

US Army Corps
of Engineers
Philadelphia District

Dredging, Beach Nourishment and Bird Conservation Workshop Atlantic Coast Region



Beach Nourishment and Bird Habitat Restoration in Southern New Jersey



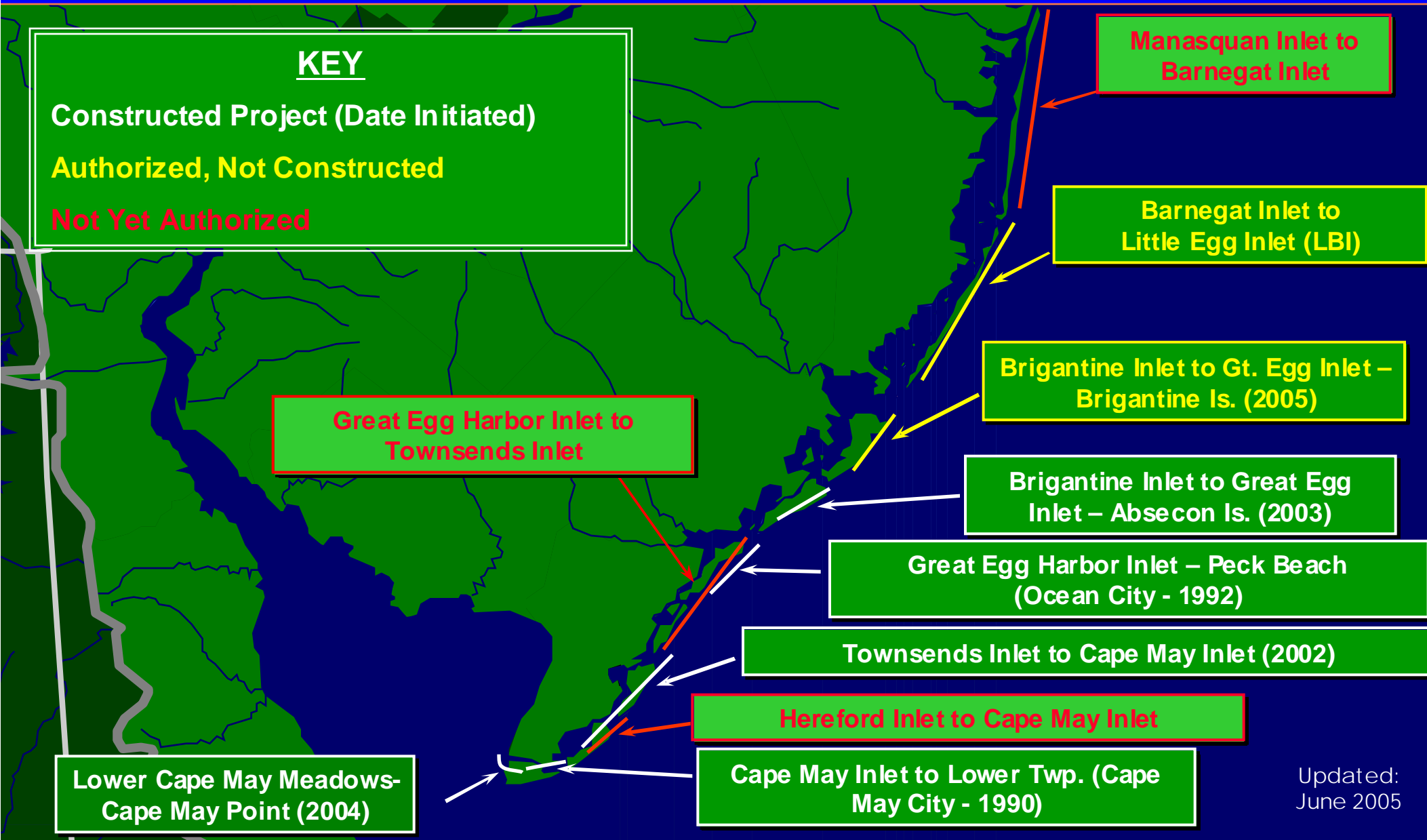
Philadelphia District Shore Protection and Ecosystem Restoration Projects

KEY

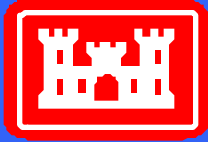
Constructed Project (Date Initiated)

Authorized, Not Constructed

Not Yet Authorized



Updated:
June 2005



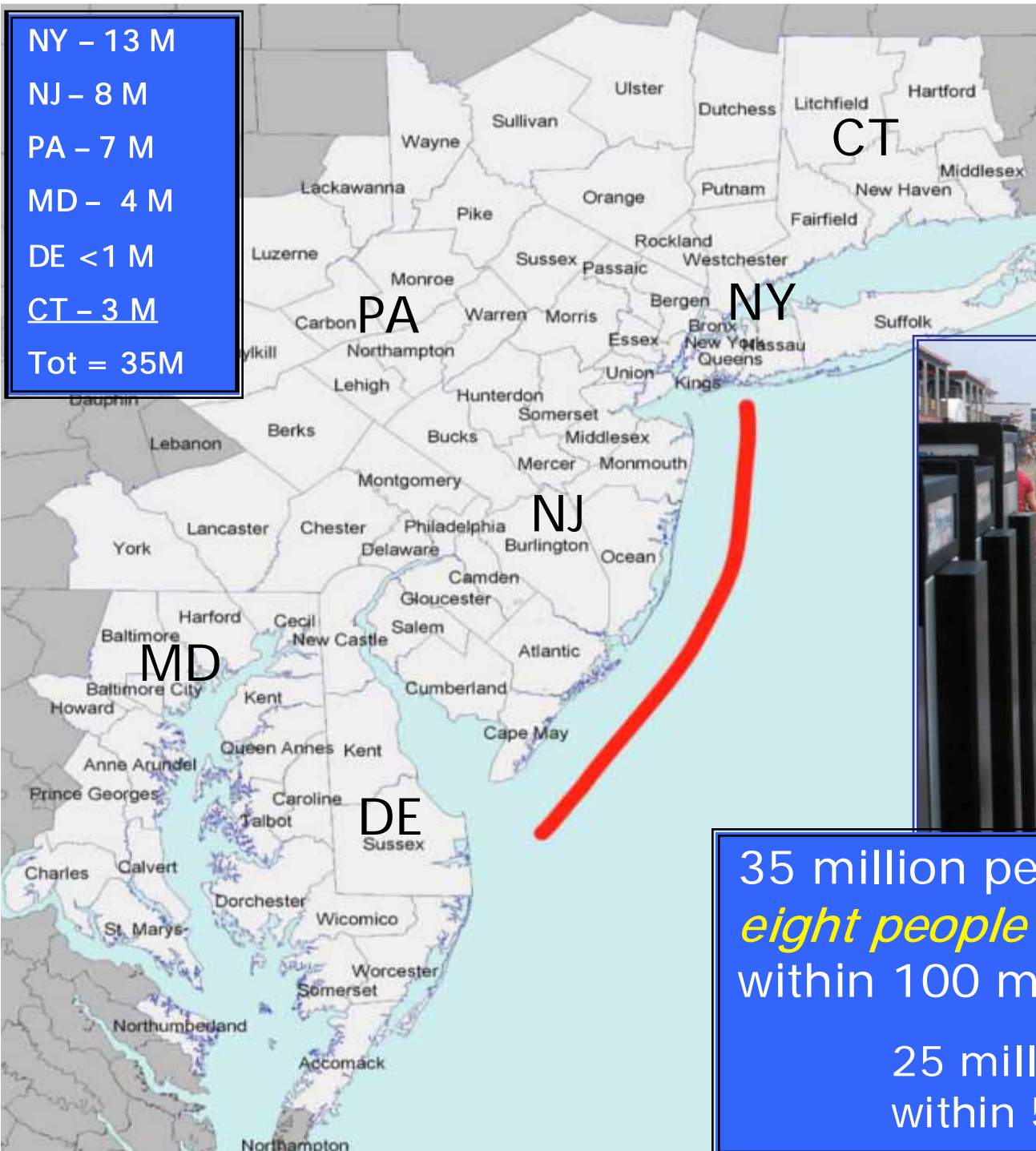
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Beach Nourishment and Coastal Ecosystem Restoration Projects with Active Piping Plover Nesting Habitat

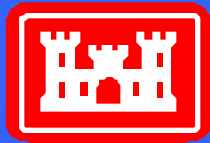
- Manasquan Inlet to Barnegat Inlet
- Barnegat Inlet to Little Egg Inlet
- Brigantine Inlet to Great Egg Harbor Inlet
 - Brigantine Island
 - Absecon Island
- Great Egg Harbor and Peck Beach (Ocean City) **
- Great Egg Harbor to Townsends Inlet **
- Townsends Inlet to Hereford Inlet **
 - Stone Harbor Point Ecosystem Restoration **
- Hereford Inlet to Cape May Inlet
- Cape May Inlet to Lower Township (Cape May City) **
- Lower Cape May Meadows to Cape May Point (Ecosystem Restoration) **

**Projects with
active plover
nesting areas

NY - 13 M
NJ - 8 M
PA - 7 M
MD - 4 M
DE < 1 M
CT - 3 M
Tot = 35M



35 million people - *one out of every eight people in the United States* - live within 100 miles of the NJ shore
25 million (*one out of eleven*) live within 50 miles of the NJ shore

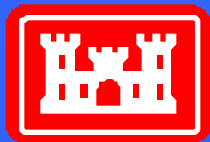


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Issues Affecting Plover Recovery Efforts in New Jersey

- Flooding was leading cause of nest failure in 2005
- Heavy predation and nest abandonment
- Recreation/beach management impacts
- 18% reduction in number of birds in 2005
- Average state-wide fledge rate 0.77 (2005)





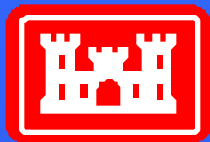
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Plover Nesting Success at Constructed Beach Nourishment/Restoration Projects

• Ocean City

- Initial construction 1991-1993 (6.2 million cubic yards of sand)
- Re-nourishment in 1994-1995, 1997, 2000, and 2003
- Average fledge rate from 1987-2004
 - 0.98 (northern nesting area)
 - 0.51 (center nesting area)
- 2005 fledge rate
 - 0.00 (northern nesting area)
 - 1.00 (center nesting area)





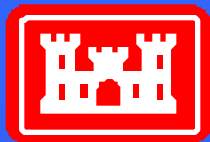
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Plover Nesting Success at Constructed Beach Nourishment/Restoration Projects

- **Cape May City**

- Initial construction 1989-1991 (1.3 million cubic yards of sand)
- Re-nourishment in 1993, 1995, 1997, 1999, and 2003
- Average fledge rate from 1987-2004
 - 0.95 (Coast Guard nesting area)
 - 1.00 (City nesting area)
- 2005 fledge rate
 - 0.00 (Coast Guard nesting area)





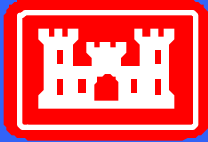
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Plover Nesting Success at Constructed Beach Nourishment/Restoration Projects

- **Lower Cape May Meadows**

- Initial construction 2004-2005 (1.3 million cubic yards of sand)
- Average fledge rate from 1987-2004
 - 0.83 (TNC and State Park combined)
- 2005 fledge rate
 - 1.60 (TNC and State Park combined)





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Lower Cape May Meadows Ecosystem Restoration

Study Area

- 343 acre coastal freshwater wetlands and beach habitat
 - 153 acres - Cape May Point State Park
 - 190 acres - Cape May Migratory Bird Refuge (owned by The Nature Conservancy)

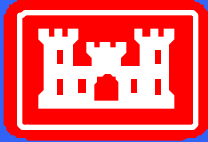
Internationally recognized migratory bird habitat, included in Coastal America Program

- Number of pairs of nesting plovers dropped from 12 pairs (in 1995) to 2 pairs (in 2002)



**Lower Cape May Meadows, looking toward
Cape May City, October 1996.**





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Lower Cape May Meadows Ecosystem Restoration

Problem Identification

- Ecosystem Degradation at Meadows
 - 1,110 feet of shoreline eroded since 1936
 - 124 acres lost since 1955
 - 138 additional acres lost by year 2050 if no action
 - degradation of remaining habitat through saltwater intrusion
- Storm Damage Vulnerability to Cape May Point and West Cape May

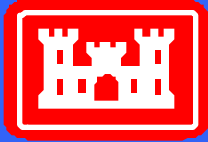
1933



Cape May Meadows Shoreline Change 1933 - 1995



**October 1991
Coastal Storm**

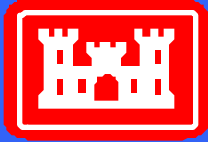


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Lower Cape May Meadows Ecosystem Restoration

Selected Plan

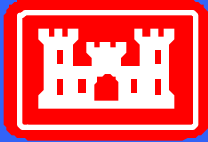
- Beachfill and periodic nourishment
- Invasive plant control
- Internal hydrology improvements
- Restoration of lost wetlands



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**Lower Cape
May Meadows –
Cape May Point**



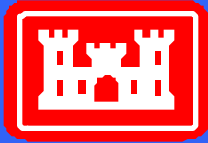


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Lower Cape May Meadows Ecosystem Restoration

- Piping Plover Design Features
 - Plover crossovers
 - Lower berm elevation
 - Plover ponds
 - Modification of dune fencing/planting





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Plover Crossovers

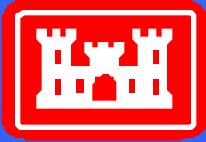


- 3 crossovers
- 100 feet wide
- 1 on 10 side slope

Pond/Wetland Restoration 3/7/05



- Old dune relocated seaward
- Ponds excavated
- Minimal vegetation planted around 1 pond



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Plover Ponds

April 2005

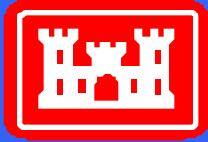


Pond 1 – 1.4 acres

Pond 2 – 2.5 acres



September 2005

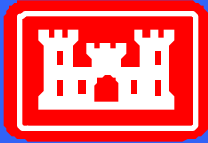


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Success of Plover Design Features at Lower Cape May Meadows

- ALL broods used new plover ponds for feeding (some exclusively)
- Plover crossovers and unvegetated dunes used by adults and chicks
- Some nesting took place on new unvegetated dune
- 8 chicks fledged from 5 pairs

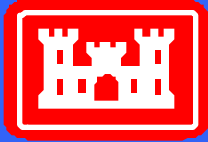




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What Else is the Philadelphia District Doing for Plovers?

- Coordinating additional modifications to dune grass planting and sand fence placement at Cape May Meadows.
- Coordinating design of ecosystem restoration project at Stone Harbor Point to benefit plovers and other beach nesting birds.
- Working with USFWS and NJDEP to implement beach nesting management plans at the local level.
- Finalizing programmatic Section 7 consultation with USFS.
- Working with USFWS, NJDEP, and USDA to develop dune standards (for engineering and management) more compatible with plover nesting.



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Take Away Points.....

- Corps projects can provide good quality habitat for piping plovers
- Plovers can successfully nest on nourished beaches
- Corps projects not population sinks for piping plovers
- Plover restoration features can be effective additions to some coastal projects