A piping plover is shown in profile, facing right. It has a light-colored head with a dark eye and a dark, pointed beak. Its body is covered in light brown and tan feathers. The bird is standing on a sandy beach with a blurred background of water and sky.

***Beach Stabilization and Piping Plovers:
An Overview of Conservation Issues
and Implications for
ESA Section 7 Consultation***

David Rabon, U.S. Fish and Wildlife Service, Raleigh, NC

Anne Hecht, U.S. Fish and Wildlife Service, Sudbury, MA

**The First Regional Workshop on Dredging, Beach Nourishment, and Bird Conservation and
A Symposium on the Wintering Ecology and Conservation of Piping Plovers
Jekyll Island, Georgia
February 1-4, 2005**



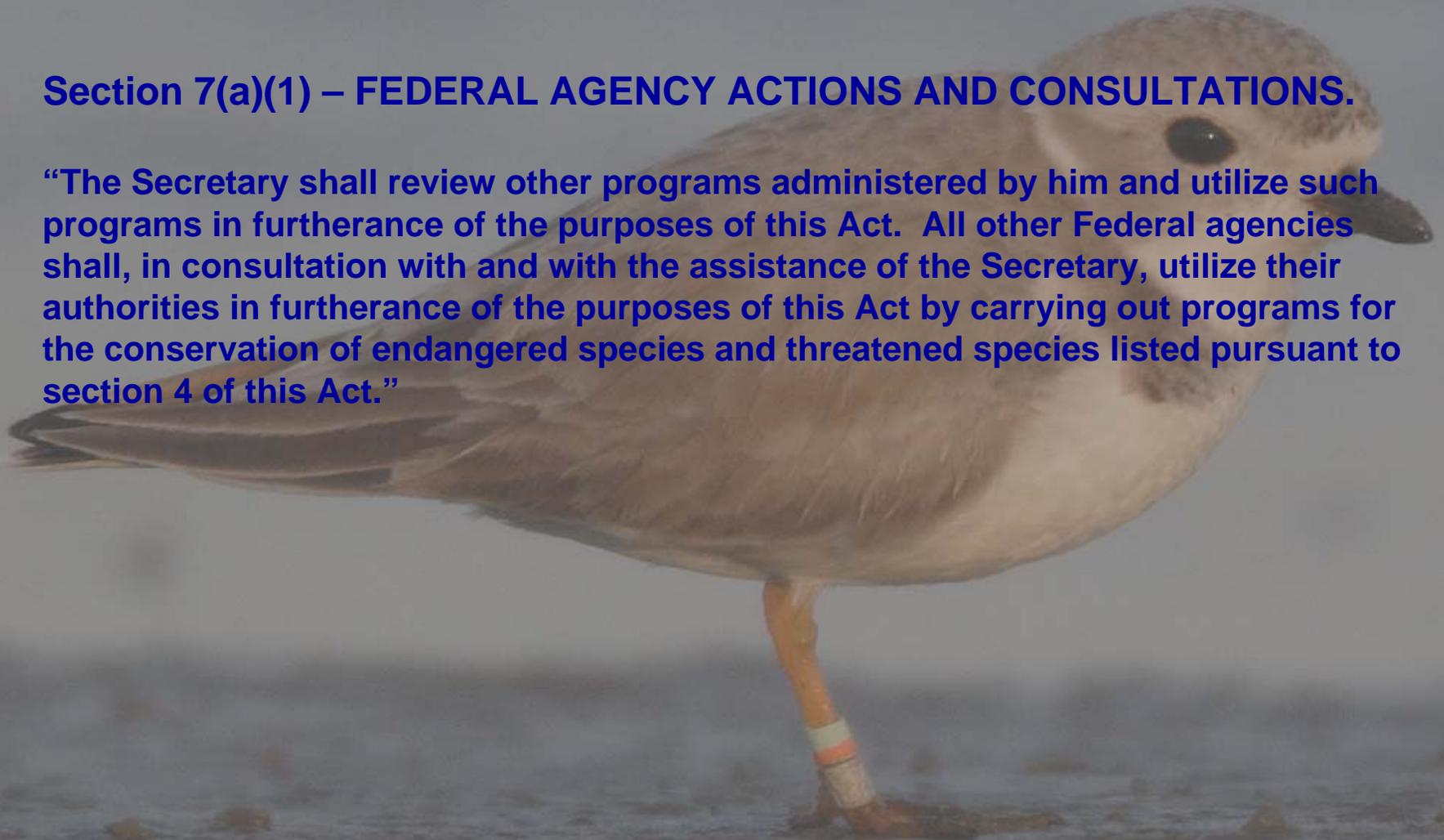


Endangered Species Act of 1973

(16 U.S.C. 1531 et seq.)

Section 7(a)(1) – FEDERAL AGENCY ACTIONS AND CONSULTATIONS.

“The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act.”



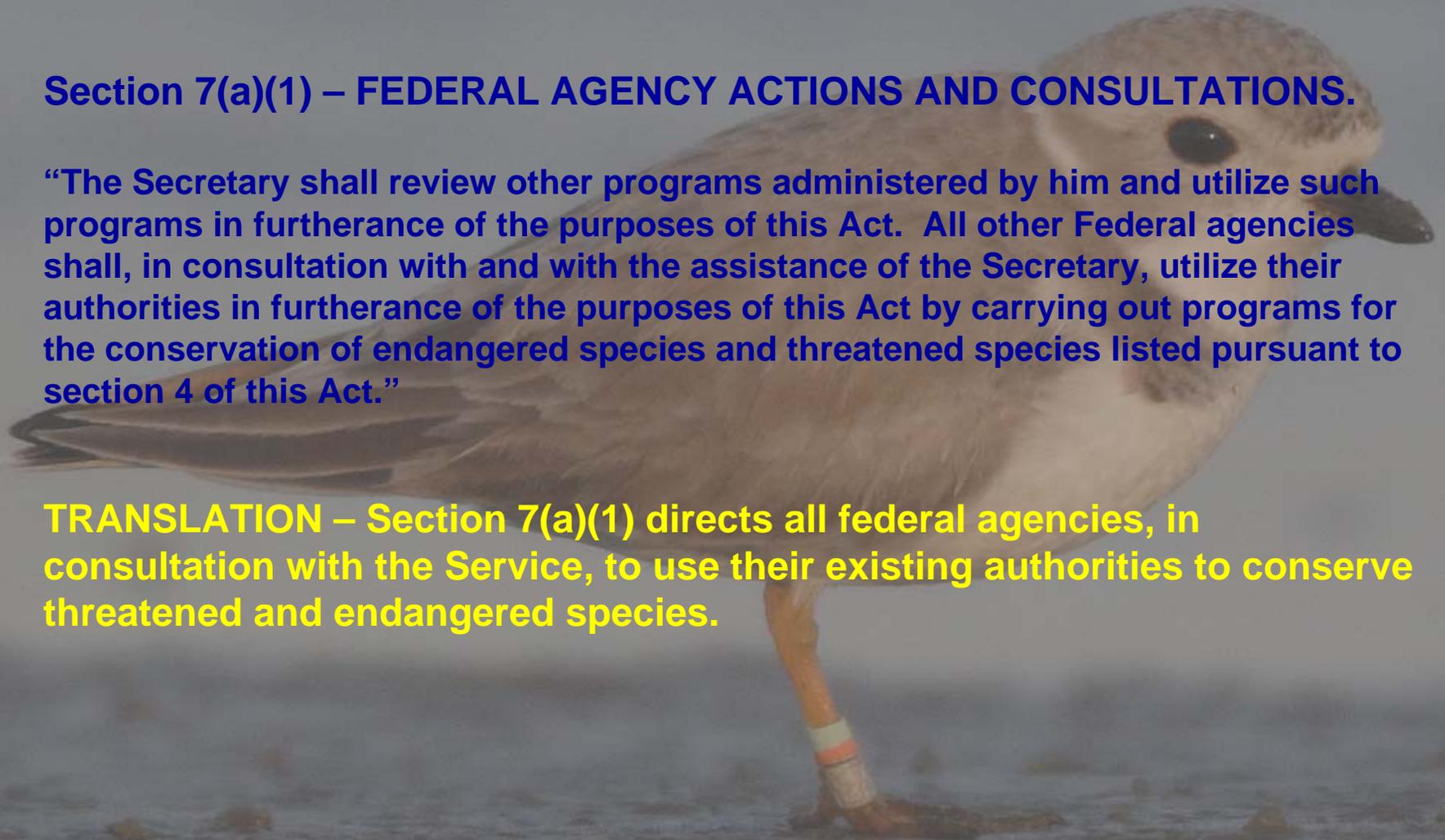
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TRANSLATION – Section 7(a)(1) directs all federal agencies, in consultation with the Service, to use their existing authorities to conserve threatened and endangered species.

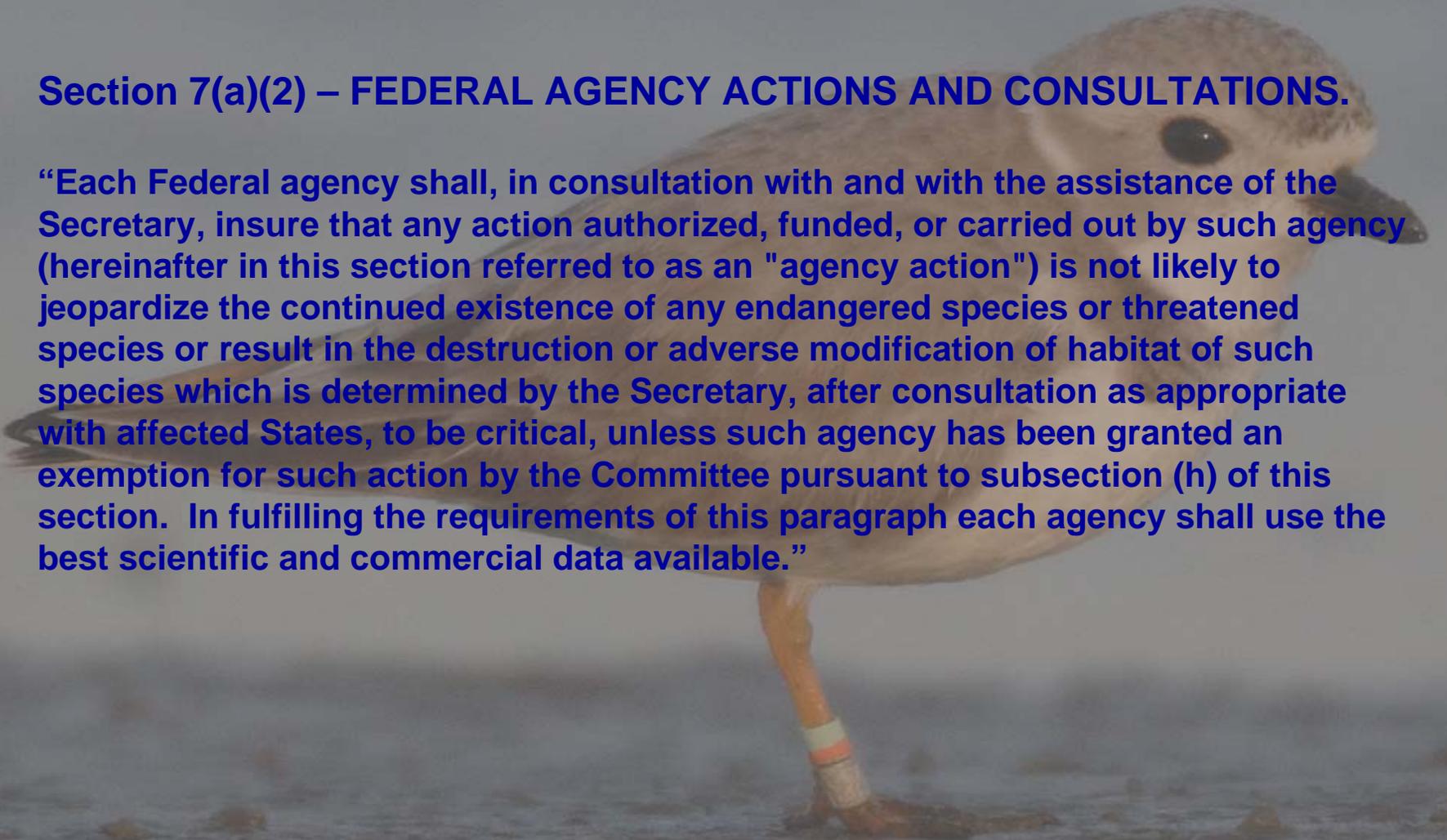


Endangered Species Act of 1973

(16 U.S.C. 1531 et seq.)

Section 7(a)(2) – FEDERAL AGENCY ACTIONS AND CONSULTATIONS.

“Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an "agency action") is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available.”



Endangered Species Act of 1973

(16 U.S.C. 1531 et seq.)

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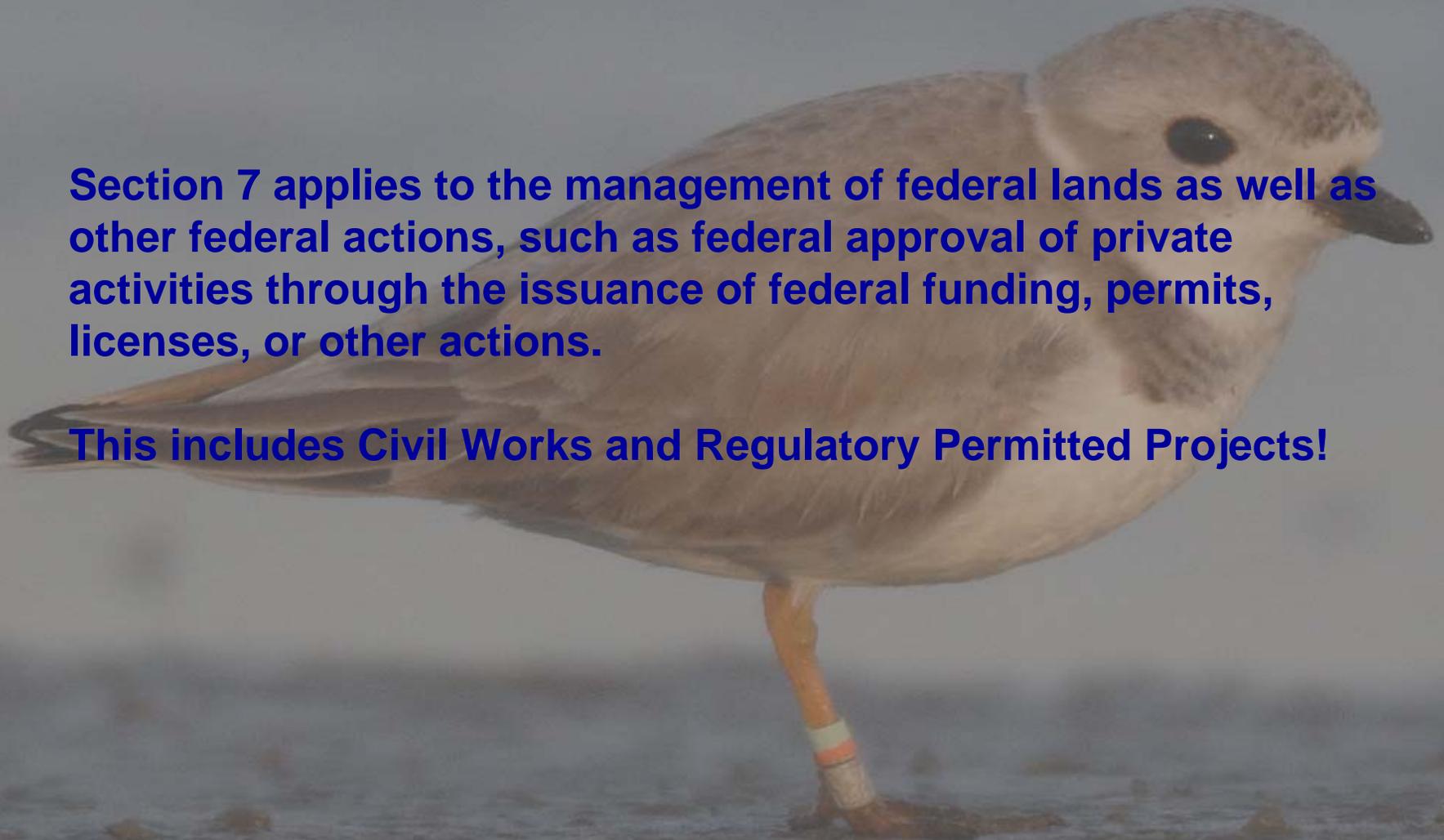
TRANSLATION – Section 7(a)(2) directs all federal agencies, in consultation with the Service, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat.

Endangered Species Act of 1973

(16 U.S.C. 1531 et seq.)

Section 7 applies to the management of federal lands as well as other federal actions, such as federal approval of private activities through the issuance of federal funding, permits, licenses, or other actions.

This includes Civil Works and Regulatory Permitted Projects!



Endangered Species Act of 1973

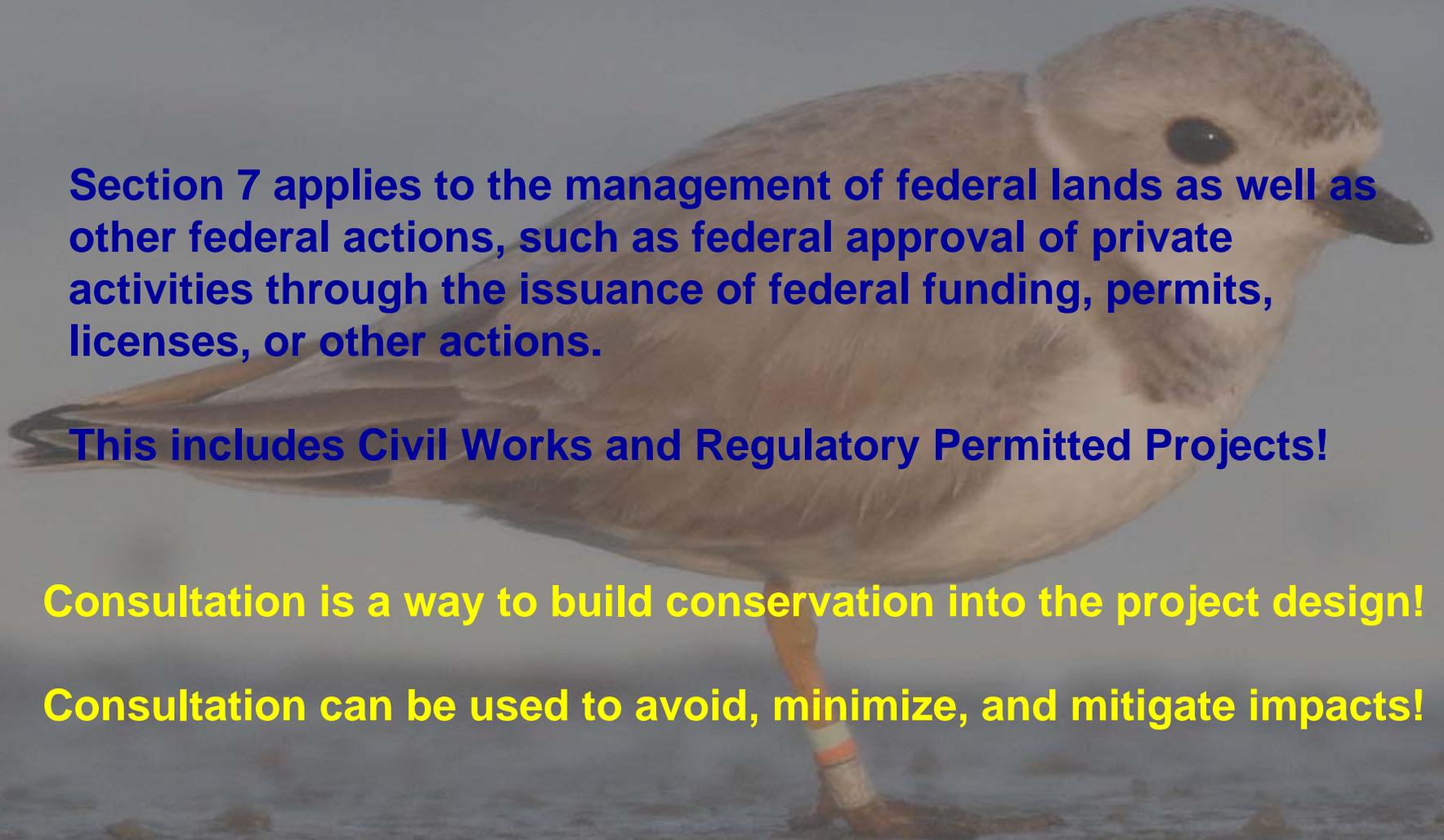
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This includes Civil Works and Regulatory Permitted Projects!

Consultation is a way to build conservation into the project design!

Consultation can be used to avoid, minimize, and mitigate impacts!















Examples

Avoiding Impacts

Maintaining Natural Coastal Processes

Land Purchases and Buy-outs

Abandon problem areas for more stable solutions

Ferry Terminal on Ocracoke Island

Long Bridge over Oregon Inlet and Pea Island NWR

Artificially Create and Maintain High Quality Habitats

Disperse High Quality Habitats Across the Plover's Range

Avoid Plover Use Season or High Use Periods

Protect Plovers from Project-Abetted Recreational Activities (e.g., ORVs, boating, etc.)







S. Maddock







Buy-outs and Land Purchases!

North Carolina Coastal Reserve



BIRD ISLAND

A DEDICATED STATE NATURE PRESERVE

Managed by the
N.C. Division of Coastal Management



Funding for acquisition provided by: N.C. Clean Water Management Trust Fund / N.C. Natural Heritage Trust Fund / N.C. Department of Transportation

Examples

Minimizing and Mitigating Impacts

On-site Meetings

Monitoring/Surveys

Presence/Absence

Abundance and Species Associations

Habitat Use and Time Activity Budgets

Timing of Monitoring/Surveys

Pre-project (Baseline Data)

During Construction Activities

Post-project (multi-year data collection)

Discuss project design to replace lost habitat... including foraging and roosting areas

Protected Areas (Foraging, Roosting, and Nesting)

Signs and Post and Rope

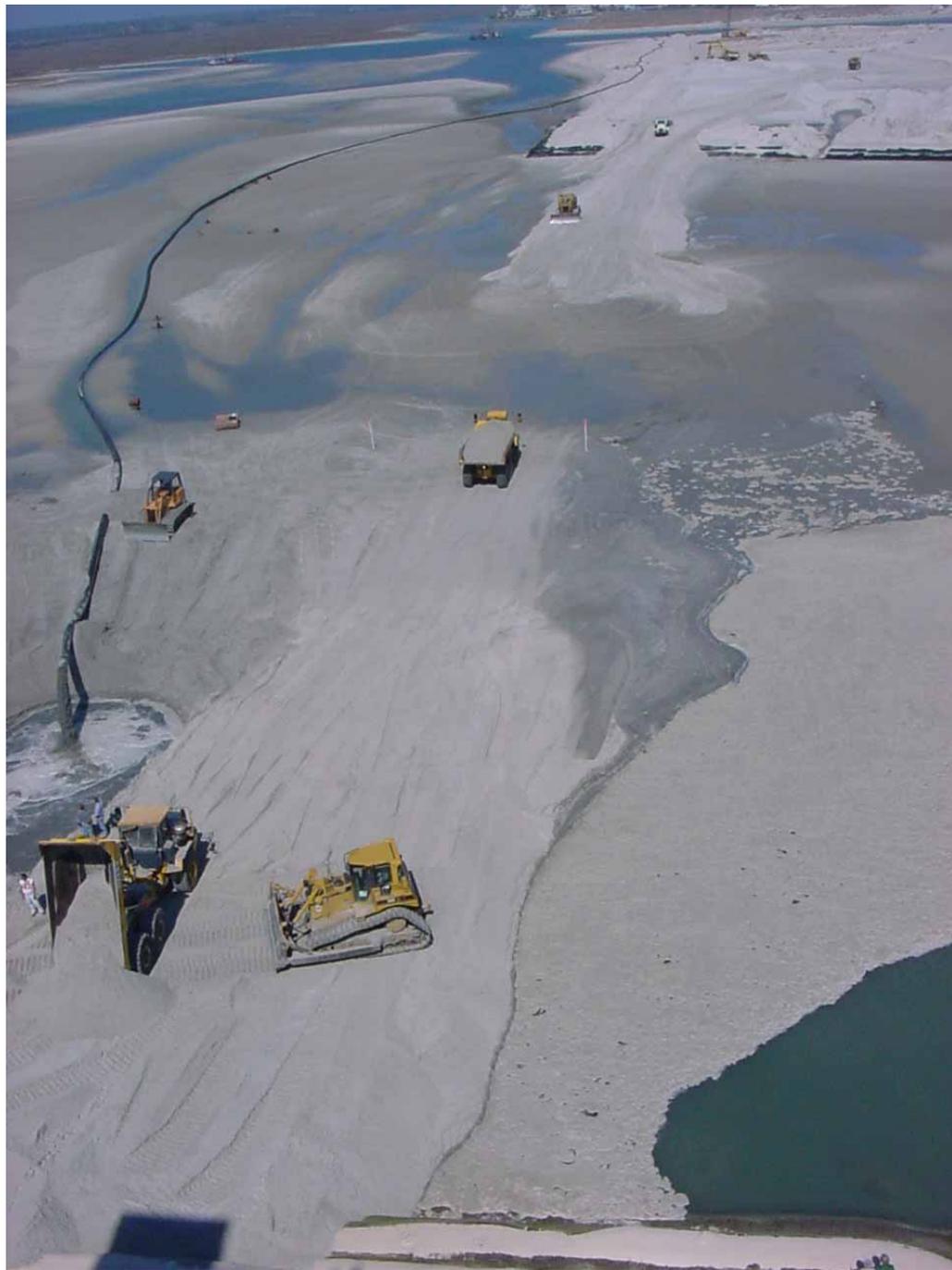










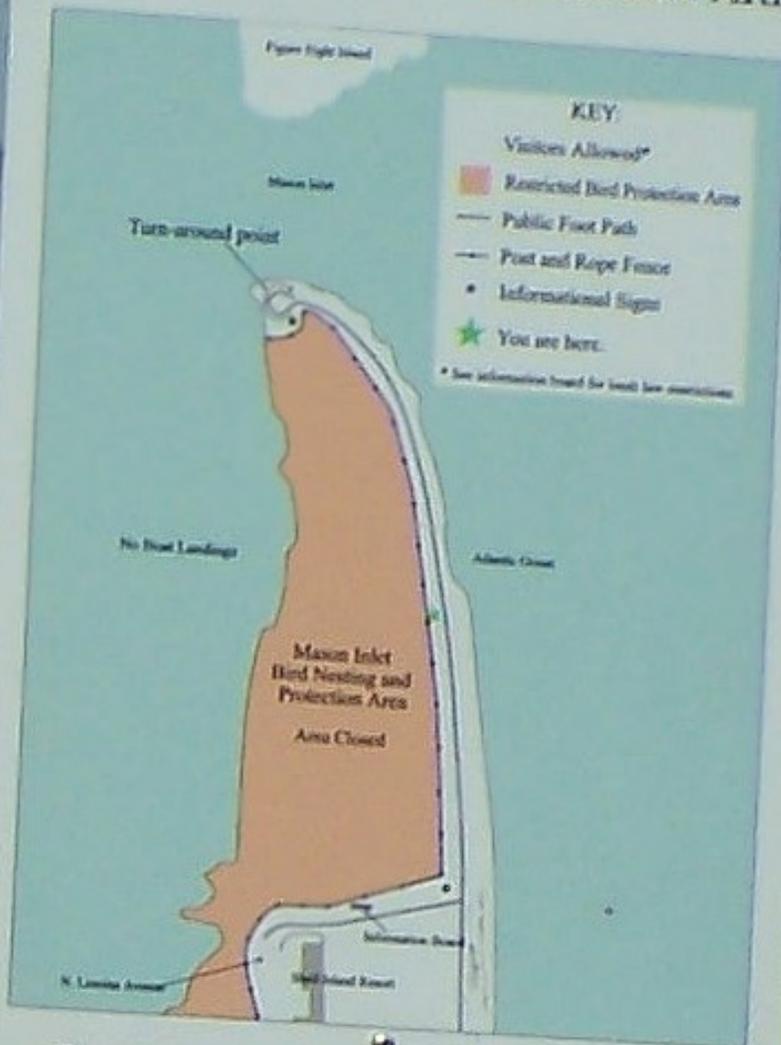








MASON INLET BIRD NESTING AND PROTECTION AREA



Please visit the Information Board to learn more about Mason Inlet.

AREA CLOSED



NO ADMITTANCE
BEYOND THIS SIGN



Mason Inlet Bird Nesting and Protection Area

Area regularly patrolled by the Town of Wrightsville Beach
and New Hanover County law enforcement



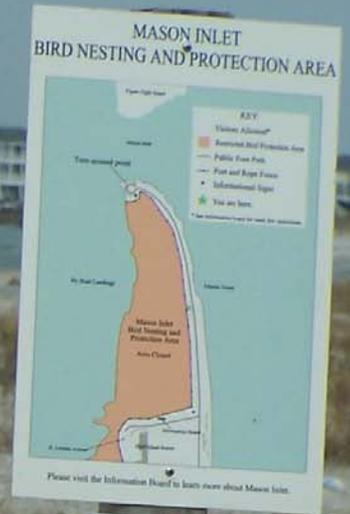
Audubon NORTH CAROLINA



Area managed by the State Office of the National Audubon Society
in cooperation with New Hanover County.

LIFEGUARDS DO NOT
RESPOND BEYOND THIS POINT

TOWN ORDINANCES RESTRICTING
DOGS COOKING, FIRES AND OTHER
RESTRICTED ACTIVITIES STILL APPLY
AND WILL BE ENFORCED.



Examples

Minimizing and Mitigating Impacts

Management and Conservation Plans

- Multi-species

- Breeding and Non-breeding protection, monitoring, and study

- Education and Outreach Component

 - Interpretive Signs and Kiosks

 - Flyers and Fact Sheets

 - On-Site Naturalist/Biologist

 - Local Businesses (e.g., Beach House Rental Companies, Hotels, etc.)

Local Ordinances

- Leash Laws

- Bird Protection or Anti-harassment Laws

- Bird Protected Areas



Figure 1. Designated nesting and foraging areas

Bogue Inlet

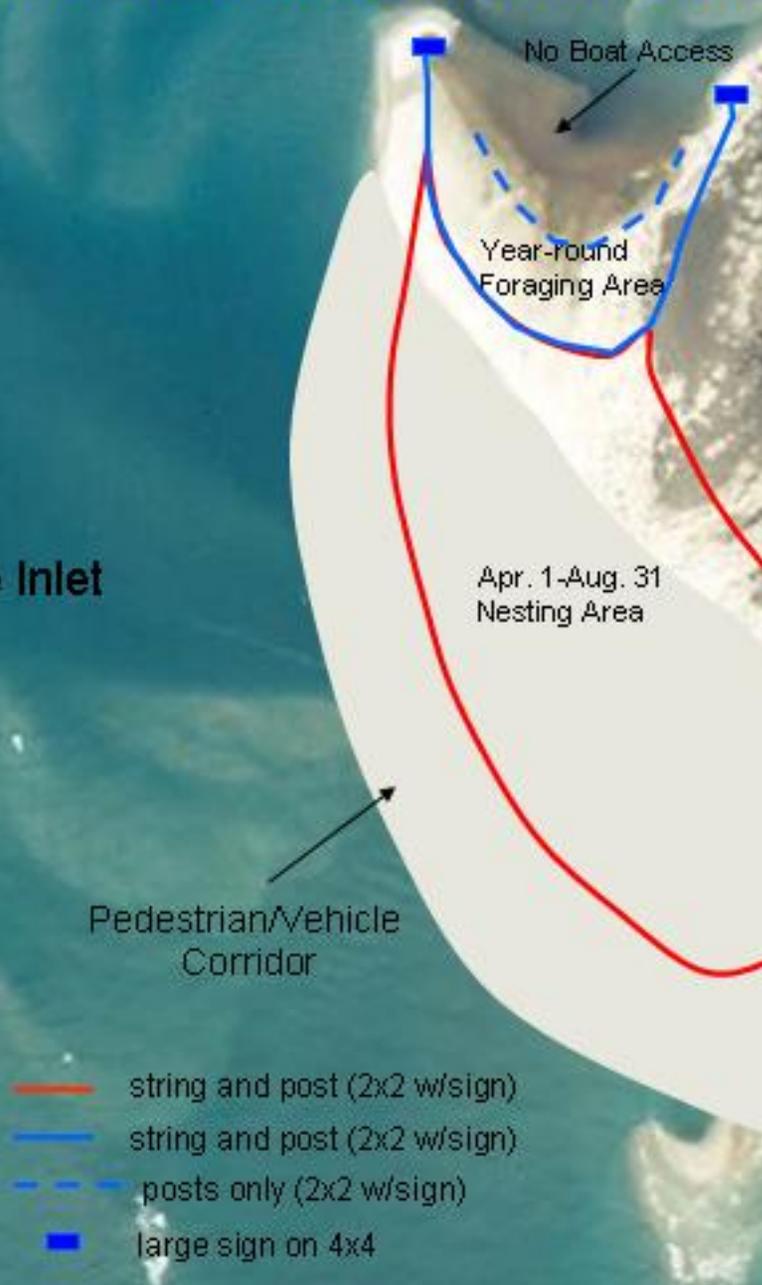


- string and post (2x2 w/sign)
- string and post (2x2 w/sign)
- - - posts only (2x2 w/sign)
- large sign on 4x4



Figure 2. Predicted designated nesting and foraging areas after shoreline adjustment

Bogue Inlet



Pedestrian/Vehicle
Corridor

Apr. 1-Aug. 31
Nesting Area

No Boat Access

Year-round
Foraging Area

- string and post (2x2 w/sign)
- string and post (2x2 w/sign)
- - - posts only (2x2 w/sign)
- large sign on 4x4



COLONIAL WATERBIRD
NESTING AREA

DR. JAMES F. FARNELL
COLONIAL WATERBIRD SANCTUARY SYSTEM

ENTRY PROHIBITED
APRIL 1 - AUGUST 31



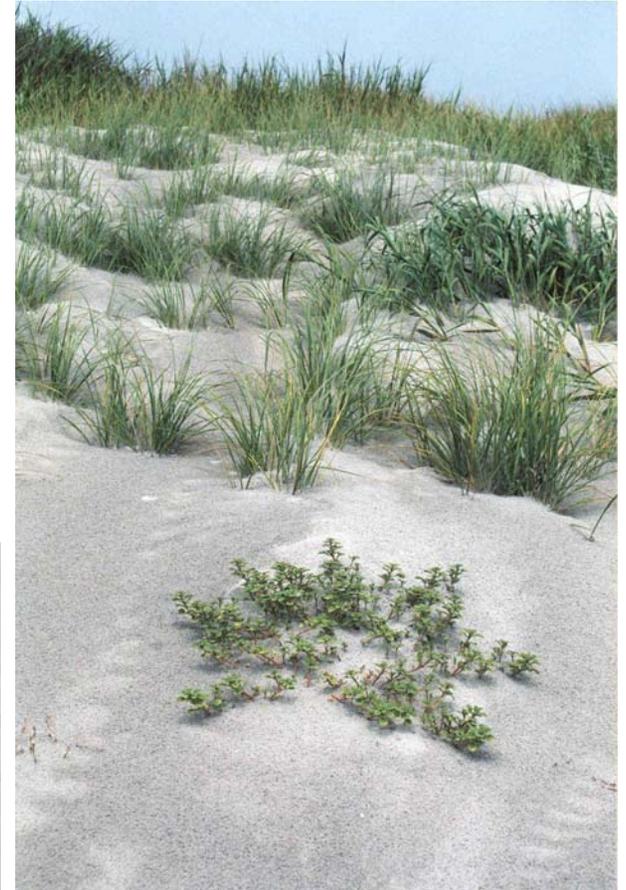
North Carolina Wildlife Resources Commission

102 N. Salisbury St., Raleigh, NC 27604-1955

Report Violations - Call Toll Free
1-800-662-7137



Other species get protection too...



Research Needs

Investigate Migration Ecology

Investigate Wintering Ecology and Distribution

Characterize Physical Attributes of Migration and Wintering Habitats

Determine Spatial and Temporal Use of Wintering Habitats

Evaluate Contaminant Levels at Wintering Sites

Determine if Pesticide Use Poses a Threat to Plovers

Collect Data to Refine Population Viability Models (e.g., Survival, Dispersal)

Evaluate and Compare Foraging Behavior and Resources for Specific Microhabitats

Compare Foraging Resources Across Habitats

Investigate Effects of Human Disturbance

Develop Safe Techniques for Marking Plovers

Develop Standardized Statewide and Centralized Databases







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Marilyn Stoll
Patty Kelly
Robyn Cobb
David Webster**

Agencies and Organizations

**U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers
National Park Service
North Carolina Wildlife Resources Commission
Audubon North Carolina
Carteret County, North Carolina
New Hanover County, North Carolina
Town of Emerald Isle
Town of Wrightsville Beach**