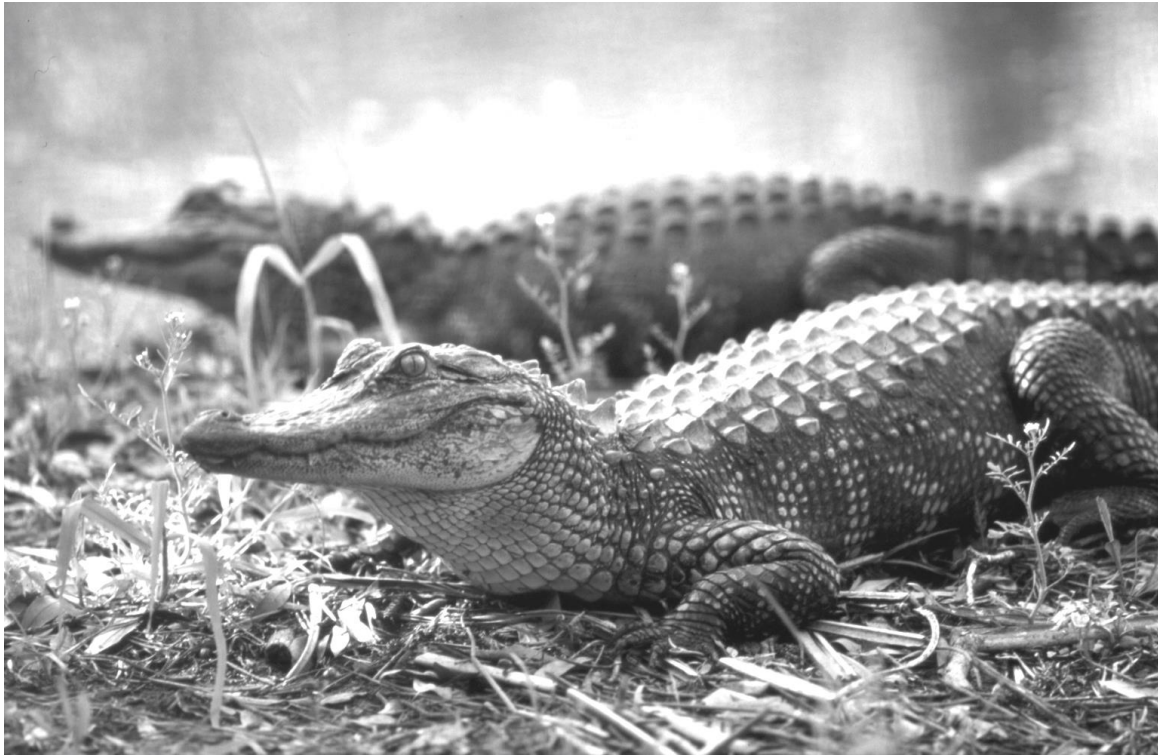


Alligator Hunting Season Report 2021



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Table of Contents

INTRODUCTION	2
HUNTER SELECTION	2
Figure 1. 2021 Alligator Management Units	3
Table 1. Fee breakdown for resident and non-resident hunters	4
SEASON RESULTS	5
Table 2. The number of alligators taken, and percent of total alligators harvested for the 2021 season by Hunt Unit	5
Figure 2. Reported participation rate (at least one trip afield) for all hunters selected to participate in the 2021 alligator season by Hunt Unit.....	6
Figure 3. Average size of alligators taken during the 2021 Public Hunting Season by Hunt Unit	7
Figure 4. Number of alligators taken by size class during the 2021 Public Hunting Season	7
Table 3. Number of alligators taken by size class and Hunt Unit during the 2021 Public Hunting Season.....	8
Figure 5. Number of alligators taken during the 2021 Public Hunting Season by size class and Hunt Unit.....	8
Table 4. 2021 Alligator harvest and percent of total alligator harvest by hunt unit and county	9
Figure 6. Number of “larger” alligators (10 feet and greater) taken during the 2021 Public Hunting Season by size class and County	10
Figure 7. Reported initial capture device utilized during the 2021 Alligator Season	11
DISCUSSION & RECOMMENDATIONS	12
Figure 8. Percent success rate for all selected hunters, by year	12
Figure 9. Total number of the largest alligators (10-13 ft.) harvested each year since 2008. Trend lines represent trajectory of harvest numbers over time	13
APPENDIX	2
Appendix I. Average length of alligators reported taken during the 2021 Public Harvest Season by county	15
Appendix II. Number of alligators taken during the 2021 Public Hunting Season by county of reported harvest	16
Appendix III. Number of alligators taken during all years of the Public & WMA Hunting Season, by Hunt Unit	17
Appendix IV. Number of alligators taken during all years of the Public Alligator Hunting Seasons, by size class.....	18

INTRODUCTION

The successful return of the American alligator (*Alligator mississippiensis*), since its near demise and subsequent listing as “endangered” by the Endangered Species Act in the 1960s, has prompted most Southeastern states to implement hunting seasons to allow the public use of this unique natural resource. The hunts are also seen as an attempt to maintain the number of nuisance alligator complaints at a manageable level. The alligator is currently listed as “threatened,” not because of population numbers, which are secure, but because of its “similarity of appearance” to other rare and protected crocodylians worldwide. It is estimated that a minimum of 100,000 alligators occur in the state of South Carolina.

The 2021 Public Alligator Hunting Season marked the fourteenth general alligator hunting season after a closure of nearly 40 years. However, alligators have been legally hunted in South Carolina since 1995 under the Private Lands Alligator Harvest Program. The Private Lands Program was established as a means for large landowners having significant amounts of alligator habitat to manage their alligator numbers on a sustained-yield basis and included quotas for specific size-class alligators. This year’s public hunt, utilizing a random computer drawing, was open to all applicants, including nonresidents, and was conducted on public and private lands (not enrolled in the Private Lands Program) from the Midlands to the coast.

Because alligators can grow to considerable size, alligator hunters can have others assist them with the taking of an alligator during the season. Everyone who participates must have a South Carolina hunting license or be under the age of 16. To participate in the public alligator season, one must first apply online, be selected, then pay a fee for a permit and harvest tag. The fee for the permit and tag is \$100. In addition, any nonresident hunter or nonresident assistant 16 years of age or older must pay an additional \$200 nonresident alligator hunting fee. By law, all fees collected for the alligator hunting program are used to support administration of the alligator program in South Carolina, and for research, monitoring, and management of this important and unique natural resource.

HUNTER SELECTION

The public alligator hunt is a limited, lottery-style hunt in which participants are selected in a randomized computer drawing. All potential hunters are required to apply online through the Department of Natural Resources (DNR) website (www.dnr.sc.gov) and pay a non-refundable application fee of \$10. A person must be 16 years of age or older to apply for any alligator lottery hunt. There is no age requirement to assist a permitted alligator hunter, although other fees may apply.

The four alligator hunt units (Figure 1) remain unchanged. Except for a small portion of Berkeley County located within Lake Marion, county lines bound all hunt units. The allocation of permits for 2021 was 250 per hunt unit based on 1,000 total tags available. Hunters could select the option to be considered for any or all the units for the computer drawing, but if successful, are only selected to hunt in one unit. After paying the \$100 tag fee, those selected for the hunt are issued a permit and one harvest tag. All alligator harvest tags and permits are issued specifically to the selected hunter and are non-transferrable. The harvest tag is a numbered, permanently locking nylon tag that must be attached to the alligator’s tail immediately after harvest. The permit and tag allow a hunter to take one alligator greater than 4 feet in total length from either public or private waters in their selected hunt unit; however, no alligator hunting

is allowed on certain public lands such as Wildlife Management Areas (except in navigable waters normally open to the public for hunting), State Parks, or Federal properties such as National Wildlife Refuges and their jurisdictional waters.

Two Wildlife Management Area (WMA) properties, Bear Island and Santee Coastal Reserve, were opened for alligator hunting beginning in 2011 and closed to alligator hunting after the 2017 season. These two WMAs were part of a special draw hunt held separately from the regular Public Alligator Hunting Season, but due to extremely long wait times for hunt selection and often disappointing hunt results these hunts were discontinued.

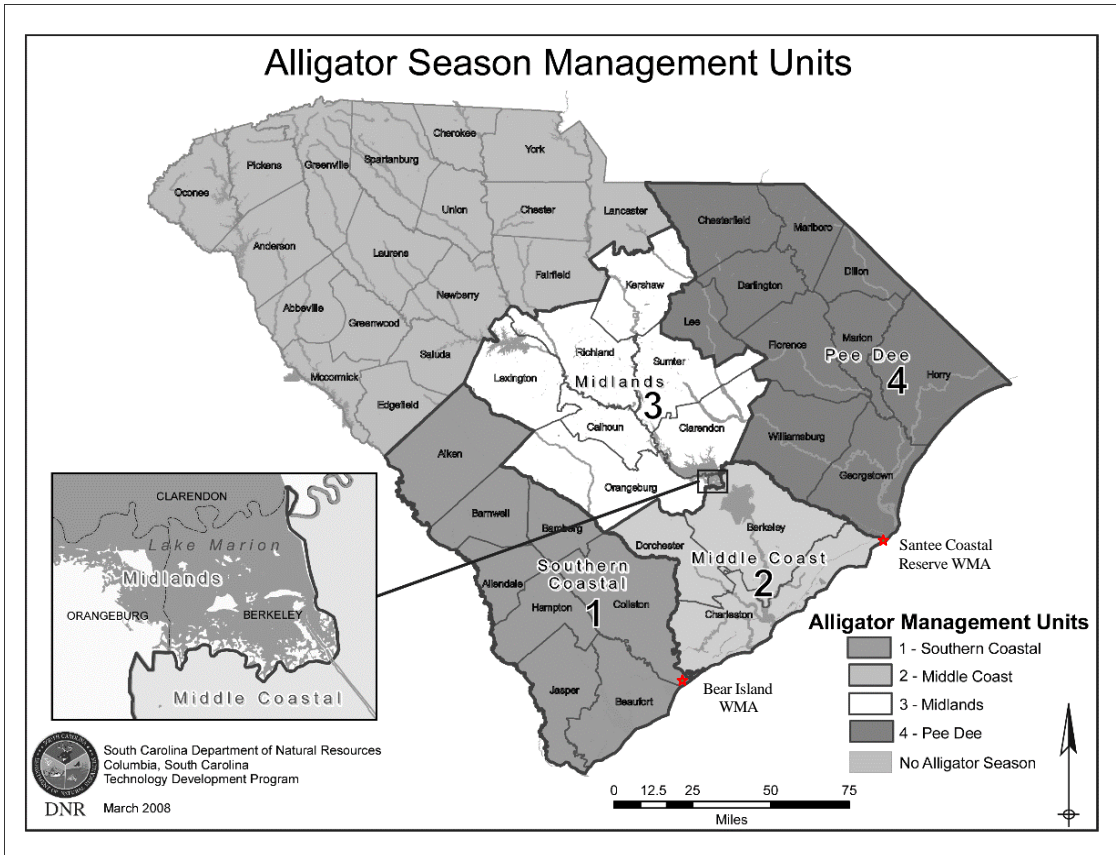


Figure 1. 2021 Alligator Management Units

Legislation passed during the 2010 legislative session requires that all nonresident alligator hunters pay a *nonresident alligator hunting fee*. This fee is *in addition* to any application, licensing, and permit fees normally required to hunt alligators, regardless of the alligator hunting program. The cost is \$200 and is required of all nonresident hunters, as well as nonresident assistants 16 years of age or older (Table 1). Nonresident assistants under 16 do not pay any fees. Other states have similar additional nonresident fees or prohibit nonresident participation altogether.

Table 1. Fee breakdown for resident and non-resident hunters

Fee	Resident	Non-resident
Application (non-refundable)	\$10	\$10
Permit/tag	\$100	\$100
Hunting fee	\$0	\$200
Hunting license	\$12	\$40 (3-day)

The lottery selection process began as usual on May 1st and ended on June 15th. A total of 8,381 hunters applied for the 2021 hunt. This is an increase of 1,208 (+16.8%) applicants over last year. The applicants were from 47 different states (including SC) along with one applicant from Washington D.C. The number of resident applicants remained steady at 88.5% of the total applications received for the Public Hunting Season. Similar to past years, NC and GA residents made up the majority of non-residents at 3.8% and 0.97% of the total number of applicants, respectively. No other states' applicants were more than 1% of the total.

No hunters with fewer than three preference points were selected for the Public Alligator Hunting season. The majority (81.9%) had three preference points. The remaining selected hunters had four (14.5%) and five or greater (3.6%) preference points. Another 176 applicants with four or more preference points chose the non-draw option. Applicants lose any accumulated preference points once selected for a permit, whether the permit is purchased or not.

A total of 830 of the 1,000 hunters selected (83.0%) in the 2021 season completed the application process and were issued a harvest tag and permit. The tag purchase rate was lower than last year's rate of 85%. This purchasing rate remains at or above the predicted fulfillment rate of 75-80% relative to the targeted tag distribution. Currently, the targeted allotment is 1,000 tags, a number which is subject to change in future years based on harvest and/or alligator survey data.

The 2021 Alligator Hunting Guide, ([2021gatorguide.pdf \(sc.gov\)](#)) was updated to reflect changes from the previous season.

The 2021 season began at noon on September 11th and ended at noon on October 9th.

SEASON RESULTS

All permitted alligator hunters were required to report their hunting activities by November 1st, regardless of whether they went alligator hunting in South Carolina. Reporting compliance for 2021 was 57.95% for all fully permitted hunters. **Those hunters who did not report are not eligible to apply for the next hunting season.**

The total number of alligators reported taken during the 2021 public alligator hunting season was 310, an increase of 57 alligators from the 2020 season. This represents a success rate of 37.3% for all fully permitted hunters (n=830) and 31% for all selected applicants (n=1,000). One alligator harvest occurred outside of its assigned hunting unit and has been excluded from all harvest data going forward. The Midlands unit had the most alligators taken at 80, followed by Southern Coastal with 79, the Middle Coastal Unit with 76, and Pee Dee with 74 (Table 2).

Table 2. The number of alligators taken, and percent of total alligators harvested for the 2021 season by Hunt Unit.

Hunt Unit Taken	Number of Alligators Harvest*	Percent of Total
Middle Coastal	76	24.6%
Midlands	80	25.9%
Pee Dee	74	23.9%
Southern Coastal	79	25.6%
Total	309	100.0%

*Percentages may not be equal due to rounding of decimal numbers.

Fully permitted hunters (n=830) who reported going hunting (n=456) had a success rate of 67.98%. The number of hunters that hunted but were unsuccessful was 146 (32%). Another 3% of hunters (n=25) that paid their \$100 tag fee reportedly did not go alligator hunting this season. The *reported* participation rate was highest in the Middle Coastal Unit, with 47.2% of all selected hunters *for the unit* (n=250) going on at least one alligator hunting trip. Participation rates for the other units are shown in Figure 2.

Of all participating hunters reporting, the Middle Coastal hunters averaged 2.6 hunting trips (SD=2.3) per hunter, the Midlands hunters averaged 2.7 days afield (SD=2.4), the Southern Coastal hunters at 1.9 days (SD=1.2), and Pee Dee hunters averaged 2.5 days afield (SD=2.6). Collectively, all hunters averaged 2.4 days hunting alligators (SD=2.2).

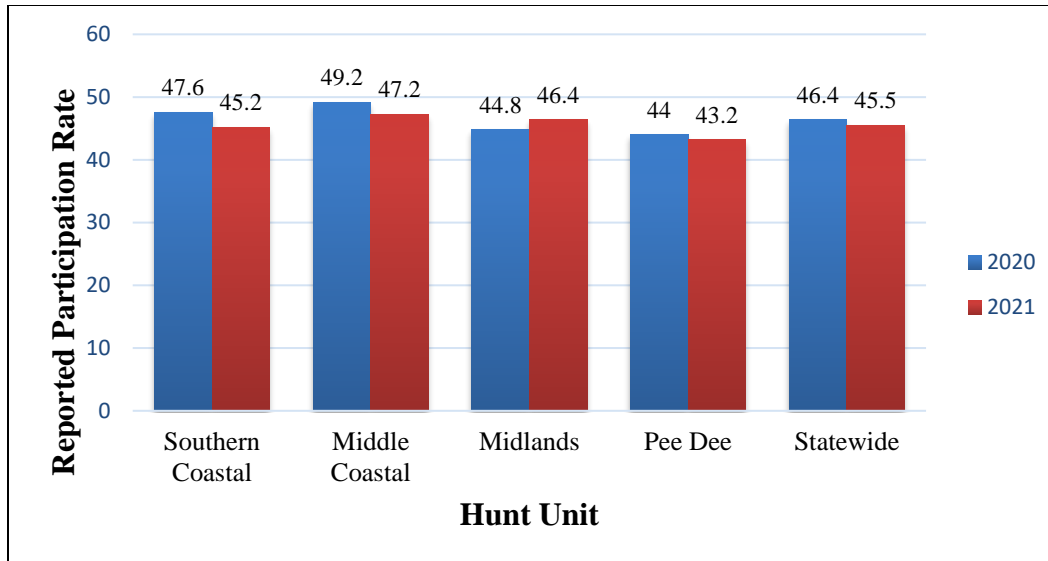


Figure 2. Reported participation rate (at least one trip afield) for all hunters selected to participate in the 2021 alligator season by Hunt Unit.

Considering *only the successful hunters*, the most efficient hunters were from the Southern Coastal Unit. These hunters went afield an average of 1.8 trips per alligator killed. Successful Pee Dee and Middle Coastal hunters averaged 2.5 trips per alligator taken, followed by Midland’s hunters at 2.8 trips. All successful hunters spent an average of 2.4 trips hunting per every alligator taken.

The average size of all alligators reported taken during the 2021 public season was 8.9 feet. The average size of alligators taken in Middle Coastal was 9.6 feet, followed by the Midlands and Pee Dee units at 8.8 feet. Lastly, the Southern Coastal unit averaged at 8.3 feet (Figure 3; Appendix 1). The average size of alligators harvested in all hunt units were the same as in 2020. Four alligators were reported to be 13 feet or greater, as was also the case in 2020 (Figure 4). According to harvest reports, the largest alligator taken this season was 13’08” from the Middle Coastal unit. The smallest alligator reported was 5’08” and was taken from the Midlands unit.

Of the smallest alligators taken, 16 were reported to be less than 6 feet in length. The number of smaller alligators (*six feet and smaller*) harvested this season was greater than last year at 12 (4.7% of total harvested). The greatest number of larger alligators (*10 feet and larger*) came from the Middle Coastal unit, with 36 alligators 10 feet and larger, followed by the Midlands with 29, Pee Dee with 19, and the Southern Coastal unit with 15 (Table 3; Figure 5). Of the *very large* alligators (*12 feet and larger*), the Middle Coastal unit had a slightly larger number of the total alligators taken (n=9), followed by the Midlands (n=6). Pee Dee had one alligator greater than 12 feet harvested, and the Southern Coastal units had none. Four alligators 13 feet and larger were harvested, three from the Middle Coastal unit and one from Midlands. Overall, there was a 33.8% increase in the number of alligators taken in all size classes greater than 8-foot from the 2020 hunt (see Appendix).

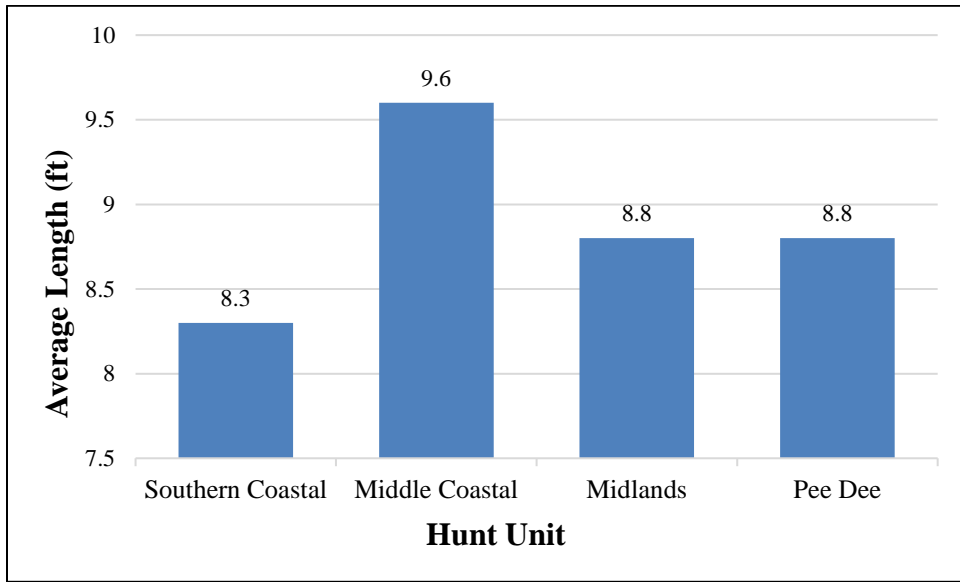


Figure 3. Average size of alligators taken during the 2021 Public Hunting Season by Hunt Unit.

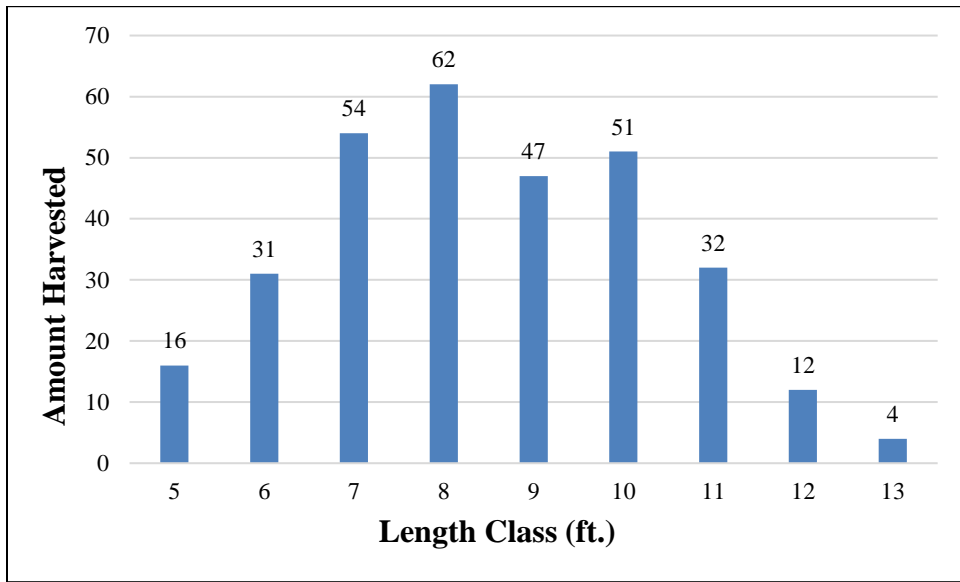


Figure 4. Number of alligators taken by size class during the 2021 Public Hunting Season.

Table 3. Number of alligators taken by size class and Hunt Unit during the 2021 Public Hunting Season

Hunt Unit	Alligator Size Class ^a									
	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'
Southern Coastal	0	3	13	18	19	11	8	7	0	0
Middle Coastal	0	1	7	8	11	13	13	8	6	3
Midlands	0	10	6	14	12	9	9	14	5	1
Pee Dee	0	2	5	14	20	14	15	3	1	0
Totals	0	16	31	54	62	47	51	32	12	4
Change from 2020	-2	+6	+7	+13	+6	+1	+12	+7	+6	0

^a Shaded area denotes “larger” alligator size classes.

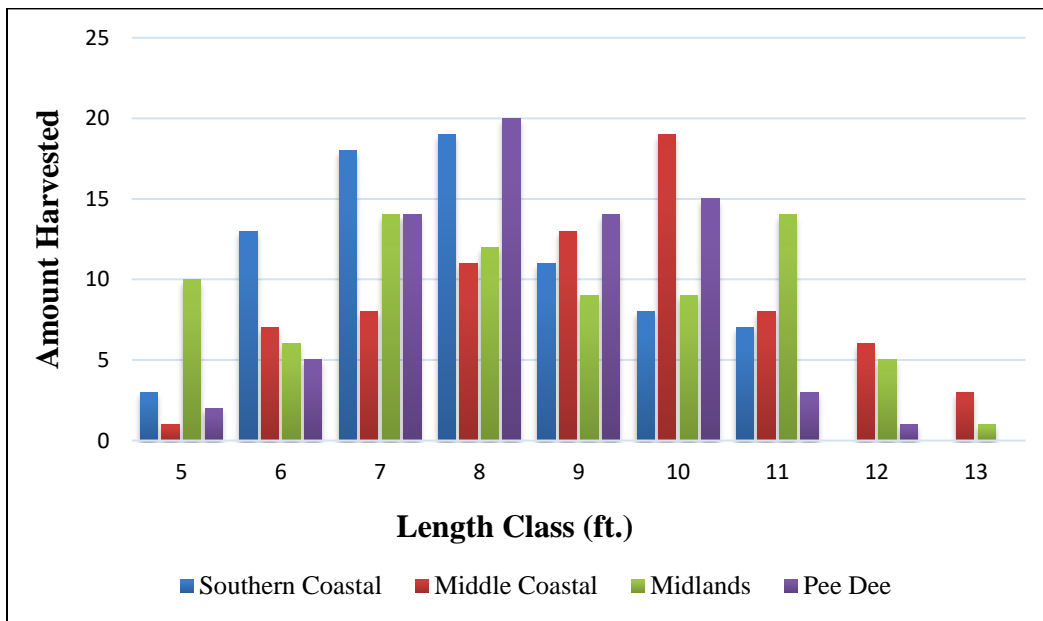


Figure 5. Number of alligators taken during the 2021 Public Hunting Season by size class and Hunt Unit.

Alligator harvest was reported from sixteen coastal plain counties. Reported take by county revealed that three counties: Berkeley, Georgetown, and Colleton, comprised 64.1% of the public alligator harvest (Table 4; Appendix II). Those same counties have accounted for approximately 60% to 70% of the total harvest since the 2009 season. The largest alligators (10'+) came from 12 counties. Allendale, (n=2), Beaufort (n=5), Berkeley (n=37), Calhoun (n=3), Charleston (n=4), Clarendon (n=9), Colleton (n=8), Georgetown (n=15), Horry (n=3), Marion (n=1), Orangeburg (n=10), and Sumter (n=2) (Figure 6).

Table 4. 2021 Alligator harvest and percent of total alligator harvest by hunt unit and county.

Hunt Unit	County	Number of Alligators Taken	Percent of Total Harvest*
SOUTHERN COASTAL		79	25.6%
	Allendale	2	0.6%
	Bamberg	1	0.4%
	Beaufort	19	6.1%
	Colleton	54	17.5%
	Jasper	3	0.97%
MIDDLE COASTAL		76	24.6%
	Berkeley ^a	63	20.4%
	Charleston	12	3.9%
	Dorchester	1	0.4%
MIDLANDS		80	25.9%
	Berkeley ^b	12	3.9%
	Calhoun	12	3.9%
	Clarendon	26	8.4%
	Orangeburg	24	7.8%
	Richland	1	0.4%
	Sumter	5	1.6%
PEE DEE		74	23.9%
	Florence	0	0%
	Georgetown	69	22.3%
	Horry	4	1.3%
	Marion	1	0.4%
TOTAL		309	100%

^a Does not include the portion of Berkeley County in the lower end of Lake Marion.

^b Includes only the portion of Berkeley County in the lower end of Lake Marion.

*Percentages may not be equal due to rounding of decimal numbers.

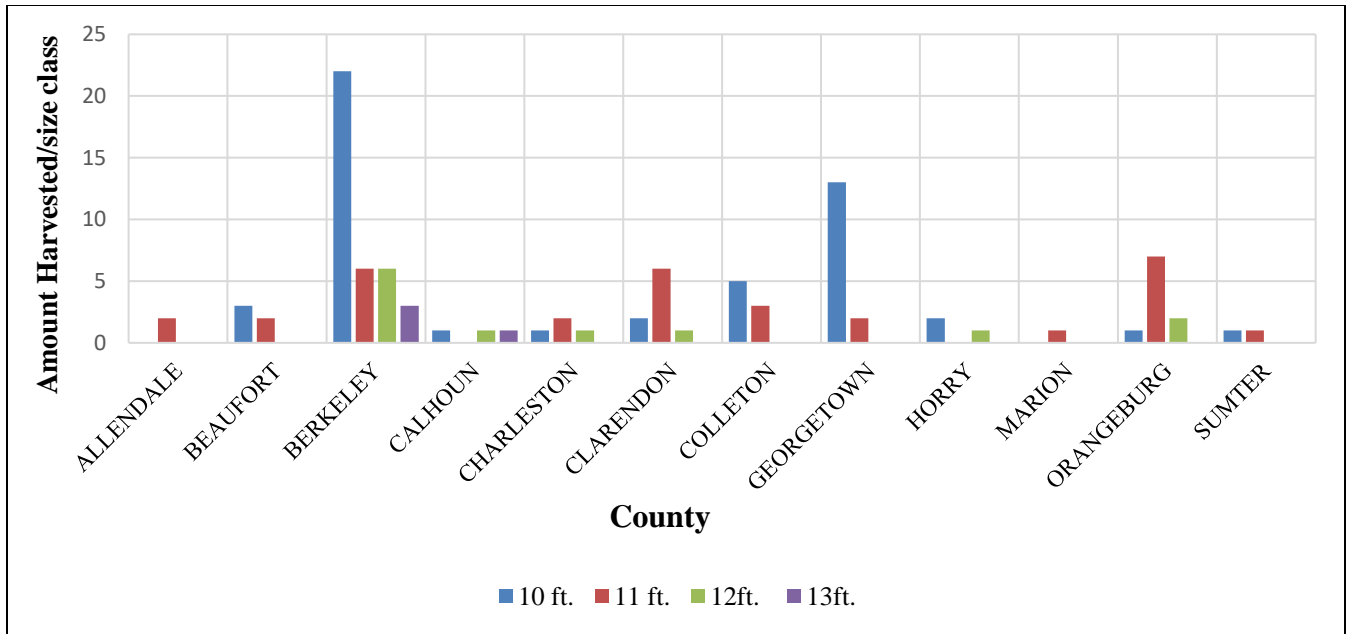


Figure 6. Number of “larger” alligators (10 feet and greater) taken during the 2021 Public Hunting Season by size class and County.

Reported meat yield from all harvested alligators was 9,192.1 lbs.

The most reported alligator capture technique was a hook and line, with over three-quarters (78.6%) of all successful hunters using this as a primary capture device. The second most reported type was crossbow, followed by a bow, and a harpoon (Figure 7). A total of 14.2% of the successful hunters utilized a guide’s services.

Alligator hide utilization (disposed, kept, or given away) was reported at 93.2%, with the majority of participants keeping their harvest.

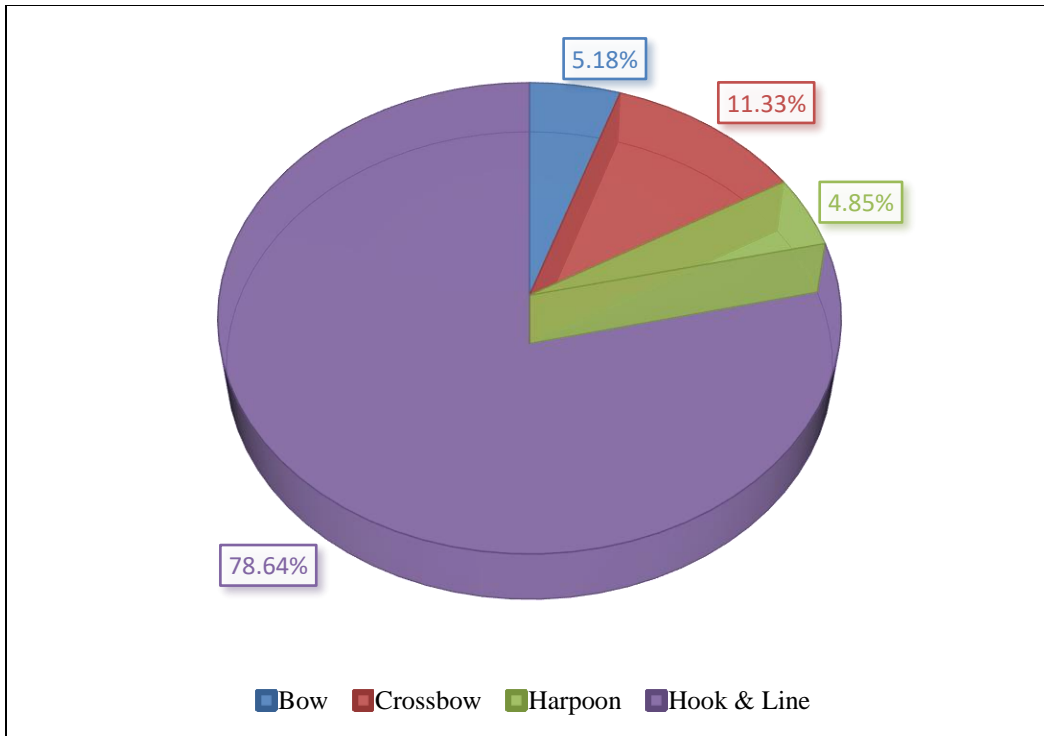


Figure 7. Reported initial capture device utilized during the 2021 Alligator Season.

DISCUSSION AND RECOMMENDATIONS

The number of applicants for this season's alligator hunt continued to increase from last year and make up a new all-time high. Many hunters apply annually, and as the population growth in South Carolina continues to climb the number of applicants climbs too. A continued increase every year suggests there is still strong interest in South Carolina's public alligator hunting program.

The hunt participation was lower this year than in years past. Overall participation was down 1.9% from last year (Figure 2), with only the Midlands unit reporting a minor increase in participation. We also observed a slight increase in success rate among all selected hunters (n=1,000) from last year, however, still below the long-term average of 37% (Figure 8).

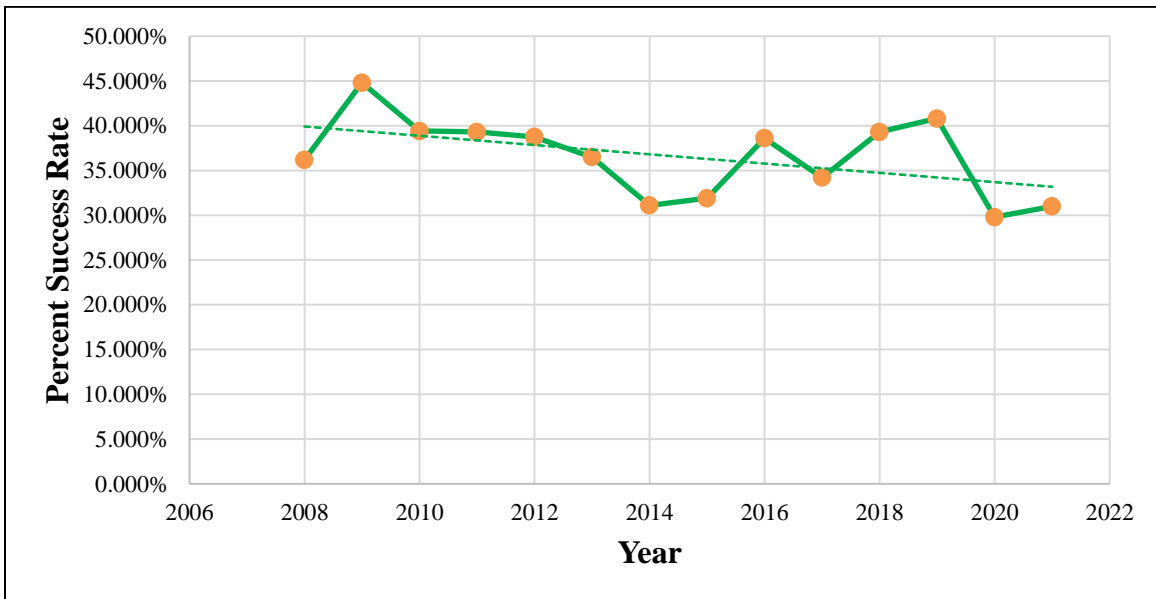


Figure 8. Percent success rate for all selected hunters, by year.

One concern regarding the public alligator hunt is the over harvest of “larger” alligators. Although total harvest per hunt unit and total harvest of “larger” alligators did increase from last year, trends from the past 14 years still suggest an overall decrease in alligators harvested in these larger size classes (Figure 9). While this does not necessarily represent a true decline in the number of large alligators available it does suggest that fewer large alligators are being harvested and reported.

Possible explanations for this apparent trend include but are not limited to:

- 1) An overall reduction in participation and/or reporting of harvest
- 2) An overall reduction in total alligators harvested
- 3) Behavioral changes in alligators resulting from negative anthropogenic interactions
- 4) Reduced accessibility to larger alligators
- 5) It represents a true decline in the larger size classes

Harvest numbers will continue to be closely monitored as there is still uncertainty as to how many of these animals can be taken annually on a sustainable basis. Future management decisions will consider sustainable harvest of all size classes to avoid over harvest.

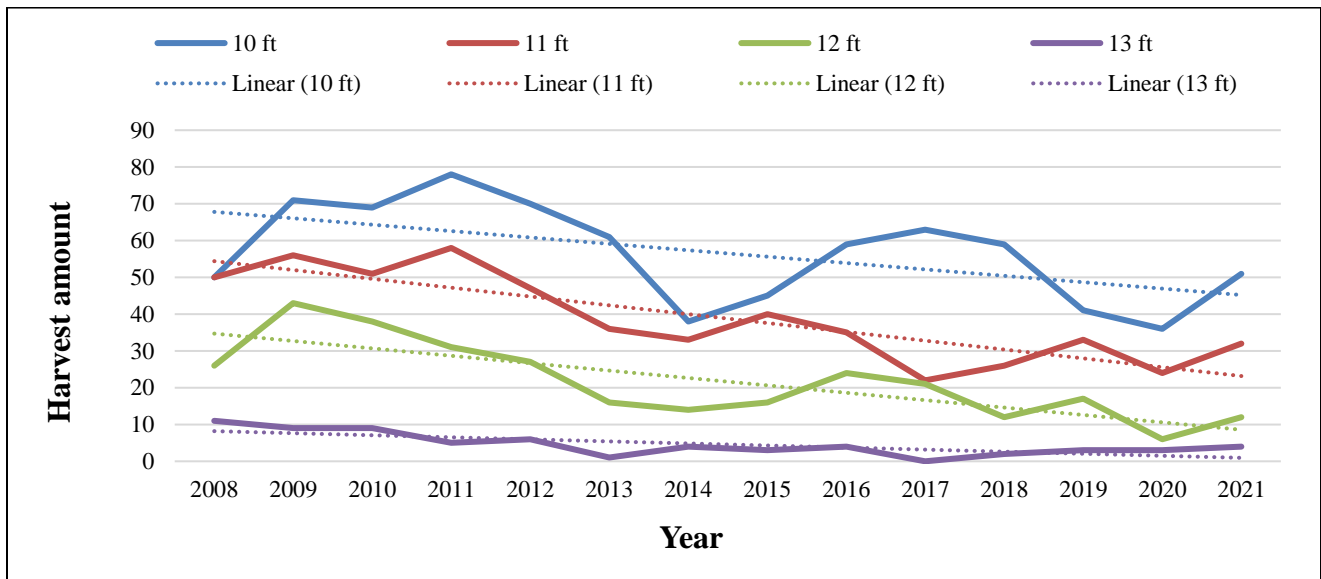


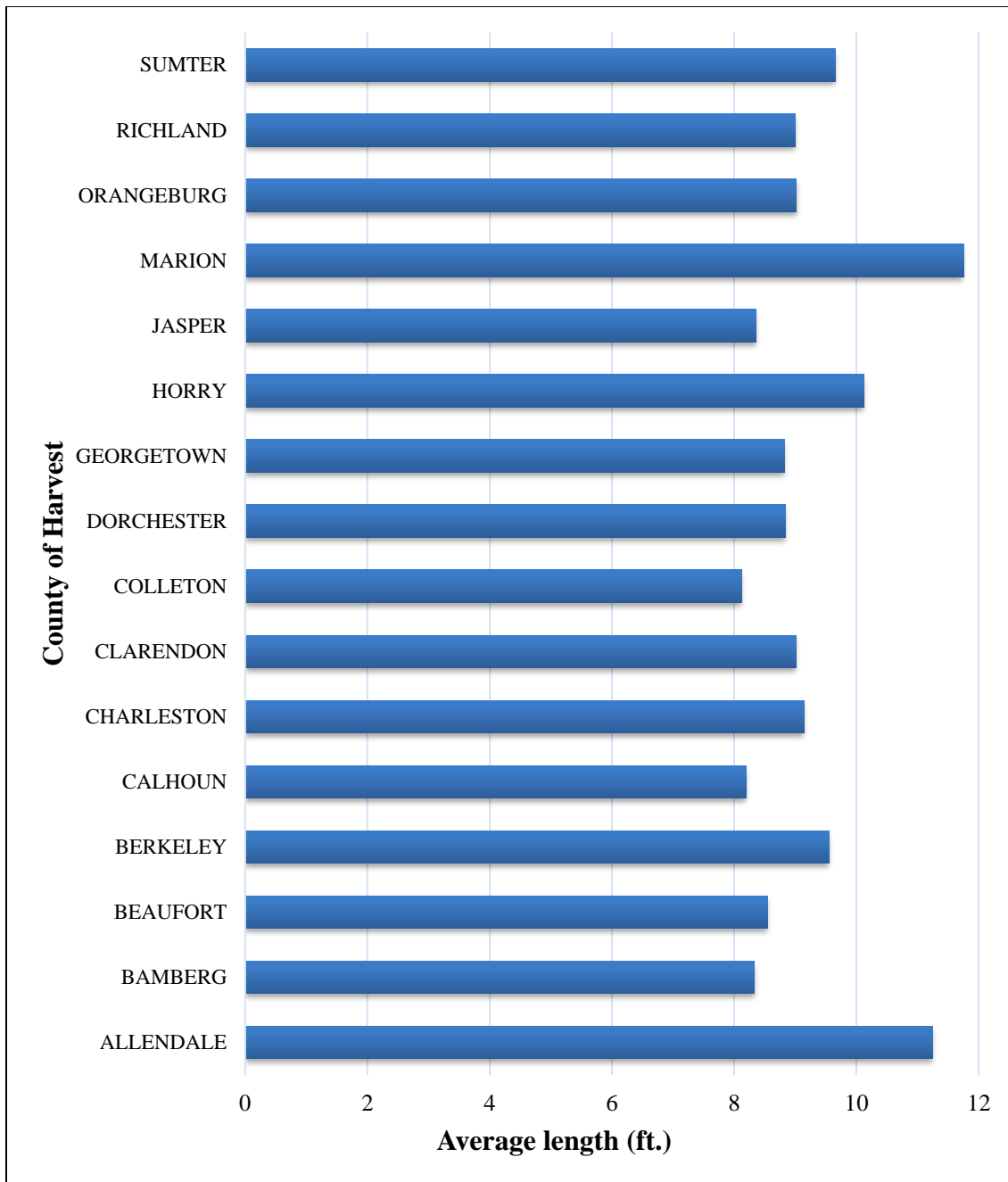
Figure 9. Total number of the largest alligators (10-13 ft.) harvested each year since 2008. Trend lines represent trajectory of harvest numbers over time.

Appendix

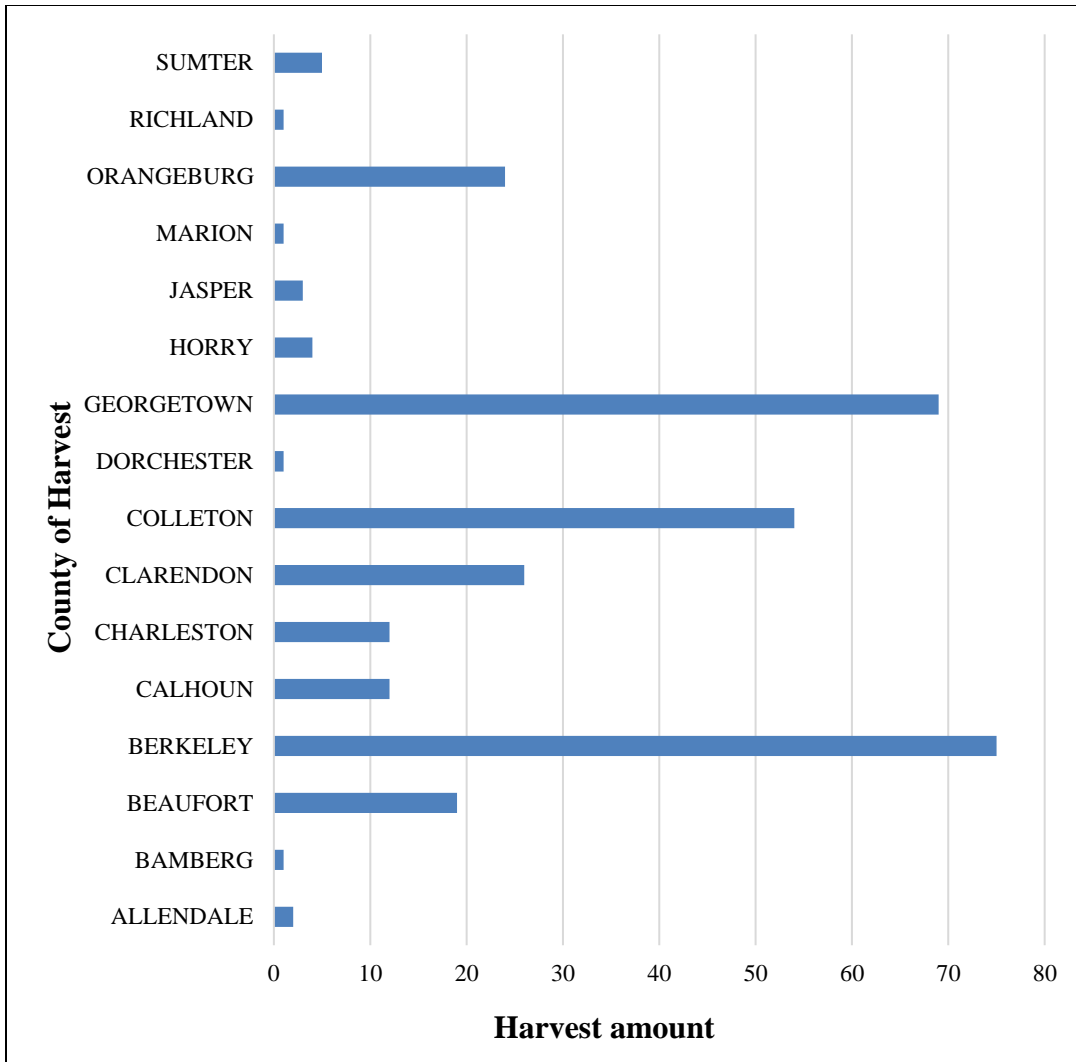
2021 Harvest Graphs

By

Public Alligator Harvest Hunt Unit
&
County of Harvest
&
Cumulative Harvest Totals by Year



Appendix I. Average length of alligators reported taken during the 2021 Public Harvest Season by county.



Appendix II. Number of alligators taken during the 2021 Public Hunting Season by county of reported harvest.

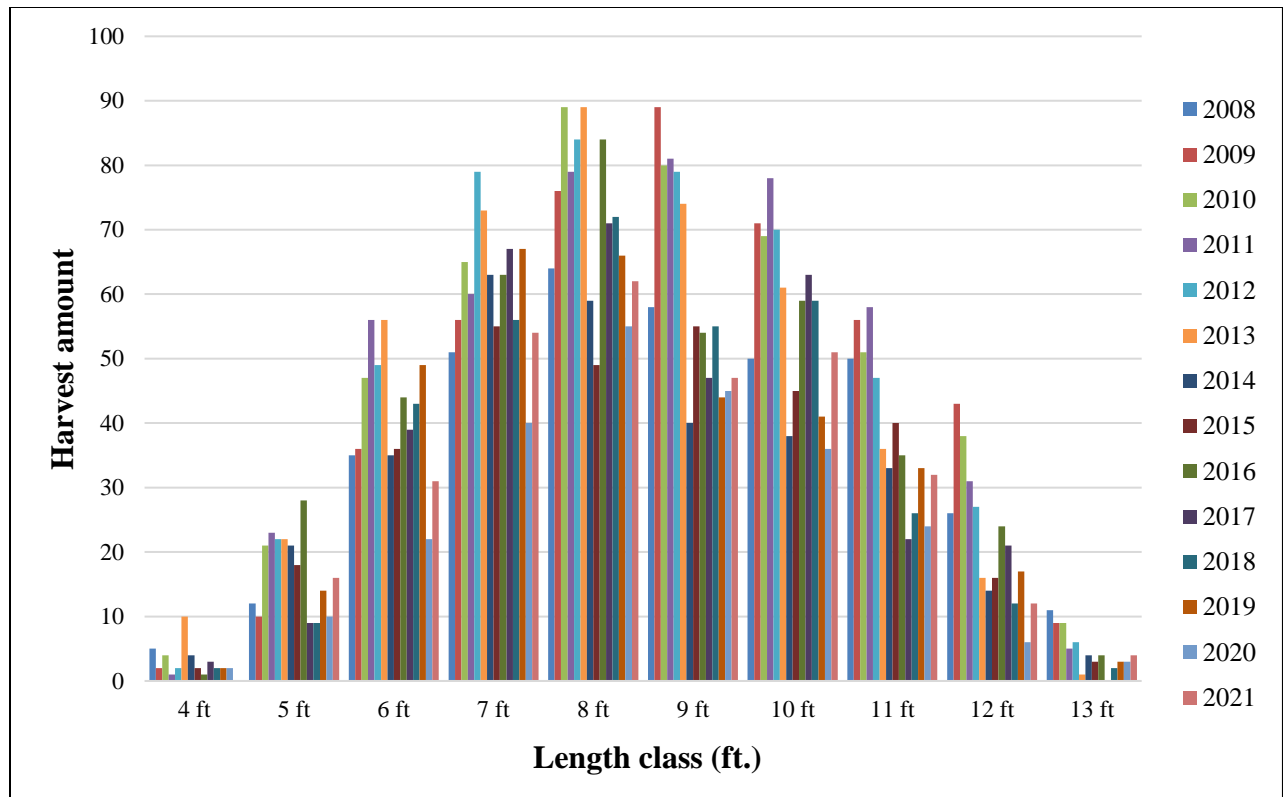
Hunt Unit	Year														Total
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Southern Coastal ^a	94	108	141	136	144	121	81	102	118	91	99	79	75	79	1468
Middle Coastal ^b	121	147	117	140	134	128	88	88	108	94	88	78	72	76	1479
Midlands	87	93	104	87	90	82	57	74	79	71	66	89	52	80	1111
Pee Dee	60	104	111	120	115	121	85	69	91	86	77	89	54	74	1256
Annual Total	362	452	473	483	483	452	311	333	396	342	330	335	253	309	5314

^aIncludes alligators taken during the WMA Alligator Hunting Program beginning in 2011 and ending in 2017.

^aIncludes alligators taken at Santee Coastal Reserve WMA

^bIncludes alligators taken at Bear Island WMA

Appendix III. Number of alligators taken during all years of the Public & WMA Hunting Season, by Hunt Unit.



Appendix IV. Number of alligators taken during all years of the Public Alligator Hunting Seasons, by size class.