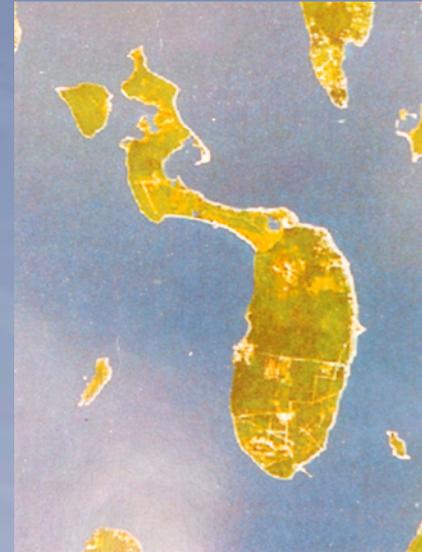


Narragansett Bay Research Reserve



Ospreys on Prudence Island



NBRR is a part of the Nation Estuarine Research Reserve System





Our Purpose

- The **National Estuarine Research Reserve System** is a network of protected areas established for long-term research, education and stewardship
- The System protects more than **one million acres** of estuarine land and water nationwide
- **The Reserves provide:**
 - Essential **habitat** for wildlife
 - **Education** opportunities for students, teachers, public
 - And serve as **living laboratories** for scientists



State-Federal Partnership

State



- Staff
- 30% funding

Federal

- National coordination
- 70% Funding



Other Partners (ASRI, URI, etc.)

- Program support
- Administration
- Technical assistance



What is an Estuary?

Where rivers meet the sea

Which major freshwater rivers flow into Narragansett Bay and mix with saltwater from the Atlantic Ocean?

- Taunton River
- Blackstone River
- Ten Mile River
- Pawtuxet River



Program Sectors

- Research
- **Stewardship**
- Education
- Coastal Training Program



What is 'Stewardship'?

“The practice of carefully managing land to ensure natural systems are maintained or enhanced for future generations.”

- Improving habitat for native plants and animals
 - Thinning or planting trees and other plants
 - Planting butterfly gardens`
 - Controlling non-native plants and animals
- Reintroducing fire to fire-dependent ecosystems
- Trail maintenance and beach clean-ups



Stewardship on Prudence



- Reconnecting saltmarsh habitat to Narragansett Bay



Stewardship on Prudence



Wood Lots for
Habitat Restoration Program

- Access Road
- Larch - Dead Standing
- Larch - Live Standing



- Controlling invasive exotic plants like European larch



Stewardship on Prudence

- Counting and identifying songbirds



Stewardship on Prudence

- International Coastal Cleanup



Stewardship on Prudence

- Providing nesting habitat for kestrels, barn swallows, and osprey



And that brings us to ospreys!

- Only species in the family *Pandionidae*
- *Pandion haliaetus* comes from the mythical king of Athens, *Pandion* who turned into a bird, and Greek *halos aetos* means sea eagle
- The common name is from the Latin word *ossifragus* meaning "a bone breaker"
- Also called: **fishhawk**, **seahawk** or **fish eagle**
- Fossil record goes back 15 million years



Global Success!

Ospreys are one of the **widest ranges of all birds** found on every continent (except Antarctica) living from Norway to Australia and Africa to Alaska.

Ospreys eat **freshwater and saltwater fish**, living in a very wide range of waters-edge habitats



A challenge for you...

Despite its 15 million year history, the osprey has not evolved into different species.

In contrast, fish-eating *Haliaeetus* sea-eagles have evolved into 8 separate species over a range nearly identical to that of the osprey.

WHY?



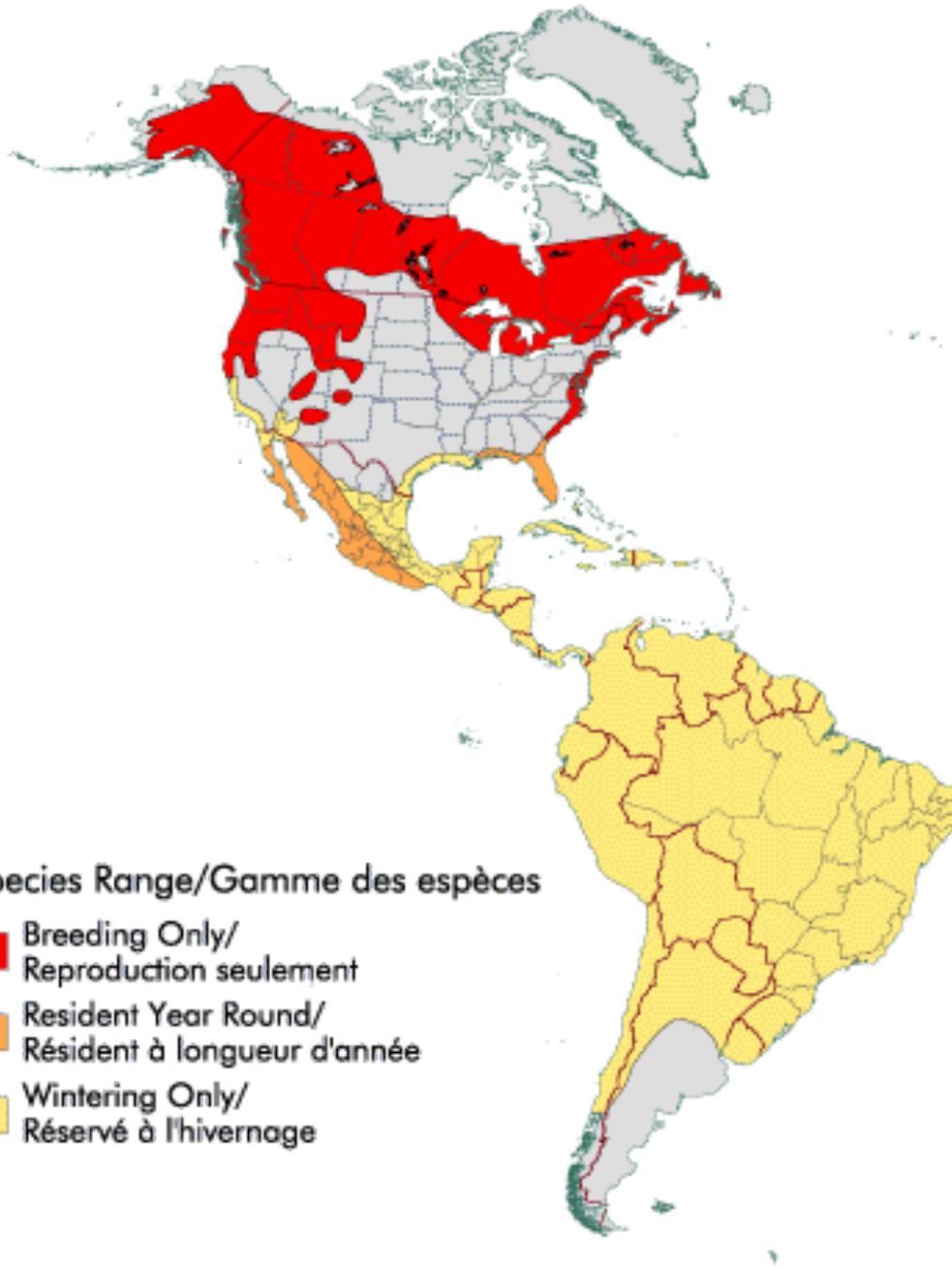
Answer: Migration!

Most eagles are non-migratory.

The long-distance migration of most ospreys has allowed breeding between populations and less chance for groups to become isolated and evolve as species.

Species Range/Gamme des espèces

-  Breeding Only/
Reproduction seulement
-  Resident Year Round/
Résident à longueur d'année
-  Wintering Only/
Réservé à l'hivernage



What makes ospreys so cool?

Adaptations as a fish-eating specialist have made it one of the most successful birds on earth



Anatomy of an Osprey

- Excellent vision to see fish from far up high
- Nostrils close to keep out water during dives
- Dense feathers on chest provide protection when hitting the water during a dive
- Can catch fish up to 4 pounds – roughly the osprey's own weight



Fish Hawk Talons

- Talons are more curved than most raptors and an extra long talon on the "little" or outer toe, is unlike other raptors
- Talons have a reversible outer toe that allows them to seize a fish with two talons in front and two behind
- Their toe pads have backward facing barbs



The down side...

The long talons, and strong, barbed feet are such effective tools for grasping fish that ospreys have been unable to release a fish that is heavier than expected.

This can cause the osprey to be pulled into the water, where it may either swim to safety or possibly even drown



Head First!



Nesting

- Osprey nest in the open to defend their nest and near the water for access to fish
- They choose tall trees, especially dead ones known as snags
- Ospreys often mate for life and a pair reuse the same nest site by adding new materials
- There are reports of a nest being used for 125 years and reaching a height of 10 feet



Eggs



- Females lay 1-5 eggs (average 3) in April
- Incubation lasts 34-40 days and is done by both male and female
- They aggressively defend the nest



Fledgling Ospreys

- Average fledgling 48-60 days and young remain dependent on the parents for 4-8 weeks
- Young leave the nest for good before the start of fall migration





Young Ospreys

- At 3 years old they can begin to mate and reproduce
- Nesting materials can include brush, driftwood, corn stalks, shingles, small floats, toys, old brooms, shoes, fishing line, soda cans, doormats, bones and skulls, sod, packing materials, plastic scraps, fishing nets, etc.



Recovery of a Species

- In the 1940s, the coastal zone between New York City and Boston supported an estimated 1,000 active osprey nests
- Development and DDT eggshell thinning reduced this number to 150 nests by 1969
- The banning of DDT in the 1970s and restrictions on the use of other pesticides have prompted a steady recovery



Ospreys on Prudence Island

Once plentiful on Prudence Island, ospreys had not nesting here for over 30 years

WHY?





Snags

Lack of dead trees in prime nesting areas such as salt marshes

The Narragansett Bay Research Reserve decided to move existing nesting platforms to better locations and to create more nesting platforms as needed



On the Move

- In March 2003, the Reserve moved a pre-existing nesting tripod to a spot sheltered from wind and people and closer to fishing grounds



- In addition to the move, staff added nesting material to simulate previous nesting activity



Osprey Nesting Habitat



Within two weeks of this effort, a pair of ospreys arrived to Prudence and began building up a nest.

Unfortunately, these birds were inexperienced and did not produce offspring.



Success!

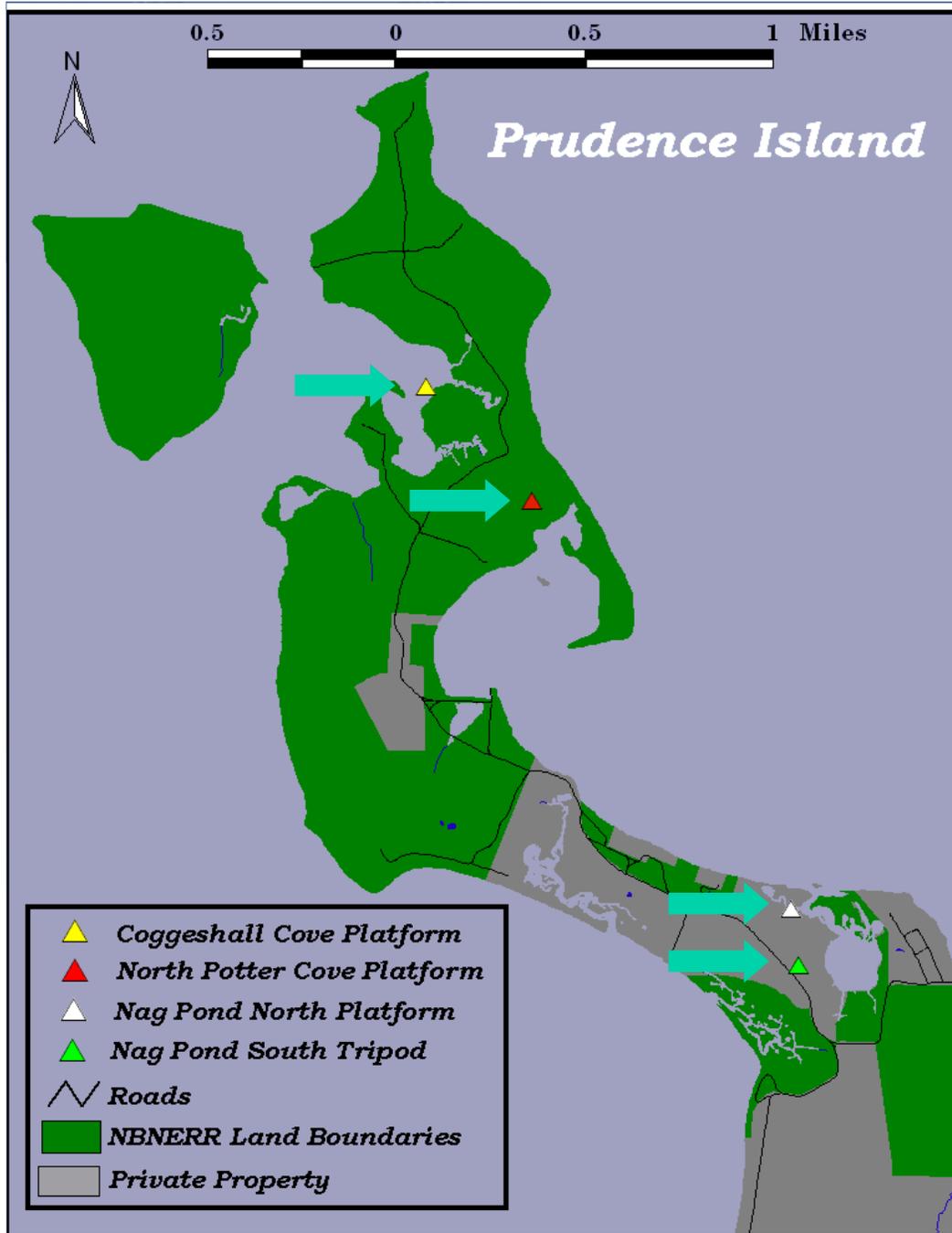
In February of 2004, two new platforms were added and the design was changed to a platform nest

The osprey pair returned and produced 3 eggs. Two of the young survived.



Monitoring the Nest





Nest Sites

Location of the four osprey platforms on Prudence Island



2005 and 2006

- In 2005, two pairs nested on Prudence Island. One pair produced 2 eggs, but they didn't survive a harsh storm that summer
- In 2006, two pairs nested again. One pair again produced 2 eggs and one fledgling survived to join the winter migration







Thank You!

www.nbnerr.org



national estuarine research reserve system