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From: [Ted Simons](#)
To: [Mike Murray@nps.gov](mailto:Mike_Murray@nps.gov)
Subject: FW: Thoughts about future Oystercatcher research and monitoring
Date: 06/27/2008 03:38 PM
Attachments: [2007 CALO CAHH Oystercatcher Report.pdf](#)
[Simons Draft AMOY Proposal June 08.doc](#)

Hi Mike,

Sorry about the address. And all this time I thought you were ignoring me (: Here is the message and attachments. On a personal note, I learned a lot from the meeting last week and have a lot of respect for how you are grappling with this difficult situation. I feel the same level of commitment to CAHA as most of the people at the meeting and really hope there is something we can do to help you and your dedicated staff come to a good resolution to this conflict. Please don't hesitate to let me know what else I can do to help.

Regards,

Ted

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Sent: Thursday, June 26, 2008 5:17 PM
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Cc: 'Thayer_Broilli@nps.gov'; 'Michael_Rikard@nps.gov'; 'Anne_Hecht@fws.gov'; 'rme5g@cms.mail.virginia.edu'; 'Sherri_Fields@nps.gov'; 'Timothy_Pinion@nps.gov'
Subject: Thoughts about future Oystercatcher research and monitoring

Mike and Russ,

I drafted some ideas about objectives for future work on American Oystercatchers that focus on the topics raised at the reg-neg meeting last week. Funding for our work on the Outer Banks expired last year, and although we have done our best keep the monitoring going this field season, I am currently trying to generate new funding to continue the work in the future. Continuing productivity monitoring and banding studies, and evaluating predator management programs will provide valuable information on the effects of management policies implemented under the consent decree. Please let me know if you have thoughts about how we can contribute to resolving current conflicts over shorebird and ORV management, and if you have suggestions about possible funding sources to support the work.

Best regards,

Ted

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DRAFT PROPOSAL**Title**

Conservation and Management of American Oystercatchers at Cape Hatteras and Cape Lookout National Seashores

Principal Investigator: Theodore R. Simons, USGS, North Carolina State University

Abstract

*The American Oystercatcher (*Haematopus palliatus*) is recognized as an important indicator of ecological conditions on Atlantic coast beaches. Because the birds nest and feed along the outer beach, their populations are threatened by a variety of problems related to human activity including disturbance related to human recreation and off road vehicles (ORV's), loss of nesting habitat due to coastal development, erosion, and predation from introduced predators such as feral cats, dogs, rats, and native predators such as raccoons and mink. Sensitivity to these problems and the fact that American Oystercatchers are large, conspicuous, and long-lived, makes them excellent indicators of environmental conditions in the coastal zone. Although oystercatchers are conspicuous breeders from Maine to Florida, evidence of population declines in several states is raising concern over the status of their populations. The US Shorebird Conservation Plan lists American Oystercatchers as a high priority species, and the bird was recently upgraded to a species of special concern in North Carolina, in part because of significant threats from development and heavy recreational use of coastal breeding habitats. A recent lawsuit and subsequent consent decree over the effects of beach driving on breeding coastal birds at Cape Hatteras National Seashore identified American Oystercatchers as a focal species which will serve as model for evaluating future management efforts. This proposal seeks three years of support to determine the management actions necessary to protect the remaining breeding populations in a way that minimizes conflicts over resource use on public lands. Funding will support a post-doctoral research associate at the USGS Cooperative Fish and Wildlife Research Unit, North Carolina State University, and seasonal field technicians. Research will address three primary objectives: 1) Assessing the relationship between breeding American Oystercatcher populations on the National Seashores and those on State and private lands, especially those occupying non-traditional habitats, 2) Evaluating whether on-going predator management programs at the Seashores are contributing to higher Oystercatcher nesting productivity, and 3) Assessing the response of breeding Oystercatcher populations at Cape Hatteras to the management policies implemented under the consent decree.*

Problem Statement

American Oystercatchers are large, conspicuous shorebirds that are strictly tied to the coastal zone throughout the year. Unlike many shorebirds that breed in the Arctic and migrate to coastal regions in the winter, oystercatchers breed along the Atlantic Coast from Cape Cod to Florida, and along the Gulf Coast from Florida to Mexico. The winter range extends from central New Jersey south. The US Shorebird Conservation Plan lists American Oystercatchers as a high priority species (Brown et al. 2001), in part

because of significant threats from development and heavy recreational use of coastal breeding habitats.

Human population density is increasing along the Atlantic seaboard, and the rate of growth is expected to increase substantially, particularly in the southeastern states (Crossett et al. 2004). At the same time, recreational use of the coastal zone is on the rise. Many visitors to the coast seek out undeveloped beaches. As coastal islands and beaches are developed, more visitors are concentrated onto the remaining undeveloped areas. Coastal development, recreational activity, and altered predator communities have seriously reduced the amount of suitable nesting habitat for American Oystercatchers in North Carolina. Shoreline development affects the availability of foraging habitat as well. Oystercatchers nest at higher densities and fledge more chicks when they have direct access to foraging areas (Nol 1989; Ens et al. 1992). Roads and artificial dunes along nesting beaches can limit access to sound-side marshes and flats that are important foraging habitats for oystercatchers. Nesting and roosting sites can also be lost when jetties and revetments alter the normal process of longshore transport of sand and accelerate erosion of adjacent beaches.

American Oystercatchers are listed in both Georgia and Florida as “threatened”, and as a “species of special concern” in North Carolina. A recent aerial survey of the species’ winter range resulted in a population estimate of 10971 individuals (+/-298), with 7500-8000 wintering on the Atlantic Coast (Brown et al. 2005). The survey estimated a winter population of Oystercatchers in North Carolina at 647 birds. A 2007 breeding season survey estimated North Carolina’s summer population at 717 individuals, with 339 breeding pairs (Cameron and Allen 2007).

Like many long-lived species, oystercatcher reproductive rates tend to be highly variable but generally low (Evans 1991). Thus, the species is unable to recover quickly from population declines. These traits make it difficult to assess the trajectory of a population because populations can persist for many years, even if reproductive success is low. Recent surveys indicate that populations in the Mid-Atlantic states are declining (Mawhinney and Benedict 1999, Nol et al. 2000, Davis et al. 2001). The breeding population of Virginia’s barrier islands, a historical stronghold for oystercatchers, fell from 619 breeding pairs in 1979 to 255 breeding pairs in 1998 (Davis et al. 2001). A 2004 survey that covered the same region estimated the population at 302 breeding pairs (Wilke et al. 2005). This survey also covered lagoon and marsh habitat and found an additional 223 pairs.

These results suggest populations may be moving into non-traditional habitats, and they highlight the need for additional surveys in marsh and upland habitats not normally associated to oystercatchers. During the period of apparent decline in the mid-Atlantic, the species expanded its breeding range into the northeastern U. S. (Davis 1999, Mawhinney and Benedict 1999, Nol et al. 2000, Davis et al. 2001). Understanding the causes of local, regional, and continental population trends will require region-wide studies of the species’ population structure and demographics.

Objectives and Methods

Researchers at the USGS Cooperative Fish and Wildlife Research Unit at NC State University have studied the factors affecting the size, distribution and productivity of American Oystercatcher populations on the Outer Banks of North Carolina since 1997

(Simons and Schulte 2007). To date they have documented factors affecting nesting success on over 1,500 nesting attempts and individually color-banded over 350 birds. A recent lawsuit and subsequent consent decree over the effects of beach driving on breeding coastal birds at Cape Hatteras National Seashore identified American Oystercatchers as a focal species which will serve as model for evaluating future management efforts. This proposal seeks three years of support to determine the management actions necessary to protect the remaining breeding populations in a way that minimizes conflicts over resource use on public lands. Funding will support a post-doctoral research associate at the USGS Cooperative Fish and Wildlife Research Unit, North Carolina State University, and seasonal field technicians. Research will address three primary objectives: 1) Assessing the relationship between breeding American Oystercatcher populations on the National Seashores and those on State and private lands, especially those occupying non-traditional habitats, 2) Evaluating whether on-going predator management programs at the Seashores are contributing to higher Oystercatcher nesting productivity, and 3) Assessing the response of breeding Oystercatcher populations at Cape Hatteras to the management policies implemented under the consent decree.

- 1) ***Assessing the relationship between breeding American Oystercatcher populations on the National Seashores and those on State and private lands, especially those occupying non-traditional habitats.*** We seek to measure the relative importance of traditional and non-traditional nesting habitats in sustaining American Oystercatcher populations in North Carolina. As human pressure on coastal nesting sites increases, it appears that nesting American Oystercatchers are moving from ocean beaches to non-traditional nesting sites on dredge spoil islands, coastal marshes, and estuaries. Although these sites are more easily managed to limit human disturbance and predation we know nothing about the extent to which these habitats contribute to sustaining oystercatcher populations. We propose to expand current monitoring of oystercatcher productivity along the coastal barriers in North Carolina to inland sites managed by Audubon and the NC Wildlife Resources Commission in the Cape Fear Estuary and Pamlico Sound. We will measure nesting success, chick provisioning and growth rates, adult foraging ranges, and juvenile dispersal and survival to determine differences in the roles traditional and non-traditional nesting habitats play in sustaining oystercatcher populations. We will employ traditional radio telemetry and assess the potential of recently developed satellite/GPS telemetry to document patterns of foraging behavior, dispersal and survival. Mark-resight and telemetry studies will provide direct metrics of the relative costs of reproduction on traditional ocean-side sites (where birds can walk to foraging sites) and non traditional sound-side, river estuary, and mainland breeding sites where adult birds fly between foraging and nesting areas when they are provisioning their chicks. This information will help identify habitats likely serving as population sources or sinks so that future management and habitat acquisition efforts can be targeted where they will provide the greatest population level response.
- 2) ***Evaluating whether on-going predator management programs at the Seashores are contributing to higher Oystercatcher nesting productivity.*** Managing predators to benefit breeding American Oystercatchers has been identified as a priority in the business plan drafted by the American Oystercatcher Working Group. There are few established guidelines in this area, and we believe

initial efforts should focus on identifying the potential return on investment for different predator management strategies, and on avoiding the unintended consequences that can occur when management alters predator-prey relationships without the knowledge required to make informed decisions. We will do this by leveraging an on-going project evaluating the costs and benefits of partial raccoon removal on South Core Banks, Cape Lookout National Seashore, to make comparisons with total raccoon removals on two smaller islands in coastal North Carolina. The project on South Core Banks, funded by the National Park Service and the USGS (\$215,000 in 2006), is assessing the response of breeding American Oystercatchers, sea turtles, and Piping Plovers to a 50% reduction in the raccoon population. The project is directed by Dr. Ted Simons, USGS NC State, and Dr. Alan O'Connell, USGS Patuxent Wildlife Research Center. To date more than 150 raccoons on South Core banks have been individually marked and 60 animals radio collared. Radio telemetry and mark-resight studies using an array of infrared cameras on the island are providing estimates of raccoon population size, and demographics and an unprecedented picture of island raccoon ecology. The removal phase is scheduled for the fall/winter of 2008/2009 and monitoring will continue for six months after reducing the raccoon population by approximately 50%. We propose to continue research on raccoon and prey species on South Core Banks for an additional 36 months to determine the rate at which raccoon and American Oystercatcher populations respond to predator management. Expanded monitoring will allow researchers to assess whether populations of non-target species such as mink or feral cats show responses to raccoon removal. This work will determine the feasibility of total removal on small islands, the relative costs and benefits of partial versus total removal strategies, and quantify the benefits realized by breeding American Oystercatchers in the form of increased reproductive success.

- 3) ***Assessing the response of breeding Oystercatcher populations at Cape Hatteras to the management policies implemented under the consent decree.*** Cape Hatteras National Seashore has recently implemented new policies to minimize the effects of ORV's on breeding shorebirds. We will document the response of breeding American Oystercatcher populations at Cape Hatteras National Seashore to newly implemented ORV management policies. Findings will build on 10 years of productivity monitoring to determine if management policies are influencing long term declining trends in the number of breeding pairs and rates of nesting productivity. Results will provide a before-after comparison of the response of breeding Oystercatchers to ORV management and a measure of productivity gains that can be expected when ORV disturbance during the breeding season is reduced.

Expected Results and Products

Annual summary reports will be submitted according to the work schedule outlined below. Reports will include tabular and graphic products depicting quantitative estimates of the abundance, distribution, habitat preferences and reproductive success of breeding American Oystercatchers in Coastal North Carolina. Project results should enable managers to:

1. Summarize trends in American Oystercatcher population size and nesting productivity on the Outer Banks from 1997 to 2011.

2. Assess how human-related disturbance and predators are affecting the distribution, abundance, productivity, and persistence of American Oystercatcher populations, and determine the effectiveness of predator and ORV management programs.
3. Estimate the relative importance of National Park Service and other Federal, State, and private lands in supporting American Oystercatcher populations in North Carolina, and promote the integration of management activities among cooperating agencies.

Interim and final results will be published in peer reviewed journals such as the Auk, Wilson Bulletin, and Conservation Biology. A summary article will be submitted to Park Science.

Technology/Information Transfer

The intended users of project results and products are the resource management staff at Cape Hatteras and Cape Lookout National Seashores and other Federal, State, and private natural resource managers who have an interest in the conservation of shorebird populations. The study will implement a long-term natural resource monitoring program that uses the American Oystercatcher as an indicator of resource conditions. Resource conditions will be assessed by relating the annual reproductive success of oystercatchers, and the abundance, movement, and survival rates of color-banded birds to trends in visitation, recreational activity, habitat availability, and predator populations.

Work Schedule

Deliverables will be submitted according to the following schedule:

Recruit Post-doc: Winter 2008
Field work, year 1: March - August 2009
Annual report, year 1: December 2009
Field work, year 2: March - August 2010
Annual report, year 2: December 2010
Field work, year 3: March – August 2011
Draft final report: June 31, 2012
Final report: December 30, 2012

Project Personnel

Research will be conducted under a cooperative agreement (Research Work Order) with Cooperative Fish and Wildlife Research Unit, North Carolina State University, under the direction of Dr. Ted Simons. Funding will support three years of field work on the Seashores, provide salary for a Post-doctoral Research Associate, and salary for field technicians, supplies and equipment. Matching and in-kind support for the project will be provided by Cape Hatteras and Cape Lookout National Seashores in the form of housing and logistical support, North Carolina State University, and the NCSU Cooperative Fish and Wildlife Research Unit.

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