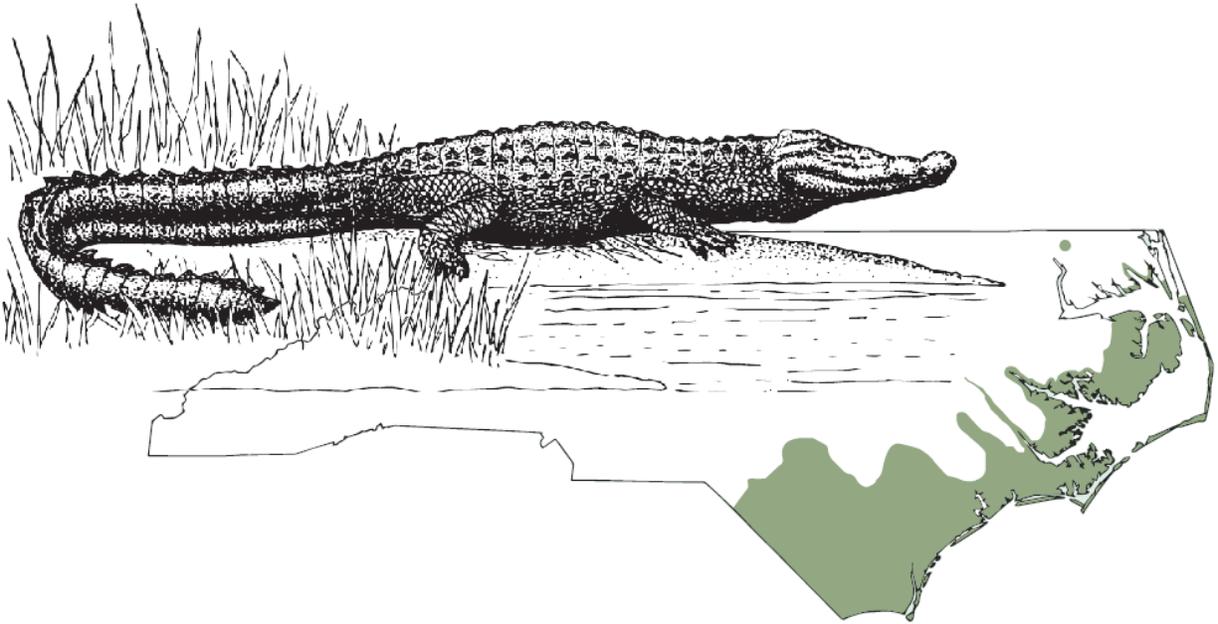


# Summary of Public Input from 2016 NCWRC Alligator Management Forums



**Alicia Davis and Allen Boynton**

November 2016

As directed in a resolution signed by the Commissioners, the Executive Director of the N.C. Wildlife Resources Commission appointed 15 various stakeholders—private landowners, Commission staff, and scientists—to serve on an Alligator Task Force. The primary goal of the Task Force is to develop an Alligator Management Plan for the state that includes:

- Evaluation of all available biological information on alligators in North Carolina,
- Identification of knowledge gaps and additional research needed on alligator population demography, historical changes in alligator habitats, and public attitudes and opinions on alligator conservation,
- Identification of areas where alligators may be over-populated and recommend biological and social strategies to address alligator management issues in these areas,
- Recommendations of geographical management zones,
- Recommendations for metrics to establish the number of permits per year that could be issued for opportunities to harvest alligators by hunting where sustainable and consistent with local alligator population, habitat, and social conditions, and
- Recommendations on a framework for gathering public input on the North Carolina Alligator Management Plan.

Agency staff held three public forums in eastern North Carolina in early November to receive public input on management of American alligators. This input will be considered by Alligator Task Force members as they develop the Alligator Management Plan. Announcements were made on the agency's website, in Wildlife Update emails, and in several local newspapers to invite citizens to attend these forums and provide their opinions regarding alligator management.

Interactive technology (i>clicker©) was used during the presentations to allow attendees to anonymously answer questions presented by agency staff. The use of this technology has been well received by our constituents at other public forums regarding bear and deer management. It enables the audience to actively participate in the forums by selecting their answers with wireless handheld i>clicker© remotes. It effectively allowed us to demonstrate where consensus or disagreement occurred between our constituents.

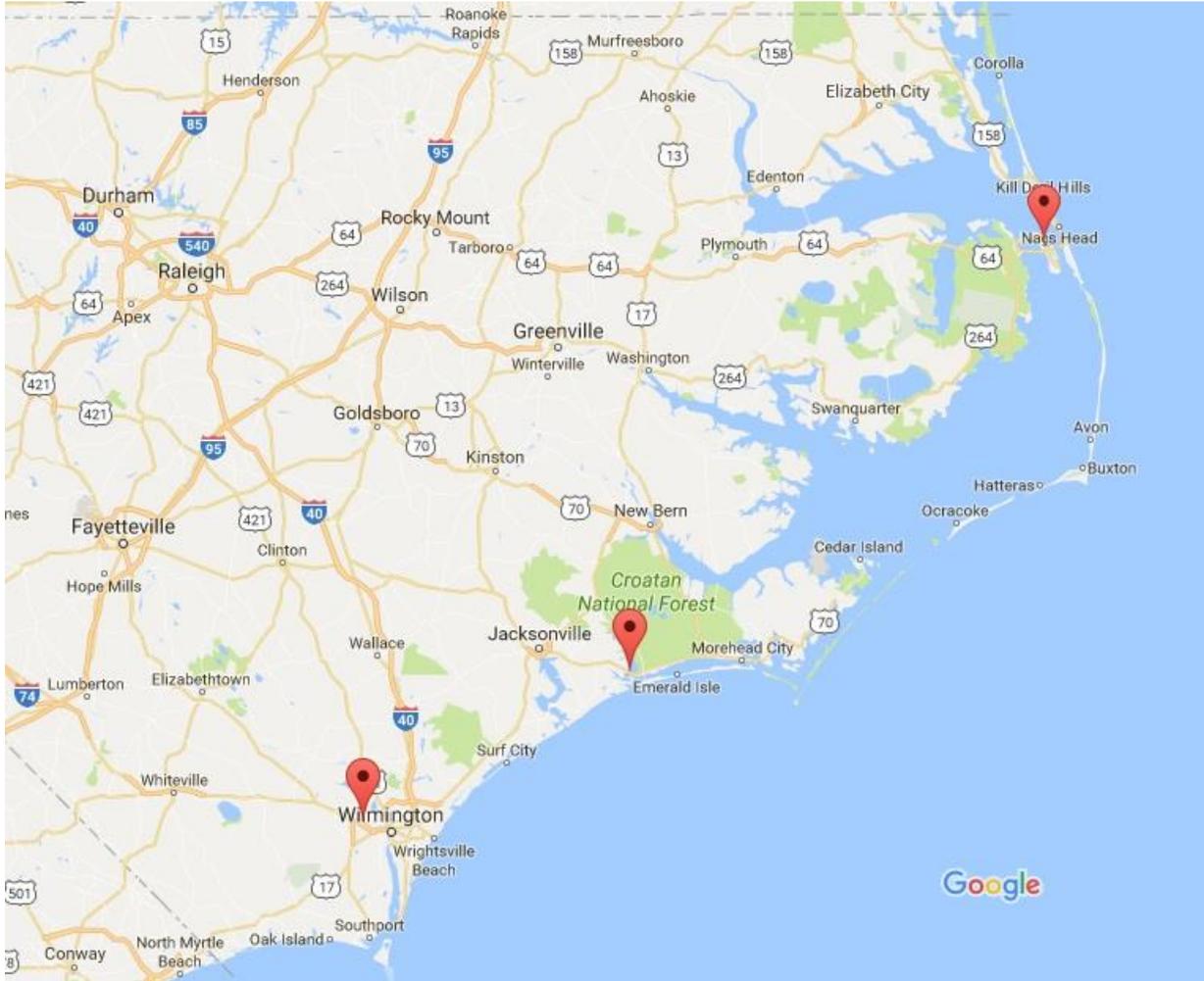
It is important to recognize that this summary of the three meetings represents the opinions of only those individuals that attended the meetings. Some answers to questions could have been influenced by the presentations and the discussions that occurred at each meeting. The data presented below are not and should not be interpreted as statistically valid representations of citizen opinions in each locality. It may be most appropriate to view these meetings as focus groups which provided insight to areas of potential consensus or disagreement among stakeholders about alligator management. These meetings gave private citizens an opportunity to voice their interests and concerns about alligators in their communities and provided Alligator Task Force members with public input on topics that should be addressed in the Alligator Management Plan.

Herein, we provide the results of the audience's participation with answers to specific questions that were asked during the meetings. Because discussions evolved and differing attitudes and concerns were brought up in each meeting, the number of questions evolved as well. Staff asked certain predetermined questions at every forum; however, a few questions were adaptively added at each forum when suggested by members of the audience. Therefore, not all questions were asked at each

venue. But it is interesting to note that in two separate instances (question numbers 15 and 38), the same add-in question was posed independently by audience members at multiple forums.

Attendance at each public forum was as follows:

<b>Venue:</b>	<b>Leland</b>	<b>Swansboro</b>	<b>Manteo</b>
<b>Attendance:</b>	33	32	8



## PART I. Introductions

To begin each forum, we introduced the audience to the i>clicker® technology and asked a few questions just to ensure that everyone was familiar with the use of the technology and to attempt to gain some insight into the audience in attendance each night.

<b>Question 1. I heard about this meeting from...</b>					
	<b>Friend/Family</b>	<b>Radio/TV</b>	<b>Newspaper</b>	<b>Internet/E-mail</b>	<b>Other</b>
Leland	19%	3%	10%	61%	6%
Swansboro	31%	0%	12%	58%	0%
Manteo	33%	17%	0%	50%	0%
<b>Total</b>	<b>25%</b>	<b>3%</b>	<b>10%</b>	<b>59%</b>	<b>3%</b>

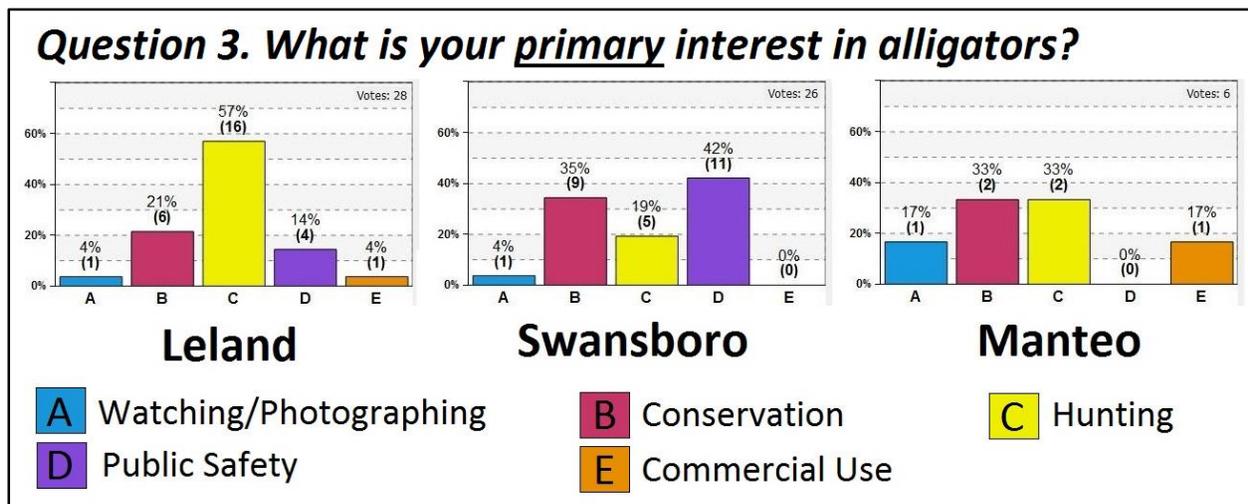
By far, the majority of those in attendance had learned about the meeting via email or from an internet source, while a quarter of those in attendance reported learning of the meeting by word-of-mouth.

<b>Question 2. How far did you travel to get to this meeting?</b>					
	<b>&lt;10 miles</b>	<b>10-25 miles</b>	<b>26-50 miles</b>	<b>50-100 miles</b>	<b>&gt;100 miles</b>
Leland	23%	55%	13%	0%	10%
Swansboro	52%	16%	20%	12%	0%
Manteo	40%	20%	20%	0%	20%
<b>Total</b>	<b>36%</b>	<b>36%</b>	<b>16%</b>	<b>5%</b>	<b>7%</b>

Over 70% of attendees traveled less than 25 miles, which implies that some individuals could either be unwilling or unable to travel long distances in order to attend public input forums. This reinforces the importance of scheduling multiple meetings in different locations in an effort to reach constituents.

<b>Question 3. What is your primary interest in alligators?</b>					
	<b>Watching/ Photographing</b>	<b>Conservation</b>	<b>Hunting</b>	<b>Public Safety</b>	<b>Commercial Use</b>
Leland	4%	21%	57%	14%	4%
Swansboro	4%	35%	19%	42%	0%
Manteo	17%	33%	33%	0%	17%
<b>Total</b>	<b>5%</b>	<b>28%</b>	<b>38%</b>	<b>25%</b>	<b>3%</b>

As further demonstrated by the bar graphs (below) generated by the i>clicker© software, the ratios of participants' interests varied between forum locations. While more than half of those in attendance in Leland were primarily interested in hunting alligators, this group made up less than 20% of the audience in Swansboro, where the majority of attendees identified public safety as their primary interest, closely followed by conservation. None of the audience members in Manteo saw public safety as their primary concern, but this group was more evenly spread across other the interest types.



## PART II. Biology & Ecology of Alligators

This type of forum offered us a unique opportunity to share some of what we know—and what we don’t currently know—about North Carolina alligators with our audience. Although alligators have been studied extensively in other states, the knowledge that has been acquired regarding alligator populations in lower latitudes doesn’t always hold true for the populations here because this is the northern extent of their range, where the transition area occurs between environments alligators can and cannot tolerate.

We presented the following information in an interactive question-and-answer format that allowed each audience member to submit answers using the i>clicker<sup>®</sup> remotes before the correct answers (highlighted in yellow) were revealed and discussed in further detail.

Question 4. The number of alligators in North Carolina is _____ ?					
	About 1,000	About 2,000	About 5,000	About 10,000	Unknown ✓
Leland	0%	6%	26%	10%	58%
Swansboro	0%	4%	26%	30%	39%
Manteo	0%	0%	33%	50%	17%
<b>Total</b>	<b>0%</b>	<b>5%</b>	<b>27%</b>	<b>22%</b>	<b>47%</b>

The majority of our audience members answered this question correctly. Most people knew that we don’t know how many bear or deer there are in our state either, and that we are able to make population estimates based on harvest data from one year to the next. In contrast, we don’t have the type of data necessary to make reliable estimates of how many alligators there are in North Carolina.

Question 5. How long do wild alligators live?					
	0-9 years	10-19 years	20-29 years	30-39 years ✓	40+ years
Leland	0%	0%	6%	9%	84%
Swansboro	0%	14%	3%	21%	62%
Manteo	0%	0%	17%	0%	83%
<b>Total</b>	<b>0%</b>	<b>6%</b>	<b>6%</b>	<b>13%</b>	<b>75%</b>

Most of the forum attendees had a good idea of how long alligators *can* live. Few wild alligators in hunted populations are expected to live past their 30s, but it’s not uncommon for them to live longer than 50 years in captivity. The record for the oldest known alligator—at least 80 years old—is currently held by a captive male in a Serbian zoo, where it has been living since it arrived “fully grown” in 1937.

Question 6. Alligators are sexually mature when they attain what length?					
	4 feet	5 feet	6 feet ✓	7 feet	8 feet
Leland	11%	32%	36%	11%	11%
Swansboro	24%	31%	34%	3%	7%
Manteo	0%	17%	67%	0%	17%
<b>Total</b>	<b>16%</b>	<b>30%</b>	<b>38%</b>	<b>6%</b>	<b>10%</b>

When it comes to alligators, sexual maturity is determined by size, not age. Both sexes grow much more quickly in the first few years of life, then female growth rate slows considerably in comparison to males. Social dynamics also play an important role and may further extend the amount of time required for individuals to reach sexual maturity. For example, a male may be sexually mature at 6 or 7 years of age in Texas, but may not have the social status to breed for several more years.

<b>Question 7. Alligators are sexually mature in North Carolina at what age?</b>					
	<b>2-3 years</b>	<b>5-6 years</b>	<b>8-10 years</b>	<b>15-18 years ✓</b>	<b>20+ years</b>
Leland	6%	53%	31%	9%	0%
Swansboro	3%	59%	28%	10%	0%
Manteo	0%	33%	50%	17%	0%
<b>Total</b>	<b>4%</b>	<b>54%</b>	<b>31%</b>	<b>10%</b>	<b>0%</b>

The audience's answers to this question were on par with what is known about alligators in lower latitudes. Because there are considerably fewer months that are warm enough for alligators to feed (and, therefore, grow) in North Carolina compared to states farther south, it takes alligators longer to reach the minimum size necessary for sexual maturation. In the only study to date that has investigated the age of sexual maturity in North Carolina alligators, NC State University's Zoology Department estimated that sexual maturity occurs at 15 years for males and 18 years for females. Similarly, a very recent publication based on 35 years of observations of a population of alligators in South Carolina reported the mean earliest age of sexual maturity to be 11.6 years for males and 15.8 years for females.<sup>1</sup>

<b>Question 8. Alligators lay about how many eggs in a clutch (on average) in North Carolina?</b>					
	<b>5</b>	<b>15</b>	<b>25</b>	<b>35 ✓</b>	<b>45</b>
Leland	12%	35%	42%	12%	0%
Swansboro	13%	40%	30%	13%	3%
Manteo	0%	50%	17%	33%	0%
<b>Total</b>	<b>11%</b>	<b>39%</b>	<b>34%</b>	<b>15%</b>	<b>2%</b>

So far, only one study has looked at the nesting ecology of alligators in North Carolina. Raccoon predation of 12 % of nests was the only cause on nest failure observed during this study. However, nest failure also occurs due to flooding or other causes.

<b>Question 9. Alligators care for their young for several years after they hatch?</b>		
	<b>True ✓</b>	<b>False</b>
Leland	52%	48%
Swansboro	22%	78%
Manteo	33%	67%
<b>Total</b>	<b>35%</b>	<b>65%</b>

Alligators are unique among reptiles in the level of maternal care that they provide for their offspring. After depositing her eggs in a constructed nest, the female closely guards it from predators for more than two months during incubation. In response to vocalizations from her young as they hatch, she breaks open and excavates the tightly-packed nest, gently cracks open slower-hatching eggs, and even carries hatchlings to the water in her mouth. The pod of young alligators usually stays in the vicinity of the female for at least 2 years, during which the young will call out when threatened and she will come to their aid. Her protection is crucial to their survival, as they are most vulnerable to predation during this early stage of life by large fish, birds, mammals, snakes, and even bullfrogs, as well as larger alligators. Despite this advantage of being aggressively defended by the maternal female, it has been estimated that 80% of all alligator hatchlings will not survive their first 2 years of life.

<sup>1</sup> Wilkinson, Philip M., Thomas R. Rainwater, Allan R. Woodward, Erin H. Leone, and Cameron Carter. 2016. Determinate growth and reproductive lifespan in the American alligator (*Alligator mississippiensis*): Evidence from long-term recaptures. *Copeia* 104(4): 843-852.

### PART III. Research Needs

In this section of the forum, we wanted to gauge the audience’s opinions on the importance of various types of research that could be carried out to learn more about alligators in North Carolina. We selected 5 research topics (questions 10 - 14) and then gave the audience an opportunity to suggest any additional research topics that they thought important, which resulted in the addition and subsequent polling of questions 15 – 17 during meetings. It is interesting to note that audience members at two of the meetings independently suggested alligator movement as a research need.

<b>Question 10. How important do you think it is to do research on alligator population vital rates?</b>					
	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>	<b>Most Important</b>
Leland	6%	6%	25%	34%	28%
Swansboro	3%	3%	7%	57%	30%
Manteo	0%	0%	0%	60%	40%
<b>Total</b>	<b>4%</b>	<b>4%</b>	<b>15%</b>	<b>46%</b>	<b>30%</b>

Population vital rates, as defined by the presenter for the forum audiences, refer to the numbers of births and deaths that occur within each life stage of a population over time that result in overall growth or decline of the population. Research on population vital rates could include investigations of nest success rates, hatch rates, hatchling mortality, survival of juveniles to the adult stage, or fecundity (the number of viable offspring produced by each adult female within a given span of time), etc.

<b>Question 11. How important do you think it is to do research on changes in habitats?</b>					
	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>	<b>Most Important</b>
Leland	7%	14%	29%	46%	4%
Swansboro	3%	0%	31%	59%	7%
Manteo	0%	17%	17%	67%	0%
<b>Total</b>	<b>5%</b>	<b>8%</b>	<b>29%</b>	<b>54%</b>	<b>5%</b>

This research topic refers to changes in both the amount of alligator habitat available and quality of alligator habitats over time.

<b>Question 12. How important do you think it is to do research on public perspectives?</b>					
	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>	<b>Most Important</b>
Leland	19%	28%	28%	16%	9%
Swansboro	0%	4%	54%	32%	11%
Manteo	0%	17%	67%	17%	0%
<b>Total</b>	<b>9%</b>	<b>17%</b>	<b>42%</b>	<b>23%</b>	<b>9%</b>

Research on public perspectives could include statistically valid surveys of North Carolina residents to address public attitudes towards conservation of alligators and their habitats, hunting or commercial farming of alligators, management of human-alligator interactions, and public safety concerns.

<b>Question 13. How important do you think it is to do research on management in areas with too many alligators?</b>					
	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>	<b>Most Important</b>
Leland	6%	3%	19%	44%	28%
Swansboro	0%	3%	10%	67%	20%
Manteo	0%	17%	33%	33%	17%
<b>Total</b>	<b>3%</b>	<b>4%</b>	<b>16%</b>	<b>53%</b>	<b>24%</b>

Research that pertains to the management in areas with too many alligators could include evaluating the effectiveness of various management techniques, including removal of problematic individual alligators (relocation or euthanization), the use of hunting as a tool for population management, the implementation of regulations that prohibit feeding by people, and educating the public about coexisting with alligators.

<b>Question 14. How important do you think it is to do research on population numbers and distribution?</b>					
	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>	<b>Most Important</b>
Leland	0%	3%	38%	41%	19%
Swansboro	0%	0%	17%	63%	20%
Manteo	0%	0%	67%	17%	17%
<b>Total</b>	<b>0%</b>	<b>1%</b>	<b>31%</b>	<b>49%</b>	<b>19%</b>

Population numbers and distribution refers to how many alligators there are and where they are located, as well as the variations in population densities that occur in different areas.

<b>Question 15. Other research needs: How important do you think it is to do research on movements?</b>					
	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>	<b>Most Important</b>
Leland	5%	10%	14%	43%	29%
Swansboro	0%	12%	40%	50%	0%
Manteo	-	-	-	-	-
<b>Total</b>	<b>2%</b>	<b>10%</b>	<b>27%</b>	<b>46%</b>	<b>15%</b>

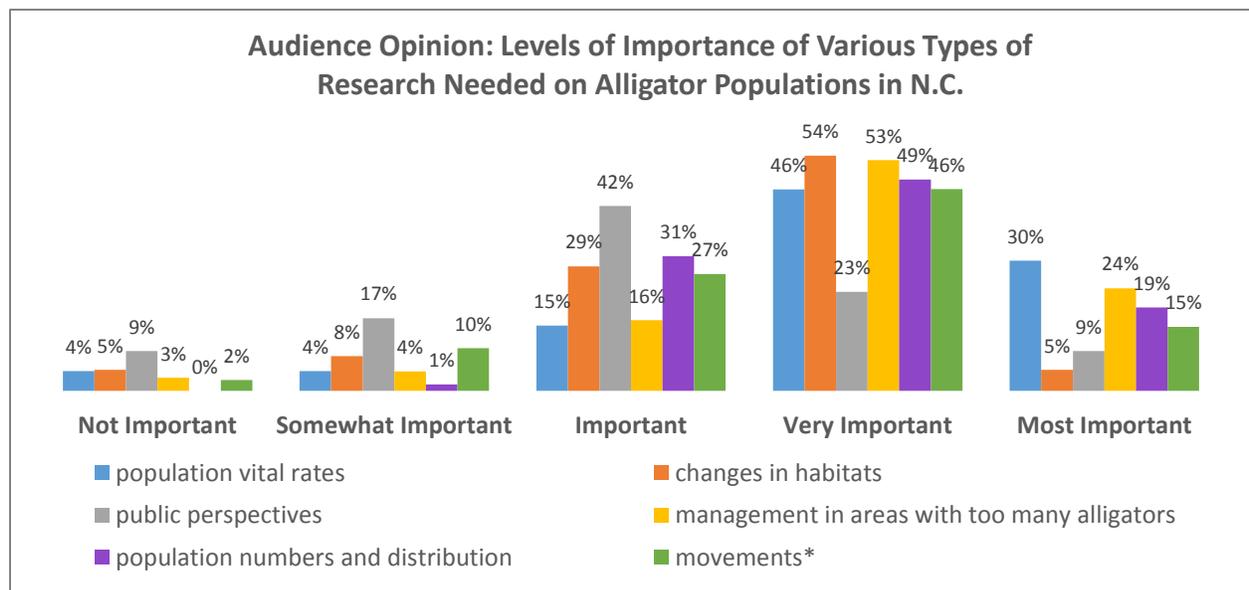
Research on alligator movements could include investigating home range sizes of individuals in different age classes or locations, seasonal patterns of movement, juvenile dispersal to new territories, movements of relocated alligators, etc.

<b>Question 16. Other research needs: How important do you think it is to do research on hatchling mortality rates?</b>					
	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>	<b>Most Important</b>
Leland	7%	15%	26%	33%	19%
Swansboro	-	-	-	-	-
Manteo	-	-	-	-	-
<b>Total</b>	<b>7%</b>	<b>15%</b>	<b>26%</b>	<b>33%</b>	<b>19%</b>

Research on hatchling mortality rates would assess the proportion of alligators that survive their first, and arguably most vulnerable, year of life.

<b>Question 17. Other research needs: How important do you think it is to do research on diet/what North Carolina alligators eat?</b>					
	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>	<b>Most Important</b>
Leland	-	-	-	-	-
Swansboro	4%	4%	54%	23%	15%
Manteo	-	-	-	-	-
<b>Total</b>	<b>4%</b>	<b>4%</b>	<b>54%</b>	<b>23%</b>	<b>15%</b>

Research that examines what alligators eat in North Carolina could be useful in determining how often their diet has positive (invasive species or mesopredator control), negative (domestic animal predation), or neutral (compensatory mortality) effects on other species and the ecosystem as a whole.



A few trends in the responses that are worth noting are:

- Overall, more than 90% of the people that attended these meetings thought that it was at least somewhat important to do each type of research we asked about.
- Based on the opinions of our audience, research on public perspectives ranked lowest in importance when compared to the other research topics presented at the forums. It also received the highest number of 'not important' votes from audience members.
- The two research topics ranked highest by our audiences were alligator population vital rates and management in areas with too many alligators.
- None of the people attending these meetings selected 'not important' in response to research on alligator population numbers and distribution, and only one person out of all three forum locations viewed that research topic as 'somewhat important'.

## PART IV. Nuisance Alligator Management

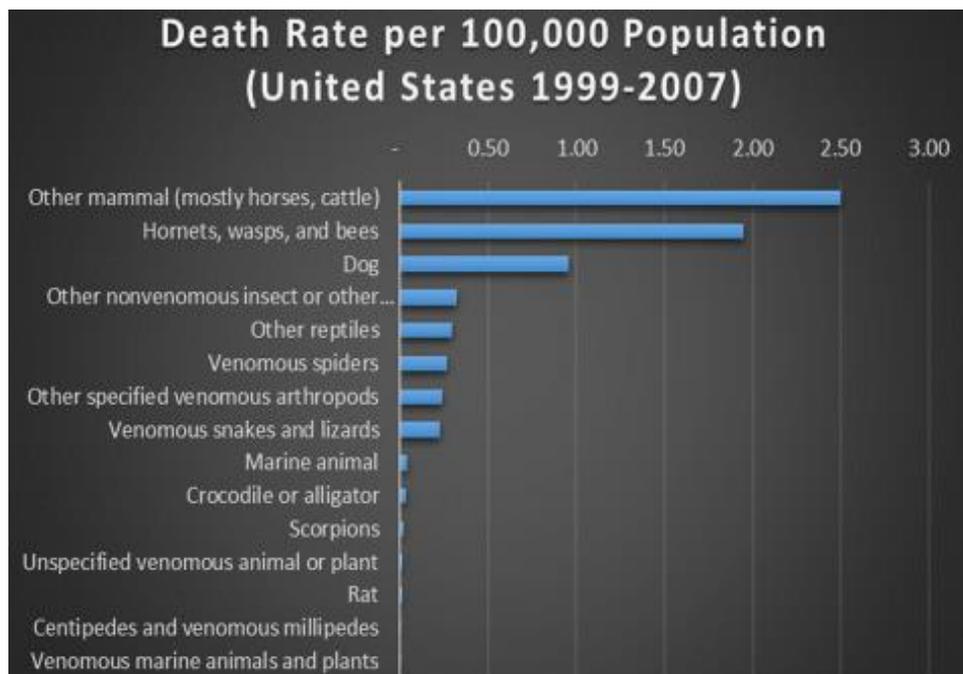
In this part of the forum, we were interested in gauging the audience’s level of acceptance of the current policies and procedures regarding the management of alligators in nuisance situations.

Agency staff first gave a short presentation about how our personnel respond to situations involving alligators. An important take-home message was that the majority of calls that our agency receives are to report observations of alligators that are not demonstrating threatening behavior. However, in rare circumstances, alligators are relocated after an appropriate assessment of each situation has been made by a biologist. These relocations most often occur in Brunswick and New Hanover counties.

Next, statistical data was presented in an attempt to offer the audience some perspective on how often interactions between humans and American alligators result in human fatality. Audience members were asked to submit their guesses to the following question before the correct answer was revealed.

Question 18. Which animals cause the most human deaths in the United States?					
	Dogs	Venomous snakes	Horses and cattle ✓	Crocodilians	Hornets, wasps, and bees
Leland	13%	3%	10%	7%	67%
Swansboro	19%	3%	13%	0%	66%
Manteo	14%	14%	0%	0%	71%
<b>Total</b>	<b>16%</b>	<b>4%</b>	<b>10%</b>	<b>3%</b>	<b>67%</b>

Although “hornets, wasps, and bees” was a very good response by our audience members, this group actually comes in at number two in the list of animals responsible for the most human deaths in the United States between 1999 and 2007. The graph below was also presented at the forums to illustrate the findings of a report<sup>2</sup> that summarized this data.



<sup>2</sup> Forrester, Jared A., Christopher P. Holstege, and Joseph D. Forrester. 2012. Fatalities from venomous and nonvenomous animals in the United States (1999-2007). *Wilderness & Environmental Medicine* 23: 146-152.

<b>Question 19. Who should determine which alligators demonstrate threatening behaviors?</b>					
	<b>Residents</b>	<b>Law enforcement officers</b>	<b>Wildlife biologists</b>	<b>Commercial WDCA</b>	<b>other</b>
Leland	16%	6%	58%	16%	3%
Swansboro	12%	15%	46%	23%	4%
Manteo	14%	29%	43%	14%	0%
<b>Total</b>	<b>14%</b>	<b>13%</b>	<b>52%</b>	<b>19%</b>	<b>3%</b>

Over 80% of the audience agreed that the person responsible for making this decision should possess a professional knowledge of animal behavior, while approximately two-thirds indicated that Commission staff would be most appropriate in making this determination.

The next series of questions (20 – 25) were asked in effort to gauge the audience’s level of acceptance of various management strategies (relocation, euthanization, or taking no action) in response to situations involving alligators that either (a) demonstrate threatening behavior or (b) **do not** demonstrate threatening behavior. ‘Taking no action’ is defined as no physical removal of the alligator, but could include providing citizens with education or technical guidance (e.g. advice for installation of a fence).

<b>Question 20. What is your level of acceptance for relocating alligators that demonstrate threatening behaviors?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	20%	8%	0%	24%	48%
Swansboro	19%	10%	6%	19%	45%
Manteo	14%	14%	43%	29%	0%
<b>Total</b>	<b>19%</b>	<b>10%</b>	<b>8%</b>	<b>22%</b>	<b>41%</b>

A majority indicated their agreement with the relocation of alligators that pose a threat to public safety.

<b>Question 21. What is your level of acceptance for relocating alligators that do not demonstrate threatening behaviors?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	60%	17%	17%	3%	3%
Swansboro	42%	16%	13%	13%	16%
Manteo	50%	17%	17%	17%	0%
<b>Total</b>	<b>51%</b>	<b>16%</b>	<b>15%</b>	<b>9%</b>	<b>9%</b>

Two-thirds of the audience disagreed with the relocation of alligators that exhibit natural behavior.

<b>Question 22. What is your level of acceptance for euthanizing alligators that demonstrate threatening behaviors?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	31%	10%	7%	31%	21%
Swansboro	11%	14%	18%	29%	29%
Manteo	29%	0%	14%	43%	14%
<b>Total</b>	<b>22%</b>	<b>11%</b>	<b>13%</b>	<b>31%</b>	<b>23%</b>

There was somewhat less agreement with euthanization (54%) than with relocation (63%) of alligators that demonstrate threatening behaviors.

**Question 23.** What is your level of acceptance for  **euthanizing**  alligators that  **do not**  demonstrate threatening behaviors?

	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	72%	14%	0%	3%	10%
Swansboro	80%	3%	3%	7%	7%
Manteo	80%	0%	0%	20%	0%
<b>Total</b>	<b>77%</b>	<b>8%</b>	<b>2%</b>	<b>6%</b>	<b>8%</b>

85% of forum attendees disagreed with the euthanization of alligators that exhibit natural behavior.

**Question 24.** What is your level of acceptance for  **taking no action**  with alligators that demonstrate threatening behaviors?

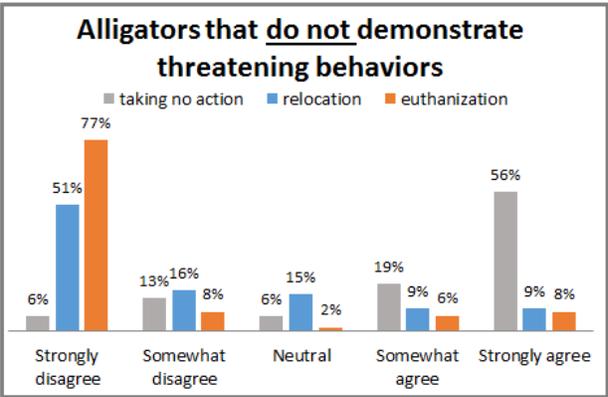
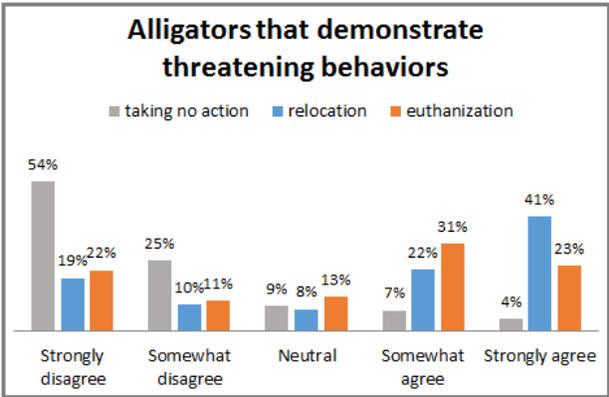
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	55%	21%	3%	14%	7%
Swansboro	55%	29%	10%	3%	3%
Manteo	43%	29%	29%	0%	0%
<b>Total</b>	<b>54%</b>	<b>25%</b>	<b>9%</b>	<b>7%</b>	<b>4%</b>

Almost 80% of audience members felt that taking no action was an unacceptable management strategy in situations with alligators that demonstrate threatening behavior.

**Question 25.** What is your level of acceptance for  **taking no action**  with alligators that  **do not**  demonstrate threatening behaviors?

	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	0%	13%	3%	10%	73%
Swansboro	6%	16%	10%	26%	42%
Manteo	29%	0%	0%	29%	43%
<b>Total</b>	<b>6%</b>	<b>13%</b>	<b>6%</b>	<b>19%</b>	<b>56%</b>

In stark contrast to the previous question, 75% of audience members indicated that taking no action with alligators exhibiting natural behavior is an acceptable management strategy.



When the data from all three forums are combined, the participants' level of acceptance for each management strategy can be assessed and compared. For alligators that demonstrate threatening

behavior, there is strong disagreement with taking no action, and relocation is slightly more acceptable than euthanization. For alligators that exhibit natural behavior, there is strong disagreement with relocation or euthanization, while a majority of participants agreed that no action should be taken.

<b>Question 26. What would be most effective for preventing the illegal feeding of alligators?</b>					
	<b>Public education efforts</b>	<b>Increase enforcement</b>	<b>Increase penalties for violations</b>	<b>More signage</b>	<b>Other</b>
Leland	35%	29%	29%	3%	3%
Swansboro	52%	16%	26%	6%	0%
Manteo	29%	14%	29%	14%	14%
<b>Total</b>	<b>42%</b>	<b>22%</b>	<b>28%</b>	<b>6%</b>	<b>3%</b>

Alligators that demonstrate threatening behaviors are almost always those that have been fed by people, which is why there is a law that prohibits the feeding of alligators. It's interesting to note that very few of our audience members appeared to think that signs are very effective, while the rest of the audience was fairly split in their opinions about the effectiveness of public education and increasing efforts to hold violators of this law more accountable for their actions.

<b>Question 27. On the property that you reside, who do you think most appropriate to remove problem alligators?</b>					
	<b>Commercial WDCA</b>	<b>Government WDCA</b>	<b>Licensed sportsmen (no fee charged)</b>	<b>You</b>	<b>Someone else</b>
Leland	31%	21%	10%	38%	0%
Swansboro	11%	39%	11%	36%	4%
Manteo	25%	13%	25%	25%	13%
<b>Total</b>	<b>22%</b>	<b>28%</b>	<b>12%</b>	<b>35%</b>	<b>3%</b>

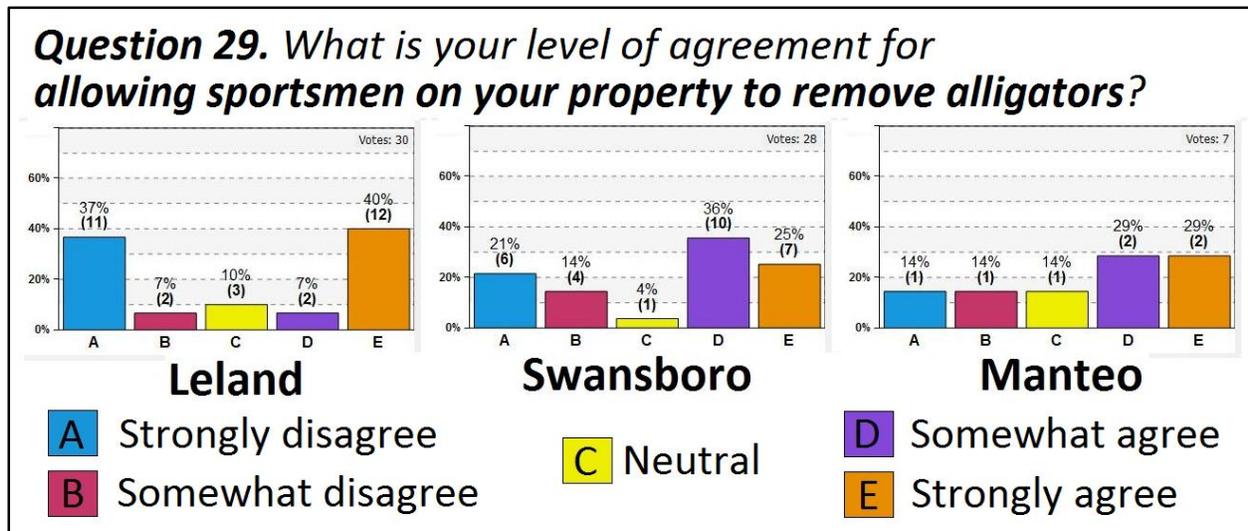
50% of the audience believed that someone with a professional knowledge of wildlife damage control would be most appropriate to remove problem alligators from their property, while a third of the answers indicated that the property owners themselves would be most appropriate. Only 12% of the audience thought that licensed sportsmen would be most appropriate for removing problem alligators from their property.

<b>Question 28. Capturing and relocating or euthanizing alligators is expensive. Who should pay for these types of management actions?</b>					
	<b>Individual/entity experiencing nuisance issue</b>	<b>Government agencies</b>	<b>Licensed sportsmen (no fee charged)</b>	<b>All of the above</b>	<b>Someone else</b>
Leland	52%	7%	10%	31%	0%
Swansboro	13%	23%	13%	47%	3%
Manteo	29%	0%	42%	29%	0%
<b>Total</b>	<b>32%</b>	<b>14%</b>	<b>15%</b>	<b>38%</b>	<b>2%</b>

Meeting participants thought that costs of removal of problematic alligators should be shared and that some of the costs should be paid by the individual or entity experiencing the issue.

<b>Question 29. What is your level of agreement for allowing sportsmen on your property to remove alligators?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	37%	7%	10%	7%	40%
Swansboro	21%	14%	4%	36%	25%
Manteo	14%	14%	14%	29%	29%
<b>Total</b>	<b>28%</b>	<b>11%</b>	<b>8%</b>	<b>22%</b>	<b>32%</b>

As illustrated in the graphs (below) generated by the i>clicker© software, there was a strong split in opinion on this topic. The 39% that disagreed with this concept could be a partial reflection of the 35% that viewed themselves as the most appropriate party to remove problem alligators on their property (question 27), but there are certainly many other reasons that a property owner might have this attitude in response to this question.



Wildlife Damage Control Agents (WDCAs) have received training and authorization from the NCWRC to issue depredation permits, but work for private pest removal companies that charge fees to homeowners for their services. There is currently only one WDCA with the authorization to trap and remove alligators determined on a case-by-case basis by agency staff to warrant removal.

<b>Question 30. Do we need more commercial Wildlife Damage Control Agents with the authority to handle alligators?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	21%	7%	10%	34%	28%
Swansboro	10%	3%	16%	45%	26%
Manteo	0%	29%	29%	14%	29%
<b>Total</b>	<b>13%</b>	<b>7%</b>	<b>15%</b>	<b>37%</b>	<b>27%</b>

64% of the audience indicated that they would like to see more WDCAs authorized to remove alligators.

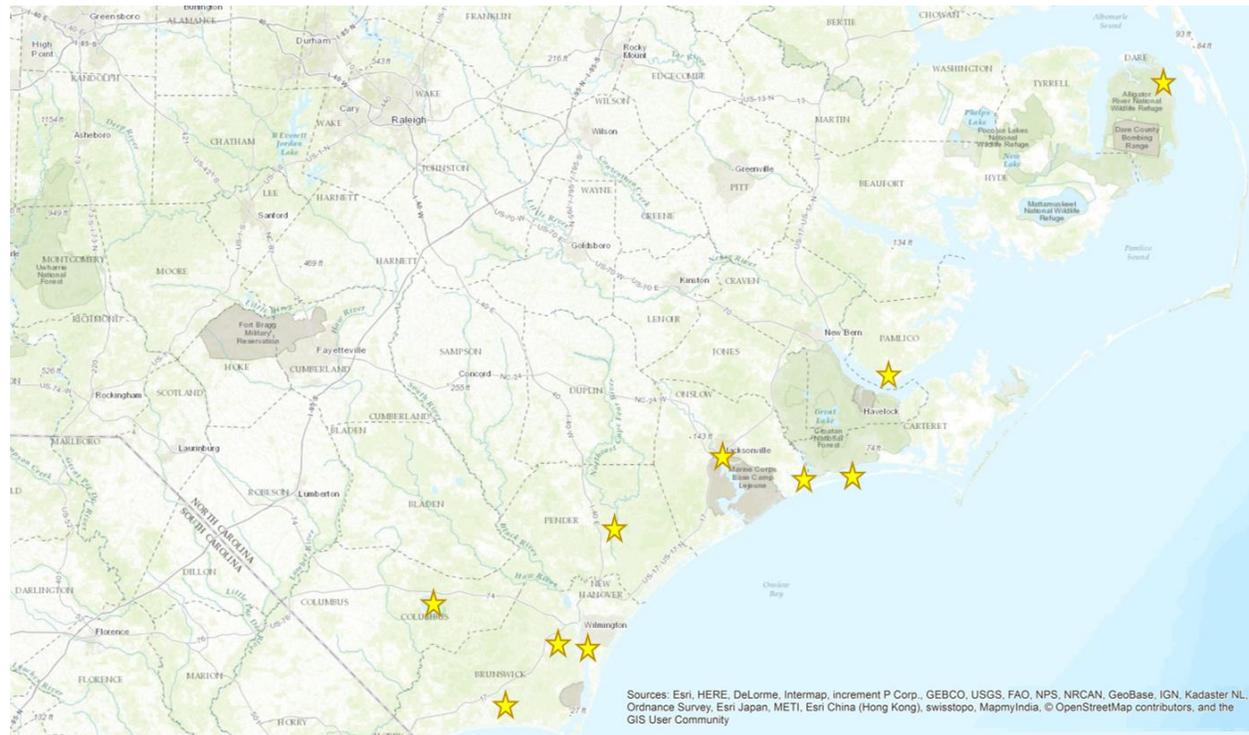
## PART V. Management Zones

The Alligator Management Plan will include recommendations for management zones. Because we expect that areas throughout the alligator’s range in North Carolina are significantly different (i.e. the availability and quality of habitats, the population densities of both alligators and people, etc.), we were interested in learning what attendees thought the population objective should be where they live.

<b>Question 31. In the area that you live, the population objective should be...</b>					
	<b>Increase the population</b>	<b>Stabilize the population</b>	<b>Decrease the population</b>	<b>Eliminate all alligators</b>	<b>I don’t know</b>
Leland	6%	59%	16%	3%	16%
Swansboro	14%	43%	25%	11%	7%
Manteo	13%	38%	25%	0%	25%
<b>Total</b>	<b>10%</b>	<b>50%</b>	<b>21%</b>	<b>6%</b>	<b>13%</b>

A majority of audience members at all three forum locations indicated that they believe that the appropriate objective would be to stabilize the alligator population in their area.

Next, the audience was asked to identify locations in which they think alligators need to be managed (see map below). Their responses included Lake Waccamaw and the Waccamaw River, Greenfield Lake, the NE Cape Fear River downstream of Hwy 53, Holly Shelter, Town Creek, Rice’s Creek, Lockwoods Folly, downtown Jacksonville, Camps Seagull & Seafarer, Swansboro, Emerald Isle, and Mann’s Harbor.



## PART VI. Hunting as a Tool for Conservation

The Alligator Management Plan will include recommendations for determining the conditions under which alligator hunting would be considered appropriate in terms of the population objectives and other management goals established in the plan.

Question 32. Do you think that alligator hunting would support conservation of the species in NC?			
	Yes	No	Not sure
Leland	63%	27%	10%
Swansboro	79%	3%	17%
Manteo	83%	0%	17%
Total	<b>72%</b>	<b>14%</b>	<b>14%</b>

It’s interesting to note that although 77% of the audience members in Swansboro were primarily interested in public safety or the conservation of alligators and only 19% were interested in hunting alligators (question 3), a higher percentage of the Swansboro audience (in comparison to the Leland audience, where 57% were primarily interested in hunting alligators) indicated that they believe hunting would support conservation.

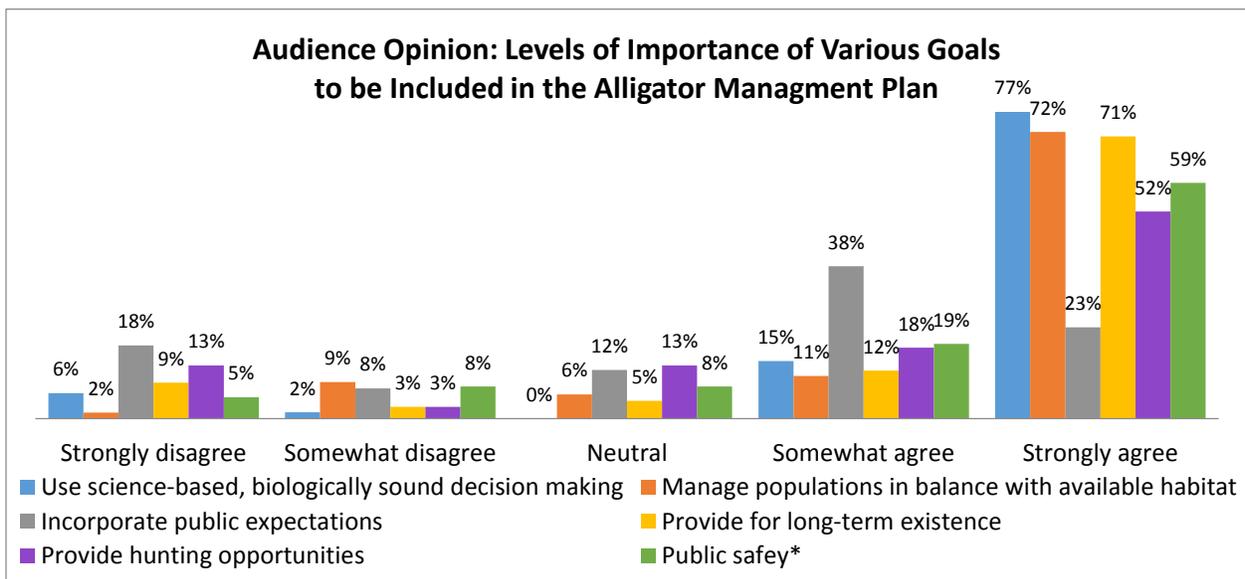
### PART VII. Development of a Management Plan

We presented the goal from the NCWRC’s Black Bear Management Plan as an example of a wildlife population management goal:

*“Use science-based decision making and biologically-sound management principles to manage black bear populations in balance with available habitats and human expectations to assure long-term existence and hunting opportunities.”*

We then broke the bear plan goal down into 5 individual parts and asked the audience members (in questions 33 – 37) to select their level of agreement for the inclusion of each part as a separate goal in the Alligator Management Plan.

Note that the part that received the lowest level of agreement (61%) from our audience was “incorporating public expectations”. Audience members indicated the highest level of agreement (92%) with “using science-based, biologically sound decision making”, while “managing populations in balance with available habitat” and “providing for long-term existence” both received 83% audience agreement. 70% of forum attendees agreed that “providing hunting opportunities” should be included as a goal of the Alligator Management Plan.



Audience response to each proposed goal (questions 33 – 37) is presented in the tables below.

<b>Question 33. Should a goal of the management plan be to: “use science-based, biologically sound decision making”?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	10%	3%	0%	10%	77%
Swansboro	0%	0%	0%	15%	85%
Manteo	20%	0%	0%	40%	40%
<b>Total</b>	<b>6%</b>	<b>2%</b>	<b>0%</b>	<b>15%</b>	<b>77%</b>

<b>Question 34. Should a goal of the management plan be to: “manage populations in balance with available habitat”?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	3%	10%	13%	13%	61%
Swansboro	0%	7%	0%	4%	89%
Manteo	0%	17%	0%	33%	50%
<b>Total</b>	<b>2%</b>	<b>9%</b>	<b>6%</b>	<b>11%</b>	<b>72%</b>

<b>Question 35. Should a goal of the management plan be to: “incorporate public expectations”?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	23%	6%	10%	32%	29%
Swansboro	15%	11%	15%	37%	22%
Manteo	14%	0%	14%	71%	0%
<b>Total</b>	<b>18%</b>	<b>8%</b>	<b>12%</b>	<b>38%</b>	<b>23%</b>

<b>Question 36. Should a goal of the management plan be to: “provide for long-term existence”?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	7%	3%	3%	7%	79%
Swansboro	13%	3%	3%	17%	63%
Manteo	0%	0%	14%	14%	71%
<b>Total</b>	<b>9%</b>	<b>3%</b>	<b>5%</b>	<b>12%</b>	<b>71%</b>

<b>Question 37. Should a goal of the management plan be to: “provide hunting opportunities”?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	24%	3%	10%	17%	45%
Swansboro	6%	3%	16%	23%	52%
Manteo	0%	0%	14%	0%	86%
<b>Total</b>	<b>13%</b>	<b>3%</b>	<b>13%</b>	<b>18%</b>	<b>52%</b>

We then gave audience members the opportunity to suggest additional goals, which were subsequently added into the presentation to poll the rest of the audience.

<b>Question 38. Other goals: Should a goal of the management plan be: “public safety”?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	-	-	-	-	-
Swansboro	6%	6%	3%	19%	65%
Manteo	0%	17%	33%	17%	33%
<b>Total</b>	<b>5%</b>	<b>8%</b>	<b>8%</b>	<b>19%</b>	<b>59%</b>

“Public safety” was suggested as a goal that should be included in the Alligator Management Plan by audience members at two of the forums, and almost 80% of the attendees at those forums agreed.

<b>Question 39. Other goals: Should a goal of the management plan be: “public education”?</b>					
	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neutral</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
Leland	-	-	-	-	-
Swansboro	-	-	-	-	-
Manteo	0%	0%	0%	57%	43%
<b>Total</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>57%</b>	<b>43%</b>

The entire audience in Manteo agreed that “public education” should be included as a goal.

The Alligator Management Plan will include a Threat Assessment section. We asked the following question in an attempt to gauge audience opinion on what the most significant threats are to alligators.

<b>Question 40: The most significant threat to alligator populations is...</b>					
	<b>Habitat loss</b>	<b>Environmental contaminants</b>	<b>Illegal killing</b>	<b>Feeding by people</b>	<b>Other</b>
Leland	32%	3%	13%	16%	35%
Swansboro	57%	0%	18%	25%	0%
Manteo	14%	29%	14%	29%	14%
<b>Total</b>	<b>41%</b>	<b>5%</b>	<b>15%</b>	<b>21%</b>	<b>18%</b>

The majority of forum participants indicated that they think habitat loss is the most significant threat to alligators. When the audience members at Leland and Manteo were asked to share what ‘other’ threats they thought were most significant, people responded that they felt that more than one of the options given were equally significant threats.

The Alligator Management Plan will also include an Economic Impacts section. We asked each audience the open-ended question below, to which we received the following answers from audience members.

**Question 41: How does the presence of alligators influence your community and your use of your property?**

- “I own a small river guide service and in the spring and early summer I have quite a few people that want to see alligators. So they’ve actually made me some money, you might say.”
- “In the last 10 years, we have seen an increase in alligators that troll up and down in front of the piers in broad daylight, which inhibits use of the lake by people.”

- “There are areas in the river that I won’t go in because I know that people feed gators there.”
- “It could be good. They keep it clean.”
- “They lie on the shore next to the sound, so it probably limits use of the beach there.”
- “In Hyde County, it’s good for us because people come down to see them and they have to buy gas and food.”

**PART VIII. Forum Conclusion**

At the end of the meetings, we asked our audience members to provide feedback on the effectiveness of this type of forum and whether or not the presentation met the expectations of those in attendance. We received positive feedback from the majority of the Leland participants and all of the audience members in Swansboro and Manteo.

<b>Question 41. Is this type of forum helpful?</b>			
	<b>Yes</b>	<b>No</b>	<b>Not sure</b>
Leland	74%	10%	16%
Swansboro	100%	0%	0%
Manteo	100%	0%	0%
<b>Total</b>	<b>88%</b>	<b>5%</b>	<b>8%</b>

<b>Question 42. Would you like to see more forums or something similar?</b>			
	<b>Yes</b>	<b>No</b>	<b>Not sure</b>
Leland	86%	11%	4%
Swansboro	100%	0%	0%
Manteo	100%	0%	0%
<b>Total</b>	<b>94%</b>	<b>5%</b>	<b>2%</b>