

**From:** [Mike Murray](#)  
**Sent By:** [Mike Murray](#)  
**To:** [Ted Simons](#)  
**Cc:** [Britta Muiznieks](#); [Thayer Broili](#)  
**Subject:** AMOY buffer distances  
**Date:** 05/19/2010 05:19 PM  
**Attachments:** [Simons Sample 3 and 5 year CAHA Research Budgets.xls](#)  
[Simons Thoughts on CAHA Disturbance Study.docx](#)  
[Sabine et al 2008 Human activity effects on Amer Oystercatchers Waterbirds 31 70-82.pdf](#)  
[CAHA OverviewFinal2.pdf](#)  
[McGowan and Simons 2006 AMOY Disturbance.pdf](#)  
[NCWRC.Comments.051110.pdf](#)

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Ted,

I've included the email history below to refresh your memory of our earlier discussions regarding buffer distances during AMOY nest incubation and whether there is sufficient information to support a smaller "drive-by" buffer distance for vehicles driving past an incubating AMOY nest that is less than the full buffer (e.g., 137 m or 150 m) recommended by Sabine or USGS respectively.

As a result of comments received on our draft ORV management plan/EIS (DEIS), I have several questions on which I would appreciate hearing your professional opinion.

Question #1: See page 2, item # 2 in the attached NC Wildlife Resource Commissions comments (on our DEIS) recommending "drive-through corridors for SMA closures". In your professional opinion, is such a buffer supported by any research or currently available information, including the research mentioned by WRC? Would there be a sound basis for allowing a 50 meter buffer for ORVs travelling past an AMOY nest? Would such a buffer provide adequate protection such that the nest is unlikely to be negatively impacted by disturbance?

Question # 2: Numerous other commenters suggested that we utilize a "a flush + 15 meter buffer" buffer for AMOY nests (rather than 150 m), presumably to allow for more flexibility of access for ORVs and/or pedestrians. In your professional opinion, is such a buffer (flush + 15 m) supported by prior research or currently available information? Would there be a sound basis for allowing a "flush + 15 meter" buffer for an AMOY nest? Would such a buffer provide adequate protection such that the nest is unlikely to be negatively impacted by disturbance?



[NCWRC.Comments.051110.pdf](#)

I would appreciate hearing your opinion on these issues.

Thank you,

Mike Murray  
Superintendent

▼ "[Ted Simons](#)" <[tsimons@ncsu.edu](mailto:tsimons@ncsu.edu)>

0026266

"Ted Simons"  
<tsimons@ncsu.edu>  
05/27/2009 04:20 PM

To <Mike\_Murray@nps.gov>  
cc <Darrell\_Echols@nps.gov>, <Thayer\_Broilli@nps.gov>, <Britta\_Muiznieks@nps.gov>  
Subject RE: AMOY research proposal

Hi Mike,

Here are some thoughts on possible future studies of AMOY disturbance at CAHA (Simons thoughts.... attached). I have also attached some related publications and a sample research budget. Please let me know if you would like to set up a time to talk about this in more detail. I'm happy to drive down for a visit if that would be helpful.

Regards,

Ted

Ted Simons  
Professor  
USGS Cooperative Research Unit  
Department of Biology  
Box 7617 NCSU  
Raleigh, NC 27695  
919-515-2689  
919-515-4454 Fax  
tsimons@ncsu.edu  
<http://www4.ncsu.edu/~simons>

-----Original Message-----

From: Mike\_Murray@nps.gov [mailto:Mike\_Murray@nps.gov]  
Sent: Friday, May 22, 2009 3:51 PM  
To: tsimons@ncsu.edu  
Cc: Darrell\_Echols@nps.gov; Thayer\_Broilli@nps.gov;  
Britta\_Muiznieks@nps.gov  
Subject: AMOY research proposal

Hi Ted,

We have a possible research project we'd like to get your thoughts on.

Background: My understanding is that the recommended nest buffer of 150 meters in the USGS protocols for American oystercatcher (AMOY) nests was based, in part, on John Sabine's study at Gulf Islands NS (2005 thesis). The buffer, as recommended by USGS, applies to ALL recreational activities (i.e., ORVs and pedestrians). In reading through Sabine's thesis on American oystercatchers (particularly Chapter 4, Effects of Human Activity on Behavior of Breeding American Oystercatchers) there are a number of statements indicating a marked difference between observed pedestrian and

vehicular disturbance during nest incubation (i.e., suggesting that pedestrian disturbance is much more of a concern than vehicular disturbance during incubation; while vehicular disturbance is clearly a concern when chicks are present). Sabine's study makes a strong case for the pedestrian buffer of 137 m or more during incubation, but does not seem to make the same case for completely restricting all vehicular activity within 150 m of a nest during incubation. For example:

Page 45: "During incubation, pedestrian activity ?137 m of subjects reduced the proportion of time devoted to reproductive behavior, but pedestrian activity 138-300 m had no effect. Vehicular and boat activities had minimal effects on oystercatcher behavior during incubation."

Page 88 (Management Recommendations): "Although presence of vehicular activity altered behavior during incubation, reproductive behavior was not negatively impacted, suggesting that vehicular activity at CINS in 2003 and 2004 did not negatively impact hatching success. During brood rearing, foraging behavior was lower in the presence of vehicular activity, which may alter chick provisioning and ultimately chick survival. To minimize impacts on adult foraging behavior, I recommend the prohibition of beach driving in oystercatcher territories (within 150 m) when chicks are present. At all other times, beach driving should be limited to well below the high tide line and speeds should be limited to 10 mph or less, so drivers have ample time to see and react to birds in the path of travel." (underlining added for emphasis)

The apparent contrast between pedestrian disturbance and vehicular disturbance described in Sabine 2005 does not seem to support the recommendation of an absolute 150 m buffer for ALL recreation during AMOY incubation that is found in the USGS protocols (perhaps other references provided the basis for the 150 m vehicular restriction during incubation?). In managing the beach at Cape Hatteras, there are limited occasions in which being able to allow vehicles to pass some appropriate buffer distance from an AMOY nest during incubation (i.e., NOT when chicks are present) would be beneficial, provided the buffer distance is sufficient to prevent negative impacts from disturbance. For example, if a 150 m buffer for such a nest were to block the only means of access to an important recreation site such as Cape Point and if a lesser buffer for the activity of driving past the site to reach the open area beyond the closure were adequate to prevent disturbance during incubation (assuming that a full beach closure would occur when chicks are present), it could reduce the

overall length  
of time that popular sites (such as Cape Point) were  
inaccessible to the  
public and could decrease public resentment about the duration  
and impact  
of the closures.

Research Project Concept: To follow up on specific negotiated  
rulemaking  
discussions that occurred during natural resources subcommittee  
meetings  
(which included Walker Golder among other stakeholders), I am  
interested in  
having research done at Cape Hatteras in the next few years that  
would  
evaluate the effectiveness/adequacy of having a buffer of less  
than 150 m  
for ORVs driving past AMOY nests during the incubation. My  
intent is to  
definitively determine for Cape Hatteras whether there may be  
limited,  
definable circumstances under which it may be appropriate to  
allow vehicles  
to drive past by an AMOY nest at a distance less than 150 m.  
Under what  
circumstances or conditions, if any, would a reduced buffer for  
vehicles  
driving by be effective/adequate? Under said conditions, what  
would be the  
effective/appropriate vehicular buffer size during incubation?  
Would  
restricting vehicles to traveling below the high tide line  
during  
incubation be adequate as p. 88 in Sabine's thesis suggests?  
Would  
controlling or restricting the number of vehicles per hour, or  
limiting  
travel time to limited time periods per hour, or would  
manipulating any  
other variable(s) within management control make a difference?

Underlying Management Objectives:

Ensure adequate protection of incubating AMOY nests  
Determine if a reduced buffer distance (i.e., less than 150  
m) for ORVs  
driving past an incubating AMOY nest is adequate to prevent  
disturbance  
and, if it is, determine what distance is adequate  
OR  
Determine that a reduced buffer is NOT adequate (and put this  
issue to  
rest)

Questions:

Do you believe that such a study could produce the specific  
results the  
park would need for practical management purposes, or would  
it possibly  
only indicate that there is such variability in individual  
bird's  
reactions to ORV disturbance during incubation that the only  
way to  
prevent disturbance is to use the same conservative buffer  
size for all  
human disturbance situations?  
Is there an adaptive management approach to managing these  
specific  
situations (AMOY nest buffer blocking the only access to an  
inlet or  
Cape Point, when the inlet or point itself is otherwise  
"open") that  
could be designed to determine the appropriate effective ORV  
"drive-by"  
buffer distance over time?

Request for a Proposal: If you believe that such a study could lead to a practical differentiation in buffer size for ORVs driving past an incubating nest vs. the buffer size needed to prevent disturbance from other human activities, I would appreciate it if you would develop a research proposal, with estimated costs, for such a study so that the Seashore can seek funding for it. Ideally, the project would be something that could be started in 2010 (or no later than 2011).

Thank you for your consideration. If you think it would be helpful to discuss this on the phone before responding, feel free to say so and we can set up a call to discuss it.

Mike Murray  
Superintendent  
Cape Hatteras NS/ Wright Brothers NMem/ Ft. Raleigh NHS  
(w) 252-473-2111, ext. 148  
(c) 252-216-5520  
fax 252-473-2595

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