



The Wildlife Society

North Carolina Chapter

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June 26, 2017

Allen Boynton
Wildlife Diversity Program Coordinator
1722 Mail Service Center
Raleigh, NC 27699-1700

Dear Mr. Boynton and NCWRC Alligator Task Force,

The NC Chapter of The Wildlife Society (NCTWS) respectfully submits the enclosed comments on the draft Alligator Management Plan. NCTWS is the professional society for wildlife biologists and managers in North Carolina, with 250+ members representing dozens of federal, state, & local agencies, universities, and non-governmental organizations. As part of our mission, NCTWS “strives to be an acknowledged source of current scientific information and expertise, and acts as a collective voice on matters relating to wildlife biology, management, education, and policy”.

The comments were generated by Dr. Phil Doerr on behalf of the NCTWS Conservation Affairs Committee, and were reviewed by several members and approved by the executive board. Dr. Doerr is a Certified Wildlife Biologist and Professor Emeritus for Fisheries, Wildlife Biology & Conservation Biology, Department of Forestry & Natural Resources, at North Carolina State University. Dr. Doerr led many wildlife research projects during his 40 year career, including research on American alligator in NC. He was editor for numerous graduate theses, journal articles and symposium proceedings, and has been retired for 10 years.

We commend the work that that has gone into this draft plan, and we hope our comments will be constructive and helpful, and are submitted with the goal of strengthening the final product. Please do not hesitate to contact me for any follow-up questions or discussion.

Sincerely,

Jeff Marcus
President, NC Chapter of The Wildlife Society
Certified Wildlife Biologist

Draft Management Plan Ver. 1.2 for American Alligator in North Carolina: A review by the
North Carolina Chapter of The Wildlife Society, Conservation Affairs Committee

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Biology, Department of Forestry & Natural Resources, North Carolina State University

Summary of comments:

By and large the NC Wildlife Resources Commission (WRC) used sound methods and your conclusions and recommendations are mostly supported by past research. The WRC and Alligator Task Force (ATF) are to be commended for that effort. However, the proposed implementation plan seems to be severely lacking. Important research needs are identified to make appropriate management decisions, such as measuring critical demographic variables and identifying population viability levels, but there is not a realistic timeline identified to collect the needed data. For a long-lived and slow-maturing species like American alligator, gathering sufficient demographic data will take many years. The plan does not include an adequate timeline, identification of where funding will come from, and other important elements that will be required to sufficiently implement the plan. We also have some concerns about the use of lethal controls to reduce alligator populations in urban areas. Lethal controls should be a last resort for dealing with nuisance situations, and there should be an understanding of how alligator populations in urban and other problem areas are connected to other populations. NCTWS supports the harvest of American alligator where populations can demographically support harvest, though we have concerns that the currently available data do not justify harvest.

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General Comments:

This Plan is very readable and well put together, especially for a document conceived and written by a committee! Kudos to the folks who made that happen. It seems clear that the Alligator Task Force was populated by a group of very smart and capable people who have worked hard to put together a strong management plan. However, the plan has a number of very serious flaws that give us concern about a successful outcome.

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In the following sections, the text from the plan with line numbers will be copied in standard font, followed by commentary/questions in bold face.

L 247 Five broad goals will guide the state's management of alligators. Proposed strategies (Section III) and objectives (Section IV) will guide activities to achieve these goals

These goals do indeed seem to effectively outline a strategy to manage alligators; Our concern is that we see no effective implementation plan for the research that is supposed to provide the data on which to base management decisions. The 22 objectives on L 758-59 appear to be a wish list but will be difficult to implement.

Line 200-251; The definition of “viable population” here or in the glossary needs to be strengthened I think, to include the notion of “long term sustainability”

L 308 In both AMU 1 and AMU 2, the primary management objective would be to continue managing for viable alligator populations.

Lacking specified criteria and data required to establish viability these statements seem meaningless, and I don’t really see such data being available in a timely manner to meet the schedules outlined later.

L 314 However, population management to remove alligators may occur in some circumstances or locations if the removals do not harm a metapopulation;

Again, nowhere in this document do I see a timely method to acquire the data needed to make a “no harm” decision. This needs to be made clear. It is also not clear how WRC will determine whether alligators are connected to a metapopulation and what the acceptable threshold for harm to that metapopulation will be.

L 319 The population objective would be to reduce alligator densities in L 320 urbanized areas where reports of alligator-human conflicts frequently occur, and to reduce alligator L 321 densities or otherwise allow limited take of alligators.

The Plan should make more explicit that public education, outreach, and non-lethal management options should be the first lines of defense in nuisance situations, and lethal removal should be a last option to resolve conflicts.

L 330 Population management.

Comment: We support that the Plan include removal and/or hunting of alligators, where populations might demographically support such activity. However, current evidence seems compelling that almost any harvest rate will be detrimental to most local alligator populations in North Carolina. The burden should be to demonstrate that proposed harvest levels will not cause undesirable population declines before any harvest is implemented.

The draft plan notes:

L 351 NCWRC would work with the jurisdiction involved to establish population goals and define hunt 352 area boundaries. The Director also would instruct staff to determine the approximate number of alligators 353 within the jurisdiction that should be dispatched to meet the established population goal.

How will the staff develop such removal numbers? I can't see any timely methods in this plan that such data could be available. The staff will need resources and lead time to collect data. We recognize that there may be demands from the public for more immediate action, but management decisions should be based on sound science.

L 443 Historically, NCWRC has had very few Nuisance Alligator Agents. Increasing calls about alligators received 444 by NCWRC and associated response activities are approaching the limit of agency capability.

Comment: These are vague statements. It would be useful to have data/records here of numbers of calls received each month and numbers of responses. Otherwise, it is hard to assess the validity of the statement. The data will benefit the argument.

L 477 With increasing contacts and demands from the public related to alligator issues, and uncertainties related 478 to some aspects of alligator biology and population dynamics, clearly NCWRC should develop a formal 479 alligator education and outreach program.

Comment: Outstanding goals. Again it would be helpful to present data concerning "increasing contacts and demands", unless this is speculative regarding future demand.

L 480 Six studies proposed.....all outstanding.

535 Research

536 The conservation of the American alligator in North Carolina depends on understanding fully the 537 demography of each metapopulation. This will include all the vital rates, such as fecundity, nest and egg 538 survival, recruitment rates, growth rates and size at maturity of adults. An understanding of alligator 539 movements would also clarify population dynamics. These data are sorely lacking for North Carolina, 540 although some may be available from other states.

How will size at maturity be measured? What does "maturity" mean in this case? Capable

of Reproduction? Need to specify.

Comment: A well stated expression of information/data required to scientifically manage NC alligators; but nowhere can I find any clearly stated proposals to collect these data. Collection of the data requires considerable field work and resources, and most especially time! Some vital rates can be estimated in a couple field seasons, while others (eg, growth rates, maturity, movements) may require several years to accomplish. Consequently, I am very skeptical of the windows for accomplishments in the implementation schedule.

L 544 Two recent studies explored exploitation models 545 including a harvest element, and both appeared to show declines with any significant level of harvest. In 546 fact, the Dunham et al. (2014) model found that the overall population of northern alligators (which would 547 include North Carolina) is in decline currently. The Gardner et al. (2016) model reported a similar negative 548 population trajectory, but anecdotal reports from trappers and biologists and comparison of raw counts 549 between the 1980s and 2010s indicated a slowly increasing population.

Comment: This last statement suggests the plan authors believe anecdotal observations are superior to the research and data based results. Not sure I'd put all my eggs in that basket! Strains credibility.

The plan states I think appropriately, if the vital rate data support the action:

621 It would be advantageous to establish an alligator hunting season and manner of take rules. These rules 622 would provide the legal framework to conduct population reduction hunts in cities. These rules could also 623 provide the legal framework for hunting in those areas of AMU 1 where research has demonstrated that 624 an alligator metapopulation produces sufficient recruitment to offset mortality from hunting.

Comment: Recreational hunting should be treated separately from “population reduction hunts”. As stated earlier, lethal controls should be a last resort for dealing with nuisance (and potential nuisance) situations. Also, population reduction hunts should not be implemented just as the request of a local government. NCWRC should retain authority and establish decision criteria for when such requests will be granted.

Comment: How will “sufficient recruitment” be determined? And how is recruitment defined in this document? I don't think I saw this definition anywhere.

L 758-759 **Table 3.** Implementation schedule for draft Alligator Management Plan objectives....

Comment: A very ambitious schedule for implementation and while I am convinced some objectives can be completed with this schedule, I really don't see how the objectives that require field studies of alligators can be completed on this schedule. In fact, I suspect it will be challenging to get some field studies underway in this time frame. Such difficulty I think means that many of the data needed to make the management decisions described will not be available when they are needed to make decisions about population reduction, hunting seasons, or estimating recruitment.

789 Completion of the six studies outlined in Section D could cost about \$855,000. The research is required to 790 provide the scientific basis for management of alligator metapopulations.

Comment: What is to be the source(s) of these resources to allow the needed research to be conducted??

Comment: It will be difficult for this comprehensive plan and all its component parts to be coordinated without a lead person who is ultimately responsible (a gator czar?). An organization without leadership will flounder. It's reasonable to suggest the Alligator Task Force may continue to function on some way, but operationally some one person needs to steer the ship. I recommend a significant portion of a senior staff position in WRC be assigned to this task.

It will be helpful to describe the accountability for implementation of the plan. Where does the buck stop? Is that the Director's office? What will be the public transparency of this entire endeavor?

Will the ATF be evaluating and awarding the competitive grants?

Formatting and other minor comments

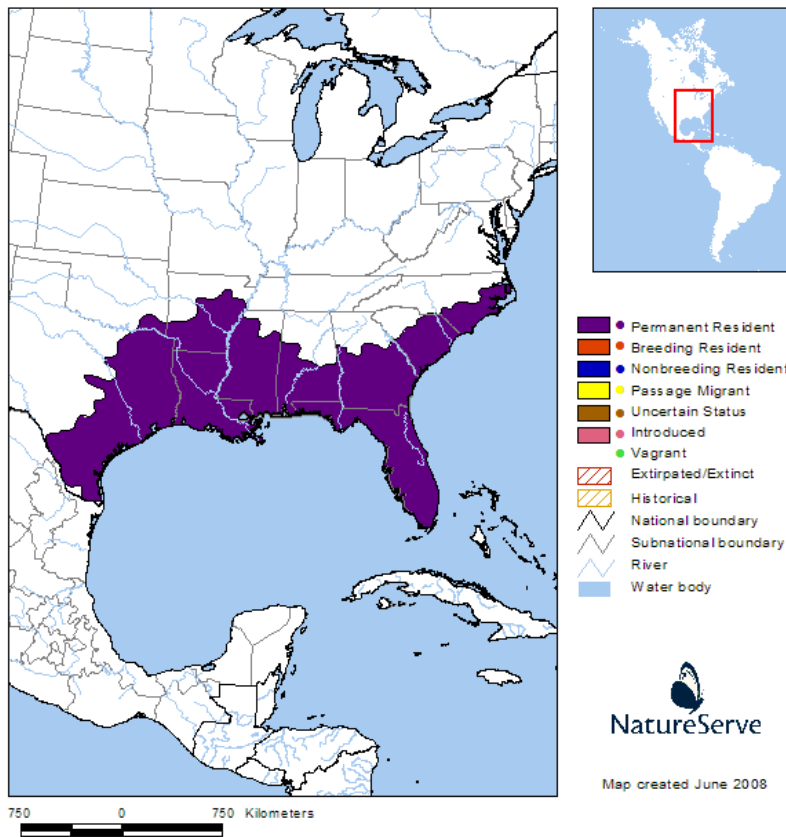
Line 86 etc "This draft plan proposes five management goals and 22 objectives to strengthen American alligator (*Alligator mississippiensis*) management in the state."

I had a hard time identifying/locating the 22 objectives noted here. I found the 22 objectives on page 23, which is a long way from L 86 on page 3. I suggest referring to Table 3 to let the reader know where to find these. It would be helpful to associate appropriate objectives

numerically with the research or survey activities as those are described.

Line 193 The range of the alligator in the United States includes areas from the southern tip of Texas through the northern coastal areas of North Carolina (Fig. 1).

Comment: This Figure includes a colorful legend depicting a variety of distributional characteristics of alligators, none of which are represented in the figure...needs editing. Either delete the legend or add the colors to the map.



Line 200 Figure 2 seems to have 2 slightly different captions; choose one. The caption should include a date to which the range estimate applies.

Comments on Literature Cited

L 381-383 makes reference to South Carolina harvest rates associated with hunt

permitting. A citation is needed here so readers can judge the credibility of the statement.

L 1016 reference/citation needed for Tom Murphy's alligator trap...

The first task of an editor or reviewer of such a document is to evaluate the quality of the literature research that must be the starting point for such an endeavor. While I believe that current available knowledge in the literature was well represented, I was disturbed by the seemingly careless attention to the details of standard literature citation protocols. I list below the numerous errors and oversights I found. There may be more that I missed. The reason I find this listing disturbing is that these are errors that anyone can easily locate, and there were many, leaving the reader to worry about the errors not so easily located. I trust that is not the case here and that this situation may indeed have the one flaw caused by group input to literature used and cited. These citations should all be carefully edited by the authors to ensure accuracy.

Authors/papers cited in text, NOT found in Lit cited:

Hagan 1982

Kushlan and Simon 1981

Kushlan 1973

McCoy et al. 2015

O'Brien and Doerr 1986

Zanno 2015

Schwimmer 2002

Sues 2003

Lit cited but NOT in text that either I or search command could locate.

Brochu, Christopher A. 1999. Phylogenetics, Taxonomy, and Historical Biogeography of Alligatoroidea. *Journal of Vertebrate Paleontology* 19: 9-100.

Dalrymple, George H. 1996. Growth of alligators in the Shark Valley region of Everglades National Park. *Copeia* 1: 212-216.

Ouchley, Kelby. 2013. *American Alligator: Ancient Predator in the Modern World*. Gainesville:

University Press of Florida.