Chapter V : NC RECREATIONAL SALTWATER ACTIVITY MAIL SURVEYS

TABLE OF CONTENTS

PROGRAM NARRATIVE V-2
SURVEY METHODOLOGY V-2
Participation Estimates V-3
Effort Estimates V-3
Catch Estimates V-3
Precision of Estimates V-3
SURVEY LIMITATIONS V-4
Non-Response Bias V-4
Recall Bias V-4
Rare Events V-4
CONTACTS V-5
INFOGRAPHIC V-6

LIST OF TABLES

Table V.1 Response rates for recreational flounder gigging mail surveys by year. V-7
Table V.2 Recreational flounder gigging effort and catch (in numbers) (estimates based on mail survey). V-8
Table V.3 Response rates for recreational cast net and seine mail surveys by year. V-10
Table V.4 Recreational cast net effort and catch (in numbers) for Atlantic Menhaden (estimates based on mail survey). V-11
Table V.5 Recreational cast net effort and catch (in numbers) for mullet (striped and white) (estimates based on mail survey). V-13
Table V.6 Recreational cast net effort and catch (in numbers) for shrimp (estimates based on mail survey). V-15
Table V.7 Response rates for recreational shellfish and crab harvest by year. V-17
Table V.8 Number and percent of recreational shellfish surveys reporting clam activity by year. V-18
Table V.9 Number and percent of recreational shellfish surveys reporting oyster activity by year. V-19
Table V.10 Number and percent of recreational shellfish surveys reporting crab activity by year. V-20
Table V.11 Recreational shellfish effort and catch (in numbers) for Hard Clam (estimates based on mail survey). V-21
Table V.12 Recreational shellfish effort and catch (in numbers) for Blue Crab (estimates based on mail survey). V-23
Table V.13 Recreational shellfish effort and catch (bushels) for Oysters (estimates based on mail survey). V-25

LIST OF APPENDICIES

Appendix V.1 Primary and secondary waterbodies. V-27
Appendix V.2 Saltwater recreational cast net/seine survey form. V-28
Appendix V.3 Recreational flounder gigging survey form. V-30
Appendix V.4 Recreational crab and shellfish harvesting survey form. V-32

PROGRAM NARRATIVE

Broad-based intercept surveys are commonly developed to produce estimates of recreational finfish harvest by hook and line activity among anglers. However, some saltwater related recreational fishing activities are commonly overlooked in these surveys and include the use of alternative gear(s) such as gigs, cast nets, and seines as well as harvest of shellfish (e.g., crabs, clams, oysters, and scallops). In May of 2010, North Carolina Division of Marine Fishers (NCDMF) began a mail survey for developing catch and effort estimates of recreational gigging activity. In October of 2011, two additional mail surveys were implemented to develop catch and effort estimates for cast net and seine use as well as the harvest of shellfish including: crabs, clams, oysters, and scallops. All three mail surveys are currently being conducted in North Carolina and are similar in design, methodology, and estimate computations. To date, methods to calculate catch and effort estimates have been developed and applied for gigging, cast net and seine use, and shellfish (e.g., Blue Crab and Hard Clam).

SURVEY METHODOLOGY

Coastal Recreational Fishing License (CRFL) holders who purchase their license online, or at NCDMF and North Carolina Wildlife Recourses Commission (NCWRC) offices are asked four questions regarding their participation in the aforementioned saltwater recreational fishing activities. In addition, lifetime license holders who have purchased a hunting and/or inland fishing license prior to the implementation of the CRFL are asked the same questions when updating their contact information.

These questions are:

- Do you flounder gig?
- Do you use cast nets or seines?
- Do you harvest crabs?
- Do you harvest oysters, clams, or scallops?

For each survey activity, a subsample of approximately 1,300 anglers is chosen from among those who answered affirmatively to the respective saltwater activity question and whose license was valid at least one day during the prior two months. Each member of the sample is sent a pre-notice letter at the beginning of the month. The purpose of this letter is to inform license holders that they have been chosen to participate in the survey, the purpose of the survey, and to allow them the opportunity to complete the survey online through the NCDMF web-based survey site. Approximately 10-14 days later, sample members who have not completed the online survey are sent a second letter that includes a hard copy of the survey to complete. These individuals are asked to return the survey by the end of the month. The following estimates are produced independently for each survey.

Participation Estimates

Participation estimates are determined for each of the survey time periods considering the following parameters:

- The number of potential participants is a product of the number of valid recreational licenses for the survey period and the percent of those who answered affirmatively to the respective saltwater activity question at the time of license purchase (or while updating contact information).
- The ineligibility rate is the number of anglers reporting they do not participate in flounder gigging divided by the total number of responses received.
- The estimated participation is a product of the number of potential participants and one minus the ineligibility rate.

Effort Estimates

Effort estimates are determined for each of the survey time periods. Overall effort is determined by the number of trips reported for each survey respondent extrapolated to represent the population of license holders.

Catch Estimates

Catch estimates are determined for each of the survey time periods by the following method. Catch is the number of a species harvested by each angler extrapolated to represent the population of license holders.

Precision of Estimates

The numbers presented are estimates, not actual counts; therefore, the level of precision varies. Precision refers to the estimate's variability. Statistical comparison between numbers must include this variability.

Precision refers to the dispersion of the sample measurements used to calculate an estimate and the resultant variability in the estimate. The square root of the estimate of sampling variance is an estimate of the standard error of the estimate and is almost universally used in sample surveys as a measure of precision.

The standard error is used to calculate the proportional standard error (PSE). The PSE expresses the standard error as a percentage of the estimate (standard error/estimate x100). It provides an alternative measure of precision and is useful in comparing the relative precision of two or more estimates. A small PSE indicates a more precise estimate than a large PSE. A PSE of 20% or less is generally considered an acceptable level of precision in fisheries data.

SURVEY LIMITATIONS

Non-Response Bias

There is a potential risk that those anglers who do not respond to the mail survey(s) behave in a manner differing from those who do. This is referred to as non-response bias. A 100% response rate is not a practical expectation from these surveys. This is due to many different factors including, but not limited to: a large constituent of grandfathered license holders who may not participate in the fishery of interest, deceased individuals who were not identified as such before the survey was sent, and choosing not to participate in the survey. Methods to mitigate non-response bias include incentivizing individuals as well as validating effort and catch with on-site intercept surveys.

Recall Bias

Recall bias can occur when any length of time exists between the reporting of an event and the event itself. The longer the time between reporting and the occurrence, the more likely recall bias is to occur. Validity of reported data can be strengthened with an intercept survey (in-person interview).

Rare Events

Activities that seldom occur in recreational angling are referred to as rare events. In this particular instance, contacting someone participating in oyster and clam harvesting is rare. Despite a relatively high response rate, the number of responses with reported oyster harvesting activity is too low to produce precise estimates of catch.

CONTACTS

The recreational mail surveys are administered by the North Carolina Division of Marine Fisheries, Coastal Angling Program from the Washington Regional Office. For additional information regarding the survey, please consider the list below.

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INFOGRAPHIC

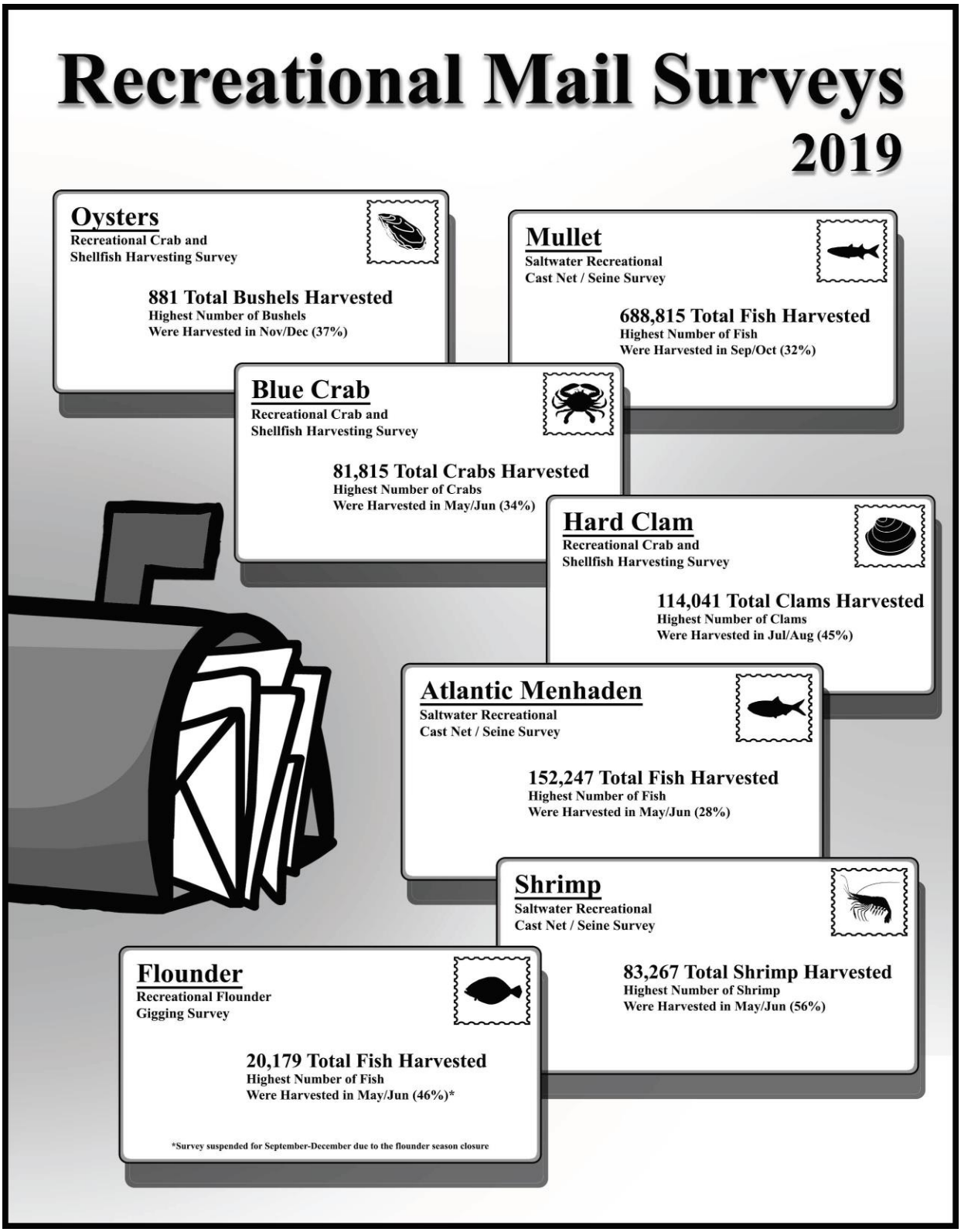

Table V.1 Response rates for recreational flounder gigging mail surveys by year.

Year	Survey Metric[1]	Wave						
		Jan/Feb	Mar/Apr	May/Jun	Jul/Aug	Sep/Oct	Nov/Dec	Total
2019	Total Delivered Surveys	1,309	1,332	1,349	1,406	-	-	5,396
	Number Responses	392	305	325	304	-	-	1,326
	Responses (%)	29.9	22.9	24.1	21.6	-	-	24.6
2018	Total Delivered Surveys	1,288	1,339	1,356	1,368	1,334	1,382	8,067
	Number Responses	425	349	339	83	332	418	1,946
	Responses (%)	33.0	26.1	25.0	6.1	24.9	30.3	24.1
2017	Total Delivered Surveys	1,257	1,303	1,297	1,405	1,397	1,269	7,928
	Number Responses	380	338	293	206	386	408	2,011
	Responses (%)	30.2	25.9	22.6	14.7	27.6	32.2	25.4
2016	Total Delivered Surveys	980	1,280	1,293	1,369	1,103	1,374	7,399
	Number Responses	274	401	347	361	265	447	2,095
	Responses (%)	28.0	31.3	26.8	26.4	24.0	32.5	28.3
2015	Total Delivered Surveys	1,429	1,437	1,427	1,320	1,386	981	7,980
	Number Responses	515	460	486	478	400	328	2,667
	Responses (%)	36.0	32.0	34.1	36.2	28.9	33.4	33.4
2014	Total Delivered Surveys	1,291	1,243	1,260	1,356	1,330	1,339	7,819
	Number Responses	467	418	416	392	386	475	2,554
	Responses (%)	36.2	33.6	33.0	28.9	29.0	35.5	32.7
2013	Total Delivered Surveys	1,278	1,279	1,274	1,273	1,281	1,267	7,652
	Number Responses	518	494	444	478	467	524	2,925
	Responses (%)	40.5	38.6	34.9	37.6	36.5	41.4	38.2
2012	Total Delivered Surveys	1,273	1,287	1,271	1,284	1,278	1,288	7,681
	Number Responses	525	494	444	504	484	473	2,924
	Responses (%)	41.2	38.4	34.9	39.3	37.9	36.7	38.1
2011	Total Delivered Surveys	1,254	1,272	1,267	1,308	1,278	1,263	7,642
	Number Responses	635	576	504	504	548	517	3,284
	Responses (%)	50.6	45.3	39.8	38.5	42.9	40.9	43.0

[1] Does not include deceased license holders or invalid addresses.

Table V.2 Recreational flounder gigging effort and catch (in numbers) (estimates based on mail survey).

Year	Wave	Total Effort	PSE Effort	Total Flounder Harvest	PSE Harvest	Total Flounder Release	PSE Release	Total Flounder Catch	PSE Total Catch
2019	Jan/Feb	698	58.7	532	64.2	398	100.0	930	63.9
	Mar/Apr	450	48.4	964	68.0	74	100.0	1,038	69.7
	May/Jun	3,847	30.0	9,356	48.4	398	70.7	9,754	46.8
	Jul/Aug	3,422	32.3	9,327	44.6	172	100.0	9,499	44.0
	Sep/Oct*	-	-	-	-	-	-	-	-
	Nov/Dec*	-	-	-	-	-	-	-	-
	Total	8,417	20.0	20,179	30.9	1,042	50.1	21,221	29.7
2018	Jan/Feb	989	51.6	711	64.9	-	-	711	64.9
	Mar/Apr	-	-	136	71.2	-	-	136	71.2
	May/Jun	3,559	36.6	5,197	33.7	294	57.0	5,491	32.7
	Jul/Aug	1,549	45.0	10,556	64.2	-	-	10,556	64.2
	Sep/Oct	1,369	47.6	2,581	39.6	166	100.0	2,746	38.6
	Nov/Dec	2,673	26.8	4,062	37.3	65	100.0	4,127	37.7
	Total	10,139	18.4	23,243	31.4	525	46.8	23,767	30.8
2017	Jan/Feb	349	57.6	65	100.0	390	100.0	455	100.0
	Mar/Apr	2,750	37.1	7,640	41.1	141	100.0	7,781	41.3
	May/Jun	2,757	31.7	5,162	48.0	-	-	5,162	48.0
	Jul/Aug	3,007	26.6	3,668	40.1	-	-	3,668	40.1
	Sep/Oct	3,213	24.9	5,964	32.2	124	100.0	6,088	32.0
	Nov/Dec	1,448	37.3	1,637	46.7	-	-	1,637	46.7
	Total	13,524	13.8	24,136	19.8	655	66.1	24,790	19.6
2016	Jan/Feb	150	71.1	-	-	-	-	-	-
	Mar/Apr	730	38.2	120	100.0	-	-	120	100.0
	May/Jun	4,292	27.9	8,268	39.5	3,101	87.5	11,369	42.5
	Jul/Aug	5,621	22.3	5,968	27.9	-	-	5,968	27.9
	Sep/Oct	4,800	29.7	7,087	37.1	277	100.0	7,364	37.0
	Nov/Dec	4,735	27.9	8,199	38.7	359	74.3	8,557	39.2
	Total	20,179	26.3	42,677	33.1	3,736	73.4	46,413	31.5
2015	Jan/Feb	951	30.2	1,169	42.2	-	-	1,169	42.1
	Mar/Apr	520	38.3	994	49.2	-	-	994	49.1
	May/Jun	4,258	18.8	7,600	21.7	1,230	39.5	8,830	21.9
	Jul/Aug	4,448	17.5	7,799	23.0	69	100.0	7,868	22.9
	Sep/Oct	4,592	21.9	9,241	22.5	764	51.3	10,005	23.2
	Nov/Dec	1,892	29.0	1,909	40.0	293	62.0	2,202	41.3
	Total	16,660	9.9	28,712	11.9	2,356	27.9	31,068	12.1
2014	Jan/Feb	1,490	37.6	1,880	43.4	542	100.0	2,422	47.7
	Mar/Apr	893	38.4	1,274	64.9	-	-	1,274	64.9
	May/Jun	5,624	18.1	8,444	26.1	702	47.5	9,146	24.9
	Jul/Aug	5,549	17.4	8,816	23.9	793	40.1	9,609	24.0
	Sep/Oct	5,282	22.0	12,648	27.1	106	100.0	12,754	27.0
	Nov/Dec	2,108	32.2	9,245	33.9	572	51.9	9,817	32.9
	Total	20,946	10.0	42,306	13.6	2,715	28.8	45,022	13.3

* Mail survey was suspended because of the 2019 flounder season closure.

Table V.2 Recreational flounder gigging effort and catch (in numbers) (estimates based on mail survey) *(continued)*.

Year	Wave	Total Effort	PSE Effort	Total Flounder Harvest	PSE Harvest	Total Flounder Release	PSE Release	Total Flounder Catch	PSE Total Catch
2013	Jan/Feb	602	56.1	368	72.0	-	-	368	72.0
	Mar/Apr	330	77.1	923	59.3	-	-	923	59.3
	May/Jun	7,022	28.7	16,687	30.8	1,062	70.0	17,749	29.9
	Jul/Aug	7,596	18.0	12,618	23.3	829	43.5	13,447	22.5
	Sep/Oct	6,206	20.4	16,249	25.8	415	70.1	16,664	25.4
	Nov/Dec	4,062	21.9	7,574	27.6	453	57.7	8,027	27.3
	Total	25,818	11.3	54,419	13.9	2,759	33.1	57,178	13.8
2012	Jan/Feb	976	62.0	69	100.0	-	-	69	100.0
	Mar/Apr	623	48.3	1,539	48.2	99	80.8	1,638	47.5
	May/Jun	5,851	27.4	13,101	44.0	977	95.0	14,079	45.6
	Jul/Aug	5,411	23.3	10,741	30.9	577	78.0	11,318	30.4
	Sep/Oct	7,483	22.3	16,601	24.2	775	97.9	17,376	23.5
	Nov/Dec	1,602	32.4	4,287	42.8	246	100.0	4,533	42.2
	Total	21,946	12.9	46,338	17.5	2,674	48.8	49,013	17.7
2011	Jan/Feb	325	45.3	746	61.0	91	59.7	838	56.0
	Mar/Apr	425	41.1	431	38.0	-	-	431	38.0
	May/Jun	4,687	28.7	8,341	30.1	514	55.3	8,855	29.7
	Jul/Aug	9,723	27.2	18,090	30.3	4,549	83.7	22,639	30.9
	Sep/Oct	4,502	27.8	9,270	40.7	1,521	93.4	10,791	46.6
	Nov/Dec	6,004	33.5	15,076	40.0	3,051	64.0	18,127	41.1
	Total	25,666	15.4	51,954	18.4	9,726	46.5	61,680	19.5
2010	Jan/Feb	-	-	-	-	-	-	-	-
	Mar/Apr	-	-	-	-	-	-	-	-
	May/Jun	2,168	24.2	4,138	28.1	977	39.1	5,116	27.6
	Jul/Aug	5,427	18.8	8,438	19.1	1,308	30.7	9,746	18.2
	Sep/Oct	2,385	21.5	3,932	25.0	338	42.5	4,270	24.1
	Nov/Dec	802	25.7	1,571	28.6	428	46.9	1,999	28.3
	Total	10,782	12.0	18,079	12.6	3,051	19.9	21,131	12.2

Table V.3 Response rates for recreational cast net and seine mail surveys by year.

		Wave						
Year	Survey Metric[2]	Jan/Feb	Mar/Apr	May/Jun	Jul/Aug	Sep/Oct[3]	Nov/Dec	Total
2019	Total Delivered Surveys	1,289	1,327	1,337	1,432	1,362	1,317	8,064
	Number Responses	384	369	375	318	394	379	2,219
	Responses (%)	29.8	27.8	28.0	22.2	28.9	28.8	27.5
2018	Total Delivered Surveys	1,282	1,353	1,403	1,370	1,349	1,288	8,045
	Number Responses	421	422	392	119	348	419	2,121
	Responses (%)	32.8	31.2	27.9	8.7	25.8	32.5	26.4
2017	Total Delivered Surveys	1,318	1,336	1,281	1,621	1,397	1,265	8,218
	Number Responses	445	424	376	358	357	421	2,381
	Responses (%)	33.8	31.7	29.4	22.1	25.6	33.3	29.0
2016	Total Delivered Surveys	1,230	1,294	1,289	1,388	1,200	1,276	7,677
	Number Responses	423	473	391	370	362	465	2,484
	Responses (%)	34.4	36.6	30.3	26.7	30.2	36.4	32.4
2015	Total Delivered Surveys	1,361	1,435	1,405	1,460	1,375	1,159	8,195
	Number Responses	490	514	452	424	390	411	2,681
	Responses (%)	36.0	35.8	32.2	29.0	28.4	35.5	32.7
2014	Total Delivered Surveys	1,289	1,270	1,254	1,396	1,243	1,324	7,776
	Number Responses	506	458	377	362	398	479	2,580
	Responses (%)	39.3	36.1	30.1	25.9	32.0	36.2	33.2
2013	Total Delivered Surveys	1,274	1,283	1,287	1,284	1,277	1,300	7,705
	Number Responses	584	492	532	466	510	502	3,086
	Responses (%)	45.8	38.4	41.3	36.3	39.9	38.6	40.1
2012	Total Delivered Surveys	1,271	1,282	1,281	1,288	1,288	1,297	7,707
	Number Responses	537	523	470	470	505	543	3,048
	Responses (%)	42.3	40.8	36.7	36.5	39.2	41.9	39.5
2011	Total Delivered Surveys	-	-	-	-	641	1,279	1,920
	Number Responses	-	-	-	-	283	530	813
	Responses (%)	-	-	-	-	44.2	41.4	42.3

[2] Does not include deceased license holders or invalid addresses.

[3] Mail survey was implemented in October 2011; the Sept/Oct wave was incomplete.

Table V.4 Recreational cast net effort and catch (in numbers) for Atlantic Menhaden (estimates based on mail survey).

Year	Wave	Total Effort	PSE Effort	Total Menhaden Harvest	PSE Harvest	Total Menhaden Release	PSE Release	Total Menhaden Catch	PSE Total Catch
2019	Jan/Feb	13,659	18.4	17,103	47.4	4,863	49.0	21,966	47.1
	Mar/Apr	10,362	20.6	2,818	75.9	6,330	80.6	9,148	79.1
	May/Jun	42,236	15.0	42,858	31.4	23,445	32.2	66,303	30.6
	Jul/Aug	43,978	14.5	36,847	39.4	30,263	44.8	67,110	37.5
	Sep/Oct	45,606	12.7	24,679	35.0	7,886	51.9	32,565	34.8
	Nov/Dec	16,667	20.1	27,942	45.8	10,498	63.4	38,440	48.5
	Total	172,897	7.0	152,247	17.4	83,285	22.0	235,532	17.5
2018	Jan/Feb	6,463	28.6	3,036	70.9	675	100.0	3,710	70.8
	Mar/Apr	10,362	19.5	-	-	-	-	-	-
	May/Jun	33,481	13.8	60,711	26.8	33,363	29.8	94,075	26.3
	Jul/Aug	10,400	17.7	27,555	61.3	12,297	50.8	39,852	57.2
	Sep/Oct	11,832	71.2	-	-	-	-	-	-
	Nov/Dec	20,643	16.3	39,138	37.7	5,666	55.1	44,804	37.0
	Total	93,181	11.6	130,441	21.5	52,000	23.7	182,441	20.9
2017	Jan/Feb	6,793	24.0	18,229	68.1	1,768	72.7	19,997	68.4
	Mar/Apr	16,500	15.7	26,415	37.7	14,929	37.7	41,344	35.4
	May/Jun	44,380	13.1	66,305	26.9	26,597	34.1	92,902	26.7
	Jul/Aug	55,435	13.6	57,131	45.7	23,282	42.4	80,413	44.3
	Sep/Oct	48,079	13.2	67,551	32.3	24,180	41.3	91,731	31.7
	Nov/Dec	27,603	14.7	25,571	59.2	5,817	50.3	31,388	57.1
	Total	198,790	6.6	261,203	17.1	96,573	18.7	357,775	16.6
2016	Jan/Feb	12,493	25.8	8,164	59.0	2,758	59.5	10,923	59.1
	Mar/Apr	15,978	19.5	28,291	36.7	8,749	45.5	37,040	36.1
	May/Jun	39,692	13.6	83,219	31.0	32,888	32.5	116,107	30.6
	Jul/Aug	50,891	12.4	79,950	31.2	24,649	38.7	104,598	30.2
	Sep/Oct	43,818	11.7	53,022	27.4	27,515	30.4	80,537	26.8
	Nov/Dec	32,993	16.9	25,566	41.2	4,439	46.9	30,006	38.7
	Total	195,865	6.4	278,213	15.2	100,998	17.3	379,210	14.8
2015	Jan/Feb	10,675	22.6	-	-	-	-	-	-
	Mar/Apr	16,552	16.5	2,034	63.3	268	100.0	2,301	65.9
	May/Jun	50,845	12.0	62,733	23.0	63,946	38.6	126,679	26.4
	Jul/Aug	68,945	10.3	113,267	29.6	61,579	37.9	174,846	31.4
	Sep/Oct	41,410	10.5	41,810	30.4	15,103	35.0	56,912	29.3
	Nov/Dec	25,799	17.2	51,979	41.8	21,644	62.4	73,624	43.8
	Total	214,226	5.8	271,824	16.5	162,539	22.8	434,363	17.2
2014	Jan/Feb	7,369	21.7	695	100.0	-	-	695	100.0
	Mar/Apr	16,723	18.3	17,674	47.0	2,777	59.2	20,452	43.5
	May/Jun	33,348	14.1	14,805	34.9	5,067	40.9	19,872	32.0
	Jul/Aug	53,322	14.7	22,338	32.5	7,558	40.8	29,896	32.5
	Sep/Oct	65,487	12.1	66,546	26.9	43,994	37.3	110,540	26.6
	Nov/Dec	26,039	14.1	9,361	39.1	5,097	49.5	14,458	39.4
	Total	202,287	6.8	131,419	17.2	64,493	27.3	195,912	17.7

Table V.4 Recreational cast net effort and catch (in numbers) for Atlantic Menhaden (estimates based on mail survey) *(continued)*.

Year	Wave	Total Effort	PSE Effort	Total Menhaden Harvest	PSE Harvest	Total Menhaden Release	PSE Release	Total Menhaden Catch	PSE Total Catch
2013	Jan/Feb	12,872	16.4	16,679	57.0	5,859	52.1	22,538	51.3
	Mar/Apr	10,043	21.9	6,899	54.5	2,042	57.7	8,941	54.1
	May/Jun	25,337	11.9	34,407	29.8	18,238	39.1	52,645	32.1
	Jul/Aug	38,931	11.1	124,449	28.0	48,914	25.6	173,363	25.6
	Sep/Oct	23,617	16.4	23,447	39.2	13,161	39.2	36,608	36.2
	Nov/Dec	24,819	14.9	15,133	40.2	7,791	45.9	22,923	40.0
	Total	135,619	6.2	221,014	18.0	96,004	17.0	317,018	16.5
2012	Jan/Feb	9,930	22.5	6,836	58.6	2,682	70.8	9,519	61.3
	Mar/Apr	7,795	21.1	1,687	59.1	2,933	61.3	4,620	59.3
	May/Jun	21,890	12.3	52,938	34.8	15,933	34.9	68,871	33.0
	Jul/Aug	33,678	12.7	23,302	34.9	17,962	54.3	41,264	39.9
	Sep/Oct	32,483	10.8	68,965	32.8	25,754	36.6	94,719	32.8
	Nov/Dec	24,844	14.4	16,198	48.8	3,039	64.2	19,237	47.6
	Total	130,621	6.0	169,926	18.8	68,303	22.1	238,229	18.3
2011	Sep/Oct[3]	-	-	-	-	-	-	-	-
	Nov/Dec	15,152	17.6	48,423	32.4	19,952	42.3	68,375	32.4

[3] Mail survey was implemented in October 2011; the Sept/Oct wave was incomplete.

Table V.5 Recreational cast net effort and catch (in numbers) for mullet (striped and white) (estimates based on mail survey).

Year	Wave	Total Effort	PSE Effort	Total Mullet Harvest	PSE Harvest	Total Mullet Release	PSE Release	Total Mullet Catch	PSE Total Catch
2019	Jan/Feb	12,139	18.4	27,088	35.1	7,351	33.7	34,439	32.7
	Mar/Apr	9,674	21.4	11,023	37.4	3,517	47.8	14,540	34.7
	May/Jun	44,262	14.5	143,824	21.9	35,856	25.0	179,680	20.9
	Jul/Aug	39,904	14.5	210,967	20.3	122,890	33.6	333,857	20.8
	Sep/Oct	40,143	13.3	219,358	14.8	124,146	22.7	343,504	15.3
	Nov/Dec	16,819	20.1	76,555	30.7	27,125	33.3	103,680	30.0
	Total	162,941	7.1	688,815	10.0	320,885	16.5	1,009,700	10.2
2018	Jan/Feb	4,121	30.4	3,935	65.2	450	70.5	4,385	62.1
	Mar/Apr	8,950	20.8	16,051	41.4	4,560	43.2	20,611	39.5
	May/Jun	32,021	14.3	58,694	25.2	12,577	29.5	71,271	24.8
	Jul/Aug	11,125	20.3	43,317	24.2	13,418	33.4	56,735	24.5
	Sep/Oct	11,832	71.1	139,578	72.5	56,912	85.8	196,490	76.1
	Nov/Dec	20,890	16.3	85,612	18.4	20,987	23.6	106,599	18.4
	Total	88,939	12.1	347,187	30.1	108,904	45.4	456,091	33.5
2017	Jan/Feb	6,178	25.3	7,047	55.9	994	70.9	8,042	56.7
	Mar/Apr	16,513	15.9	36,630	25.7	13,572	30.5	50,202	26.3
	May/Jun	37,371	13.2	175,562	20.3	56,093	21.8	231,656	19.4
	Jul/Aug	54,353	13.8	218,395	15.6	89,636	19.3	308,031	15.0
	Sep/Oct	41,186	13.8	195,901	15.9	54,855	24.7	250,756	16.1
	Nov/Dec	27,259	14.4	89,393	18.6	24,847	28.1	114,240	18.9
	Total	182,861	6.7	722,929	8.8	239,998	11.3	962,927	8.7
2016	Jan/Feb	11,910	27.1	6,927	51.1	3,283	73.2	10,210	55.4
	Mar/Apr	13,803	20.5	17,333	44.5	1,238	63.5	18,571	42.0
	May/Jun	39,127	13.7	141,203	25.2	47,699	29.9	188,903	23.6
	Jul/Aug	51,085	11.8	306,614	18.3	109,938	22.3	416,552	17.7
	Sep/Oct	41,325	12.1	173,517	18.6	26,096	21.3	199,613	17.2
	Nov/Dec	34,673	16.3	102,800	26.5	31,637	33.1	134,437	27.0
	Total	191,922	6.4	748,394	10.9	219,892	14.3	968,286	10.7
2015	Jan/Feb	6,730	25.4	19,540	38.2	3,060	52.0	22,600	37.0
	Mar/Apr	13,981	18.5	25,446	28.2	5,880	33.6	31,326	27.9
	May/Jun	50,315	12.1	147,726	17.8	50,052	25.7	197,778	16.9
	Jul/Aug	71,656	10.7	400,123	13.9	156,696	19.1	556,819	14.1
	Sep/Oct	40,078	10.6	232,037	15.4	43,801	19.1	275,837	15.1
	Nov/Dec	24,116	17.8	117,650	21.6	36,550	26.2	154,200	21.9
	Total	206,876	6.0	942,521	8.4	296,039	12.2	1,238,561	8.5
2014	Jan/Feb	5,206	25.0	12,023	46.3	1,076	57.9	13,099	44.3
	Mar/Apr	16,131	19.0	13,949	45.0	1,859	60.3	15,807	43.0
	May/Jun	35,945	13.5	110,839	20.8	28,262	22.4	139,101	19.5
	Jul/Aug	52,883	13.7	208,730	18.1	63,626	19.8	272,356	16.8
	Sep/Oct	63,224	12.7	362,912	14.6	136,337	16.4	499,250	13.5
	Nov/Dec	23,867	14.5	74,605	19.7	20,344	26.7	94,949	19.2
	Total	197,257	6.8	783,058	9.4	251,504	11.1	1,034,561	8.9

Table V.5 Recreational cast net effort and catch (in numbers) for mullet (striped and white) (estimates based on mail survey) *(continued)*.

Year	Wave	Total Effort	PSE Effort	Total Mullet Harvest	PSE Harvest	Total Mullet Release	PSE Release	Total Mullet Catch	PSE Total Catch
2013	Jan/Feb	13,053	18.3	57,047	30.0	7,862	36.4	64,909	29.7
	Mar/Apr	9,079	23.4	20,839	41.4	4,021	49.4	24,860	41.4
	May/Jun	24,541	11.8	65,072	24.4	21,957	30.5	87,030	24.8
	Jul/Aug	41,197	11.3	324,616	16.2	121,012	21.7	445,628	15.9
	Sep/Oct	25,872	16.3	159,790	20.9	39,065	26.1	198,855	19.8
	Nov/Dec	25,544	15.3	83,943	21.1	35,592	31.0	119,534	21.5
	Total	139,286	6.3	711,307	10.1	229,509	13.9	940,816	9.9
2012	Jan/Feb	10,484	22.1	23,346	32.8	9,050	42.3	32,395	32.4
	Mar/Apr	9,734	19.8	17,055	32.0	3,931	57.2	20,986	31.8
	May/Jun	20,903	12.5	84,180	25.7	26,845	32.9	111,025	23.9
	Jul/Aug	32,810	13.3	181,667	19.6	76,701	26.0	258,368	18.3
	Sep/Oct	30,377	11.2	292,859	13.0	72,004	16.1	364,862	12.6
	Nov/Dec	21,315	15.8	94,155	21.1	31,676	26.7	125,831	20.7
	Total	125,623	6.2	693,262	8.9	220,205	12.2	913,467	8.6
2011	Sep/Oct[3]	-	-	-	-	-	-	-	-
	Nov/Dec	16,007	17.4	74,461	24.7	31,210	36.1	105,671	24.9

[3] Mail survey was implemented in October 2011; the Sept/Oct wave was incomplete.

Table V.6 Recreational cast net effort and catch (in numbers) for shrimp (estimates based on mail survey).

Year	Wave	Total Effort	PSE Effort	Total Shrimp Harvest	PSE Harvest	Total Shrimp Release	PSE Release	Total Shrimp Catch	PSE Total Catch
2019	Jan/Feb	11,518	18.4	-	-	-	-	-	-
	Mar/Apr	10,476	20.0	-	-	-	-	-	-
	May/Jun	46,723	13.8	46,620	40.8	11,804	39.3	58,424	39.0
	Jul/Aug	44,469	14.5	17,635	48.0	250	100.0	17,885	47.5
	Sep/Oct	46,450	12.5	12,220	77.2	13,545	65.1	25,765	54.4
	Nov/Dec	17,346	19.4	6,792	59.8	1,544	100.0	8,336	63.9
	Total	176,982	6.9	83,267	28.1	27,143	37.3	110,410	26.1
2018	Jan/Feb	4,658	34.6	-	-	-	-	-	-
	Mar/Apr	10,228	19.8	1,206	100.0	-	-	1,206	100.0
	May/Jun	35,845	14.8	20,385	41.3	1,308	52.3	21,693	39.5
	Jul/Aug	12,908	19.2	52,655	94.2	192	100.0	52,847	93.9
	Sep/Oct	11,832	71.2	-	-	-	-	-	-
	Nov/Dec	20,263	16.5	14,904	67.7	-	-	14,904	67.7
	Total	95,734	11.7	89,151	57.6	1,500	47.5	90,651	56.7
2017	Jan/Feb	7,318	22.7	1,105	100.0	-	-	1,105	100.0
	Mar/Apr	17,945	15.4	1,257	100.0	-	-	1,257	100.0
	May/Jun	38,382	12.9	17,556	35.8	3,781	58.5	21,337	37.0
	Jul/Aug	52,265	13.4	56,353	34.7	13,110	53.3	69,463	36.6
	Sep/Oct	47,613	13.3	39,478	40.0	11,757	70.4	51,235	41.9
	Nov/Dec	29,071	14.4	7644	56.0	3579	74.3	11,223	56.0
	Total	192,593	6.5	123,393	21.8	32,227	35.6	155,621	22.9
2016	Jan/Feb	14,268	25.1	3,826	100.0	1,196	100.0	5,021	100.0
	Mar/Apr	15,246	19.2	1,802	87.1	746	100.0	2,548	90.6
	May/Jun	41,056	14.1	17,930	67.2	3,196	70.7	21,126	64.8
	Jul/Aug	54,288	12.1	173,302	30.2	49,762	47.4	223,064	30.6
	Sep/Oct	40,406	11.3	23,622	33.4	2,394	64.8	26,016	34.8
	Nov/Dec	28,974	17.0	16,951	41.4	1,965	58.6	18,916	41.3
	Total	194,237	6.4	237,433	23.7	59,259	40.7	296,692	24.5
2015	Jan/Feb	8,957	24.0	9,119	67.9	2015	70.6	11,134	62.3
	Mar/Apr	14,425	16.7	4,388	60.1	321	100.0	4,709	60.4
	May/Jun	55,668	11.8	39,530	36.7	5,274	51.1	44,804	37.3
	Jul/Aug	72,275	10.7	87,268	25.9	18,119	33.4	105,387	26.4
	Sep/Oct	40,828	10.8	24,761	53.4	6,686	66.8	31,447	54.8
	Nov/Dec	25,331	17.3	27,564	57.5	-	-	27,564	57.5
	Total	217,484	5.9	192,630	18.0	32,415	25.3	225,044	18.2
2014	Jan/Feb	6,696	23.0	1,390	100.0	-	-	1,390	100.0
	Mar/Apr	17,128	20.7	2,001	73.1	-	-	2,001	73.1
	May/Jun	33,723	13.4	28,797	44.5	1,074	49.8	29,871	43.3
	Jul/Aug	54,700	12.7	91,643	30.8	12,355	50.8	103,998	30.7
	Sep/Oct	66,873	11.9	74,088	38.1	16,176	66.9	90,264	35.6
	Nov/Dec	26,905	13.6	2,105	71.4	-	-	2,105	71.4
	Total	206,024	6.5	200,025	21.3	29,605	42.4	229,630	20.9

Table V.6 Recreational cast net effort and catch (in numbers) for shrimp (estimates based on mail survey) *(continued)*.

Year	Wave	Total Effort	PSE Effort	Total Shrimp Harvest	PSE Harvest	Total Shrimp Release	PSE Release	Total Shrimp Catch	PSE Total Catch
2013	Jan/Feb	14,277	17.6	718	100.0	-	-	718	100.0
	Mar/Apr	9,869	22.3	6,783	72.3	-	-	6,783	72.3
	May/Jun	24,538	12.0	51,557	58.3	3,964	46.1	55,521	55.3
	Jul/Aug	42,438	11.0	67,922	26.6	7,335	39.3	75,258	26.3
	Sep/Oct	24,832	16.4	64,597	35.3	7,480	66.7	72,077	33.7
	Nov/Dec	26,239	15.0	12,574	45.7	1,785	63.1	14,359	44.4
	Total	142,193	6.2	204,151	21.0	20,563	30.0	224,715	20.0
2012	Jan/Feb	10,302	22.4	2,885	73.2	244	100.0	3,129	67.9
	Mar/Apr	9,258	20.3	-	-	-	-	-	-
	May/Jun	20,831	12.5	19,068	45.4	9,422	47.4	28,490	34.7
	Jul/Aug	31,450	13.4	18,033	48.5	716	53.5	18,749	47.2
	Sep/Oct	31,785	11.4	100,140	38.1	9,202	55.4	109,342	37.8
	Nov/Dec	24,179	14.9	19,702	50.6	-	-	19,702	50.6
	Total	127,806	6.2	159,828	26.3	19,584	34.8	179,412	25.2
2011	Sep/Oct[3]	-	-	-	-	-	-	-	-
	Nov/Dec	16,855	16.7	23,708	44.4	6855	67.3	30,563	44.7

[3]Mail survey was implemented in October 2011; the Sept/Oct wave was incomplete.

Table V.7 Response rates for recreational shellfish and crab harvest by year.

		Wave						
Year	Survey Metric[4]	Jan/Feb	Mar/Apr	May/Jun	Jul/Aug	Sep/Oct	Nov/Dec	Total
2019	Total Delivered Surveys	1,318	1,334	1,367	1,397	1,355	1,303	8,074
	Number Responses	436	370	334	344	384	418	2,286
	Responses (%)	33.1	27.7	24.4	24.6	28.3	32.1	28.3
2018	Total Delivered Surveys	1,309	1,311	1,383	1,378	1,353	1,346	8,080
	Number Responses	472	391	378	111	388	438	2,178
	Responses (%)	36.1	29.8	27.3	8.1	28.7	32.5	27.0
2017	Total Delivered Surveys	1,309	1,351	1,353	1,396	1,362	1,281	8,052
	Number Responses	491	447	377	230	416	443	2,404
	Responses (%)	37.5	33.1	27.9	16.5	30.5	34.6	29.9
2016	Total Delivered Surveys	1,279	1,258	1,273	1,359	1,355	1,236	7,760
	Number Responses	459	435	431	367	444	487	2,623
	Responses (%)	35.9	34.6	33.9	27.0	32.8	39.4	33.8
2015	Total Delivered Surveys	1,346	1,452	1,269	1,416	1,352	1,205	8,040
	Number Responses	551	610	364	436	441	489	2,891
	Responses (%)	40.9	42.0	28.7	30.8	32.6	40.6	36.0
2014	Total Delivered Surveys	1,268	1,255	1,204	1,354	1,309	1,361	7,751
	Number Responses	537	509	439	363	444	498	2,790
	Responses (%)	42.4	40.6	36.5	26.8	33.9	36.6	36.0
2013	Total Delivered Surveys	1,275	1,283	1,281	1,267	1,271	1,283	7,660
	Number Responses	552	525	520	531	480	586	3,194
	Responses (%)	43.3	40.9	40.6	41.9	37.8	45.7	41.7
2012	Total Delivered Surveys	1,283	1,284	1,291	1,276	1,294	1,285	7,713
	Number Responses	593	546	492	515	499	547	3,192
	Responses (%)	46.2	42.5	38.1	40.4	38.6	42.6	41.4
2011	Total Delivered Surveys	1,259	1,275	1,272	1,276	1,276	1,288	7,646
	Number Responses	660	592	561	588	592	598	3,591
	Responses (%)	52.4	46.4	44.1	46.1	46.4	46.4	47.0

[4] Does not include deceased license holders or invalid addresses.

Table V.8 Number and percent of recreational shellfish surveys reporting clam activity by year.

		Wave						
Year	Survey Metric[4]	Jan/Feb	Mar/Apr	May/Jun	Jul/Aug	Sep/Oct	Nov/Dec	Total
2019	Total Responses (number)	436	370	334	344	384	418	2,286
	Reporting Clam Activity (number)	11	12	15	27	18	11	94
	Reporting Clam Activity (%)	2.5	3.2	4.5	7.8	4.7	2.6	4.1
2018	Total Responses (number)	472	391	378	111	388	438	2,178
	Reporting Clam Activity (number)	9	8	16	12	11	9	65
	Reporting Clam Activity (%)	1.9	2.0	4.2	10.8	2.8	2.1	3.0
2017	Total Responses (number)	491	447	377	230	416	443	2,404
	Reporting Clam Activity (number)	9	12	24	19	20	10	94
	Reporting Clam Activity (%)	1.8	2.7	6.4	8.3	4.8	2.3	3.9
2016	Total Responses (number)	459	435	431	367	444	487	2,623
	Reporting Clam Activity (number)	17	16	24	43	24	14	138
	Reporting Clam Activity (%)	3.7	3.7	5.6	11.7	5.4	2.9	5.3
2015	Total Responses (number)	551	610	364	436	441	489	2,891
	Reporting Clam Activity (number)	10	14	24	43	24	14	129
	Reporting Clam Activity (%)	1.8	2.3	6.6	9.9	5.4	2.9	4.5
2014	Total Responses (number)	537	509	439	363	444	498	2,790
	Reporting Clam Activity (number)	8	11	30	19	18	11	97
	Reporting Clam Activity (%)	1.5	2.2	6.8	5.2	4.1	2.2	3.5
2013	Total Responses (number)	552	525	520	531	480	586	3,194
	Reporting Clam Activity (number)	11	10	20	71	27	12	151
	Reporting Clam Activity (%)	2.0	1.9	3.8	13.4	5.6	2.0	4.7
2012	Total Responses (number)	593	546	492	515	499	547	3,192
	Reporting Clam Activity (number)	10	8	26	39	21	15	119
	Reporting Clam Activity (%)	1.7	1.5	5.3	7.6	4.2	2.7	3.7
2011	Total Responses (number)	660	592	561	588	592	598	3,591
	Reporting Clam Activity (number)	20	17	20	28	28	20	133
	Reporting Clam Activity (%)	3.0	2.9	3.6	4.8	4.7	3.3	3.7

[4]Does not include deceased license holders or invalid addresses.

Table V.9 Number and percent of recreational shellfish surveys reporting oyster activity by year.

		Wave						
Year	Survey Metric[4]	Jan/Feb	Mar/Apr	May/Jun	Jul/Aug	Sep/Oct	Nov/Dec	Total
2019	Total Responses (number)	436	370	334	344	384	418	2,286
	Reporting Oyster Activity (number)	15	6	0	2	10	17	50
	Reporting Oyster Activity (%)	3.4	1.6	0.0	0.6	2.6	4.1	2.2
2018	Total Responses (number)	472	391	378	111	388	438	2,178
	Reporting Oyster Activity (number)	13	12	0	0	5	10	40
	Reporting Oyster Activity (%)	2.8	3.1	0	0	1.3	2.3	1.8
2017	Total Responses (number)	491	447	377	230	416	443	2,404
	Reporting Oyster Activity (number)	17	11	1	1	5	16	51
	Reporting Oyster Activity (%)	3.5	2.5	0.3	0.4	1.2	3.6	2.1
2016	Total Responses (number)	459	435	431	367	444	487	2,623
	Reporting Oyster Activity (number)	17	6	0	1	7	15	46
	Reporting Oyster Activity (%)	3.7	1.4	0	0.3	1.6	3.1	1.8
2015	Total Responses (number)	551	610	364	436	441	489	2,891
	Reporting Oyster Activity (number)	11	3	1	0	8	18	41
	Reporting Oyster Activity (%)	2.0	0.5	0.3	0	1.8	3.7	1.4
2014	Total Responses (number)	537	509	439	363	444	498	2,790
	Reporting Oyster Activity (number)	11	5	1	1	5	14	37
	Reporting Oyster Activity (%)	2.0	1.0	0.2	0.3	1.1	2.8	1.3
2013	Total Responses (number)	552	525	520	531	480	586	3,194
	Reporting Oyster Activity (number)	15	12	1	0	6	18	52
	Reporting Oyster Activity (%)	2.7	2.3	0.2	0	1.3	3.1	1.6
2012	Total Responses (number)	593	546	492	515	499	547	3,192
	Reporting Oyster Activity (number)	23	4	1	3	3	24	58
	Reporting Oyster Activity (%)	3.9	0.7	0.2	0.6	0.6	4.4	1.8
2011	Total Responses (number)	660	592	561	588	592	598	3,591
	Reporting Oyster Activity (number)	16	6	0	1	5	18	46
	Reporting Oyster Activity (%)	2.4	1.0	0	0.2	0.8	3.0	1.3

[4] Does not include deceased license holders or invalid addresses.

Table V.10 Number and percent of recreational shellfish surveys reporting crab activity by year.

Year	Survey Metric[4]	Wave						
		Jan/Feb	Mar/Apr	May/Jun	Jul/Aug	Sep/Oct	Nov/Dec	Total
2019	Total Responses (number)	436	370	334	344	384	418	2,286
	Reporting Crab Activity (number)	16	28	57	80	51	28	260
	Reporting Crab Activity (%)	3.7	7.6	17.1	23.3	13.3	6.7	11.4
2018	Total Responses (number)	472	391	378	111	388	438	2,178
	Reporting Crab Activity (number)	10	15	70	23	41	19	178
	Reporting Crab Activity (%)	2.1	3.8	18.5	20.7	10.6	4.3	8.2
2017	Total Responses (number)	491	447	377	230	416	443	2,404
	Reporting Crab Activity (number)	7	27	68	61	41	19	223
	Reporting Crab Activity (%)	1.4	6.0	18.0	26.5	9.9	4.3	9.3
2016	Total Responses (number)	459	435	431	367	444	487	2,623
	Reporting Crab Activity (number)	11	26	61	78	58	15	249
	Reporting Crab Activity (%)	2.4	6.0	14.2	21.3	13.1	3.1	9.5
2015	Total Responses (number)	551	610	364	436	441	489	2,891
	Reporting Crab Activity (number)	10	28	50	90	60	24	262
	Reporting Crab Activity (%)	1.8	4.6	13.7	20.6	13.6	4.9	9.1
2014	Total Responses (number)	537	509	439	363	444	498	2,790
	Reporting Crab Activity (number)	11	20	73	53	57	10	224
	Reporting Crab Activity (%)	2.0	3.9	16.6	14.6	12.8	2.0	8.0
2013	Total Responses (number)	552	525	520	531	480	586	3,194
	Reporting Crab Activity (number)	6	15	58	62	61	22	224
	Reporting Crab Activity (%)	1.1	2.9	11.2	11.7	12.7	3.8	7.0
2012	Total Responses (number)	593	546	492	515	499	547	3,192
	Reporting Crab Activity (number)	12	22	72	80	42	22	250
	Reporting Crab Activity (%)	2.0	4.0	14.6	15.5	8.4	4.0	7.8
2011	Total Responses (number)	660	592	561	588	592	598	3,591
	Reporting Crab Activity (number)	14	19	82	90	77	31	313
	Reporting Crab Activity (%)	2.1	3.2	14.6	15.3	13.0	5.2	8.7

[4] Does not include deceased license holders or invalid addresses.

Table V.11 Recreational shellfish effort and catch (in numbers) for Hard Clam (estimates based on mail survey).

Year	Wave	Total Effort	PSE Effort	Total Clam Harvest	PSE Harvest	Total Clam Release	PSE Release	Total Clam Catch	PSE Total Catch
2019	Jan/Feb	254	48.2	1,370	71.0	507	70.5	1,877	70.8
	Mar/Apr	621	74.2	195	100.0	0	00.0	195	100.0
	May/Jun	881	54.1	45,458	88.1	833	69.4	46,291	86.6
	Jul/Aug	1,906	34.4	51,820	39.3	11,637	43.4	63,457	39.5
	Sep/Oct	735	40.8	11,937	51.2	1,477	53.4	13,414	51.3
	Nov/Dec	692	72.8	3,261	78.9	543	100.0	3,804	81.3
	Total	5,089	21.7	114,041	40.0	14,997	34.9	129,038	37.3
2018	Jan/Feb	436	66.6	7,091	58.9	818	74.4	7,909	59.6
	Mar/Apr	250	52.3	2,599	70.8	338	100.0	2,936	71.5
	May/Jun	626	56.3	3,999	90.8	1,143	88.4	5,142	90.3
	Jul/Aug	328	42.3	4,266	54.1	1,413	45.0	5,679	50.0
	Sep/Oct	611	66.0	2,708	70.6	2,346	66.7	5,054	66.3
	Nov/Dec	111	68.3	6,107	79.1	1,480	70.1	7,587	76.1
	Total	2,362	27.0	26,770	30.4	7,538	31.0	34,307	29.3
2017	Jan/Feb	254	38.3	10,675	58.7	1,779	58.7	12,455	58.5
	Mar/Apr	486	46.0	9,111	62.5	2,203	58.4	11,314	60.8
	May/Jun	1,161	33.4	37,706	40.1	7,429	41.2	45,134	39.0
	Jul/Aug	346	57.8	4,283	49.5	1,456	45.2	5,740	47.5
	Sep/Oct	752	32.9	11,880	36.2	5,023	36.7	16,903	35.5
	Nov/Dec	437	45.4	1,516	80.2	233	100.0	1,749	82.4
	Total	3,435	17.4	75,171	24.1	18,124	22.2	93,295	23.0
2016	Jan/Feb	284	50.2	8,955	58.2	1,677	64.7	10,632	58.5
	Mar/Apr	1,661	58.5	16,160	44.1	6,929	48.0	23,089	41.1
	May/Jun	5,076	37.5	45,420	33.9	6,487	41.5	51,907	32.3
	Jul/Aug	361	33.0	6,498	43.8	1,972	42.0	8,470	40.3
	Sep/Oct	769	43.8	5,887	51.5	2,294	50.6	8,181	46.6
	Nov/Dec	474	54.5	2,848	61.2	449	58.5	3,297	60.7
	Total	8,625	25.6	85,769	21.5	19,808	23.5	105,577	20.0
2015	Jan/Feb	195	77.3	2,433	100.0	-	-	2,433	100.0
	Mar/Apr	645	43.6	992	100.0	-	-	992	100.0
	May/Jun	1,443	31.7	35,133	44.9	6,040	35.4	41,172	41.2
	Jul/Aug	3,587	19.7	104,911	31.1	33,464	34.7	138,374	31.1
	Sep/Oct	1,270	33.8	13,094	39.0	1,055	43.5	14,149	37.2
	Nov/Dec	497	58.0	9,856	63.5	2,255	55.1	12,112	61.1
	Total	7,636	13.9	166,418	22.8	42,814	28.2	209,231	23.0
2014	Jan/Feb	108	100.0	379	100.0	-	-	379	100.0
	Mar/Apr	129	70.8	978	100.0	-	-	978	100.0
	May/Jun	2,931	25.4	107,970	31.1	13,873	25.5	121,843	29.4
	Jul/Aug	1,368	41.2	25,053	57.2	1,827	62.6	26,880	56.0
	Sep/Oct	1,691	32.5	20,766	51.1	2,209	56.5	22,976	49.1
	Nov/Dec	98	71.8	7,510	87.9	1,306	79.0	8,816	80.8
	Total	6,325	17.9	162,656	24.0	19,215	21.5	181,871	22.9

Table V.11 Recreational cast net effort and catch (in numbers) for Hard Clam (estimates based on mail survey) *(continued)*.

Year	Wave	Total Effort	PSE Effort	Total Clam Harvest	PSE Harvest	Total Clam Release	PSE Release	Total Clam Catch	PSE Total Catch
2013	Jan/Feb	824	63.5	3,142	100.0	682	72.5	3,824	89.6
	Mar/Apr	986	81.6	-	-	-	-	-	-
	May/Jun	830	37.0	17,426	48.8	5,861	48.2	23,288	47.2
	Jul/Aug	4,763	15.3	150,255	18.6	22,168	18.0	172,423	17.6
	Sep/Oct	745	27.5	19,087	39.9	5,408	45.1	24,495	37.8
	Nov/Dec	496	48.4	1,932	84.9	644	100.0	2,576	72.8
	Total	8,645	15.1	191,841	16.2	34,764	16.1	226,605	15.3
2012	Jan/Feb	183	88.0	1,908	100.0	530	100.0	2,438	100.0
	Mar/Apr	28	100.0	-	-	-	-	-	-
	May/Jun	878	30.9	11,963	37.4	2,714	37.2	14,677	36.7
	Jul/Aug	4,024	22.3	102,500	27.8	27,899	29.1	130,399	27.0
	Sep/Oct	1,289	30.2	20,500	37.3	3,730	37.6	24,230	36.9
	Nov/Dec	324	45.8	9,280	66.9	2,743	72.2	12,023	61.6
	Total	6,725	16.3	146,152	21.3	37,615	23.1	183,767	20.8
2011	Sep/Oct[3]	-	-	-	-	-	-	-	-
	Nov/Dec	781	36.4	26,765	38.2	1,974	49.9	28,739	37.9
	Total	781	36.4	26,765	38.2	1,974	49.9	28,739	37.9

[3] Mail survey was implemented in October 2011; the Sept/Oct wave was incomplete.

Table V.12 Recreational shellfish effort and catch (in numbers) for Blue Crab (estimates based on mail survey).

Year	Wave	Total Effort	PSE Effort	Total Crab Harvest	PSE Harvest	Total Crab Release	PSE Release	Total Crab Catch	PSE Total Catch
2019	Jan/Feb	1,003	47.0	1,776	50.9	2,977	44.4	4,753	38.7
	Mar/Apr	1,801	27.1	2,487	44.5	3,269	39.0	5,576	34.4
	May/Jun	6,884	29.0	27,645	31.1	20,130	23.5	47,775	25.9
	Jul/Aug	6,545	14.2	23,979	23.9	29,117	21.7	53,096	19.3
	Sep/Oct	3,632	17.3	17,308	23.8	15,350	23.1	32,658	22.5
	Nov/Dec	2,135	25.9	8,620	43.5	7,941	46.4	16,561	40.4
	Total	22,000	12.0	81,815	14.7	78,784	12.4	160,599	12.1
2018	Jan/Feb	436	66.5	-	-	-	-	-	-
	Mar/Apr	538	41.0	675	71.9	575	65.6	1,250	68.0
	May/Jun	9,767	20.0	22,980	25.9	32,787	23.1	55,767	22.4
	Jul/Aug	1,661	23.4	10,759	64.3	9,960	33.3	20,719	46.8
	Sep/Oct	3,123	29.5	13,352	38.8	13,148	39.7	26,501	38.0
	Nov/Dec	1,294	44.0	-	-	554	65.0	554	65.0
	Total	16,819	15.2	47,766	22.3	57,024	17.5	104,791	18.3
2017	Jan/Feb	142	73.5	-	-	-	-	-	-
	Mar/Apr	1,426	23.1	3,055	61.3	4,380	40.5	7,435	41.9
	May/Jun	4,521	13.1	21,326	30.6	21,807	22.1	43,134	24.5
	Jul/Aug	7,716	15.9	26,539	29.8	23,217	20.5	49,756	23.5
	Sep/Oct	2,236	17.7	12,397	33.0	14,181	25.5	26,578	28.0
	Nov/Dec	1,341	33.7	9,328	49.0	4,081	46.9	13,409	46.9
	Total	17,381	10.6	72,645	16.97	67,667	12.21	140,311	13.69
2016	Jan/Feb	1,218	46.4	-	-	-	-	-	-
	Mar/Apr	1,111	28.6	4,696	49.6	3,351	39.8	8,047	39.6
	May/Jun	5,192	20.9	16,720	26.2	18,446	20.1	35,166	21.0
	Jul/Aug	7,435	14.8	21,722	22.0	41,521	20.1	63,243	19.2
	Sep/Oct	7,537	19.0	40,047	24.7	19,157	20.4	59,204	22.4
	Nov/Dec	832	43.5	1,694	58.2	305	72.0	1,999	58.0
	Total	23,325	9.9	84,879	14.4	82,781	12.3	167,660	11.9
2015	Jan/Feb	760	66.7	-	-	-	-	-	-
	Mar/Apr	2,993	36.1	4,648	44.9	5,897	37.4	10,546	37.3
	May/Jun	5,182	19.4	22,461	28.8	14,429	24.3	36,890	24.7
	Jul/Aug	10,880	24.3	31,483	29.5	28,123	23.4	59,605	25.1
	Sep/Oct	5,743	28.9	12,309	29.6	8,925	19.6	21,234	23.2
	Nov/Dec	13,787	100.0	-	-	18,383	100.0	18,383	100.0
	Total	39,344	35.8	70,901	17.2	75,757	26.5	146,657	17.9
2014	Jan/Feb	335	36.9	-	-	-	-	-	-
	Mar/Apr	1,222	27.6	2,872	48.4	2,322	41.5	5,195	43.0
	May/Jun	8,477	18.9	25,749	27.0	18,019	21.9	43,768	22.2
	Jul/Aug	5,584	24.9	35,911	44.3	23,067	33.7	58,978	37.1
	Sep/Oct	7,282	15.7	35,882	23.7	23,975	23.4	59,856	21.3
	Nov/Dec	481	38.7	183	100.0	30	100.0	213	100.0
	Total	23,381	11.3	100,596	19.5	67,413	15.7	168,010	16.5

Table V.12 Recreational cast net effort and catch (in numbers) for Blue Crab (estimates based on mail survey) *(continued)*.

Year	Wave	Total Effort	PSE Effort	Total Crab Harvest	PSE Harvest	Total Crab Release	PSE Release	Total Crab Catch	PSE Total Catch
2013	Jan/Feb	161	74.9	-	-	-	-	-	-
	Mar/Apr	1,784	47.4	1,528	59.8	1,162	53.6	2,690	52.8
	May/Jun	6,225	25.8	23,150	31.0	11,528	24.9	34,678	27.4
	Jul/Aug	9,555	17.6	40,004	21.4	20,143	21.6	60,147	19.2
	Sep/Oct	10,599	21.4	25,976	24.4	25,872	30.4	51,848	25.4
	Nov/Dec	2,408	39.3	3,516	44.7	2,747	44.0	6,263	42.6
	Total	30,731	11.6	94,174	13.9	61,451	15.7	155,626	13.1
2012	Jan/Feb	781	50.8	1,215	64.6	330	73.5	1,545	62.3
	Mar/Apr	2,196	21.2	8,230	37.4	5,504	40.4	13,734	34.5
	May/Jun	7,311	19.5	23,564	24.0	14,762	22.1	38,326	21.6
	Jul/Aug	11,262	12.1	61,648	17.0	40,210	18.4	101,858	16.6
	Sep/Oct	3,625	21.0	19,563	32.7	13,405	33.1	32,968	31.0
	Nov/Dec	1,688	31.9	6,759	44.5	4,861	41.6	11,620	41.6
	Total	26,863	8.9	120,980	12.0	79,072	12.5	200,052	11.5
2011	Sep/Oct[3]	-	-	-	-	-	-	-	-
	Nov/Dec	1,588	26.1	8,031	38.4	3,457	37.1	11,488	37.1
	Total	1,588	26.1	8,031	38.4	3,457	37.1	11,488	37.1

[3] Mail survey was implemented in October 2011; the Sept/Oct wave was incomplete.

Table V.13 Recreational shellfish effort and catch (bushels) for Oysters (estimates based on mail survey).

Year	Wave	Total Effort	PSE Effort	Total Oyster Harvest	PSE Harvest	Total Oyster Release	PSE Release	Total Oyster Catch	PSE Total Catch
2019	Jan/Feb	584	31.0	235	46.8	-	-	235	46.8
	Mar/Apr	-	-	-	-	-	-	-	-
	May/Jun	-	-	-	-	-	-	-	-
	Jul/Aug	108	100.0	163	100.0	-	-	163	100.0
	Sep/Oct	370	43.2	154	59.7	-	-	154	59.7
	Nov/Dec	611	35.2	329	41.3	-	-	329	41.3
	Total	1,673	21.3	881	29.1	-	-	881	29.1
2018	Jan/Feb	764	40.3	82	100	-	-	82	100
	Mar/Apr	531	42.4	165	60.5	-	-	165	60.5
	May/Jun	-	-	-	-	-	-	-	-
	Jul/Aug	-	-	-	-	-	-	-	-
	Sep/Oct	48	69.1	24	100.0	-	-	24	100.0
	Nov/Dec	408	42.9	117	59.88	-	-	117	59.9
	Total	1,751	25.2	388	38.4	-	-	388	38.4
2017	Jan/Feb	1331	24.1	1337	37.17	-	-	1337	37.17
	Mar/Apr	956	46.6	303	44.6	-	-	303	44.6
	May/Jun	-	-	-	-	-	-	-	-
	Jul/Aug	-	-	-	-	-	-	-	-
	Sep/Oct	-	-	-	-	-	-	-	-
	Nov/Dec	829	41.2	392	44.1	-	-	392	44.1
	Total	3,116	22.6	2,033	26.9	-	-	2,033	26.9
2016	Jan/Feb	669	30.5	411	41.87	-	-	411	41.87
	Mar/Apr	113	68.5	36	85.8	-	-	36	85.8
	May/Jun	-	-	-	-	-	-	-	-
	Jul/Aug	-	-	-	-	-	-	-	-
	Sep/Oct	-	-	-	-	-	-	-	-
	Nov/Dec	2,157	29.5	884	46.5	-	-	884	46.5
	Total	2,940	27.3	1,331	33.7	-	-	1,331	33.7
2015	Jan/Feb	487	35.9	487	43.81	-	-	487	43.81
	Mar/Apr	-	-	-	-	-	-	-	-
	May/Jun	-	-	-	-	-	-	-	-
	Jul/Aug	-	-	-	-	-	-	-	-
	Sep/Oct	327	73.5	39	100.0	-	-	39	100.0
	Nov/Dec	508	41.0	161	48.6	-	-	161	48.6
	Total	1,322	28.6	686	33.8	-	-	686	33.8
2014	Jan/Feb	271	48.2	108	78.95	-	-	108	78.95
	Mar/Apr	-	-	-	-	-	-	-	-
	May/Jun	-	-	-	-	-	-	-	-
	Jul/Aug	-	-	-	-	-	-	-	-
	Sep/Oct	-	-	-	-	-	-	-	-
	Nov/Dec	641	29.7	442	44.4	-	-	442	44.4
	Total	912	31.3	550	39.1	-	-	550	39.1

Table V.13 Recreational shellfish effort and catch (bushels) for Oysters (estimates based on mail survey) *(continued)*.

Year	Wave	Total Effort	PSE Effort	Total Oyster Harvest	PSE Harvest	Total Oyster Release	PSE Release	Total Oyster Catch	PSE Total Catch
2013	Jan/Feb	576	56.2	52	100	-	-	52	100
	Mar/Apr	416	67.0	30	100.0	-	-	30	100.0
	May/Jun	-	-	-	-	-	-	-	-
	Jul/Aug	-	-	-	-	-	-	-	-
	Sep/Oct	37	100.0	19	100.0	-	-	19	100.0
	Nov/Dec	560	32.7	364	45.7	-	-	364	45.7
	Total	1,589	30.7	465	38.4	-	-	465	38.4
2012	Jan/Feb	2211	25.7	136	59.6	-	-	136	59.6
	Mar/Apr	-	-	-	-	-	-	-	-
	May/Jun	-	-	-	-	-	-	-	-
	Jul/Aug	-	-	-	-	-	-	-	-
	Sep/Oct	-	-	-	-	-	-	-	-
	Nov/Dec	1,146	21.5	679	32.3	-	-	679	32.3
	Total	3,357	23.2	815	28.9	-	-	815	28.9
2011	Jan/Feb	481	63.6	70	84.9	-	-	70	84.9
	Mar/Apr	371	65.5	64	100.0	-	-	64	100.0
	May/Jun	-	-	-	-	-	-	-	-
	Jul/Aug	-	-	-	-	-	-	-	-
	Sep/Oct	29	69.6	11	74.4	-	-	11	74.4
	Nov/Dec	997	35.1	676	51.8	-	-	676	51.8
	Total	1,878	30.0	821	44.1	-	-	821	44.1

Appendix V.1 Primary and secondary waterbodies.

North Carolina Waterbodies
Please list the major waterbody (in bold) you used from the following list.

Albemarle Sound
Alligator River
Batchelor Bay
Big Flatty Creek
Bull Bay
Edenton Bay
Little River
North River
Scuppernong River
Swan Bay
Taylor Bay
Yeopim River

Bay River
Bonner Bay
Fishermen Bay
Rockhole Bay
Trent Creek
Vandermere Creek

Bogue Sound
Bogue Inlet
Broad Creek
Deer Creek
Gales Creek
Hoop Hole
Money Isle
Pelitier Creek
Spooners Creek
Tar Landing Bay
Turning Basin

Cape Fear River
Baldhead Creek
Brunswick River
Buzzards Bay
Cedar Creek
Dutchman Creek
Elizabeth River
First Bay
Northeast Cape River
Second Bay

Chowan River
Meherrin River

Core Sound
Back Bay
Back Sound
Barry Bay
Cedar Island Bay
Jarrett Bay
Middle Marshes
Nelson Bay
Oyster Creek
Styron Bay
Thorofare Bay

Croatan Sound
Manns Harbor

Currituck Sound
Above Narrows
Below Narrows
Coinjock Bay
Knotts Island Bay

Little River
Bonaparte Creek
Calabash Creek
Eastern Channel
Ocean Isle Canals

Lockwood Folly
Spring Branch

Masonboro Sound
Banks Channel
Carolina Beach Basin
Carolina Beach Inlet
Johns Creek
Mason Inlet
Masonboro Channel
Masonboro Inlet
Rich Inlet

Neuse River
Adams Creek
Beard Creek
Broad Creek
Clubfoot Creek
Dawson Creek
Goose Creek
Hancock Creek
N. of Core Creek Bridge
Slocum Creek
South River
Swan Creek
Trent River
Turnagain Bay
Upper Broad Creek

New River
Chadwick Bay
Courthouse Bay
Farnell Bay
Morgan Bay
Stones Bay

Newport River
Calico Creek
Core Creek
Haystacks
S. of Core Creek Bridge
Taylor Creek
Town Creek

North River (Carteret)

Davis Bay
Goose Bay
Muddy Creek
North River Thorofare
The Straits
Ward Creek

Pasquotank River
Little Flatty Creek
Newbegun Creek

Pamlico River
Bath Creek
Blounts Bay
Blounts Creek
Broad Creek
Durham Creek
Goose Creek
North Creek
South Creek
St. Clairs Creek

Pamlico Sound
Abel Bay
Caffee Bay
Deep Bay
Deep Cove
East Bluff Bay
Far Creek
Germantown Bay
Jones Bay
Juniper Bay
Long Shoal River
Mouse Harbor
Oyster Creek
Rose Bay
Spencer Bay
Striking Bay
Swan Quarter Bay
West Bluff Bay
Wysocking Bay

Pungo River
Fortescue Creek
Jordan Creek
Pantego Creek
Pungo Creek
Satterthwaite Creek
Slade Creek
Wrights Creek

Roanoke River
Broad Creek
Eastmost River
Middle River

Roanoke Sound
Broad Creek
Kitty Hawk Bay
Shallowbag Bay

Shallotte River
Gibbs Creek
Little Shallotte River

Stump Sound
Alligator Bay
Thomas Landing
Mill Creek

Topsail Sound
Virginia Creek
Topsail Creek
Elmore Inlet

White Oak River

If the waterbody that you used most often was the Intracoastal Waterway - please indicate the IWW and the County when filling out the survey form.

Intercoastal Waterway
Brunswick County

Intercoastal Waterway
Carteret County

Intercoastal Waterway
Craven County

Intercoastal Waterway
New Hanover County

Intracoastal Waterway
Onslow County

Intracoastal Waterway
Pender County

Atlantic Ocean
(north of Cape Hatteras)

Atlantic Ocean
(south of Cape Hatteras)

Information on catch and size limits can be found at:
http://portal.ncdenr.org/web/mf/recreational-fishing-size-and-bag-limits

Appendix V.2 Saltwater recreational cast net/seine survey form.

North Carolina Division of Marine Fisheries
Saltwater Recreational Cast Net/Seine Survey

Survey Recipient Name
Address Line 1
Address Line 2
Survey PIN: Customer ID #

If your name or mailing address (to the left) is incorrect, please fill in the correct information below.

Name	
Address	
City	
State	Zip

General Survey Information

If you purchased a Lifetime License from the Wildlife Resource Commission (WRC) ***prior to January 1, 2007*** do you saltwater fish?

O Yes O No O This question does not apply to me.

How would you *prefer* to receive future communications from the Division of Marine Fisheries? (choose only one)

O Postal mail O Internet O No preference

Email address: _____

Cast net/Seine Participation Information

☐ Check here if you **did not** use saltwater recreational cast nets or seines during the period of **(bi-monthly dates).** (If you used a cast net/seine for bait fish, please report activity on the next page.)

If you *do not* use saltwater cast net/seines and **will not do so in the future,** please check the reason why:

☐ Never used cast net/seine ☐ Other (please explain): _____

Please verify your address is correct and return the survey with the envelope provided.
We appreciate your time in helping us learn more about the catch and efforts of our cast net/seine angling community. Please feel free to write any questions, comments, or suggestions below.

If you have cast net/seine activity to report for the period of
(bi-monthly dates),
please complete the survey questions on the next page.

Trip Information

Please answer the following questions **only for saltwater recreational cast net/seine trips** that occurred during the period of **(bi-monthly dates)** in North Carolina.

Which do you use most often? (choose only one)

O Cast net O Seine O Use both equally

How many trips did you participate in? _____

On a typical trip, how many people were involved (yourself included)? _____

What is the average amount of time you spent using a cast net or seine during each trip? _____
(round to the nearest half or whole hour)

What point of access did you typically use? (choose only one)

O Water access at residence O Beach/bank/shore

O Public boat ramp (WRC or municipal facility): Ramp name_____

O Marina/ramp: Ramp name_____

O Access at public pier: Pier name_____

If you used a cast net(s) during these trips, what size(s) did you use (in feet)? (circle all that apply)

5 6 7 8 9 10 11 12 N/A

If you used a seine during these trips, what is the average length seine you used (in feet)? _____

North Carolina county most often fished using a cast net and/or seine: _____

Waterbody most often accessed using a cast net and/or seine: _____
(Please refer to the waterbody list on the back of your cover letter.)

Catch Information (including bait fish)

If you used a **saltwater cast net and/or seine RECREATIONALLY** during the period of **(bi-monthly dates)** in North Carolina waters, please complete the table below based on those experiences. Do not include any species caught by commercial or hook and line activity. Only list species caught in your cast net/seine.

Species	Total number used as BAIT	Total number kept for eating	Total number DISCARDED* (not used for bait or eating)	
			Alive	Dead

Thank you for your time and participation.

Please return your completed survey in the postage paid envelope provided or mail to:
Ami Staples c/o NCDMF, 943 Washington Square Mall, Washington NC 27889

Appendix V.3 Recreational flounder gigging survey form.

North Carolina Division of Marine Fisheries
Recreational Flounder Gigging Survey

Survey Recipient Name
Address Line 1
Address Line 2
Survey PIN: Customer ID #

If your name or mailing address (to the left) is incorrect, please fill in the correct information below.

Name	
Address	
City	
State	Zip

General Survey Information

If you purchased a Lifetime License from the Wildlife Resource Commission (WRC) ***prior to January 1, 2007*** do you saltwater fish?

O Yes O No O This question does not apply to me.

How would you *prefer* to receive future communications from the Division of Marine Fisheries? (choose only one)

O Postal mail O Internet O No preference

Email address: _____

Do you recreationally harvest crabs? O Yes O No

Do you recreationally harvest clams, oysters, or scallops? O Yes O No

Do you recreationally use a cast net or seine? O Yes O No

Gigging Participation Information

☐ Check here if you did **not** participate in flounder gigging during the period of **(bi-monthly dates).** (If you did participate in flounder gigging, please report activity on the next page.)

If you *do not* flounder gig and **will not gig in the future**, please check the reason why:

☐ Never gigged ☐ Other (please explain): _____

Please verify your address is correct and return the survey with the envelope provided.
We appreciate your time in helping us learn more about the catch and efforts of our flounder gigging community. Please feel free to write any questions, comments, or suggestions below.

If you have gigging activity to report for the period of (bi-monthly dates), please complete the survey questions on the next page.

Trip Information

Please answer the following questions **only for gigging trips** that occurred during the period of **(bi-monthly dates)** in North Carolina.

How many trips did you participate in? _____

On a typical trip, how many people went gigging (yourself included)? _____

What is the average amount of time you spent gigging per trip? _____
(round to the nearest half or whole hour)

What point of access did you typically use? (choose only one)

- O Water access at residence
- O Beach/bank/shore
- O Private boat ramp
- O Public boat ramp (WRC or municipal facility): Ramp name_____
- O Marina/ramp: Ramp name_____

What was your typical method of gigging? (choose only one)

- O Poling
- O Walking/wading
- O Trolling motor
- O Other_____

North Carolina county most often gigged for flounder: _____

Waterbody most often gigged for flounder: _____
(Please refer to the waterbody list on the back of your cover letter.)

Catch Information

If you **RECREATIONALLY gigged** during the period of **(bi-monthly dates)** in North Carolina waters, please complete the table below based on those experiences. Do not include commercial or hook and line activity. **You should only include information on fish captured while gigging (including those species other than flounder).**

Species (list other species below)	**Total number kept**	**Total pounds kept** (optional)	**Total number thrown back**
flounder			

Thank you for your time and participation.

Please return your completed survey in the postage paid envelope provided or mail to:
Ami Staples c/o NCDMF, 943 Washington Square Mall, Washington NC 27889

Appendix V.4 Recreational crab and shellfish harvesting survey form.

North Carolina Division of Marine Fisheries
Recreational Crab and Shellfish Harvesting Survey

Survey Recipient Name
Address Line 1
Address Line 2
Survey PIN: Customer ID #

If your name or mailing address (to the left) is incorrect, please fill in the correct information below.

Name	
Address	
City	
State	Zip

General Survey Information

If selected, how would you *prefer* to complete future surveys? (choose only one)

O Postal mail O Internet O No preference

Email address: _____

In addition to your Coastal Recreational Fishing License (CRFL), what other licenses do you have? (check all that apply)

☐ Recreational Commercial Gear License (RCGL)
☐ Standard Commercial Fishing License (SCFL)
☐ Retired Standard Commercial Fishing License (RSCFL)
☐ Shellfish License (a license that allows any North Carolina resident to harvest commercial amounts of shellfish without purchasing a SCFL)

Crab and Shellfish Harvest Participation Information

☐ Check here if you did **not** attempt to harvest any crabs, oysters, and clams in North Carolina during the period of **(bi-monthly dates)**. (If you harvested any crabs, oysters, and/or clams, please report activity on the next page.)

Please verify your address is correct and return the survey with the envelope provided.
We appreciate your time in helping us learn more about the catch and efforts of our recreational crab and shellfish harvesting community. Please feel free to write any questions, comments, or suggestions below.

If you attempted to harvest crabs and/or shellfish in North Carolina for the period of (bi-monthly dates), please complete the survey questions on the next page.

Recreational Crab and Shellfish Harvesting Survey

BLUE CRABS	I did not go **crabbing** from **(bi-monthly dates)** ☐	
Trip Information	**Catch Information for BLUE CRABS**	
What is the average amount of time you spent crabbing per trip? (hours) _____	**Total number kept**	**Total number thrown back**
On a typical trip, how many people went crabbing? (yourself included) _____	What gears did you use for crabbing? (Choose all that apply) ☐ Handline/Chicken necking ☐ Gig ☐ Hook & line ☐ Collapsible trap ☐ Pot ☐ Other (please list): _____	
Total number of crabbing trips made during this time period. _____		
What point of access did you typically use for crabbing? (Choose only one) O Beach/bank/shore O Public boat ramp (WRC or municipal facility): Ramp name_____ O Private boat ramp O Water access at residence O Marina/ramp: Ramp name_____		
North Carolina county most often fished for crabs: _____		
Waterbody most often fished for crabs: _____ *(REFER TO WATERBODY LIST ON THE BACK OF YOUR COVER LETTER)*		

CLAMS	I did not go **clamming** from **(bi-monthly dates)** ☐	
Trip Information	**Catch Information for CLAMS**	
What is the average amount of time you spent clamming per trip? (hours) _____	**Total number kept**	**Total number thrown back**
On a typical trip, how many people went clamming? (yourself included) _____	What gears did you use for clamming? (Choose all that apply) ☐ Hand ☐ Rake ☐ Tongs ☐ Other (please list): _____	
Total number of clamming trips made during this time period. _____		
What point of access did you typically use for clamming? (Choose only one) O Beach/bank/shore O Public boat ramp (WRC or municipal facility): Ramp name_____ O Private boat ramp O Water access at residence O Marina/ramp: Ramp name_____		
North Carolina county most often fished for clams: _____		
Waterbody most often fished for clams: _____ *(REFER TO WATERBODY LIST ON THE BACK OF YOUR COVER LETTER)*		

Recreational Crab and Shellfish Harvesting Survey

OYSTERS	I did not go **oystering** from **(bi-monthly dates)** ☐
Trip Information	**Catch Information for OYSTERS**
What is the average amount of time you spent oystering per trip? (hours) _____	**Total number of whole or half bushels kept (a 5 gallon bucket = about ½ bushel)**
On a typical trip, how many people went oystering? (yourself included) _____	What gears did you use for oystering? (Choose all that apply) ☐ Hand ☐ Rake ☐ Tongs ☐ Other (please list): _____
Total number of oystering trips made during this time period. _____	
What point of access did you typically use for oystering? (Choose only one) O Beach/bank/shore O Public boat ramp (WRC or municipal facility): Ramp name_____ O Private boat ramp O Water access at residence O Marina/ramp: Ramp name_____	
North Carolina county most often fished for oysters: _____	
Waterbody most often fished for oysters: _____ *(REFER TO WATERBODY LIST ON THE BACK OF YOUR COVER LETTER)*	

Thank you for your time and participation.

Please return your completed survey in the postage paid envelope provided or mail to:
Ami Staples c/o NCDMF, 943 Washington Square Mall, Washington NC 27889