (0)	7,254 (0)	0	0.00	5,288 (41)	50,333 (77)	105,873	0.31	1624 (4)	14,110 (4)	99,077	0.57	3,266 (11)	25,591 (17)	206,414	0.32	10,990 (56)	97,288 (98)
1993	209	0.44	860 (4)	6,285 (4)	283	0.45	4,574 (39)	42,208 (95)	157,678	0.30	2038 (0)	19,282 (0)	54,185	0.38	3,973 (10)	32,482 (13)	212,354	0.24	10,561 (53)	93,464 (112)
1994	10	1.00	910 (1)	6,137 (1)	3	1.00	4,821 (27)	47,010 (44)	112,198	0.32	1478 (0)	15,274 (0)	5,396	0.65	4,263 (3)	37,227 (3)	117,607	0.31	11,283 (31)	105,648 (48)
1995	2,395	0.45	845 (4)	5,808 (5)	1,469	0.47	4,357 (53)	41,965 (91)	90,425	0.22	1407 (0)	14,158 (0)	47,868	0.43	4,024 (11)	36,565 (15)	142,157	0.20	10,449 (68)	98,496 (111)
1996	5,827	0.52	925 (3)	5,965 (3)	33	0.50	4,671 (57)	46,299 (123)	153,235	0.25	1620 (8)	16,430 (11)	18,293	0.63	3,466 (6)	31,001 (6)	177,387	0.23	10,463 (74)	99,695 (143)
1997	2,371	0.39	1,056 (15)	6,956 (19)	683	0.19	4,886 (44)	49,038 (91)	193,311	0.28	1915 (3)	18,289 (5)	79,520	0.35	3,682 (13)	30,854 (25)	275,884	0.22	11,316 (75)	105,137 (140)
1998	2,917	0.61	1,204 (8)	7,491 (18)	306	0.38	4,975 (59)	50,735 (88)	223,724	0.21	2275 (5)	21,153 (9)	142,300	0.75	3,732 (7)	31,941 (9)	369,247	0.31	11,948 (79)	111,320 (124)
1999	1,646	0.33	1,066 (16)	6,977 (26)	591	0.36	5,305 (54)	55,625 (105)	165,424	0.21	4253 (5)	41,505 (5)	85,258	0.53	4,173 (8)	35,491 (13)	252,919	0.23	12,908 (83)	122,912 (149)
2000	2,788	0.68	1,109 (2)	6,665 (2)	269	0.74	5,126 (26)	51,323 (38)	103,472	0.29	2714 (10)	28,236 (18)	120,027	0.63	3,777 (9)	30,953 (12)	226,556	0.36	12,435 (47)	117,166 (70)
2001	9,535	0.64	1,240 (4)	8,911 (6)	914	0.63	5,658 (42)	62,754 (82)	193,220	0.24	2423 (8)	25,708 (17)	85,829	0.72	4,089 (6)	35,375 (14)	289,498	0.27	13,118 (60)	132,748 (119)
2002	1,059	0.66	1,157 (3)	7,699 (4)	738	0.75	5,392 (56)	59,404 (107)	405,626	0.28	2443 (6)	25,277 (8)	162,903	0.50	4,171 (9)	35,552 (15)	570,325	0.24	12,897 (74)	127,932 (134)

Year	Cbt				Hbt				Priv				Shore				TOTAL			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
2003	18,804	0.53	1,756 (7)	13,519 (15)	8,536	0.54	5876 (34)	57,058 (66)	237,785	0.35	2,487 (4)	25,724 (5)	118,213	0.44	4,592 (7)	34,992 (9)	383,338	0.26	14,434 (52)	131,293 (95)
2004	2	1.00	314 (0)	893 (0)	50	1.00	4559 (13)	48,147 (14)	48,498	0.55	2,892 (1)	28,487 (1)	44,993	0.70	2,961 (4)	25,842 (4)	93,543	0.44	11,306 (21)	112,663 (22)
2005	1,617	0.70	311 (0)	862 (0)	1,757	0.87	4031 (18)	43,252 (28)	230,117	0.59	3,809 (3)	35,127 (5)	8,724	0.65	2,747 (3)	23,846 (3)	242,214	0.55	10,813 (28)	107,178 (45)
2006	746	0.61	357 (0)	1,035 (0)	15	1.00	4716 (11)	50,093 (18)	44,898	0.46	3,588 (7)	32,720 (10)	15,980	0.69	2,707 (4)	23,073 (4)	61,639	0.38	11,132 (23)	108,035 (33)
2007	7,288	0.80	343 (0)	1,059 (0)	969	0.49	4927 (23)	51,377 (43)	181,769	0.40	3,652 (6)	31,796 (9)	116,799	0.67	2,936 (10)	25,772 (13)	306,825	0.35	11,395 (48)	111,247 (89)
2008	2,918	0.58	323 (0)	938 (0)	10	0.84	4899 (35)	50,633 (47)	113,308	0.26	2,885 (9)	24,247 (14)	23,852	0.53	2,951 (6)	25,719 (6)	140,087	0.22	11,426 (52)	110,149 (70)
2009	1,649	0.67	317 (0)	938 (0)	573	0.87	4856 (41)	49,207 (59)	519,146	0.27	2,731 (12)	22,188 (19)	103,490	0.73	2,888 (5)	23,881 (5)	624,859	0.25	11,148 (63)	103,484 (88)
2010	1,929	0.49	322 (0)	991 (0)	3	0.76	5278 (40)	51,521 (57)	178,004	0.25	2,858 (14)	23,552 (19)	34,538	0.50	3,318 (5)	28,051 (5)	214,474	0.22	12,142 (61)	112,353 (84)
2011	381	0.76	360 (0)	1,033 (0)	18	0.78	5112 (19)	48,348 (28)	110,114	0.29	2,853 (3)	24,663 (6)	25,703	0.82	3,423 (4)	26,963 (5)	136,216	0.28	12,039 (28)	108,520 (41)
2012	198	0.63	362 (0)	1,038 (0)	87	0.47	5359 (14)	51,579 (31)	105,847	0.40	2,844 (3)	24,954 (3)	0	0.00	3,653 (0)	28,965 (0)	106,131	0.39	12,350 (24)	112,234 (43)
2013	822	1.00	668 (0)	1,948 (0)	1,063	0.84	5035 (12)	44,417 (19)	67,163	0.51	1,822 (1)	14,273 (4)	40,903	0.71	2,805 (6)	24,839 (7)	109,951	0.41	10,291 (24)	92,232 (37)
2014	3,043	0.52	787 (0)	2,263 (0)	153	0.55	5229 (20)	46,319 (27)	157,102	0.55	3,882 (13)	30,590 (25)	11,698	0.77	2,312 (6)	21,151 (12)	171,996	0.50	12,057 (43)	107,624 (68)

Year	Cbt				Hbt				Priv				Shore				TOTAL			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
2015	5,941	0.77	872 (0)	2,877 (0)	101	0.75	5,498 (37)	47,920 (47)	151,687	0.48	4019 (10)	30,187 (12)	18,688	0.63	2,389 (6)	20,819 (8)	176,417	0.42	12,569 (56)	109,098 (70)
2016	308	0.57	893 (0)	2,599 (0)	12	1.00	5,440 (18)	44,917 (32)	159,603	0.56	4288 (5)	31,473 (7)	27,277	0.57	3,209 (6)	21,032 (6)	187,200	0.49	13,652 (30)	108,627 (46)
2017	360	0.48	916 (0)	2,971 (0)	5	1.00	5,332 (20)	47,145 (29)	237,530	0.63	4141 (11)	31,567 (22)	7,754	0.49	3,279 (5)	21,765 (6)	245,650	0.61	13,417 (37)	110,729 (58)
2018	2,772	0.44	953 (0)	3,580 (0)	367	0.95	5,230 (27)	45,433 (37)	94,939	0.45	4371 (16)	32,864 (18)	47,532	0.54	3,274 (8)	23,749 (12)	145,609	0.34	13,544 (53)	113,689 (69)
2019	1,221	0.49	1,039 (0)	3,698 (0)	401	1.00	5,300 (30)	45,951 (45)	122,779	0.35	4383 (8)	31,915 (9)	66,272	0.75	3,346 (12)	23,503 (15)	190,673	0.34	13,720 (51)	113,604 (77)
2020	292	0.52	919 (0)	3,202 (0)	218	0.60	6,486 (29)	56,892 (38)	68,099	0.40	4682 (7)	37,005 (12)	146,194	0.55	4,090 (12)	27,681 (28)	214,802	0.39	16,374 (51)	140,989 (88)
2021	1,117	0.42	1,067 (0)	4,034 (0)	179	1.00	6,279 (24)	50,671 (42)	36,692	0.28	4848 (15)	35,974 (28)	26,580	0.60	4,193 (7)	28,229 (8)	64,568	0.29	16,190 (47)	129,643 (86)
2022	780	0.38	1,005 (0)	3,695 (0)	158	0.85	5,915 (20)	42,663 (24)	78,569	0.46	4544 (12)	29,870 (20)	274,259	0.53	3,694 (11)	22,076 (16)	353,766	0.42	14,924 (45)	107,535 (69)
2023	1,022	0.55	1,114 (0)	4,134 (0)	206	1.00	6,188 (25)	46,284 (28)	69,200	0.35	4816 (9)	34,233 (11)	166,306	0.64	4,033 (10)	25,793 (15)	236,733	0.46	15,750 (45)	117,625 (62)
2024	4,367	0.44	1,103 (0)	3,863 (0)	0	0.00	6,037 (27)	43,225 (37)	57,589	0.33	4597 (12)	31,623 (22)	186,252	0.49	3,977 (15)	25,168 (24)	248,207	0.38	15,357 (54)	110,648 (83)

Table 5. Sandbar Shark 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 from all data sources. 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 Sandbar Shark.

Year	AB1				B2			
	Total	CV	PSU	Trp	Total	CV	PSU	Trp
1981	104,855	0.37	3,040 (13)	22,319 (15)	215,489	0.55	3,040 (16)	22,319 (28)
1982	42,714	0.29	3,946 (22)	30,842 (26)	248,772	0.28	3,946 (36)	30,842 (56)
1983	663,190	0.58	4,538 (44)	39,614 (52)	725,026	0.22	4,538 (51)	39,614 (104)
1984	177,802	0.71	3,953 (20)	33,698 (25)	357,723	0.29	3,953 (37)	33,698 (65)
1985	114,316	0.32	5,479 (46)	43,559 (59)	156,211	0.21	5,479 (49)	43,559 (105)
1986	179,864	0.35	6,749 (71)	52,006 (89)	440,751	0.39	6,749 (74)	52,006 (204)
1987	33,988	0.31	6,724 (28)	54,065 (31)	206,333	0.26	6,724 (55)	54,065 (114)
1988	85,555	0.28	8,156 (40)	62,994 (51)	110,077	0.33	8,156 (55)	62,994 (150)
1989	59,541	0.58	8,900 (21)	71,412 (32)	46,239	0.23	8,900 (45)	71,412 (62)
1990	100,487	0.44	8,266 (30)	67,631 (49)	98,320	0.24	8,266 (46)	67,631 (82)
1991	40,091	0.28	9,181 (27)	78,986 (38)	189,850	0.55	9,181 (52)	78,986 (80)
1992	105,955	0.38	10,990 (36)	97,288 (50)	206,414	0.32	10,990 (56)	97,288 (98)
1993	50,469	0.33	10,561 (31)	93,464 (41)	212,354	0.24	10,561 (53)	93,464 (112)
1994	23,673	0.27	11,283 (22)	105,648 (26)	117,607	0.31	11,283 (31)	105,648 (48)
1995	35,353	0.23	10,449 (39)	98,496 (46)	142,157	0.20	10,449 (68)	98,496 (111)

Year	AB1				B2			
	Total	CV	PSU	Trp	Total	CV	PSU	Trp
1996	116,896	0.53	10,463 (36)	99,695 (49)	177,387	0.23	10,463 (74)	99,695 (143)
1997	61,658	0.33	11,316 (35)	105,137 (51)	275,884	0.22	11,316 (75)	105,137 (140)
1998	107,968	0.45	11,948 (35)	111,320 (42)	369,247	0.31	11,948 (79)	111,320 (124)
1999	34,771	0.34	12,908 (35)	122,912 (36)	252,919	0.23	12,908 (83)	122,912 (149)
2000	17,358	0.65	12,435 (12)	117,166 (18)	226,556	0.36	12,435 (47)	117,166 (70)
2001	46,768	0.30	13,118 (29)	132,748 (33)	289,498	0.27	13,118 (60)	132,748 (119)
2002	10,231	0.46	12,897 (13)	127,932 (14)	570,325	0.24	12,897 (74)	127,932 (134)
2003	10,726	0.49	14,434 (9)	131,293 (9)	383,338	0.26	14,434 (52)	131,293 (95)
2004	5,574	0.50	11,306 (14)	112,663 (15)	93,543	0.44	11,306 (21)	112,663 (22)
2005	1,389	0.66	10,813 (9)	107,178 (9)	242,214	0.55	10,813 (28)	107,178 (45)
2006	1,048	0.52	11,132 (9)	108,035 (9)	61,639	0.38	11,132 (23)	108,035 (33)
2007	7,593	0.52	11,395 (15)	111,247 (16)	306,825	0.35	11,395 (48)	111,247 (89)
2008	6,006	0.45	11,426 (8)	110,149 (8)	140,087	0.22	11,426 (52)	110,149 (70)
2009	15,361	0.58	11,148 (8)	103,484 (8)	624,859	0.25	11,148 (63)	103,484 (88)
2010	6,345	0.50	12,142 (10)	112,353 (11)	214,474	0.22	12,142 (61)	112,353 (84)
2011	1,372	0.65	12,039 (6)	108,520 (6)	136,216	0.28	12,039 (28)	108,520 (41)
2012	1,024	0.97	12,350 (3)	112,234 (3)	106,131	0.39	12,350 (24)	112,234 (43)
2013	3,268	0.57	10,291 (11)	92,232 (11)	109,951	0.41	10,291 (24)	92,232 (37)

Year	AB1				B2			
	Total	CV	PSU	Trp	Total	CV	PSU	Trp
2014	1,060	0.94	12,057 (2)	107,624 (2)	171,996	0.50	12,057 (43)	107,624 (68)
2015	392	0.63	12,569 (5)	109,098 (5)	176,417	0.42	12,569 (56)	109,098 (70)
2016	282	1.00	13,652 (1)	108,627 (1)	187,200	0.49	13,652 (30)	108,627 (46)
2017	2,631	0.63	13,417 (4)	110,729 (4)	245,650	0.61	13,417 (37)	110,729 (58)
2018	205	1.00	13,544 (1)	113,689 (1)	145,609	0.34	13,544 (53)	113,689 (69)
2019	792	0.73	13,720 (2)	113,604 (2)	190,673	0.34	13,720 (51)	113,604 (77)
2020	237	1.00	16,374 (1)	140,989 (1)	214,802	0.39	16,374 (51)	140,989 (88)
2021	320	0.90	16,190 (2)	129,643 (2)	64,568	0.29	16,190 (47)	129,643 (86)
2022	332	1.00	14,924 (1)	107,535 (1)	353,766	0.42	14,924 (45)	107,535 (69)
2023	3,401	1.00	15,750 (1)	117,625 (1)	236,733	0.46	15,750 (45)	117,625 (62)
2024	3,120	1.00	15,357 (2)	110,648 (2)	248,207	0.38	15,357 (54)	110,648 (83)

Table 6. Sandbar Shark landings in pounds whole weight (LBS) with associated coefficients of variation (CV; Approach 2 described in Nuttall and Dettloff 2022) by year and mode from all data sources.

Year	Cbt		Hbt		Priv		Shore		TOTAL	
	LBS	CV	LBS	CV	LBS	CV	LBS	CV	LBS	CV
1981	12,314	0.93	1,159	0.73	911,608	0.55	285,767	1.00	1,210,849	0.52
1982	7,815	1.00	0	0.00	292,772	0.47	79,704	0.76	380,290	0.43
1983	9,408	0.68	2,626	0.37	4,367,712	0.66	304,020	0.44	4,683,766	0.60
1984	2,423	0.83	172	0.84	145,230	0.55	1,821,026	0.79	1,968,852	0.73
1985	518,914	0.58	9,456	0.40	2,062,034	0.45	91,476	0.53	2,681,880	0.39
1986	17,214	0.55	1,735	0.29	1,089,176	0.40	133,529	1.00	1,241,655	0.36
1987	24,034	0.76	75	1.00	246,764	0.40	111,880	0.94	382,753	0.36
1988	4,102	0.58	810	1.00	839,640	0.37	257,190	0.54	1,101,741	0.32
1989	14,403	0.70	7,623	0.70	231,740	0.60	215,207	0.95	468,973	0.60
1990	1,531	0.99	544	0.94	1,003,541	0.49	160,435	1.00	1,166,050	0.45
1991	979	1.00	765	1.00	112,498	0.31	89,694	0.59	203,937	0.29
1992	5,771	0.50	188	1.00	337,369	0.35	406,357	0.73	749,686	0.40
1993	8,727	0.72	467	1.00	268,353	0.37	223,553	0.72	501,101	0.38
1994	16,341	0.72	0	0.00	179,426	0.32	26,406	1.00	222,173	0.29
1995	26,048	0.43	566	0.99	84,778	0.29	111,315	0.56	222,707	0.25
1996	16,112	0.46	915	0.94	395,145	0.40	792,518	0.88	1,204,689	0.54
1997	2,176	0.91	561	0.91	380,700	0.36	54,942	0.87	438,378	0.33

Year	Cbt		Hbt		Priv		Shore		TOTAL	
	LBS	CV	LBS	CV	LBS	CV	LBS	CV	LBS	CV
1998	21,265	0.65	152	0.45	178,397	0.42	667,072	0.69	866,886	0.46
1999	7,497	0.63	515	0.47	182,558	0.40	164,155	0.72	354,725	0.36
2000	3,149	0.53	0	0.00	119,320	0.68	0	0.00	122,468	0.65
2001	3,458	0.46	180	1.00	254,687	0.39	117,529	0.89	375,854	0.35
2002	5,039	0.80	1,517	1.00	64,950	0.51	0	0.00	71,507	0.65
2003	12,322	0.70	5,440	0.71	28,902	0.59	58,213	1.00	104,878	0.71
2004	10,053	0.71	0	0.00	51,255	0.63	0	0.00	61,308	0.54
2005	2,863	0.74	700	1.00	9,197	0.82	0	0.00	12,760	0.73
2006	12,107	0.73	0	0.00	1,993	0.08	0	0.00	14,099	0.69
2007	7,252	0.44	0	0.00	52,821	0.70	19,013	1.00	79,087	0.56
2008	2,050	1.00	16	1.00	34,222	0.63	11,068	1.00	47,355	0.54
2009	10,068	0.66	0	0.00	77,967	0.75	21,361	1.00	109,396	0.60
2010	3,484	0.46	0	0.00	62,621	0.67	0	0.00	66,106	0.54
2011	1,475	0.87	0	0.00	16,343	0.69	0	0.00	17,819	0.65
2012	410	0.78	0	0.00	6,721	1.00	0	0.00	7,130	0.98
2013	11,539	0.59	853	0.74	31,625	0.90	0	0.00	44,016	0.62
2014	1,075	1.00	0	0.00	6,679	1.00	0	0.00	7,754	0.94
2015	3,388	0.93	0	0.00	1,977	0.20	0	0.00	5,365	0.63

Year	Cbt		Hbt		Priv		Shore		TOTAL	
	LBS	CV	LBS	CV	LBS	CV	LBS	CV	LBS	CV
2016	4,418	1.00	0	0.00	0	0.00	0	0.00	4,418	1.00
2017	0	0.00	0	0.00	10,107	0.98	11,974	0.75	22,081	0.65
2018	3,223	1.00	0	0.00	0	0.00	0	0.00	3,223	1.00
2019	0	0.00	0	0.00	5,333	0.73	0	0.00	5,333	0.73
2020	0	0.00	0	0.00	1,594	1.00	0	0.00	1,594	1.00
2021	0	0.00	0	0.00	5,022	0.90	0	0.00	5,022	0.90
2022	5,205	1.00	0	0.00	0	0.00	0	0.00	5,205	1.00
2023	0	0.00	0	0.00	53,366	1.00	0	0.00	53,366	1.00
2024	220	0.19	0	0.00	39,296	1.00	0	0.00	39,515	0.10

Table 7. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Sandbar Shark 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.

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	1 (1)	7.72	7.72	0.00	7.72	2 (1)	2.43	2.43	0.00	2.43	29	1.21	13.1	28.4	110.23	2 (2)	1.53	1.86	0.46	2.18
1982	1 (1)	4.85	4.85	0.00	4.85	0 (0)	0.00	0.00	0.00	0.00	29	2.20	12.0	22.7	115.61	3 (3)	0.44	3.69	3.70	7.72
1983	2 (2)	11.02	13.86	4.02	16.70	5 (5)	1.32	24.7	45.2	105.4	110	0.22	9.91	19.2	141.09	16 (10)	0.22	3.82	2.82	11.02
1984	1 (1)	9.26	9.26	0.00	9.26	1 (1)	12.15	12.1	0.00	12.15	13	1.58	17.4	23.5	79.15	18 (8)	1.54	7.87	6.41	25.79
1985	26 (15)	1.10	38.93	57.3	165.8	9 (7)	1.44	15.6	31.5	98.72	60	1.32	5.60	10.2	80.37	6 (6)	1.98	4.76	1.77	6.94
1986	20 (16)	4.25	10.87	9.84	41.52	12	1.10	5.89	6.60	21.63	121	1.37	7.81	8.03	49.38	1 (1)	4.41	4.41	0.00	4.41
1987	8 (8)	1.76	7.62	5.23	17.64	1 (1)	11.54	11.5	0.00	11.54	31	0.89	11.8	15.4	71.07	2 (2)	1.98	4.74	3.90	7.50
1988	4 (4)	4.41	7.91	3.49	11.02	0 (0)	0.00	0.00	0.00	0.00	27	0.66	7.95	6.83	26.46	6 (5)	0.22	1.26	0.72	1.78
1989	42 (10)	7.99	15.58	32.2	218.2	0 (0)	0.00	0.00	0.00	0.00	48	0.22	9.45	10.3	41.29	2 (2)	1.76	2.43	0.94	3.09
1990	6 (5)	0.24	7.58	8.76	24.05	2 (1)	6.02	7.44	2.00	8.86	122	0.22	3.63	4.14	39.80	1 (1)	6.61	6.61	0.00	6.61
1991	1 (1)	29.57	29.57	0.00	29.57	0 (0)	0.00	0.00	0.00	0.00	81	0.22	3.61	2.02	9.48	12 (8)	3.97	9.55	5.89	22.49
1992	10 (4)	2.22	7.29	4.52	12.35	0 (0)	0.00	0.00	0.00	0.00	71	0.23	6.30	5.02	38.36	11 (8)	0.44	14.07	23.15	60.73
1993	7 (6)	8.93	23.63	33.6	99.67	0 (0)	0.00	0.00	0.00	0.00	57	1.10	5.24	3.07	11.62	7 (5)	0.88	5.32	3.70	10.93
1994	5 (3)	5.45	6.76	1.71	9.40	0 (0)	0.00	0.00	0.00	0.00	37	1.10	8.09	5.71	26.13	1 (1)	18.74	18.74	0.00	18.74
1995	11 (8)	4.41	11.81	6.95	24.63	2 (2)	3.87	4.47	0.85	5.07	55	1.73	3.46	2.24	14.33	5 (5)	0.89	4.36	2.36	6.61
1996	15 (9)	4.22	21.62	18.2	54.27	6 (5)	3.29	3.88	0.48	4.34	67	2.34	6.71	4.63	22.05	10 (6)	4.68	9.42	4.29	16.38
1997	7 (3)	0.87	3.58	2.77	9.34	1 (1)	6.74	6.74	0.00	6.74	112	2.09	5.41	2.79	20.41	4 (2)	4.93	8.73	5.29	16.42
1998	15 (7)	1.99	8.00	7.65	27.50	1 (1)	1.08	1.08	0.00	1.08	56	0.98	6.41	7.66	47.89	9 (6)	1.98	8.14	7.86	25.35
1999	13 (9)	1.30	11.18	9.89	39.21	2 (2)	6.77	9.47	3.82	12.17	27	3.74	8.61	7.00	31.71	4 (4)	0.08	3.69	3.49	8.14
2000	13 (11)	3.97	8.70	5.19	19.96	0 (0)	0.00	0.00	0.00	0.00	9 (4)	7.28	10.0	2.12	12.87	0 (0)	0.00	0.00	0.00	0.00
2001	8 (6)	13.96	50.47	22.3	70.83	1 (1)	2.98	2.98	0.00	2.98	39	1.53	7.20	8.18	53.36	3 (3)	5.29	24.09	32.27	61.35

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
2002	5 (5)	11.34	52.94	67.0	165.7	2 (1)	3.60	3.60	0.00	3.60	10 (6)	2.21	5.64	2.27	8.64	0 (0)	0.00	0.00	0.00	0.00
2003	5 (4)	4.63	12.51	13.5	36.17	0 (0)	0.00	0.00	0.00	0.00	4 (4)	4.15	8.01	5.16	15.49	1 (1)	149.36	149.36	0.00	149.3
2004	9 (9)	11.02	20.44	14.2	43.32	0 (0)	0.00	0.00	0.00	0.00	3 (3)	4.30	6.65	3.79	11.02	0 (0)	0.00	0.00	0.00	0.00
2005	3 (3)	59.20	74.96	13.6	82.84	3 (1)	3.31	3.60	0.25	3.75	1 (1)	10.99	10.9	0.00	10.99	0 (0)	0.00	0.00	0.00	0.00
2006	4 (4)	3.31	24.76	26.0	59.31	0 (0)	0.00	0.00	0.00	0.00	0 (0)	0.00	0.00	0.00	0.00	0 (0)	0.00	0.00	0.00	0.00
2007	9 (9)	5.95	45.38	28.3	85.37	0 (0)	0.00	0.00	0.00	0.00	4 (4)	1.54	8.49	5.76	13.23	1 (1)	13.23	13.23	0.00	13.23
2008	1 (1)	5.95	5.95	0.00	5.95	1 (1)	2.00	2.00	0.00	2.00	5 (5)	1.54	6.47	6.19	13.23	1 (1)	3.31	3.31	0.00	3.31
2009	0 (0)	0.00	0.00	0.00	0.00	0 (0)	0.00	0.00	0.00	0.00	4 (2)	1.54	4.24	1.94	6.17	1 (1)	3.31	3.31	0.00	3.31
2010	6 (6)	54.41	54.41	0.00	54.41	0 (0)	0.00	0.00	0.00	0.00	9 (5)	4.63	10.8	16.3	54.41	0 (0)	0.00	0.00	0.00	0.00
2011	0 (0)	0.00	0.00	0.00	0.00	0 (0)	0.00	0.00	0.00	0.00	2 (2)	1.54	1.54	0.00	1.54	0 (0)	0.00	0.00	0.00	0.00
2012	2 (2)	35.15	35.15	0.00	35.15	0 (0)	0.00	0.00	0.00	0.00	1 (1)	2.20	2.20	0.00	2.20	0 (0)	0.00	0.00	0.00	0.00
2013	4 (4)	54.31	63.48	10.5	72.66	2 (2)	2.20	2.64	0.62	3.08	3 (3)	3.08	21.7	28.3	54.31	0 (0)	0.00	0.00	0.00	0.00
2014	1 (1)	49.24	49.24	0.00	49.24	0 (0)	0.00	0.00	0.00	0.00	0 (0)	0.00	0.00	0.00	0.00	0 (0)	0.00	0.00	0.00	0.00
2017	0 (0)	0.00	0.00	0.00	0.00	0 (0)	0.00	0.00	0.00	0.00	1 (1)	4.85	4.85	0.00	4.85	2 (2)	2.76	3.91	1.64	5.07
2023	0 (0)	0.00	0.00	0.00	0.00	0 (0)	0.00	0.00	0.00	0.00	1 (1)	15.70	15.7	0.00	15.70	0 (0)	0.00	0.00	0.00	0.00
2024	0 (0)	0.00	0.00	0.00	0.00	0 (0)	0.00	0.00	0.00	0.00	1 (1)	4.70	4.70	0.00	4.70	0 (0)	0.00	0.00	0.00	0.00

Table 8. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Sandbar Shark 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 weights.

Year	N	Min	Avg	SD	Max
1981	34 (15)	1.21	11.65	26.49	110.23
1982	33 (26)	0.44	11.10	21.49	115.61
1983	133 (50)	0.22	9.79	19.52	141.09
1984	33 (20)	1.54	11.83	15.87	79.15
1985	101 (58)	1.10	15.02	34.24	165.87
1986	154 (89)	1.10	8.04	8.20	49.38
1987	42 (31)	0.89	10.69	13.55	71.07
1988	37 (25)	0.22	6.86	6.41	26.46
1989	92 (32)	0.22	12.09	23.16	218.20
1990	131 (49)	0.22	3.89	4.46	39.80
1991	94 (38)	0.22	4.65	4.28	29.57
1992	92 (46)	0.23	7.34	9.31	60.73
1993	71 (39)	0.88	7.06	11.67	99.68
1994	43 (26)	1.10	8.19	5.58	26.13
1995	73 (45)	0.89	4.81	4.44	24.63
1996	98 (49)	2.34	9.09	9.70	54.27
1997	124 (51)	0.87	5.42	2.94	20.41
1998	81 (42)	0.98	6.83	7.60	47.89
1999	46 (31)	0.08	8.95	7.72	39.21
2000	22 (15)	3.97	9.25	4.19	19.96
2001	51 (32)	1.53	14.90	20.47	70.83
2002	17 (12)	2.21	19.31	40.34	165.72
2003	10 (9)	4.15	24.40	44.98	149.36

Year	N	Min	Avg	SD	Max
2004	12 (12)	4.30	16.99	13.75	43.32
2005	7 (5)	3.31	35.24	38.07	82.84
2006	4 (4)	3.31	24.76	26.08	59.31
2007	14 (14)	1.54	32.54	28.71	85.37
2008	8 (8)	1.54	5.45	5.00	13.23
2009	5 (3)	1.54	4.06	1.73	6.17
2010	15 (11)	4.63	28.27	25.31	54.41
2011	2 (2)	1.54	1.54	0.00	1.54
2012	3 (3)	2.21	24.17	19.02	35.15
2013	9 (9)	2.21	36.04	31.23	72.66
2014	1 (1)	49.24	49.24	0.00	49.24
2017	3 (3)	2.76	4.23	1.28	5.07
2023	1 (1)	15.70	15.70	0.00	15.70
2024	1 (1)	4.70	4.70	0.00	4.70

Table 9. Estimated average weights of landed Sandbar Shark in pounds whole weight (WGT) with associated coefficients of variation (CV; Approach 2 described in Nuttall and Dettloff 2022) by year and mode from all data sources. Average weight estimates are calculated from annual estimates (by-mode) of landings-in-weight (whole, Table 6) 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.

Year	Cbt			Hbt			Priv			Shore			Total		
	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N
1981	14.70	0.93	1 (1)	10.94	0.73	1 (2)	10.64	0.55	11 (29)	15.69	1.00	2 (2)	11.55	0.52	15 (34)
1982	15.69	1.00	1 (1)				9.93	0.47	22 (29)	6.26	0.76	3 (3)	8.90	0.43	26 (33)
1983	7.03	0.68	2 (2)	5.71	0.37	5 (5)	7.30	0.66	33 (110)	4.79	0.44	10 (16)	7.06	0.60	50 (133)
1984	10.48	0.83	1 (1)	6.73	0.84	1 (1)	9.19	0.54	10 (13)	11.26	0.79	8 (18)	11.07	0.73	20 (33)
1985	28.31	0.58	15 (26)	8.80	0.40	7 (9)	23.86	0.45	30 (60)	10.79	0.53	6 (6)	23.46	0.39	58 (101)
1986	10.21	0.55	16 (20)	5.71	0.29	9 (12)	6.56	0.40	63 (121)	11.27	1.00	1 (1)	6.90	0.36	89 (154)
1987	7.53	0.76	8 (8)	6.73	1.00	1 (1)	10.61	0.40	20 (31)	14.84	0.93	2 (2)	11.26	0.36	31 (42)
1988	11.97	0.58	4 (4)				13.49	0.37	16 (27)	11.23	0.54	5 (6)	12.88	0.32	25 (37)
1989	15.72	0.70	10 (42)				9.14	0.60	20 (48)	6.52	0.95	2 (2)	7.88	0.60	32 (92)
1990	4.32	0.99	5 (6)	3.28	0.94	1 (2)	11.18	0.49	42 (122)	15.69	1.00	1 (1)	11.60	0.45	49 (131)
1991	4.21	1.00	1 (1)				4.52	0.31	29 (81)	6.07	0.59	8 (12)	5.09	0.29	38 (94)
1992	9.45	0.50	4 (10)				7.31	0.35	34 (71)	6.87	0.73	8 (11)	7.08	0.40	46 (92)
1993	10.84	0.72	6 (7)				8.34	0.37	28 (57)	12.86	0.72	5 (7)	9.93	0.38	39 (71)
1994	14.72	0.72	3 (5)				8.76	0.32	22 (37)	12.65	1.00	1 (1)	9.39	0.29	26 (43)
1995	11.09	0.43	8 (11)	2.89	1.00	2 (2)	3.68	0.29	30 (55)	11.43	0.56	5 (5)	6.30	0.25	45 (73)
1996	15.48	0.46	9 (15)	4.80	0.94	5 (6)	8.03	0.40	29 (67)	11.93	0.88	6 (10)	10.31	0.54	49 (98)
1997	4.93	0.91	3 (7)	4.93	0.91	1 (1)	7.07	0.36	45 (112)	7.57	0.87	2 (4)	7.11	0.33	51 (124)
1998	8.05	0.65	7 (15)	5.45	0.45	1 (1)	5.61	0.42	28 (56)	9.08	0.69	6 (9)	8.03	0.46	42 (81)
1999	8.60	0.63	9 (13)	11.10	0.47	2 (2)	9.81	0.40	16 (27)	10.77	0.72	4 (4)	10.20	0.36	31 (46)
2000	8.24	0.53	11 (13)				7.03	0.68	4 (9)				7.06	0.65	15 (22)

Year	Cbt			Hbt			Priv			Shore			Total		
	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N
2001	11.07	0.46	6 (8)	5.96	1.00	1 (1)	7.03	0.39	22 (39)	11.50	0.89	3 (3)	8.04	0.35	32 (51)
2002	9.62	0.80	5 (5)	6.73	1.00	1 (2)	6.85	0.51	6 (10)				6.99	0.65	12 (17)
2003	6.89	0.70	4 (5)				8.20	0.59	4 (4)	12.65	1.00	1 (1)	9.78	0.71	9 (10)
2004	13.45	0.71	9 (9)				10.62	0.63	3 (3)				11.00	0.53	12 (12)
2005	15.22	0.74	3 (3)	6.73	1.00	1 (3)	8.38	0.82	1 (1)				9.19	0.73	5 (7)
2006	13.14	0.73	4 (4)										13.45	0.69	4 (4)
2007	15.33	0.44	9 (9)				9.40	0.70	4 (4)	12.65	1.00	1 (1)	10.42	0.56	14 (14)
2008	12.65	1.00	1 (1)	6.73	1.00	1 (1)	8.15	0.63	5 (5)	6.73	1.00	1 (1)	7.88	0.54	8 (8)
2009							6.75	0.75	2 (4)	6.73	1.00	1 (1)	7.12	0.60	3 (5)
2010	15.69	0.46	6 (6)				10.23	0.67	5 (9)				10.42	0.54	11 (15)
2011							12.79	0.69	2 (2)				12.98	0.65	2 (2)
2012	15.69	0.78	2 (2)				6.73	1.00	1 (1)				6.96	0.98	3 (3)
2013	15.69	0.59	4 (4)	6.73	0.74	2 (2)	13.15	0.90	3 (3)				13.47	0.62	9 (9)
2014	15.69	1.00	1 (1)										7.31	0.94	1 (1)
2015															
2016															
2017							6.90	0.98	1 (1)	10.27	0.75	2 (2)	8.39	0.65	3 (3)
2018															
2019															
2020															
2021															
2022															
2023							15.69	1.00	1 (1)				15.69	1.00	1 (1)
2024							12.65	1.00	1 (1)				12.66	1.00	1 (1)

Table 10. Recreational Fishing Effort (in angler trips) for Atlantic and Gulf of America anglers by mode and year from all data sources. These effort estimates depict all (general) recreational fishing activity across the Gulf and Atlantic and are not specific to Sandbar Shark.

Year	Cbt	Hbt	Priv	Shore	Total
1981	2,503,524	1,193,938.4	36,032,087	73,045,972	112,775,522
1982	2,842,813	2,433,227.0	40,354,306	87,111,260	132,741,606
1983	2,454,669	2,015,422.7	42,675,093	92,007,925	139,153,110
1984	1,971,127	1,635,981.5	46,537,695	89,302,036	139,446,839
1985	2,272,768	1,441,591.2	47,893,776	87,148,071	138,756,206
1986	2,620,444	1,236,059.1	48,302,073	84,567,800	136,726,375
1987	2,395,579	621,673.8	48,560,330	86,150,897	137,728,480
1988	1,981,491	906,084.6	48,176,967	88,391,324	139,455,867
1989	2,160,157	738,940.0	49,504,872	89,698,944	142,102,913
1990	1,899,178	961,811.0	50,550,886	91,832,607	145,244,483
1991	2,200,215	809,358.8	52,397,489	100,814,851	156,221,914
1992	2,038,138	665,059.5	53,132,088	95,833,903	151,669,188
1993	2,177,096	1,266,814.9	55,272,046	98,789,844	157,505,801
1994	2,329,220	832,466.3	55,924,193	98,737,422	157,823,302
1995	2,487,456	900,292.9	55,723,310	93,829,881	152,940,941
1996	2,385,924	624,837.5	57,733,120	95,600,977	156,344,859
1997	2,341,593	735,581.5	61,321,008	98,260,777	162,658,959

Year	Cbt	Hbt	Priv	Shore	Total
1998	2,260,873	604,383.5	62,504,009	98,977,817	164,347,083
1999	2,214,860	572,787.0	66,604,221	106,030,530	175,422,398
2000	2,119,194	686,027.9	71,351,984	114,976,856	189,134,062
2001	2,370,631	596,058.9	73,614,566	118,163,604	194,744,860
2002	2,214,603	657,798.0	74,119,294	113,994,132	190,985,827
2003	2,270,208	667,510.1	77,368,985	118,396,114	198,702,816
2004	2,174,527	674,260.5	81,001,657	123,358,609	207,209,053
2005	2,260,033	767,540.0	81,054,867	122,324,331	206,406,770
2006	2,157,761	649,373.9	81,376,621	122,184,762	206,368,518
2007	2,680,502	971,083.5	83,330,560	121,519,902	208,502,047
2008	2,172,263	871,784.3	84,233,770	123,709,488	210,987,305
2009	2,140,068	790,333.2	84,872,048	123,838,798	211,641,247
2010	1,693,021	580,113.9	89,998,168	128,392,353	220,663,656
2011	2,075,721	600,817.1	86,261,149	126,953,461	215,891,149
2012	2,205,461	628,596.1	85,262,681	124,463,856	212,560,594
2013	2,301,120	968,396.3	81,720,394	123,500,716	208,490,627
2014	2,346,487	831,745.5	75,863,569	119,376,496	198,418,298
2015	2,636,223	696,087.5	71,206,077	116,374,903	190,913,291
2016	2,225,168	470,308.5	71,592,398	118,908,849	193,196,723

Year	Cbt	Hbt	Priv	Shore	Total
2017	2,271,912	596,982.2	72,084,905	123,183,464	198,137,264
2018	2,456,081	535,555.0	67,082,456	114,745,465	184,819,557
2019	2,854,505	598,715.1	64,487,552	111,463,055	179,403,827
2020	2,339,838	496,200.3	70,831,612	118,750,583	192,418,234
2021	3,046,907	495,785.3	66,786,218	118,711,400	189,040,311
2022	2,751,600	443,293.1	72,549,856	116,763,278	192,508,027
2023	3,024,683	488,298.9	71,602,386	122,997,491	198,112,858
2024	2,369,441	411,070.5	72,355,663	111,516,582	186,652,756

Table 11. Catch estimates for the Requiem Shark **Genus** (UNID CATCH GENUS) and estimates of the relative contribution of Sandbar Shark to this catch (Ratio). Ratios are the average catch of Sandbar Shark relative to all Requiem Shark Family species (Sandbar Shark, Bignose Shark, Blacknose Shark, Blacktip Shark, Bull Shark, Dusky Shark, Finetooth Shark, Night Shark, Ocean Whitetip Shark, Reef Shark, Silky Shark, Smalltail Shark, Spinner Shark) and are provided for individual years (1981-2024) and across all years (Grand Total).

Year	UNID CATCH GENUS		Ratio	
	AB1	B2	%AB1	%B2
1981	0	0	0.46	0.22
1982	2,923	16,345	0.18	0.62
1983	1,216	157	0.75	0.68
1984	16,972	39,361	0.66	0.58
1985	1,158	25,724	0.22	0.44
1986	43,759	31,459	0.46	0.53
1987	29,530	152,211	0.18	0.54
1988	21,375	27,130	0.22	0.34
1989	8,949	26,843	0.22	0.30
1990	0	0	0.30	0.32
1991	14,505	12,330	0.13	0.42
1992	1,485	14,349	0.33	0.25
1993	596	26,074	0.19	0.43
1994	11,950	90,731	0.12	0.11
1995	7,741	154,071	0.21	0.31

Year	UNID CATCH GENUS		Ratio	
	AB1	B2	%AB1	%B2
1996	16,462	112,678	0.30	0.30
1997	5,499	411,508	0.26	0.37
1998	7,686	212,576	0.25	0.27
1999	14,297	614,367	0.19	0.47
2000	19,391	593,760	0.08	0.23
2001	5,149	683,086	0.23	0.24
2002	11,008	1,097,276	0.08	0.42
2003	24,171	766,887	0.08	0.30
2004	12,792	871,241	0.05	0.09
2005	7,262	2,165,473	0.01	0.20
2006	9,419	795,734	0.01	0.07
2007	12,310	897,836	0.08	0.37
2008	259	744,647	0.12	0.10
2009	3,938	574,581	0.18	0.18
2010	5,273	877,515	0.10	0.25
2011	348	705,234	0.02	0.22
2012	3,045	1,020,268	0.01	0.09
2013	5,476	882,255	0.02	0.08

Year	UNID CATCH GENUS		Ratio	
	AB1	B2	%AB1	%B2
2014	3,233	1,506,600	0.02	0.20
2015	0	837,780	0.01	0.14
2016	8,765	821,322	0.01	0.35
2017	4,161	248,233	0.06	0.23
2018	0	288,399	0.004	0.21
2019	9,169	219,678	0.06	0.24
2020	0	419,765	0.01	0.25
2021	6,877	434,107	0.004	0.15
2022	15,088	333,302	0.01	0.33
2023	0	450,113	0.04	0.37
2024	0	449,316	0.15	0.54
Grand Total	373,234	20,652,322	0.27	0.27

Table 12. Catch estimates for the Requiem Shark **Family** (UNID CATCH FAMILY) and estimates of the relative contribution of Sandbar Shark to this catch (Ratio). Ratios are the average catch of Sandbar Shark relative to all Requiem Shark Family species (Sandbar Shark, Atlantic Sharpnose Shark, Bignose Shark, Blacknose Shark, Blacktip Shark, Blue Shark, Bull Shark, Dusky Shark, Finetooth Shark, Lemon Shark, Night Shark, Ocean Whitetip Shark, Reef Shark, Silky Shark, Smalltail Shark, Spinner Shark, Tiger Shark) and are provided for individual years (1981-2024) and across all years (Grand Total).

Year	UNID CATCH FAMILY		Ratio	
	AB1	B2	%AB1	%B2
1981	6,172	78,835	0.40	0.22
1982	154,182	137,119	0.11	0.54
1983	42,451	104,713	0.54	0.59
1984	27,490	106,908	0.45	0.42
1985	8,002	31,628	0.19	0.40
1986	7,917	10,294	0.40	0.44
1987	35,102	301,248	0.13	0.42
1988	46,129	118,844	0.17	0.16
1989	70,620	58,117	0.16	0.16
1990	20,227	59,533	0.27	0.25
1991	10,874	24,168	0.10	0.36
1992	27,854	148,694	0.24	0.21
1993	69,449	266,959	0.14	0.27
1994	39,917	404,054	0.07	0.09
1995	63,082	434,322	0.10	0.10

Year	UNID CATCH FAMILY		Ratio	
	AB1	B2	%AB1	%B2
1996	11,017	736,539	0.23	0.15
1997	24,636	496,085	0.18	0.26
1998	25,760	489,551	0.20	0.22
1999	12,047	933,237	0.11	0.20
2000	14,846	1,004,431	0.04	0.13
2001	44,736	1,064,489	0.11	0.10
2002	5,720	1,379,558	0.03	0.26
2003	18,322	1,922,782	0.03	0.17
2004	11,334	2,110,820	0.03	0.04
2005	27,918	2,140,951	0.01	0.12
2006	25,126	3,236,357	0.01	0.02
2007	21,890	3,579,418	0.03	0.15
2008	58,729	2,960,449	0.04	0.06
2009	94,042	2,558,796	0.10	0.13
2010	241,837	3,084,502	0.04	0.08
2011	81,647	3,900,663	0.01	0.11
2012	65,624	4,076,189	0.01	0.05
2013	35,934	5,428,109	0.01	0.05

Year	UNID CATCH FAMILY		Ratio	
	AB1	B2	%AB1	%B2
2014	21,961	3,465,889	0.006	0.10
2015	10,425	5,355,088	0.003	0.08
2016	7,398	3,716,555	0.001	0.09
2017	9,930	1,531,220	0.02	0.13
2018	8,667	1,967,250	0.002	0.08
2019	86,666	1,513,445	0.011	0.16
2020	38,263	2,445,696	0.004	0.17
2021	380	1,464,877	0.002	0.06
2022	17,006	1,750,040	0.004	0.26
2023	4,012	1,167,931	0.02	0.24
2024	790	1,316,097	0.04	0.34
Grand Total	1,656,129	69,082,449	0.17	0.15

Table 13. Total MRIP recreational catch by wave for 1982–1984, summed across Texas, Louisiana, Mississippi, Alabama, West Florida, and East Florida. These states represent the only states for which MRIP 1981 Wave 1 imputations are performed in other assessments. Values are shown for AB1, B2, and whole weight, along with the proportion of total catch occurring in each wave for each metric.

Wave	AB1	B2	Whole Weight	Proportion of AB1	Proportion of B2	Proportion of Whole Weight
1	189	0	2,141	0.0008	0.00	0.0009
2	22,452	57,288	108,939	0.10	0.33	0.05
3	167,551	66,683	1,916,534	0.74	0.38	0.82
4	6,365	16,904	82,396	0.03	0.10	0.04
5	11,527	25,621	72,035	0.05	0.15	0.03
6	18,220	8,068	157,254	0.08	0.05	0.07

Table 14. Summary of Wave 1 catch ratios for MRIP data (1982-1984) for Texas, Louisiana, Mississippi, Alabama, West Florida, and East Florida. These states represent the only states for which MRIP 1981 Wave 1 imputations are performed in other assessments. Ratios are calculated as Wave 1 catch divided by the combined catch from Waves 2-6 for each year, fishing mode, and area. Values are shown for AB1, B2, and whole weight.

Year	Mode	Area	Wave 1 AB1	Waves 2-6 AB1	AB1 Ratio	Wave 1 B2	Waves 2-6 B2	B2 Ratio	Wave 1 Whole Weight	Waves 2-6 Whole Weight	Whole Weight Ratio
1982	Cbt	Ocean>10mi	0	0	0	0	557	0	0	0	0
1982	Cbt	Ocean>3mi	0	498	0	0	413	0	0	7,815	0
1982	Hbt	Ocean>10mi	0	0	0	0	348	0	0	0	0
1982	Hbt	Ocean>3mi	0	0	0	0	0	0	0	0	0
1982	Priv	Inshore	0	1,202	0	0	0	0	0	15,207	0
1982	Priv	Ocean<=10mi	0	9,923	0	0	7,250	0	0	155,687	0
1982	Priv	Ocean<=3mi	0	1,481	0	0	6,533	0	0	18,740	0
1982	Priv	Ocean>3mi	0	3,948	0	0	7,068	0	0	50,789	0
1982	Shore	Inshore	0	4,264	0	0	0	0	0	53,941	0
1982	Shore	Ocean<=10mi	0	0	0	0	2,836	0	0	0	0
1983	Cbt	Ocean<=10mi	0	72	0	0	0	0	0	754	0
1983	Cbt	Ocean<=3mi	0	886	0	0	0	0	0	4,271	0
1983	Hbt	Ocean<=10mi	0	45	0	0	0	0	0	472	0
1983	Priv	Inshore	0	0	0	0	7,080	0	0	0	0

Year	Mode	Area	Wave 1 AB1	Waves 2-6 AB1	AB1 Ratio	Wave 1 B2	Waves 2-6 B2	B2 Ratio	Wave 1 Whole Weight	Waves 2-6 Whole Weight	Whole Weight Ratio
1983	Priv	Ocean<=3mi	0	12,994	0	0	2,067	0	0	110,772	0
1983	Priv	Ocean>10mi	0	23,018	0	0	30,385	0	0	241,348	0
1983	Priv	Ocean>3mi	0	4,928	0	0	17,360	0	0	23,765	0
1983	Shore	Inshore	0	0	0	0	7,882	0	0	0	0
1983	Shore	Ocean<=10mi	0	0	0	0	8,134	0	0	0	0
1983	Shore	Ocean<=3mi	0	28,968	0	0	60,946	0	0	139,705	0
1984	Priv	Ocean>3mi	0	0	0	0	15,706	0	0	0	0
1984	Shore	Ocean<=3mi	0	133,885	0	0	0.0000	0	0	1,513,892	0
1984	Cbt	Ocean<=3mi	189	0	0	0	0.0000	0	2,141	0	0

Table 15. Total recreational landings (AB1) by Gulf state for 1983–1985, with each state's proportional contribution to the regional total.

State	AB1	Proportion of Total Landings
AL	0	0.00
FLW	35,521	0.70
LA	6,201	0.12
MS	8,496	0.17
TX	210	0.004

Table 16. Total recreational landings (AB1) and live discards (B2) by Gulf state, aggregated across private and charterboat modes. Proportions represent each state's contribution to the regional totals for landings and discards. As it stands, this table represents an incomplete time series, as live discard estimates from LA Creel (2014+) are not available for Sandbar Shark.

State	AB1	B2	Proportion of AB1	Proportion of B2
AL	10,052	84,079	0.04	0.25
FLW	167,789	160,220	0.73	0.49
LA	27,190	64,992	0.12	0.20
MS	22,821	20,433	0.10	0.06
TX	2,260	0	0.01	0.00

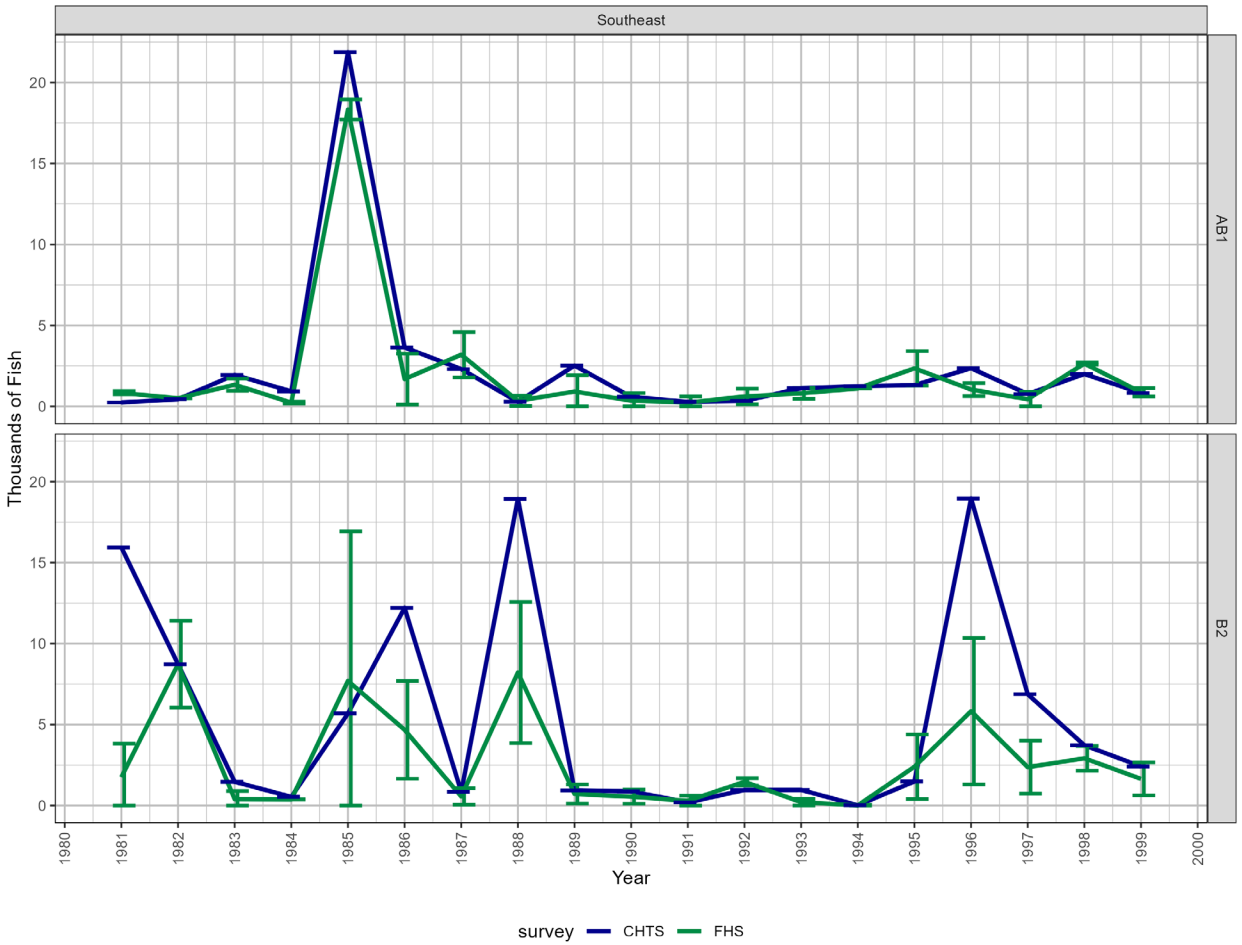

Figure 1. Comparison of MRIP charterboat landings (AB1) and discard (B2) estimates (with standard error intervals shown) for Sandbar Shark from the Coastal Household Telephone Survey (CHTS) and For-Hire Survey (FHS) from the Atlantic and Gulf of America between 1981 and 2003. The charterboat calibration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

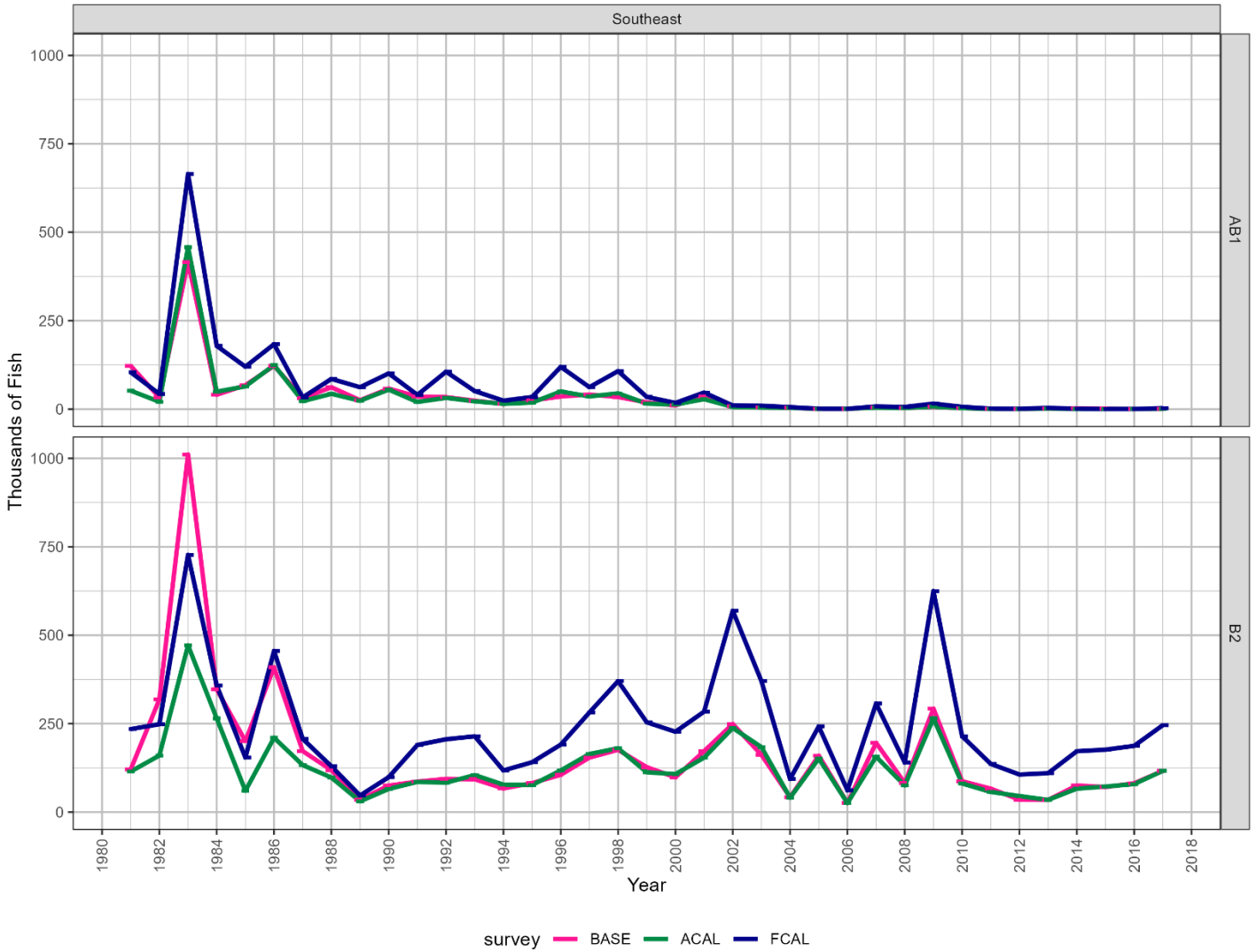

Figure 2. MRIP Base (BASE), APAIS Calibrated (ACAL), and Fully Calibrated APAIS and FES (FCAL) estimates for Sandbar Shark in the Atlantic and Gulf of America between 1981 and 2017.

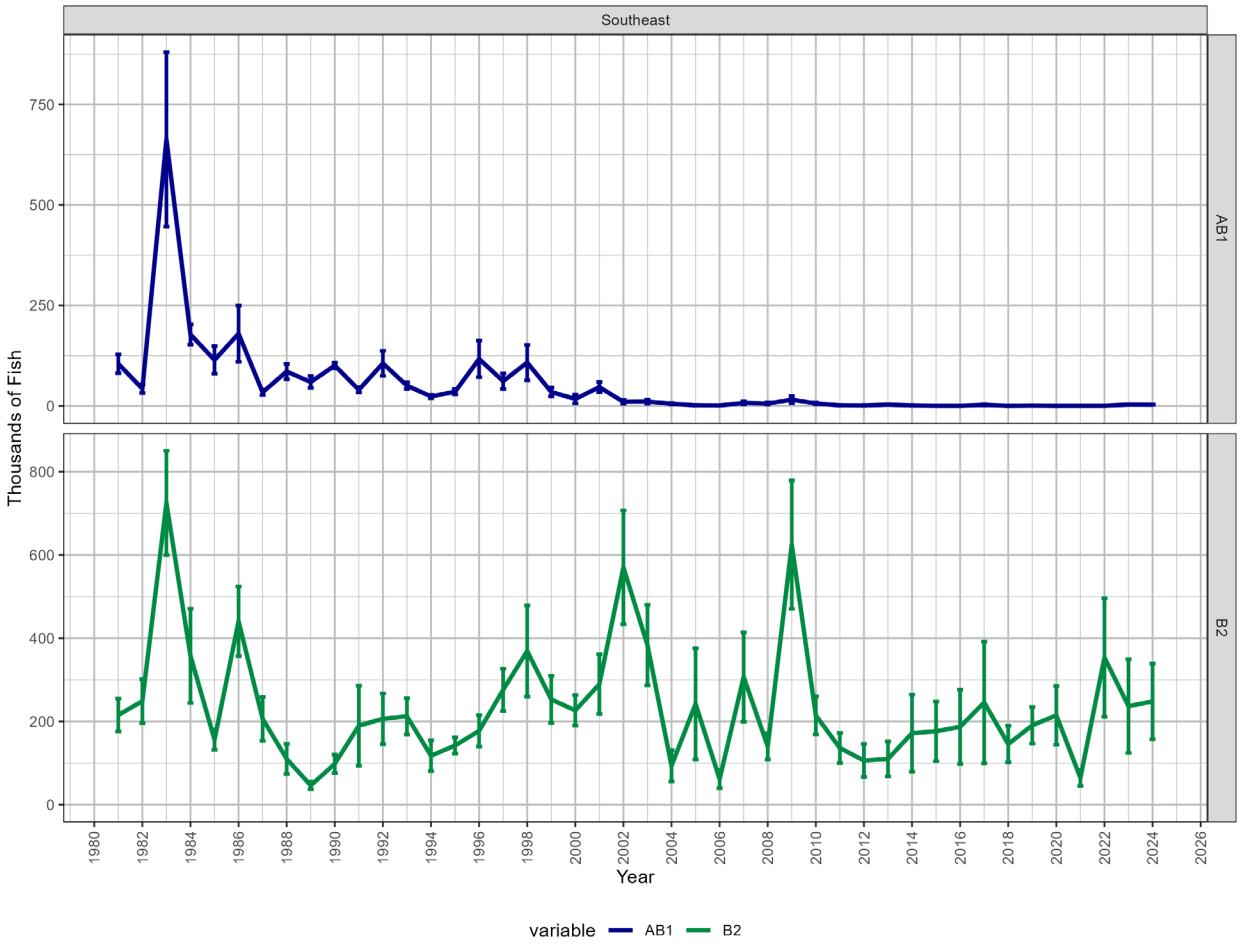

Figure 3. Annual landings (AB1) and discard (B2) estimates with standard error intervals, in thousands of fish, for Sandbar Shark from the Atlantic and Gulf of America between 1981 and 2024.

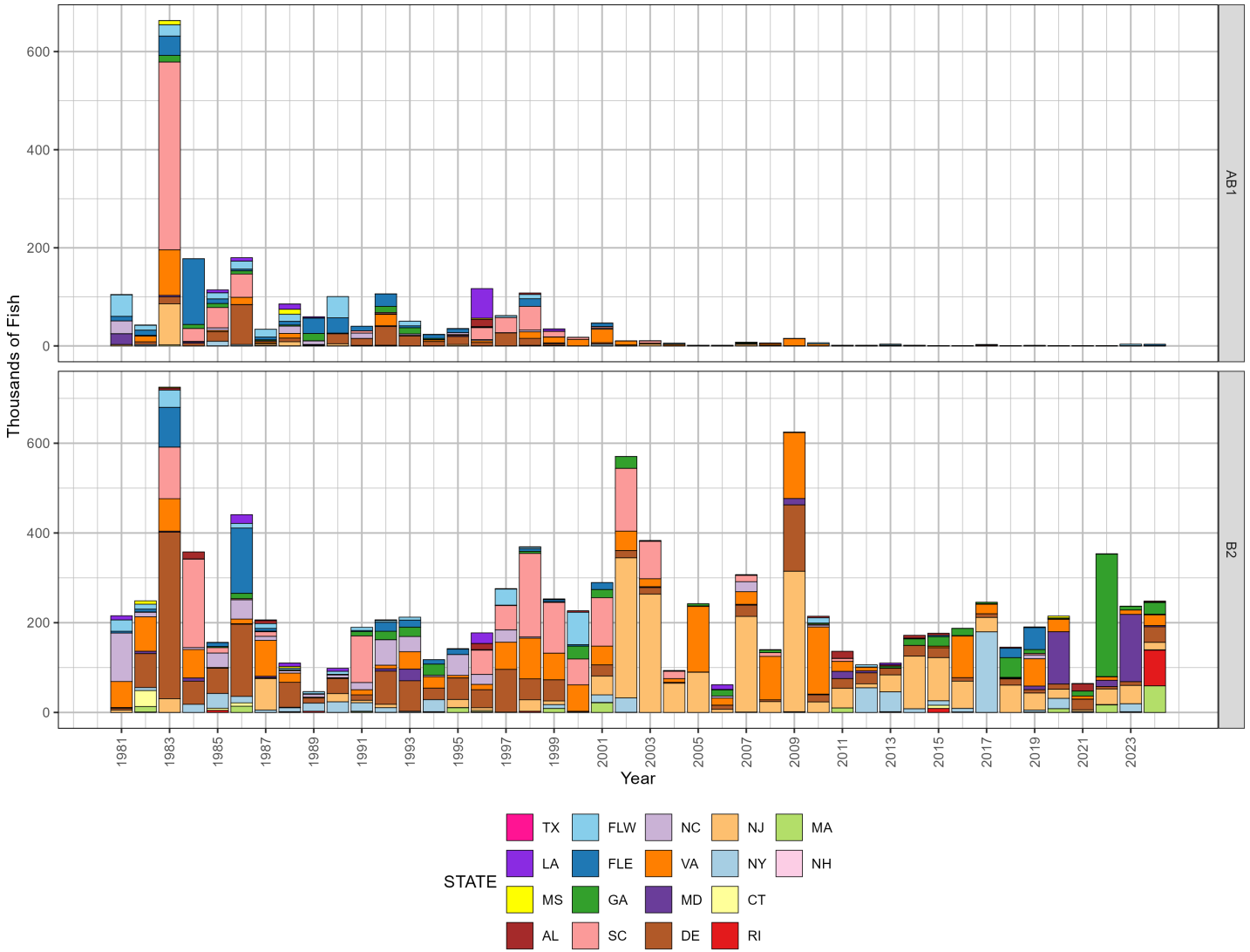

Figure 4a. Annual Sandbar Shark landings (AB1) and discards (B2), in thousands of fish, by state from 1981 to 2024 from all data sources.

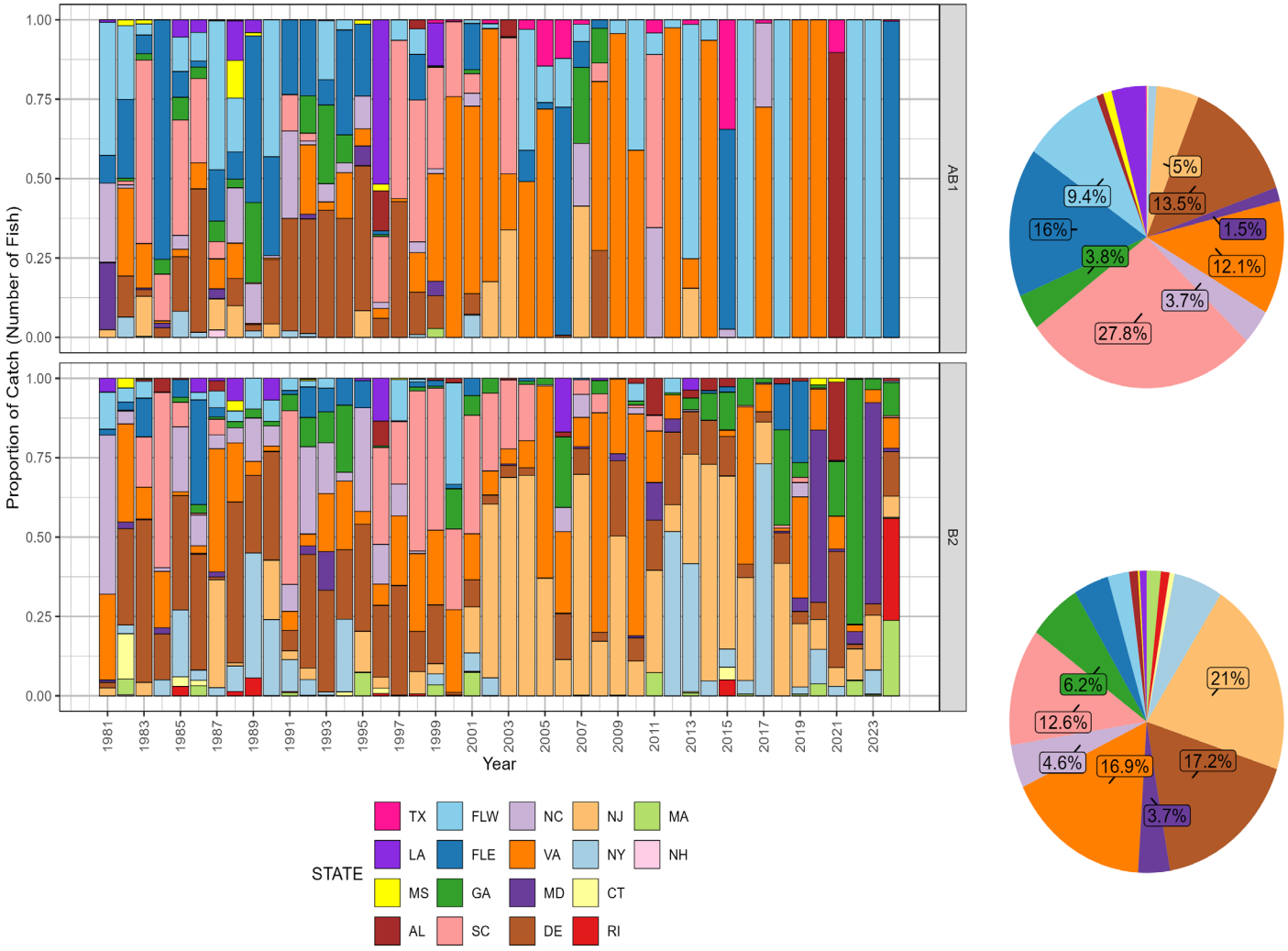

Figure 4b. Proportion of Sandbar Shark landings (AB1) and discards (B2), in numbers of fish, from each state by year (bar graph) and overall (pie chart) between 1981 and 2024 from all data sources.

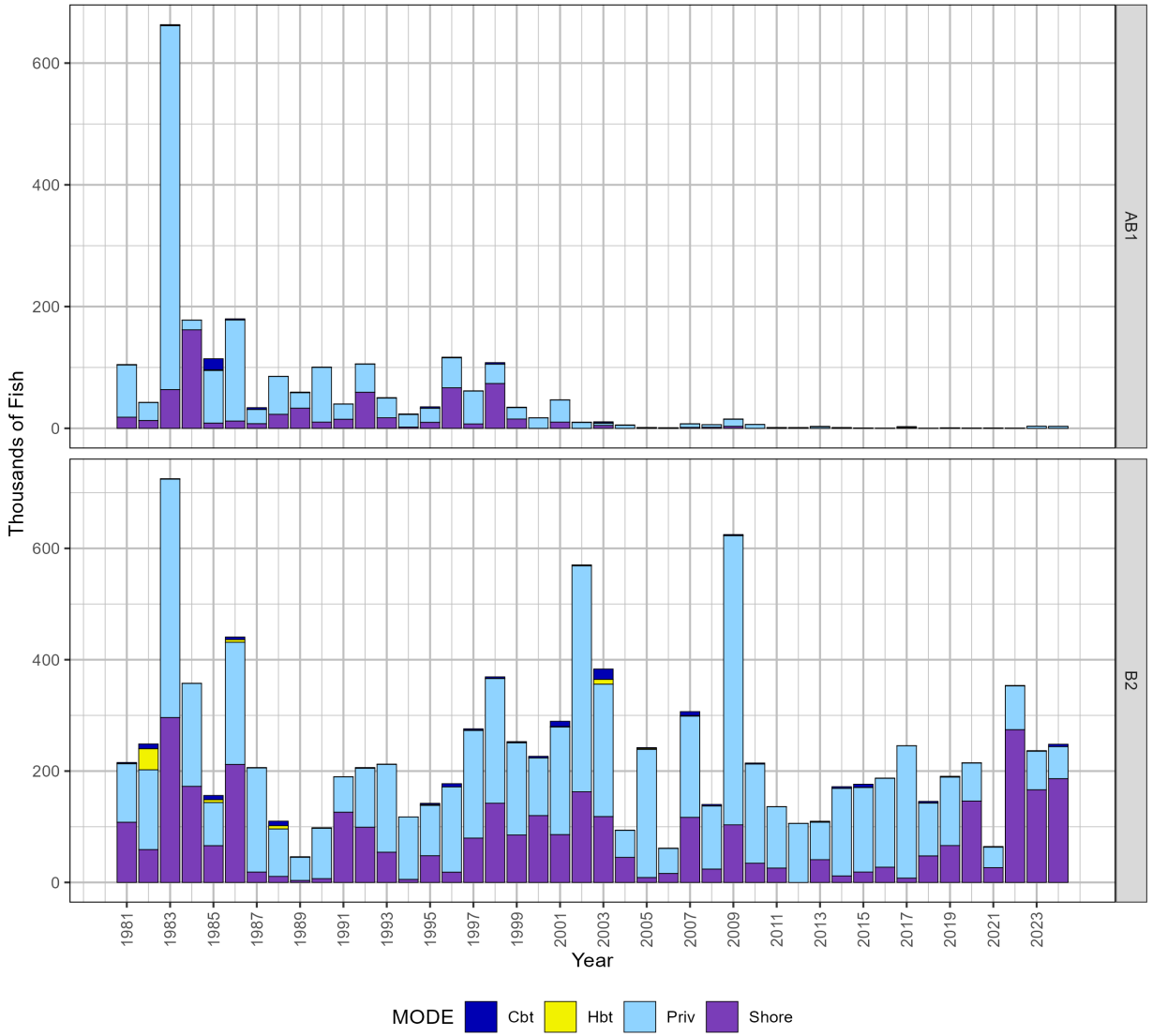

Figure 5a. Annual Sandbar Shark landings (AB1) and discards (B2), in thousands of fish, by mode from 1981 to 2024 from all data sources for the Atlantic and Gulf of America.

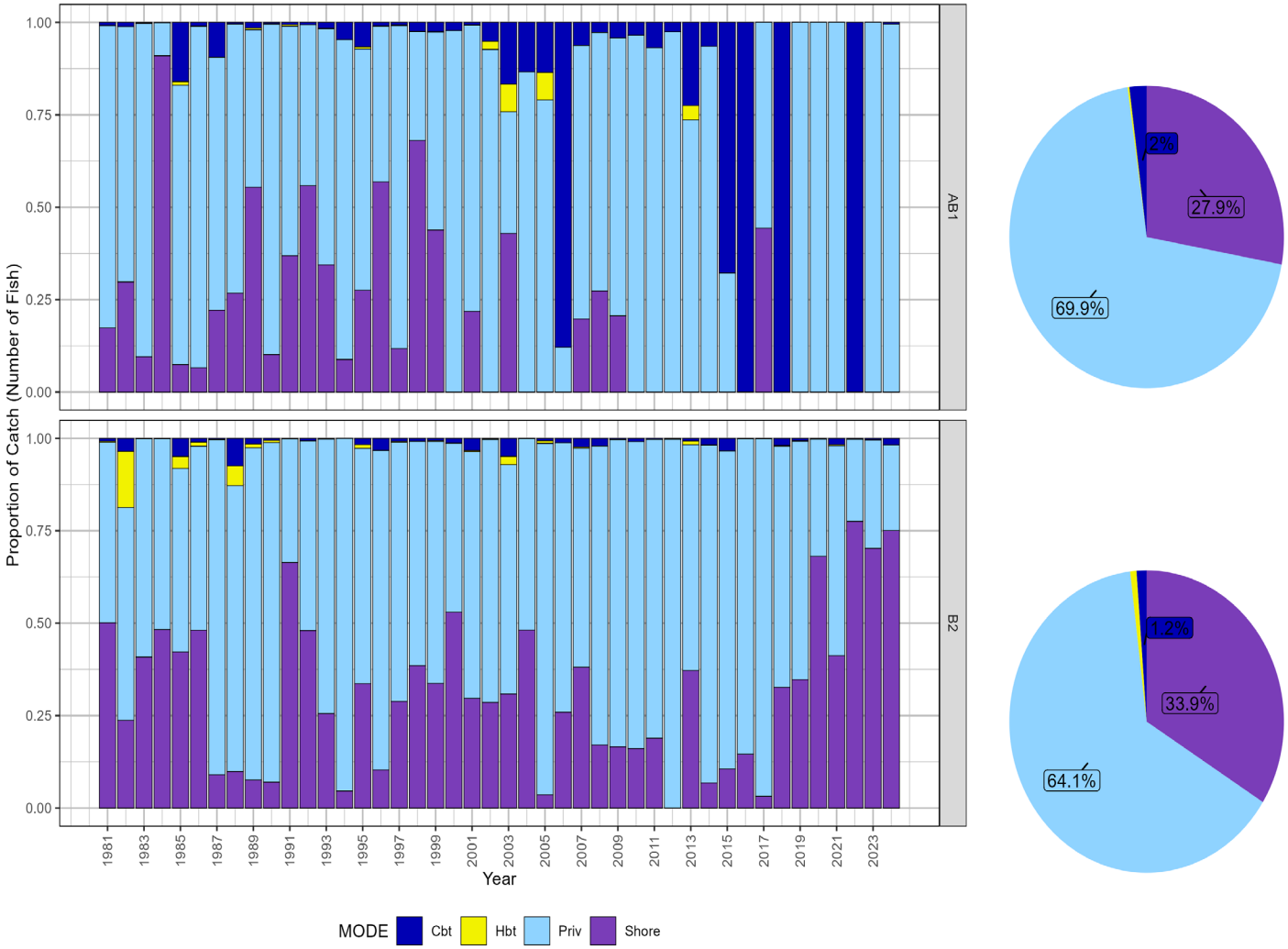

Figure 5b. Proportion of Sandbar Shark landings (AB1) and discards (B2), in numbers of fish, from each mode by year (bar graph) and overall (pie chart) between 1981 and 2024 from all data sources for the Atlantic and Gulf of America.

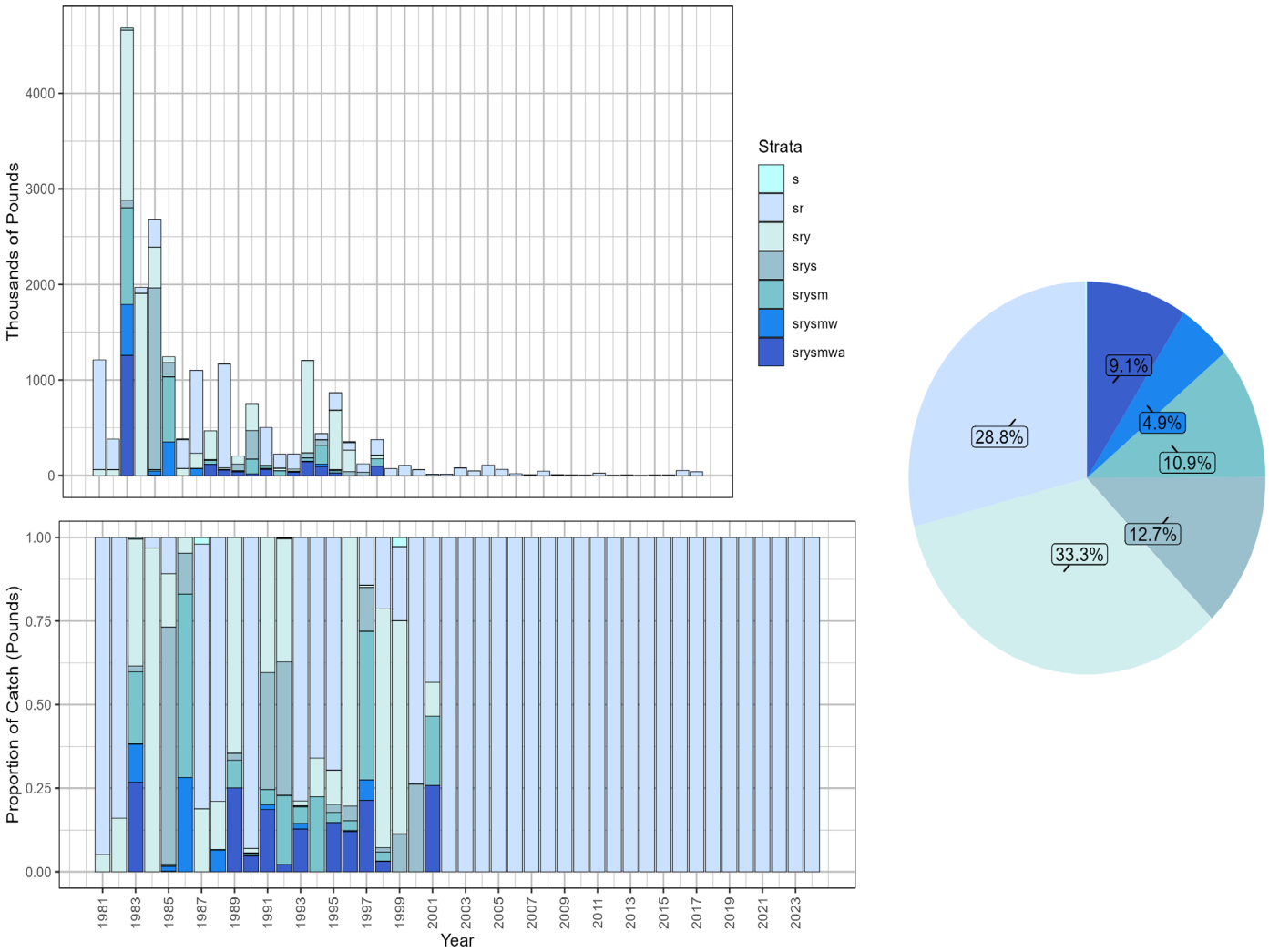

Figure 6. Annual landings estimates of Sandbar Shark in thousands of pounds whole weight by hierarchy level, defined by species, region, year, state, mode, wave, and area. Landings are grouped by the strata at which average weights were estimated. Landings are provided (A) in absolute pounds and (B) as a percentage of total landings-in-weight, summarized by year (stacked bar graph) and across all years (pie chart), for 1981 to 2024.

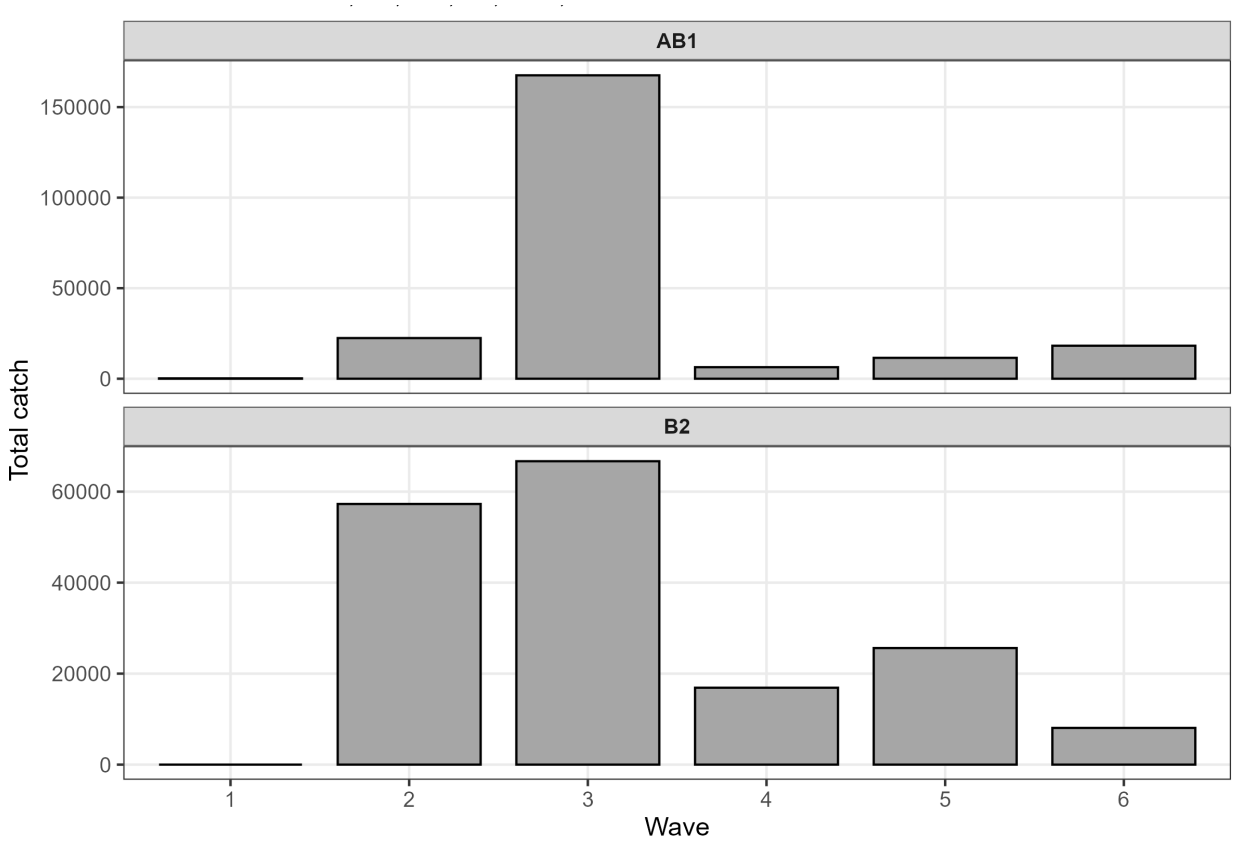

Figure 7. Total MRIP recreational catch for Sandbar Shark by wave for 1982–1984, summed across Texas, Louisiana, Mississippi, Alabama, West Florida, and East Florida. These states represent the only states for which MRIP 1981 Wave 1 imputations are performed in other assessments.

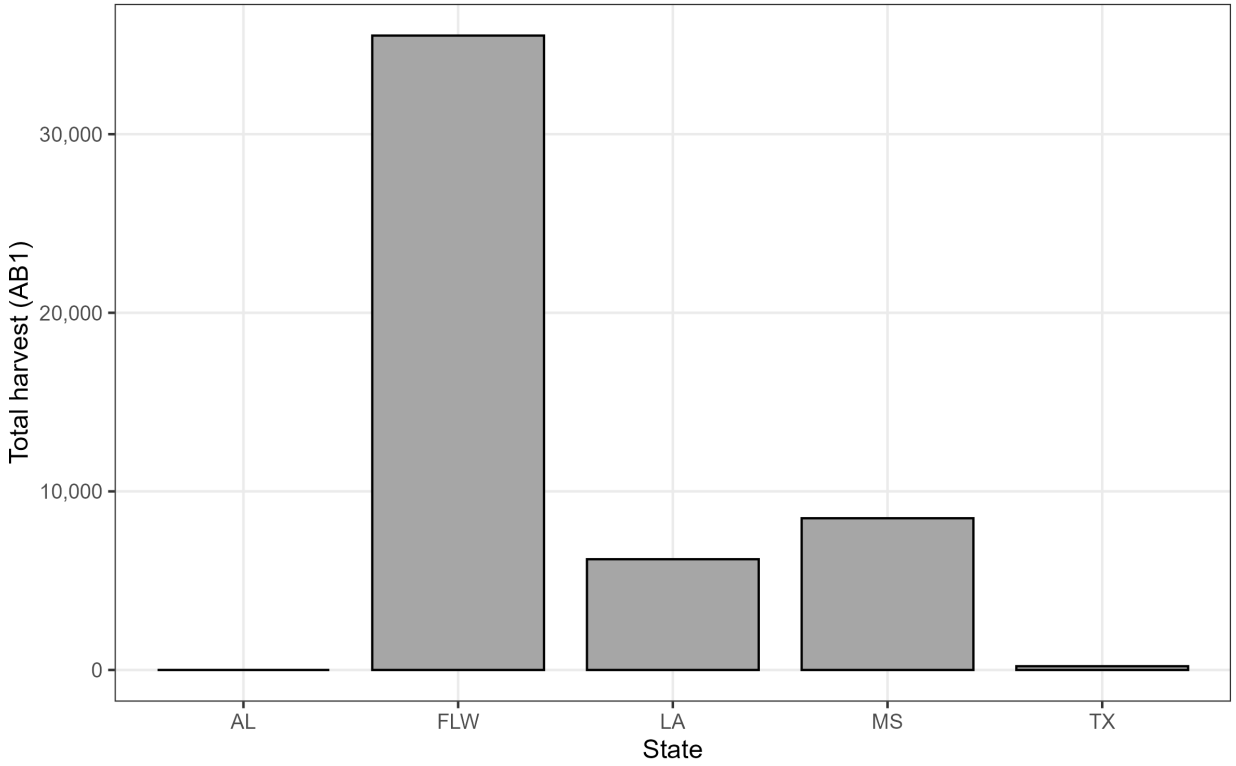

Figure 8.1. Total recreational landings (AB1) of Sandbar Shark by Gulf state for 1983–1985.

Figure 8.2. Annual recreational landings (AB1) of Sandbar Shark in Texas across the available time series. Without imputation, 1983 represents a partial year, as standard TPWD sampling did not begin until May 1983.

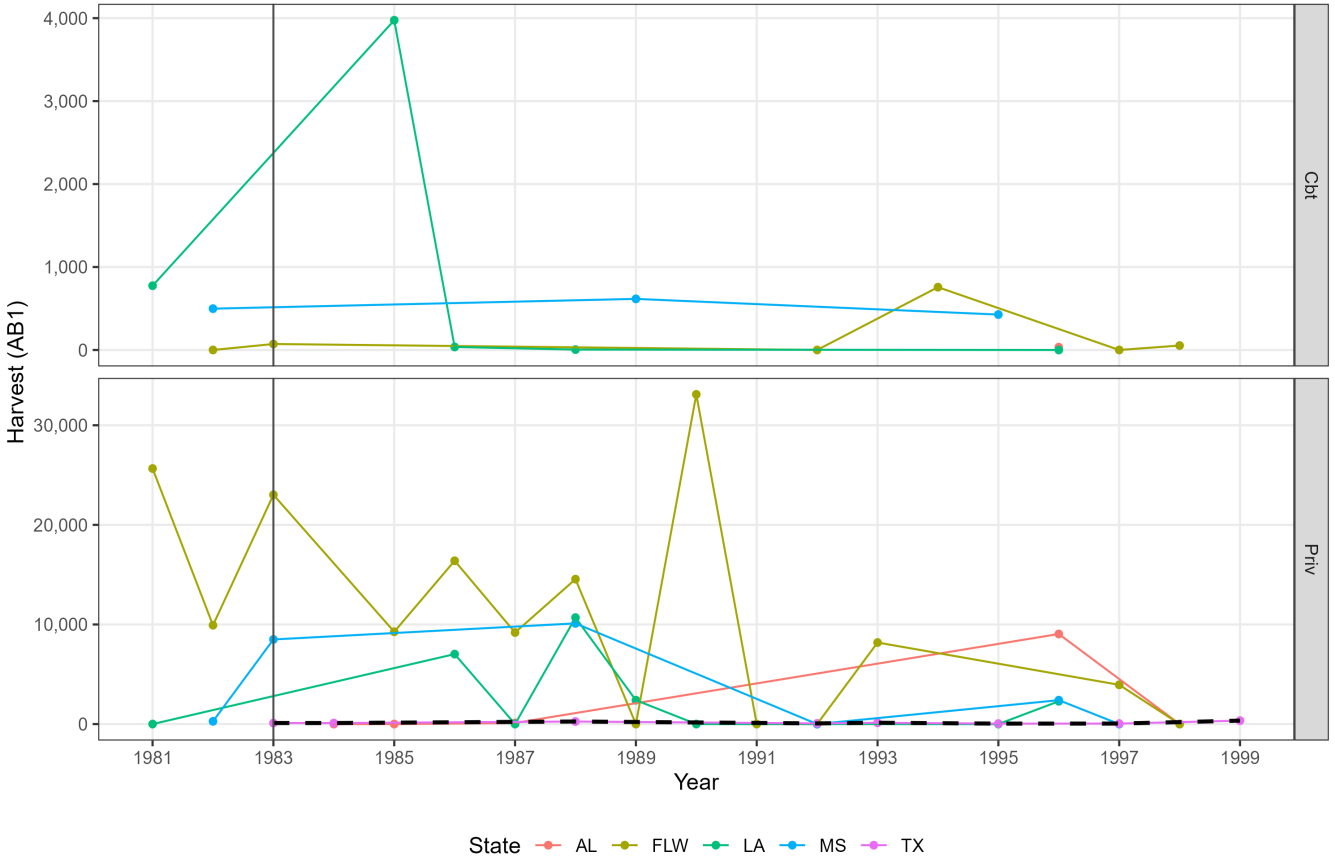

Figure 8.3. Annual recreational landings (AB1) of Sandbar Shark by Gulf state for private and charterboat modes from 1981 to 1999. Each line represents a state-specific time series, with Texas highlighted as a dashed black line. The vertical line at 1983 denotes the start of the standard TPWD survey.

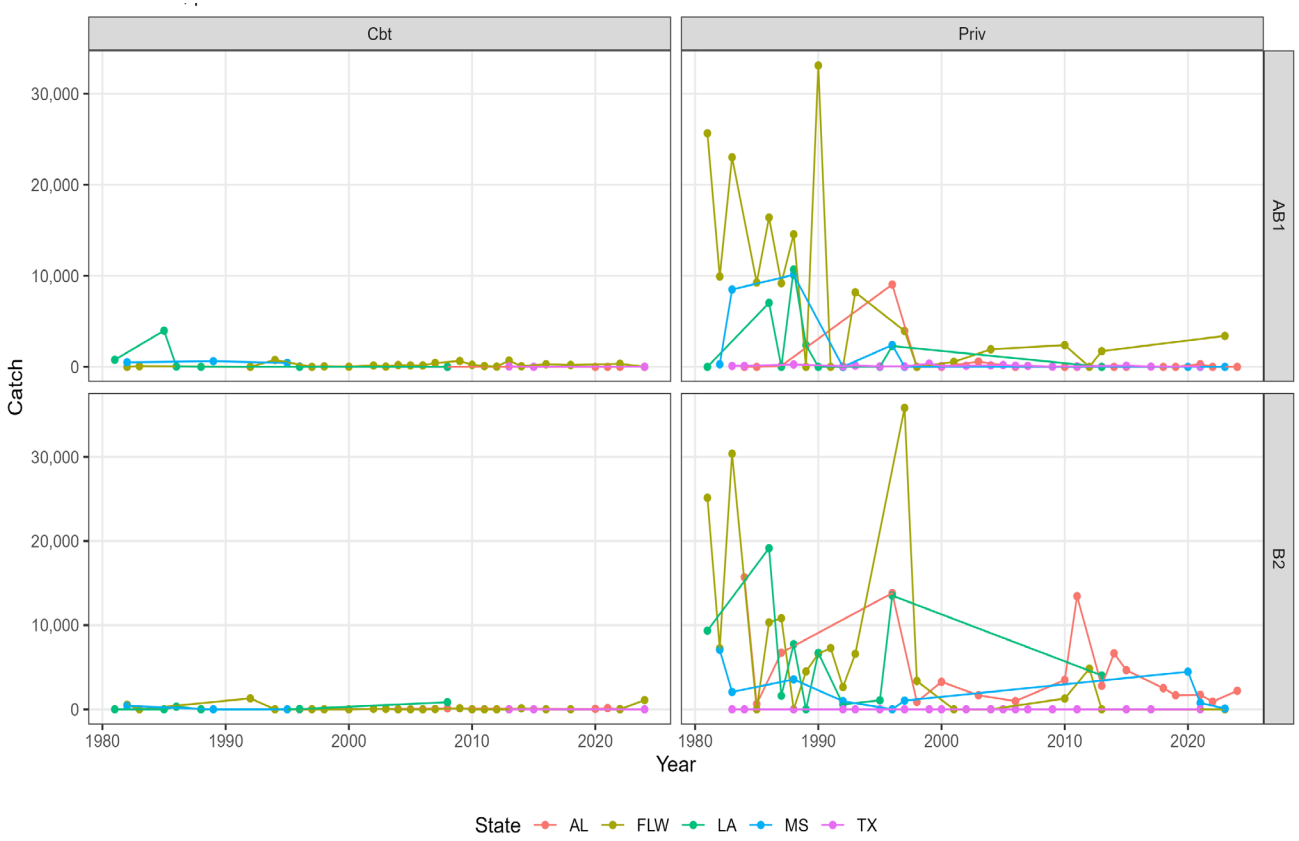

Figure 9.1. Annual recreational catch of Sandbar Shark by Gulf state, shown as landings (AB1) and live discards (B2), for private and charterboat modes. Values are aggregated by state and year to illustrate the relative magnitude and temporal trends in catch across the Gulf region.

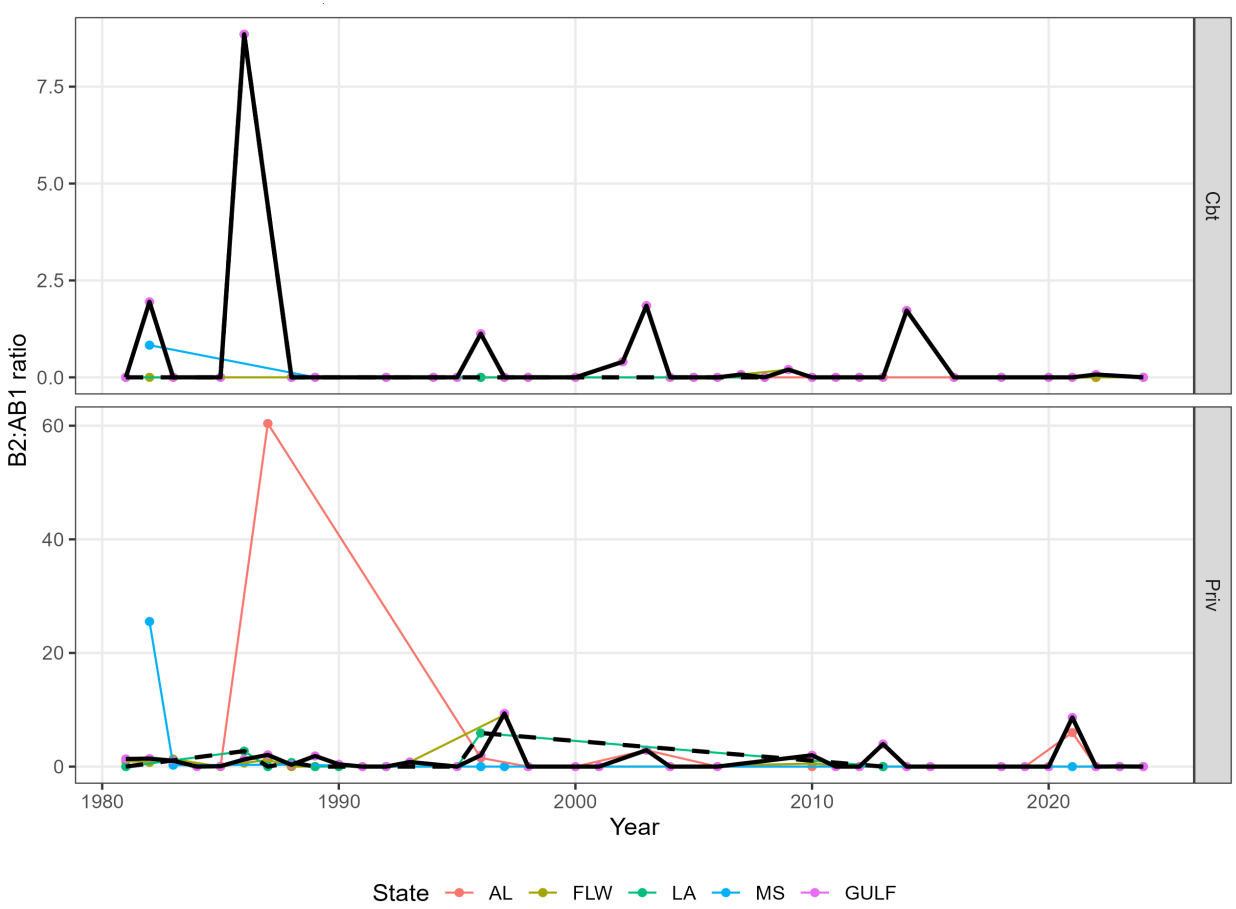

Figure 9.2. Annual B2:AB1 ratios of Sandbar Shark by fishing mode for Alabama, West Florida, Louisiana, Mississippi, and the Gulf-wide aggregate. Ratios represent the proportion of live discards (B2) relative to landings (AB1). Louisiana is shown as a dashed black line and the Gulf-wide aggregate as a solid black line.

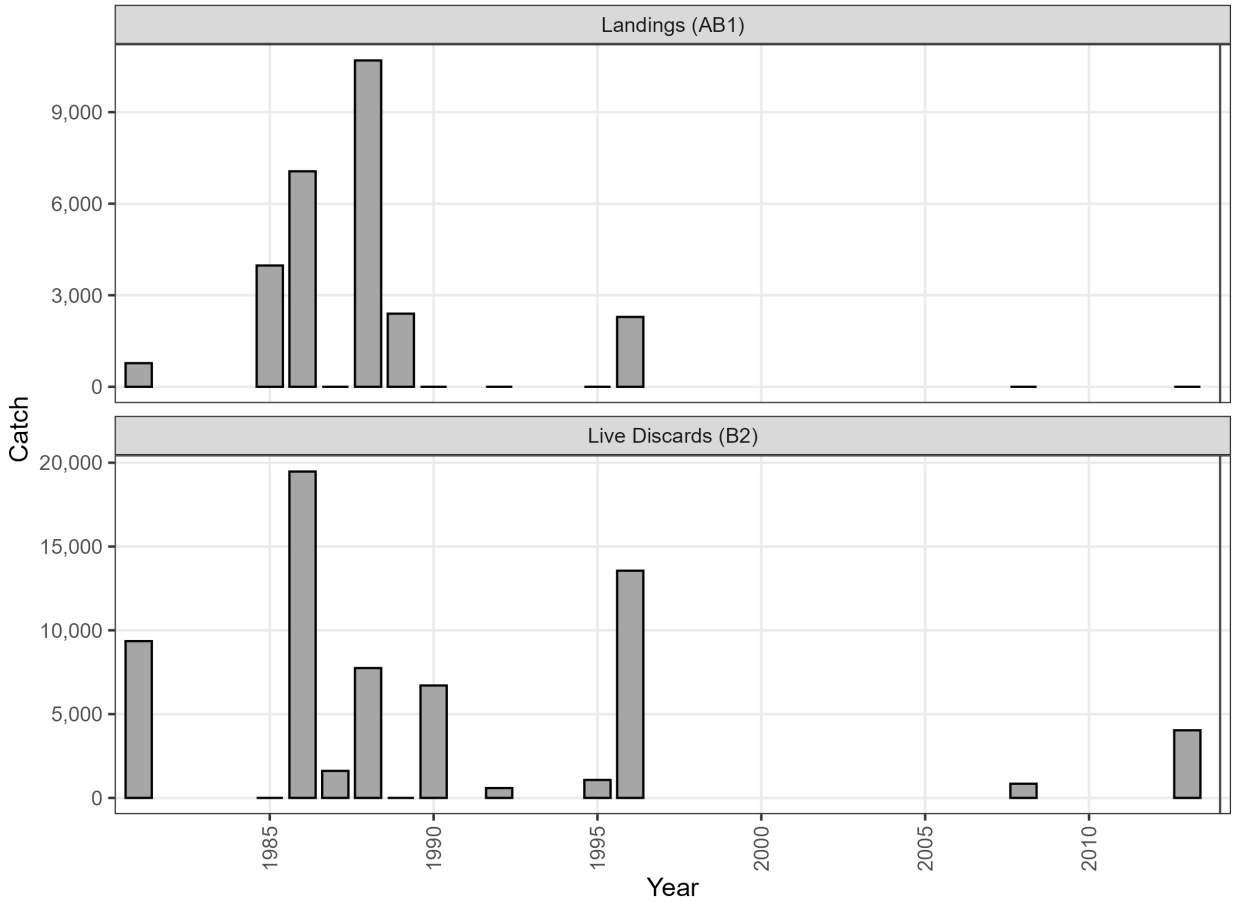

Figure 10. Annual recreational landings (AB1) and live discards (B2) of Sandbar Shark in Louisiana across the available time series for private and charterboat modes. The vertical line at 2014 marks the transition from MRIP to the LA Creel survey.

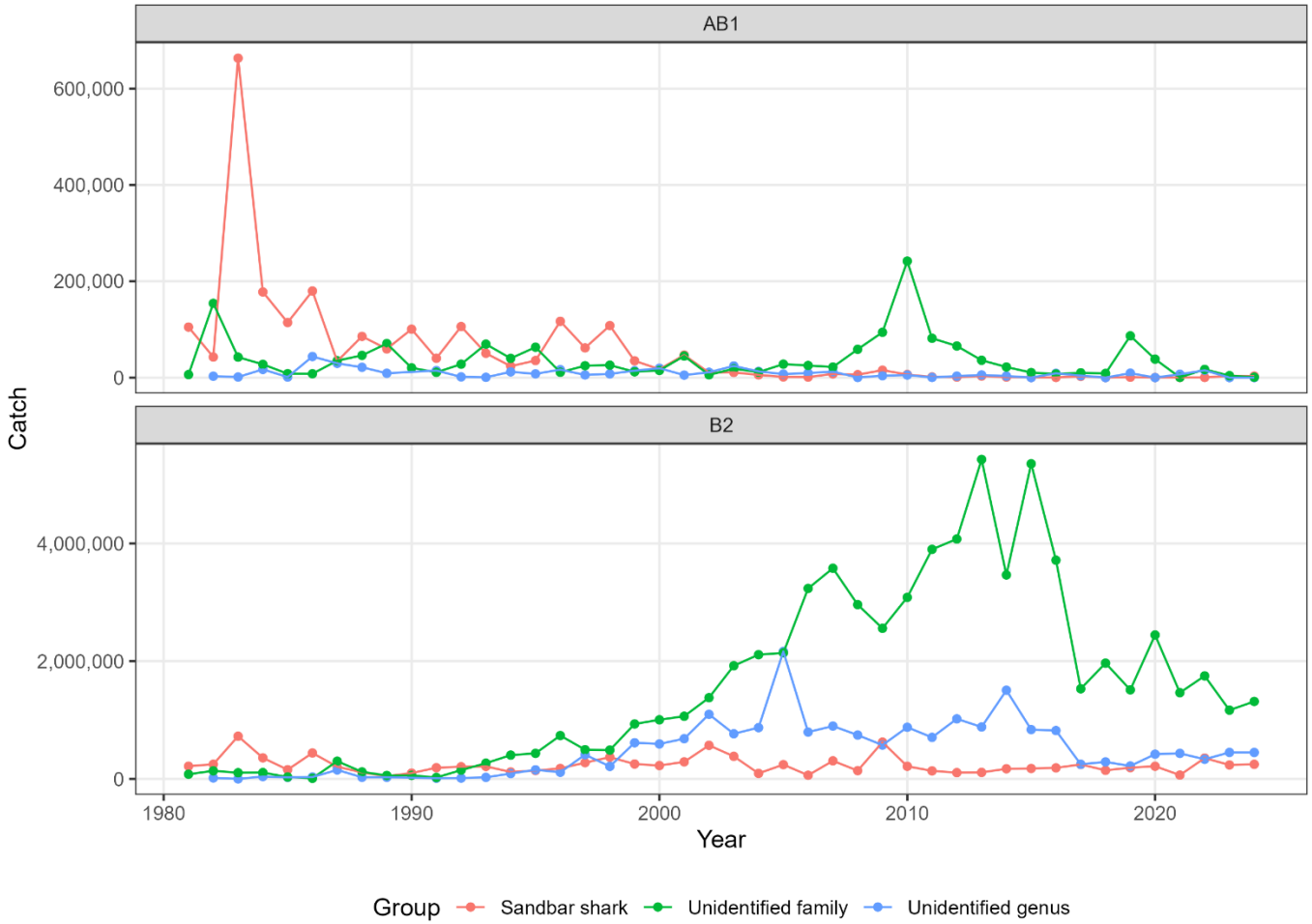

Figure 11.1. Annual catch for Sandbar Shark compared with unidentified requiem genus and unidentified requiem family, shown separately for landings (AB1) and live discards (B2).

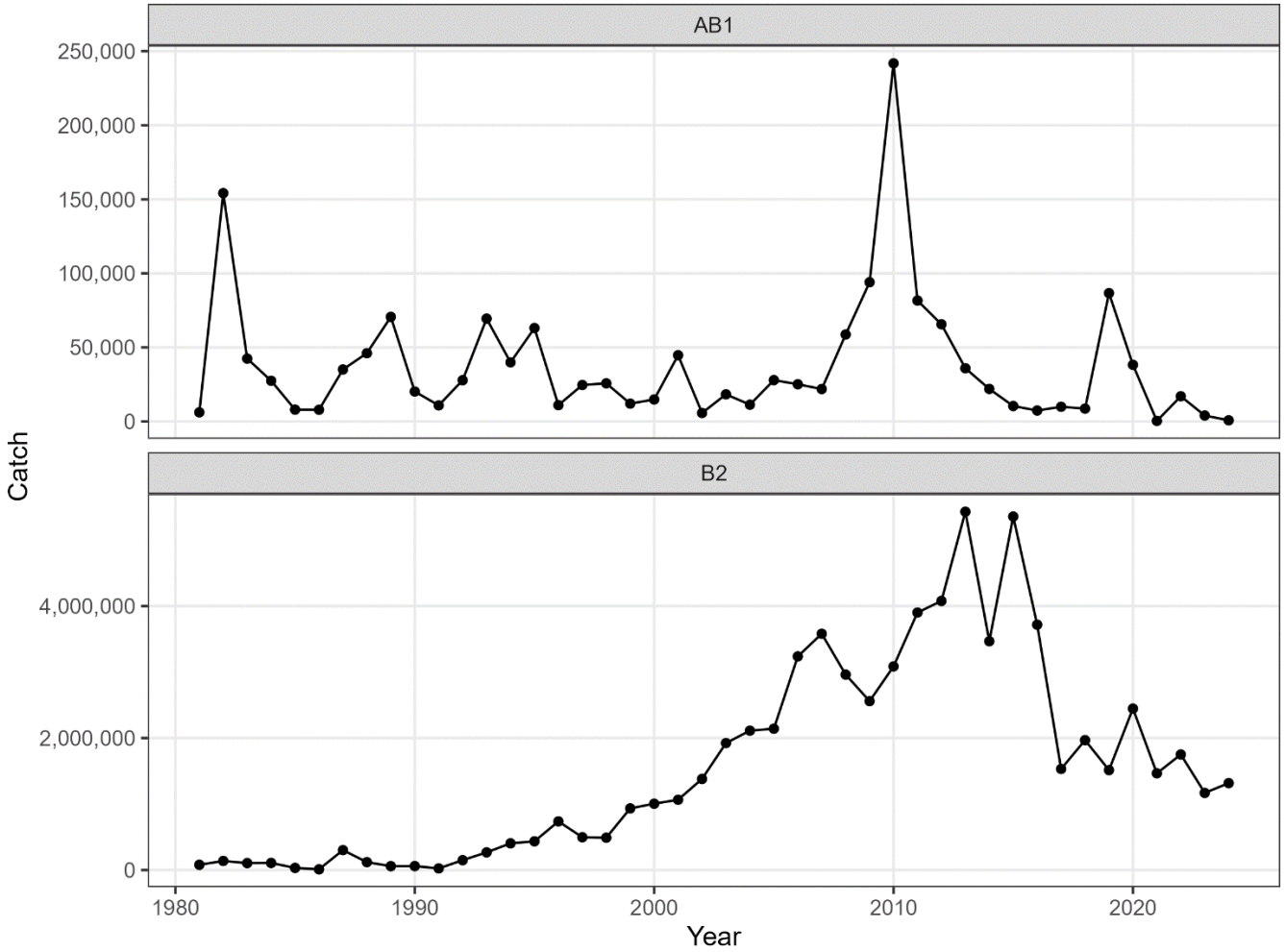

Figure 11.2. Annual unidentified requiem genus family, shown as landings (AB1) and live discards (B2), across the available time series.

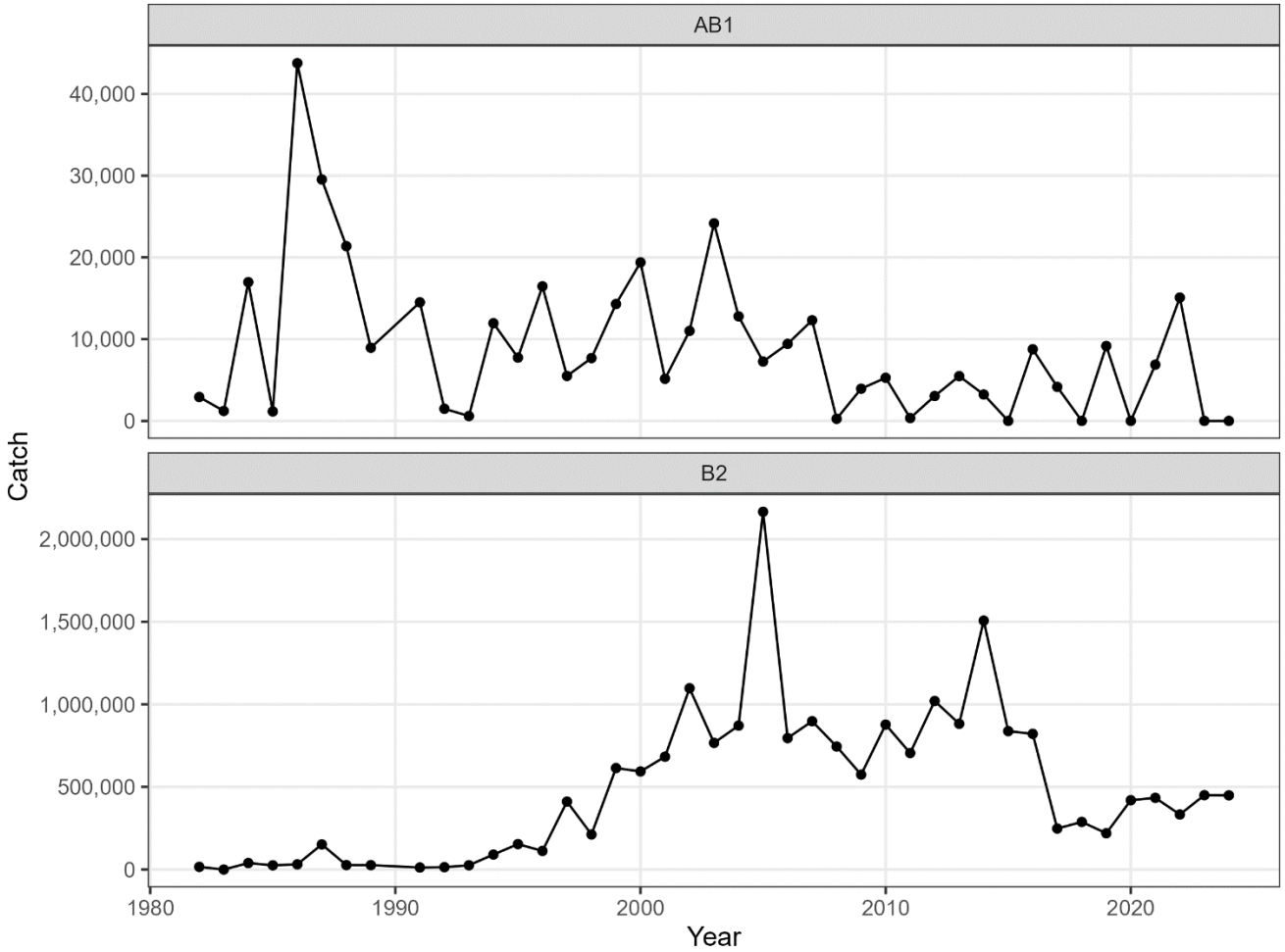

Figure 11.3. Annual unidentified requiem genus catch, shown as landings (AB1) and live discards (B2), across the available time series.

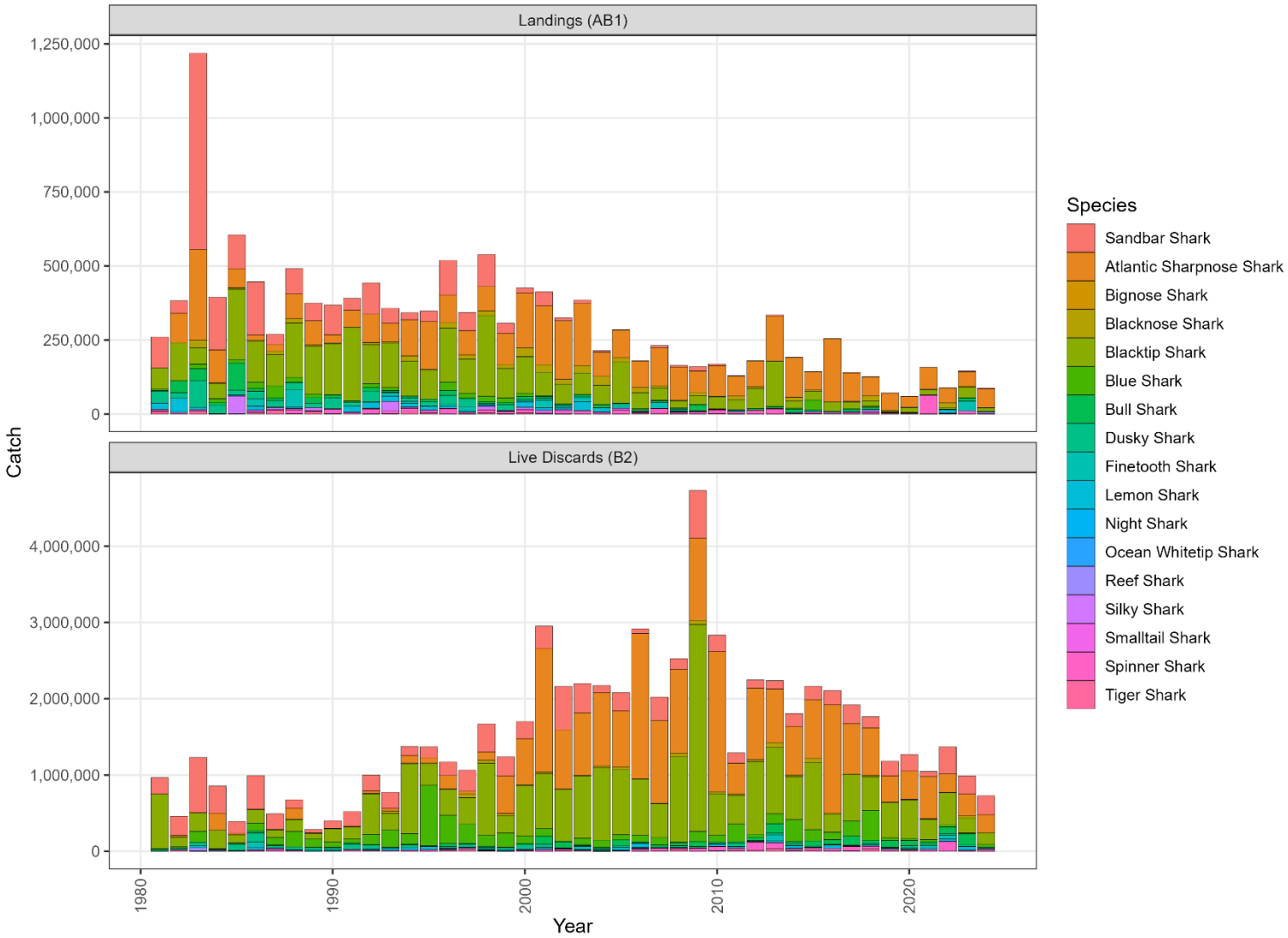

Figure 11.4. Annual recreational catch of requiem shark family species, show as stacked bars by species and separated for landings (AB1) and live discards (B2).

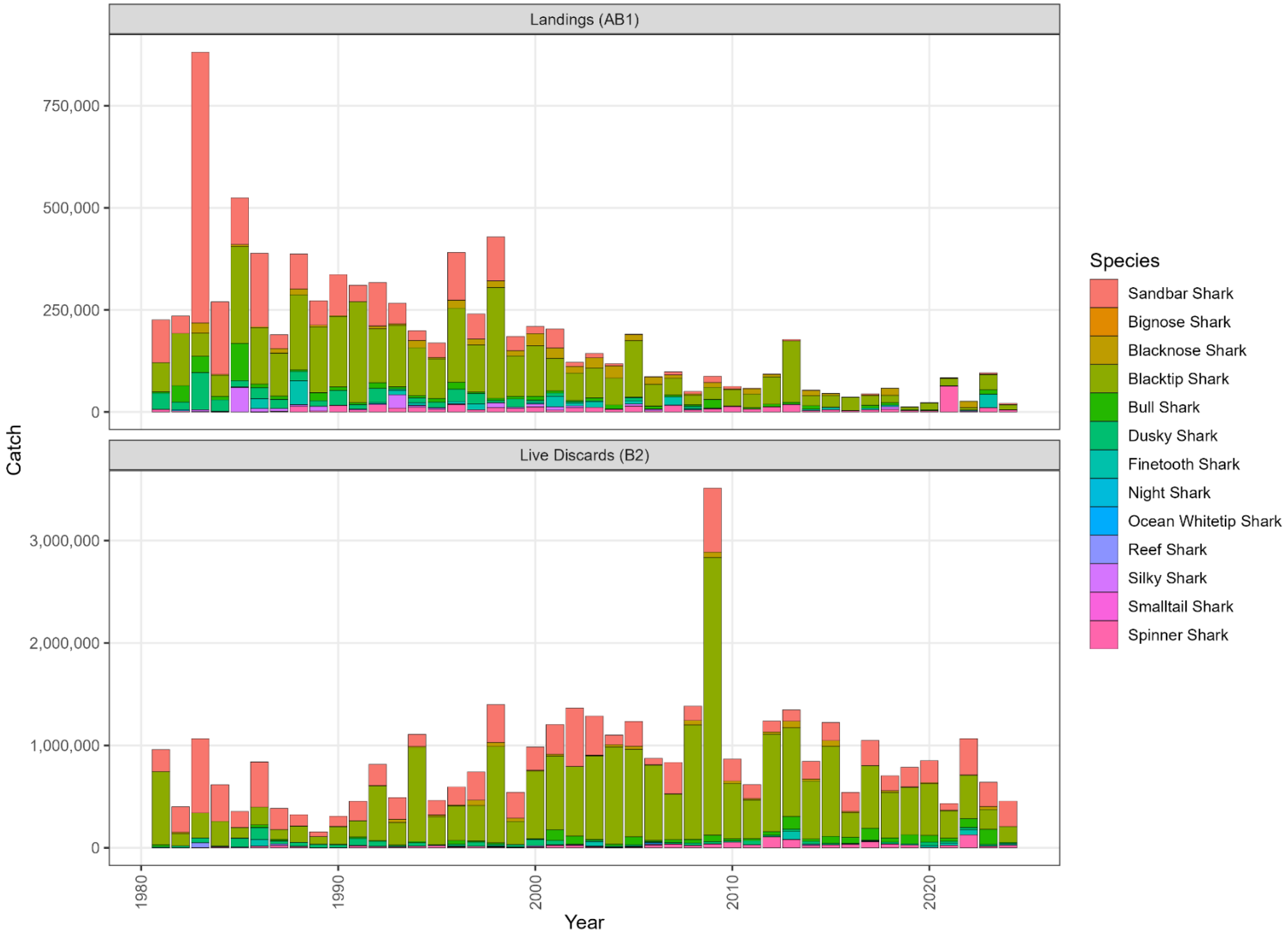

Figure 11.5. Annual recreational catch of requiem shark genus species, show as stacked bars by species and separated for landings (AB1) and live discards (B2).