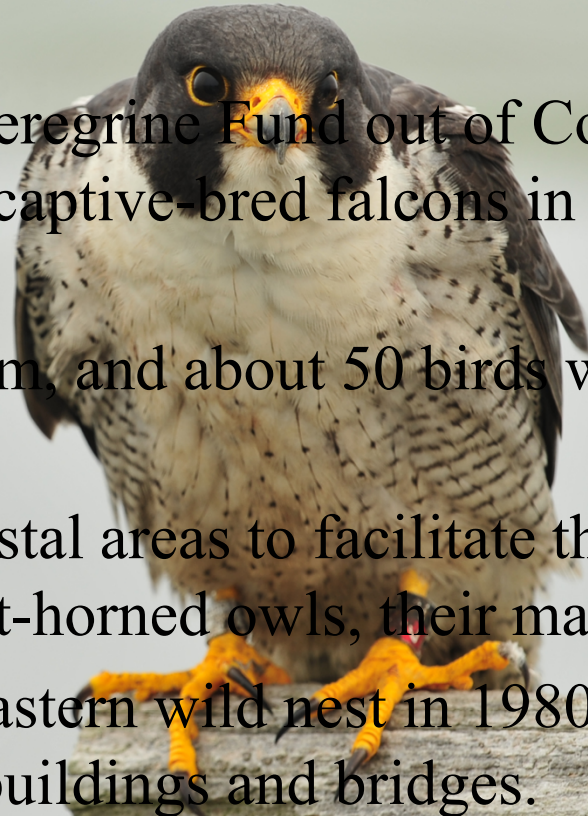




Peregrine Falcons  
in  
New Jersey

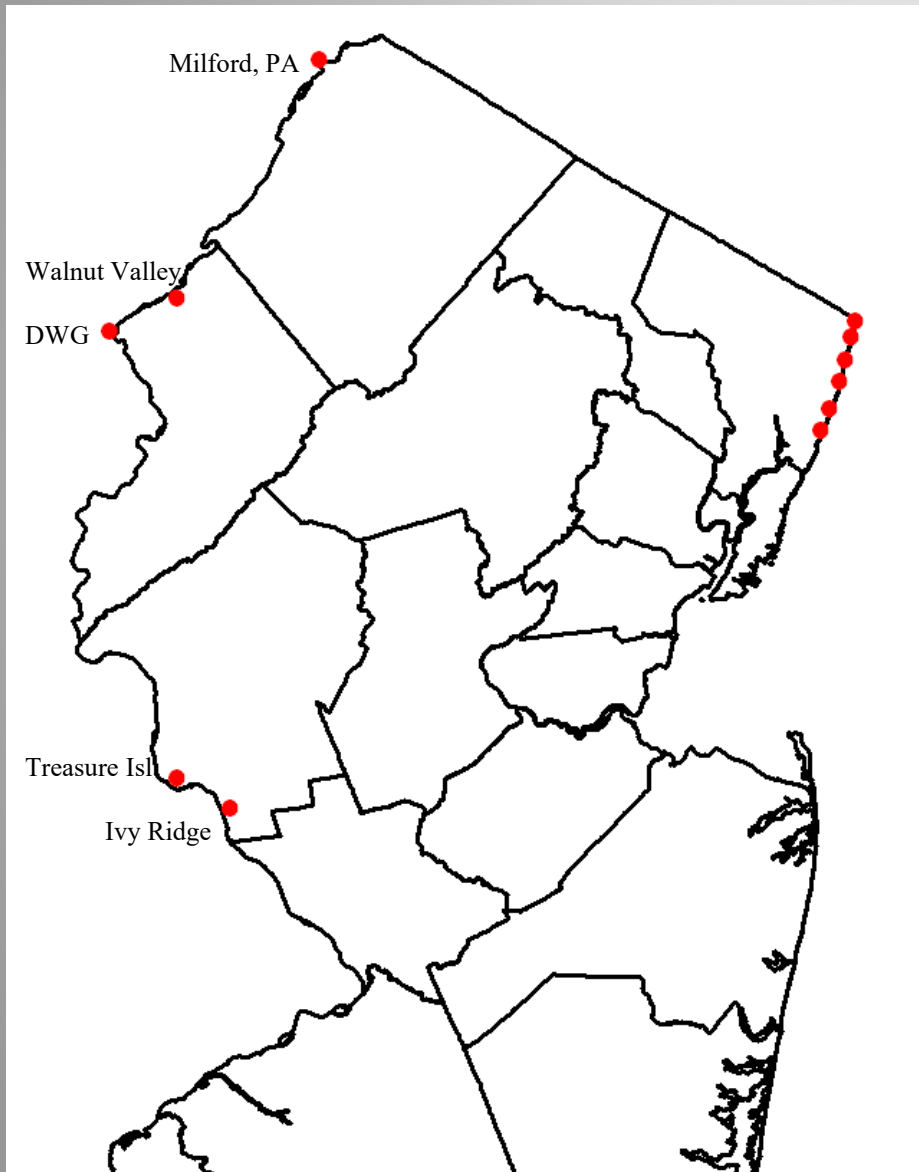
# Brief history of eastern Peregrine Falcons

- Peregrines had been extirpated from east of the Mississippi by 1964.
- A recovery program by the Peregrine Fund out of Cornell resulted in the release of hundreds of captive-bred falcons in the eastern US.
- NJ participated in this program, and about 50 birds were released here, 1975-1980.
- Nest towers were built in coastal areas to facilitate their survival away from habitats with great-horned owls, their main predator.
- New Jersey hosted the first eastern wild nest in 1980. By 1985, falcons established nests on buildings and bridges.





## Recorded Peregrine Nests, 1930s – 1950s



- The eastern peregrine historically numbered ~350 pairs in the East.
- In NJ, peregrines nested in the cliffs of the Palisades and near the Delaware River.
- Nesting was documented in the Hudson River Valley and NY City/NJ/CT, and included some building nests (Hickey and Herberts).



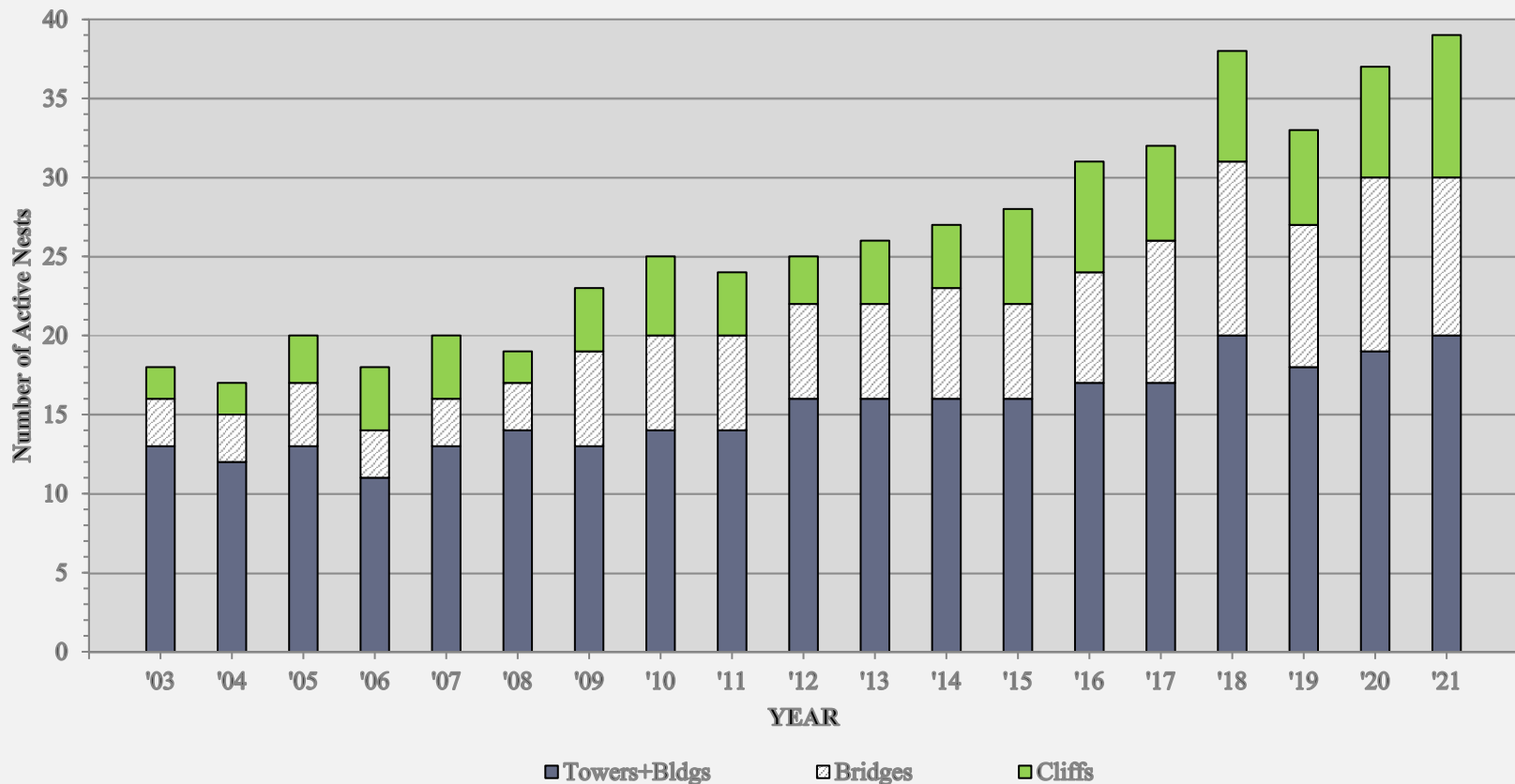
# Population and Trends

In 2021, we tracked 39 active pairs.

About half of all nests are on marsh towers and buildings.

Another 10 pairs use bridges.

The first cliff was reoccupied in 2003, and reached 9 pairs last year.





# Nest success varies by structure

*Young per Active nest, 10-year average:*

Towers & buildings: 2.3

Bridges: 1.8

Cliffs, quarries: 1.0



# Nest locations by region and structure

Coastal: 17

Delaware River: 5

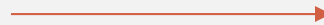
Urban: 8

Cliff-quarry: 9

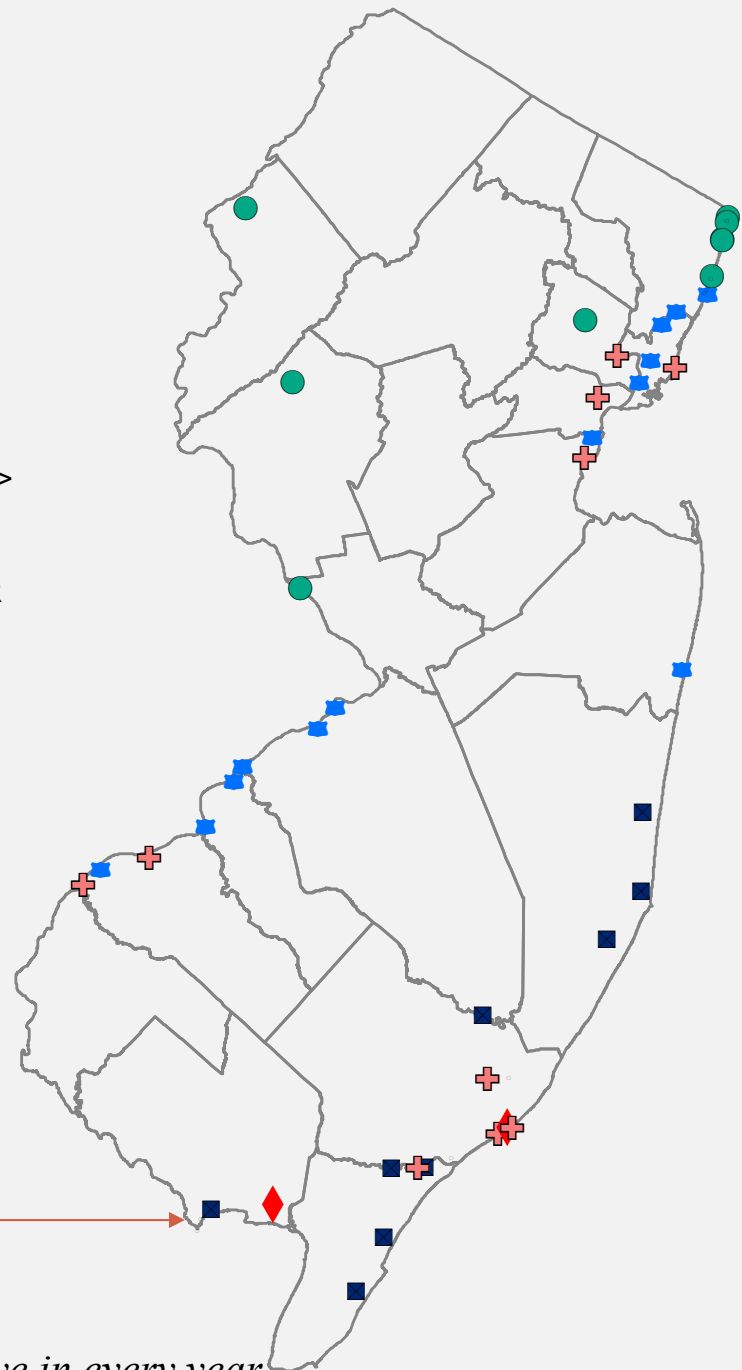
## Legend

- <all other values>
- TOWER
- ◆ WATER-TOWER
- + BUILDING
- ✚ BRIDGE
- CLIFF

Removed



*Not all sites are active in every year.*





## Of 20 coastal sites, 13 were occupied independently by peregrines

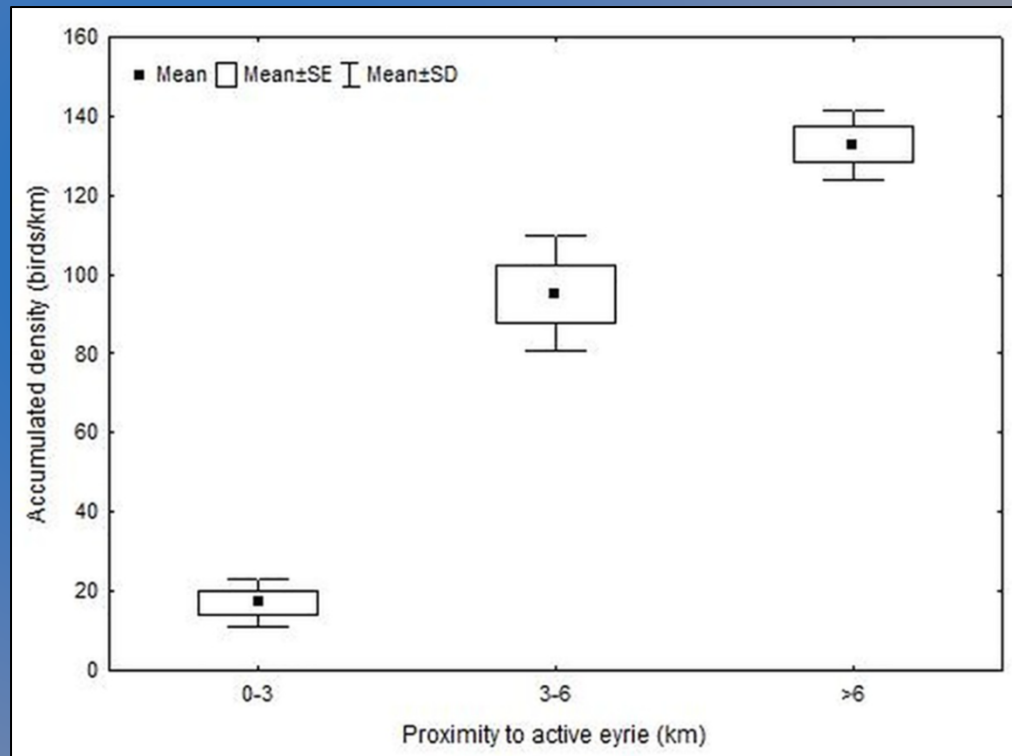
AC water tower, AC Sheraton, AC Hard Rock, AC Atlantic Club, BL England plant	4 buildings, 1 water tower were colonized unaided; structures were provided at 4 to manage their location relative to people.
Osprey nest platforms (these change in location) Avalon, Ocean City	Two were colonized independently in the last ~5 years; we have not provided any alternate structures.
Drag Island tower, Rt. 72 tower	Structures installed to move pairs off occupied bridges during construction
Stone Harbor tower	Structure provided to move pair off a grounded boat they occupied independently ~2005
Ocean Drive Bridge, Route 152 Bridge, Rumson Bridge, Wildwood Crest condo	3 bridges, 1 building were managed to <i>discourage</i> nesting by cleaning sediment and/or removing inadvertent structure
Bayside Prison tower, Seaview building	Nest structures were installed to move pairs from ex-tower sites on Bayshore and Atlantic marshes.
<i>Dividing Creek tower</i>	<i>Bayshore tower removed in winter 2020 with no replacement</i>
Manahawkin, Marmora, Ocean Gate, Sedge, Swan Bay, Sea Isle, Tuckahoe	7 towers installed in the 1980s (of the original 10)

# Evidence of conflicts with shore and beach birds (1)

Watts and Truitt (2021) in the Virginia barrier islands found lower red knot density in the vicinity of active peregrine falcon nests. Red knot density was particularly lower on beaches within 3km of nests, a lesser reduction at 3-6km from nests.

As a result of this data, ENSP removed the remaining nest that was within 3km of Delaware Bayshore in late 2020.

The falcon pair remained territorial in 2021, and laid eggs on the ground (destroyed by tide).





# Evidence of conflicts with shore and beach birds (2)

ENSP's beach-nesting bird biologists have documented peregrine falcons on beaches as a routine part of their colony surveys.

Staff are now trained to record presence, identify adult/subadult birds by plumage, and look for field-readable bands. They have identified a few peregrines that acted territorial at a beach and developed the unusual behavior of hunting birds that are on the ground.

As a result of their data, we defined the patterns of behavior that are problematic for beach-nesting birds and created a response plan.

Brochure used by BNB staff and cooperators, developed by Little Egg Foundation.

## Record Spatial & Temporal Details

Peregrines are literally "wandering" falcons, so an individual passing through a habitat is not unusual. But a peregrine who repeatedly uses the same sensitive habitat for extended periods of time can be cause for concern.

Careful observation of where the peregrine is foraging and roosting, how often it is returning, what times of day and weather conditions it appears in, and how long it stays on the habitat are each important and useful data.

Documentation of any actual predation of beach nesting birds is critical and should be reported urgently.



**adult**  
gray feathers  
white breast  
horizontal barring  
yellow beak



**Juvenile**  
brown feathers  
yellowish breast  
vertical barring  
bluish beak

## Determine the Age

Adult peregrines have steel-blue wings and white breasts with horizontal black barring.

Juvenile peregrines have brown wings and yellowish breasts with heavy, vertical brown barring.

Sub-adult peregrines are somewhere in between. At close range, you can sometimes see the first blue feathers coming in on a brownish wing, or some last brown feathers on a more bluish wing.

Non-nesting, sub-adult peregrines are the most likely to target nesting shorebirds. Carefully observing the color and the orientation of barring can be helpful.

## Look for Bands

A large percentage of eastern peregrines are banded with a federal band on the right leg, and a field readable auxiliary band on the left leg. Take note of both the color combination and code of the auxiliary band. Many peregrine auxiliary bands are two colors so look carefully.

Also note the color of any federal band. Some peregrines wear federal bands with colors other than silver.



**adult female**  
gray feathers  
white breast  
horizontal barring  
yellow beak  
banded black/green 82AN  
black federal band



**juvenile**  
brown feathers  
yellowish breast  
vertical barring  
bluish beak  
unbanded

# What has been done to address conflicts?

1. The last Delaware Bay shoreline nest was removed in 2020.
2. The beach-nesting bird project staff identify individual peregrine falcons on beaches and record behaviors like territoriality or preying on beach-nesting birds. When a pattern of this behavior is detected, ENSP has a plan to respond with trap-relocate.
3. We ran a pilot camera project in 2021 on 3 coastal peregrine nests to record prey deliveries. This was largely successful and will be expanded in 2022. The trailcam photos are reviewed by machine-learning (AI) to filter those with prey, which will facilitate prey identification.
4. Some sites have been managed to prevent nesting: The Grand at Diamond Beach (structures removed from balconies), Belmar Rt. 35 Bridge (cleaned of sediment), Cape May Ocean Drive bridge (structure removed).



## *Why nest removal may not have the desired effects on peregrine use of beaches:*

1. Many peregrines observed in coastal areas are sub-adult, non-nesting birds. Over the last three years, the BNB staff has documented two falcons habituated to nest colonies, and both were two year-old falcons not associated with a nest.
2. Removing the nest with the intention of dispersing the pair may result in more activity of transient falcons. Nesting falcons are territorial. A nesting pair, by their presence, may be excluding transient, non-nesting falcons from the area.
3. The displaced falcons are likely to find another place to nest. They may use an osprey nest structure, bridge, building or shack that is in the general vicinity. This may not be easy to detect, and would require greater search and survey effort.
4. Peregrine falcons reside in, and migrate through, the coastal areas. They hunt over migratory shorebird flocks in both hemispheres. It is exactly how they normally hunt, and shorebirds are adapted to aerial predators.

## Work in 2022

1. We will continue to monitor peregrine activity in BNB colonies and respond to individuals exhibiting unnatural territoriality. We will also we will investigate the effectiveness of hazing falcons from BNB colonies using repeated disturbances to their perch locations.
2. We expanded the peregrine prey study, fielding cameras on 9 coastal nests.
3. We obtained a USFWS Migratory Bird Scientific Collecting Permit in April that allows staff to remove eggs on an experimental basis to reduce the foraging needs of nests near sites with E&T concerns. The federal permit also allows us to trap and relocate specific falcons that are documented problem birds.
4. We would like to seek funding for a more expansive study using telemetry on nesting peregrines in select coastal areas.
5. We plan to work with other states similarly concerned with these issues. In 2022, ENSP directed contractors to collect data on peregrine use of Delaware Bay shorebird beaches as DE has been doing, to better coordinate a bay-wide approach.

# Discussion

