

## Compilation and Assessment of Piping Plover Wintering and Migratory Staging Area Data in North Carolina

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### Piping Plovers in North Carolina

- North Carolina is unique because piping plovers can be observed twelve months out of the year
- North Carolina is at the northern extent of the wintering range and is an important stopover area during spring and fall migration
- All three populations are known to use our coastline during the non-breeding season

## Threats - Development/Beach Stabilization



## Threats – Chronic Human Disturbance



## History of Non-breeding Piping Plover Program

- In the past, surveys for migrating and wintering piping plovers were conducted mostly in an opportunistic fashion with data stored in multiple formats
- In 2001, NCWRC obtained a grant from USFWS to create an Access database for non-breeding piping plover observations
- Observations were compiled in an effort to identify some of the most important areas for piping plovers

## History of Non-breeding Piping Plover Program

- In recent years, systematic surveys have been conducted at various locations including Cape Hatteras and Cape Lookout National Seashores and at several sites in association with beach stabilization projects
- An observation form has been created and distributed in an effort to increase the number of sightings reported

**Non-breeding Piping Plover Observation Form**  
(July 14 – April 30)

Date \_\_\_\_\_ Name of observer \_\_\_\_\_

General description of location: \_\_\_\_\_

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ (if known)

Number of piping plovers observed \_\_\_\_\_ tide: \_\_\_\_\_

**General activity** (check all that apply)

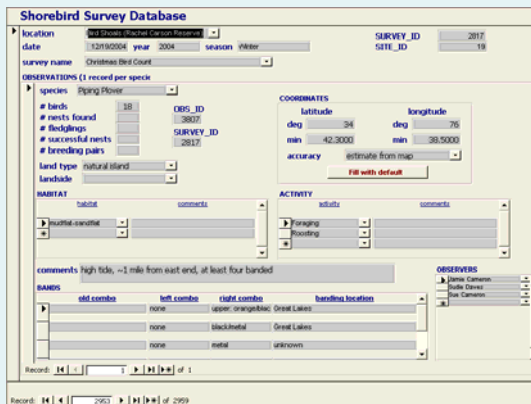
foraging \_\_\_\_\_  
 roosting \_\_\_\_\_  
 territorial displays \_\_\_\_\_  
 other \_\_\_\_\_ explain: \_\_\_\_\_

**Habitat**

oceanfront \_\_\_\_\_  
 sandbar/shoal \_\_\_\_\_  
 sandflat/mudflat \_\_\_\_\_  
 overwash \_\_\_\_\_  
 other \_\_\_\_\_ explain: \_\_\_\_\_

## Piping Plover Access Database

- Contains 24 fields including information on location, habitat, bands, season, activity
- To date nearly 4000 records have been compiled spanning over 40 years
- Presently updating database to make more user friendly



## Sites With Some Level of Survey Effort in Past and/or Present



## Survey Methods

- Cape Lookout National Seashore (Feb. 2000 – present)
  - Conducted monthly from August through March
  - Cover 53 miles of ocean beach, inlet, and sound on foot and with an ATV
- Cape Hatteras National Seashore (2000 – present)
  - Conducted ~ every ten days during fall migration and monthly during winter months
  - Coverage primarily in “best” habitat (inlet areas) and covered on foot and with a vehicle
- Permit requirements for beach stabilization projects
  - Surveys conducted anywhere from weekly to monthly for one or two years depending on the project (e.g. Mason Inlet, Bogue Inlet, Brunswick Co. beaches)

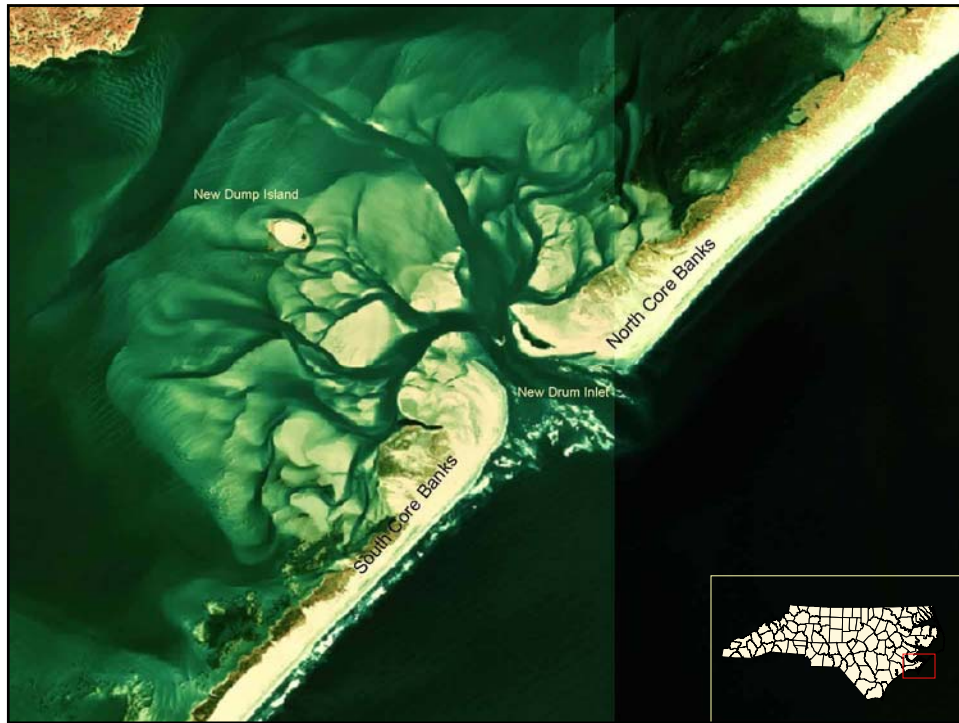
## Additional Surveys Needed...

- More frequent surveys in areas already covered
  - really need weekly or even daily surveys to fully understand what's going on
- Coverage of additional sites on barrier islands and within inlet complexes currently not covered
- Some surveys at difficult to reach islands/shoals



## Sites in Need of Additional Surveys



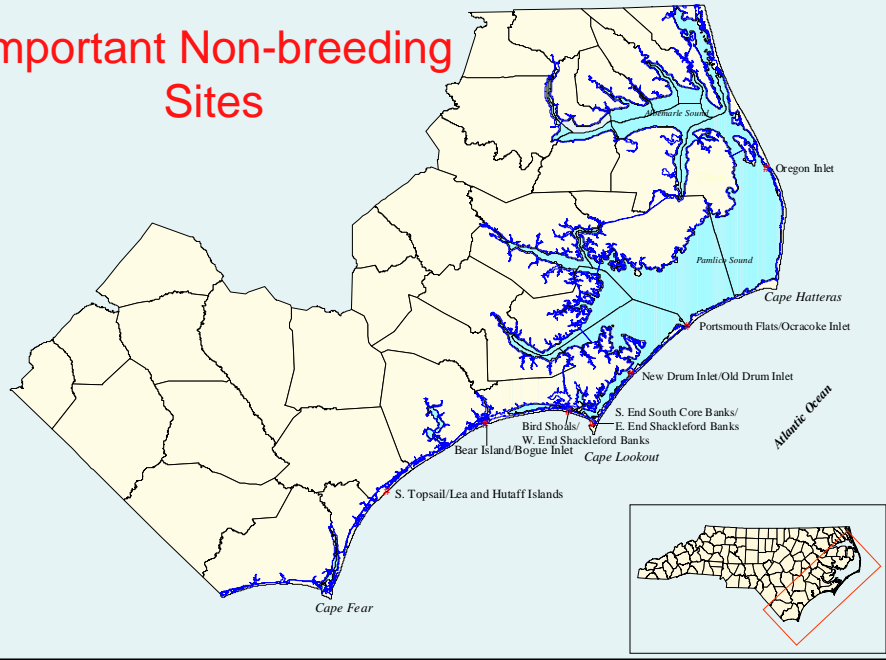


## What Have We Gained?

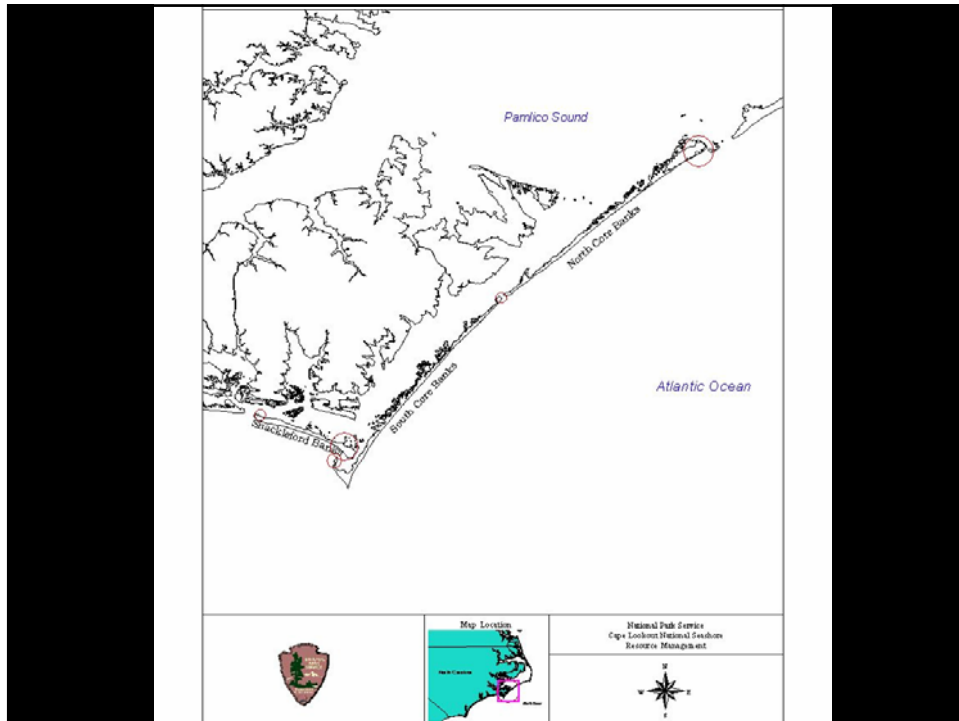
- **Identified some of most important sites and gained information on habitat use**
- Started to see trends in peak times different areas used
- Gleaned information from banded birds (e.g. site fidelity, movement between microhabitats, etc.)
- Gained invaluable information for reviewing projects that have the potential to negatively impact piping plovers



# Important Non-breeding Sites



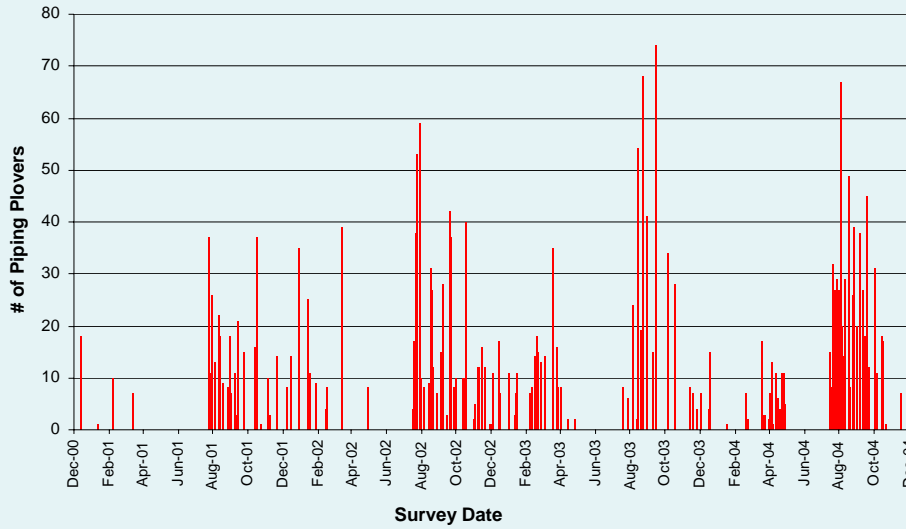




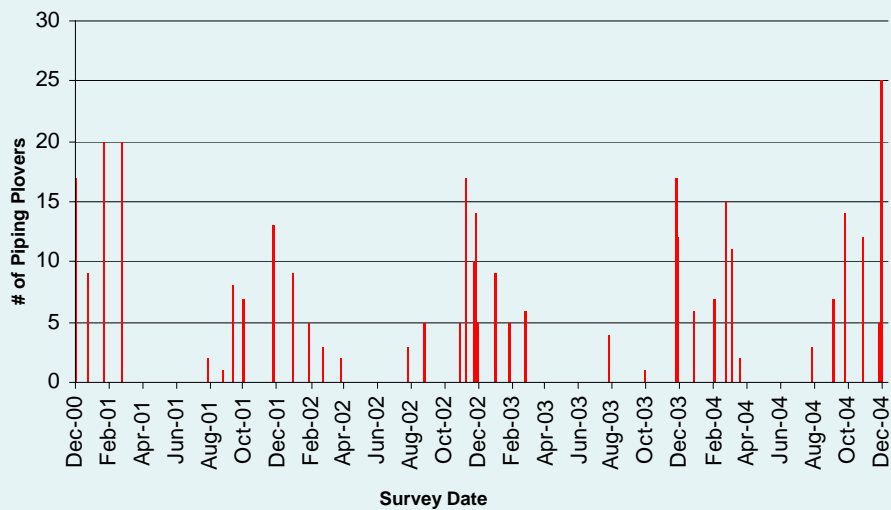
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## Ocracoke Inlet Surveys, 2001-2004



## West Shackleford Banks/Bird Shoals Surveys, 2001-2004



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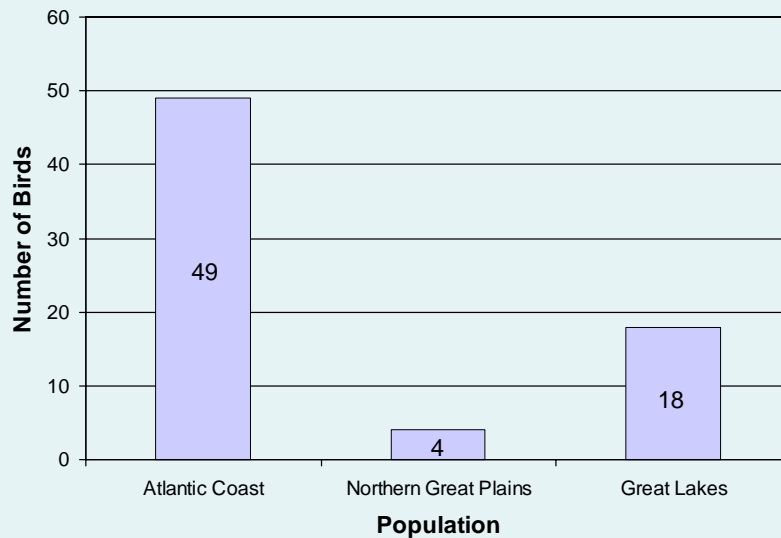
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## Banded Piping Plovers

- 481 sightings of banded plovers
- 279 identified to probable banding location (many of these were repeat observations)
- At least 71 individuals identified



## Breeding Origin of Banded Individuals



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## Lingering Questions/Concerns

- Detectability issues (e.g. problems with one day counts and with conducting counts at just one site within an inlet complex, difficulty detecting roosting birds)
- Level of survey effort difficult to assess
- What is a sufficient level of survey effort to get the information we need

## Research Needs

- Additional research needed on impacts of ORVs on piping plovers
- More information needed on the impacts of beach stabilization projects
  - Monitoring in response to projects normally done using before and after counts conducted over just a couple of years
  - Need longer term data (e.g. negative changes may not occur for many years)
- Need more synthesis/analysis of existing information

Questions?

