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**Subject:** RE: Red Knot, CAHA, and ORV planning questions  
**Date:** 12/16/2008 04:19 PM

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Hi Carla,

I think I can answer your questions and I'll discuss non-breeding shorebirds in general with some additional information on red knots. I'm not sure if we've discussed red knots specifically in the past, but I believe we have briefly discussed the need to consider non-breeding shorebirds. It is my understanding that CAHA has to consider all natural resources whether they are listed or not and since non-breeding shorebirds are a significant natural resource at CAHA, they should be considered. Most species of shorebirds found in NC don't actually breed here, but are long-distance migrants that breed in the Arctic and can be found in NC during migration and winter months. Populations of most species of shorebirds are declining. Red knots have received a lot of attention in recent years because their populations have been declining so dramatically. There is no doubt that the Delaware Bayshore is an important stopover site where red knots stop and forage almost exclusively on horseshoe crab eggs on their journey north to their breeding grounds. However, this is not the only stopover site for red knots nor the only food source. Other invertebrates, especially bivalves such as the coquina clam (found in intertidal areas on ocean front beaches), are vital food sources at other sites during migration and during the winter. The reasons for declines of red knots are not completely understood at this time and research is ongoing. Reasons might be linked to declines in horseshoe crabs, effects of climate change, habitat degradation on wintering grounds and at other migratory stopover sites, or some combination of these and other factors. At any rate, human disturbance and habitat degradation are significant threats to red knots and other shorebird species and there are concerns about direct and indirect impacts of beach driving on this resource. I hope this helps.

Best,

Sue Cameron

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

**From:** Carla Boucher [<mailto:ccboucher@cox.net>]

**Sent:** Monday, December 15, 2008 10:24 AM

**To:** 'Mike Murray'; [pete\\_benjamin@fws.gov](mailto:pete_benjamin@fws.gov); [David\\_Rabon@fws.gov](mailto:David_Rabon@fws.gov); [MFCREP@bigfoot.com](mailto:MFCREP@bigfoot.com); 'Sara Winslow'; [allend@coastalnet.com](mailto:allend@coastalnet.com); [camerons@coastalnet.com](mailto:camerons@coastalnet.com)

**Subject:** Red Knot, CAHA, and ORV planning questions

Hi. I heard for the first time at the reg neg meeting some concern about ORV access and the necessity or prudence in coordinating ORV management and Red Knot management. I have spent some time trying to gather information about Red Knots. I've also spent some time trying to figure out how Red Knot management and ORV management at CAHA are connected.

From my very limited view and even more limited scientific background I have gathered that Red Knot are not listed for protection by the USFWS. They were designated in 2006 by FWS as a "candidate species" but according to Defender's of Wildlife website "being on the candidate list confers no statutory protection". I could find no listing protection in North Carolina for Red Knots. I have found that the life of a Red Knot is directly tied to the availability of horseshoe crab eggs and that horseshoe crab eggs are declining in the Delaware and Chesapeake Bay areas north of Cape Hatteras and north of North Carolina. The North Carolina Aquariums stated in one article that "There is no known evidence that large numbers of horseshoe crabs have ever spawned on our beaches". The University of Delaware has

information that salinity range appears to be a dominant parameter for beach selection by horseshoe crab, but I can't find the salinity range for beaches in North Carolina or more specifically for CAHA. I found one article on the University of Delaware horseshoe crab website that indicates that horseshoe crab spawning occurs on "outerbanks soundside".

If the Red Knot is not listed and its greatest threat is a lack of horseshoe crab eggs, can any of you please help me understand our obligation for ORV management regarding Red Knot protection? Is there some authority for protection that I've missed?

I've copied Mike Murray, Pete Benjamin and David Rabon with USFWS, David Allen and Sue Cameron with NCWRC hoping for some help. I've copied Wayne Mathis and Sara Winslow who I thought might benefit from a listening in to this discussion about Red Knot protection insofar as that may or may not involve their commercial fishing interests relating to horseshoe crab limits in NC (if any).

Thank you. I really appreciate your help. If you could keep your answers somewhat simplistic so I can follow along I would really appreciate that too. ☺

Carla

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