

The 2018 Osprey Project in New Jersey

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A natural nest inside Barnegat Inlet where a pair has successfully nested since 2016. photo by Ben Wurst.

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A male osprey stands guard on a perch next to his nest. photo by Ben Wurst

Ospreys continue to thrive in New Jersey. Nest surveys conducted by volunteers during the peak of the nestling period (late June-early July) resulted in documenting the outcome of 87% of 589 surveyed nests. We credit the successful work by our dedicated volunteers and faithful “**Osprey Watchers**” to report on nests all along the coast and major rivers. The goal of this project is to monitor and manage the state population of breeding ospreys to ensure they remain stable in New Jersey. We hope that the work conducted as a part of this project will help protect the species while closely monitoring for any indication of emerging threats.

Surveys of nesting ospreys were conducted by boat throughout large areas of the coast. Specially trained volunteers targeted the most densely populated colonies, from Sandy Hook to Cape May and west along the Delaware Bay, and reported on 465 active nests. Citizen scientists or “Osprey Watchers” make valuable contributions of nest activity at sites that are outside of our boat survey areas. They also include structures that are not accessible by an extension ladder or boat, such as utility poles and communication towers. This year contributors to Osprey-Watch.org reported data on 47 active nests (8%) and up from 34 nests in 2017.

Established osprey pairs return to the same nest site, year after year. The majority nest along the Atlantic Coast (86%) while the remainder nest along the Delaware Bay and River and inland areas. Ospreys prefer to nest near other ospreys and established nests can indicate that the area is suitable to young adults who are looking to possibly takeover those nests or establish new ones. It is also believed that ospreys find protection from potential avian predators when nesting in large colonies where they “gang up” on intruders when they cause disturbance in a colony.

In late June and early July, surveys are conducted throughout tidal saltmarsh areas by boat. Surveys are timed to occur during the peak nestling period, when most young aren’t yet able to fly but are old enough to be banded (around 3-4 weeks old) with aluminum USGS bird bands. At this time, however, some adults can still be incubating eggs, have very small chicks, or have young that are almost old enough to fly (7 weeks old). Nearly all nests that are surveyed



A nest is surveyed using a mirror on an extension pole. photo by Ben Wurst

(~95%) are built on man-made nest platforms. They are accessed using an extension ladder, viewed from a distance with optics, or viewed using a mirror on an extension pole. During the nest survey, we document the presence of adults, number of eggs or young and their age, and the type of nest structure. While there, we also check the condition of the nest structure and remove any unnatural nest material, especially plastic marine debris which is can entangle or suffocate an osprey.

A primary focus of this project is to reduce stress to the animals while collecting the data required in an efficient manner. Surveys are timed to occur when the heat index is below 90 so that the adults and young don't suffer from additional heat-induced stress. This year we ran a test to research the use of small Unmanned Aircraft Systems (sUAS) or drones to survey nests. We believe that if used properly, they can help collect the data required to fulfill our project goals while minimizing disturbance to the adults and young. More research is needed, but in our brief tests, we found that adults did not react to the drone when the remote pilot was outside of the nest territory and the drone remained a safe distance from the nest.

Highlights

This year all major nesting colonies were surveyed along the Atlantic Coast and Delaware Bay. Specially trained volunteers and staff conducted surveys from the last week of June until mid-July, before young could leave the nests. An incredible number of 589 active nests were



A drones view of an osprey nest in Barnegat Light, NJ

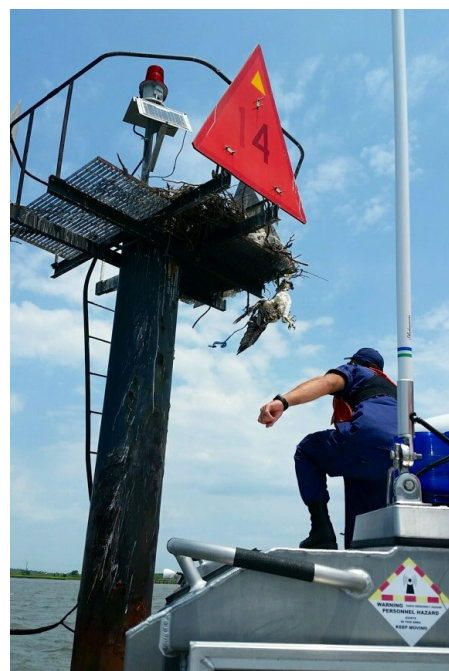
surveyed, the most ever in a “non-census” survey year, where the outcome was determined in 87% (512). For a non-census year, these are very positive results with broad representation of the statewide population. Surveys confirm that the majority of the population nests along the Atlantic Coast (505), with a robust population on the Delaware Bay and its tributaries (78) and few up north in the Meadowlands and inland areas (6 - there are more nests but many went undocumented). Data analyzed from this year’s survey indicates that overall, ospreys had a very productive year. The average statewide productivity rate was 1.82 young per known-outcome nest, which is very close to what was found last year (1.72) and in 2016 (1.78). Productivity averaged higher in Delaware Bay nests, as we observed in previous years, at 2.24 vs. 1.75 for the Atlantic. This is likely due to the efforts by Citizens United to Protect the Maurice River to maintain the nest osprey platforms to very high standards.

A record setting 932 young were produced this year (762 in the Atlantic region and 170 in the D. Bay region), the highest number ever recorded in New Jersey. A total of 387 (42%) were banded (256 in Atlantic region and 131 in D. Bay) by volunteers and staff with USGS aluminum leg bands for future tracking. Eighteen New Jersey-banded ospreys were encountered in New Jersey, Maryland, Pennsylvania, New York, North Carolina, and Florida, including 9 live birds and 9 deceased. Notable sightings include several breeding ospreys who were identified this summer. A seventeen year old osprey made big news this spring when he returned to his nest along Delaware Bay. A nine year old male, who nests at the “Pete McLain Osprey Cam Nest” was identified this year by photographers whose photos allowed the nine-digit band to be read. In a freak accident on the Mullica River around mid-May, a nest with an incubating adult was

struck by lightning. Amid the remnants of the nest platform, the remains of an osprey was found and a band recovered. The band revealed that the bird was banded as a nestling on the Tuckahoe River on July 1, 2001. She would have been seventeen years old this summer! Amazing to see breeding age ospreys live for over 15 years in New Jersey!

Weather always plays a role in the nesting success of coastal nesting raptors like the osprey, whose diet consists primarily of fish. Wet weather in spring has been shown to reduce productivity rates. Overall weather was favorable for optimal osprey nest success this summer. Temperatures during egg-laying in April started off cooler than average, but finished warmer than average during hatching and nestling periods. August was the hottest month on record in New Jersey. Statewide, precipitation was above average for every month from April through August except June; however, heavy rainfall this summer was scattered and localized. In late July, an unseasonable nor'easter rode up the coast and brought heavy rain and wind to the coast of New Jersey. Mid-summer storms with high winds often blow young from nests. Luckily, the storm didn't pack as much of a punch, with wind gusts topping out around 55mph (storms with gusts around 60-70mph do the most damage). There were no other strong wind related storm events that could have caused localized failures in nest colonies.

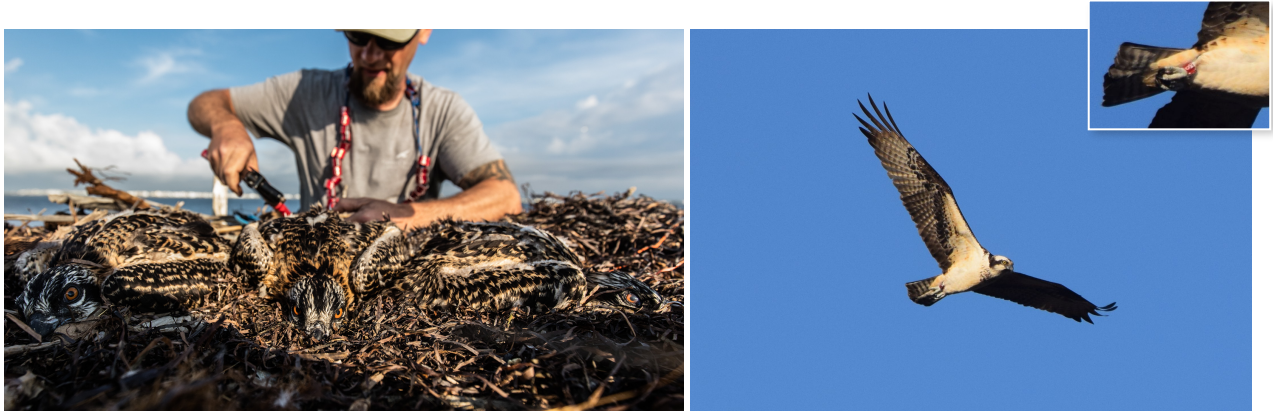
Lastly, the presence of plastics was documented throughout most survey areas. Along the New Jersey coast, plastics collect along the edge of the tidal saltmarsh, beaches, and in high marsh areas. These are the same areas where ospreys collect nesting material. Ospreys can be easily entangled in string, ribbon, monofilament, or rope/twine or suffocated by plastic sheeting or bags when in the nest. On the saltmarsh it is often hard to distinguish from synthetic and natural materials (eelgrass looks like white balloon ribbon; sea lettuce looks like white single use plastic bag). Ospreys simply use this material as it's become a more abundant resource. Almost all nests in New Jersey contain some type of plastic. This year a few young ospreys needed to be rescued and untangled, while several more were found dead from being entangled in monofilament or plastic line. We're planning more efforts to document the presence of plastics in nests, and hope to use data and photographs to raise awareness for reducing people's dependence on single use plastics.



The U.S. Coast Guard assists with the recovery of a dead nestling who was entangled in plastic monofilament. photo by Kathy Clark/ENSP

Project RedBand

This is our fourth year of auxiliary banding young ospreys in nests on Barnegat Bay. A total of 66 young were banded with red auxiliary “field readable” bands with codes from 66/H to 99/H and 00/K to 30/K. Twenty-one young were banded inside Sedge Islands WMA and forty-five in surrounding areas. The total number banded since 2014 is 327. A few



Left: Osprey 04/D being banded as a nestling (on right). photo by Northside Jim. Right: 04/D photographed in Allendale, NJ during spring. photo by Barbara Dilger.

fledglings were re-sighted after fledging in late summer. We’re now beginning to find some red-banded birds who’ve returned to New Jersey to nest as adults! One really neat sighting was of osprey 04/D, whose banding was streamed live on Facebook on July 1, 2016. was photographed this spring on April 23 by Barbara Dilger while foraging at Lake Alpert at the Celery Farm Natural Area in Allendale, NJ. Then, this summer, Northside Jim photographed her while we were conducting a nest survey near Long Beach Island. Despite re-sighting her again this summer near her natal area, we were not able to determine if and where she might be nesting. We saw her when we were at a nest and there were several ospreys who were circling us, which happens when the colony reacts to a potential threat to a nest. At the time of writing this report, we have not received any sightings of red-banded ospreys during fall migration. Sightings of red-banded ospreys should be reported to USGS here: reportband.gov, and on our website to receive a photo of the nestling at banding: conservewildlifenj.org/redband

For updates from the field, check out the New Jersey Osprey Project on Facebook at facebook.com/njospreyproject. For platform plans, a platform construction tutorial, project info, or to donate to help fund this project visit: conservewildlifenj.org.

Project Staff: Kathy Clark, Ben Wurst, and Larissa Smith

Volunteer Osprey Banders: Fred Akers-Great Egg Harbor Watershed Association, Jane and Peter Galetto-Citizens United to Protect the Maurice River and its Tributaries, Northside Jim-Nest Story, Jeanne Heuser-Sandy Hook Unit of Gateway National Recreation Area, Damon Noe-The Nature Conservancy, Bill Stuempefig, Matt Tribulski, Hans and Hanna Toft.



Osprey 0928-00665 named "Bandit." A nine year old adult male who nests at the Pete McLain Osprey Cam nest at Island Beach State Park. photo by Karl M. Soehnlein.

Thanks to: Bill Clarke-Osprey Foundation; Atlantic City Electric; Giselle and John Smisko; Don and Karen Bonica; Dr. Erica Miller of Tri-State Bird Rescue & Research; Osprey-Watch.org; Hugh Carola-Hackensack Riverkeeper; Bill Schultz-Raritan Riverkeeper; The Wetlands Institute; Cattus Island Park-Ocean County Parks; Citizens United to Protect the Maurice River and its Tributaries; Great Egg Harbor Watershed Association, Island Beach State Park; Friends of Forsythe NWR; Friends of IBSP; Toms River Avian Care; Barnegat Animal Clinic; The Raptor Trust; Exelon-Oyster Creek Generating Station; PSE&G-Salem; NJ-NY Baykeeper; The Home Depot in Manahawkin and Absecon; Cape May County Mosquito Control Department; Ocean County Mosquito Commission; and all other donors and volunteers who assist with and support the project.

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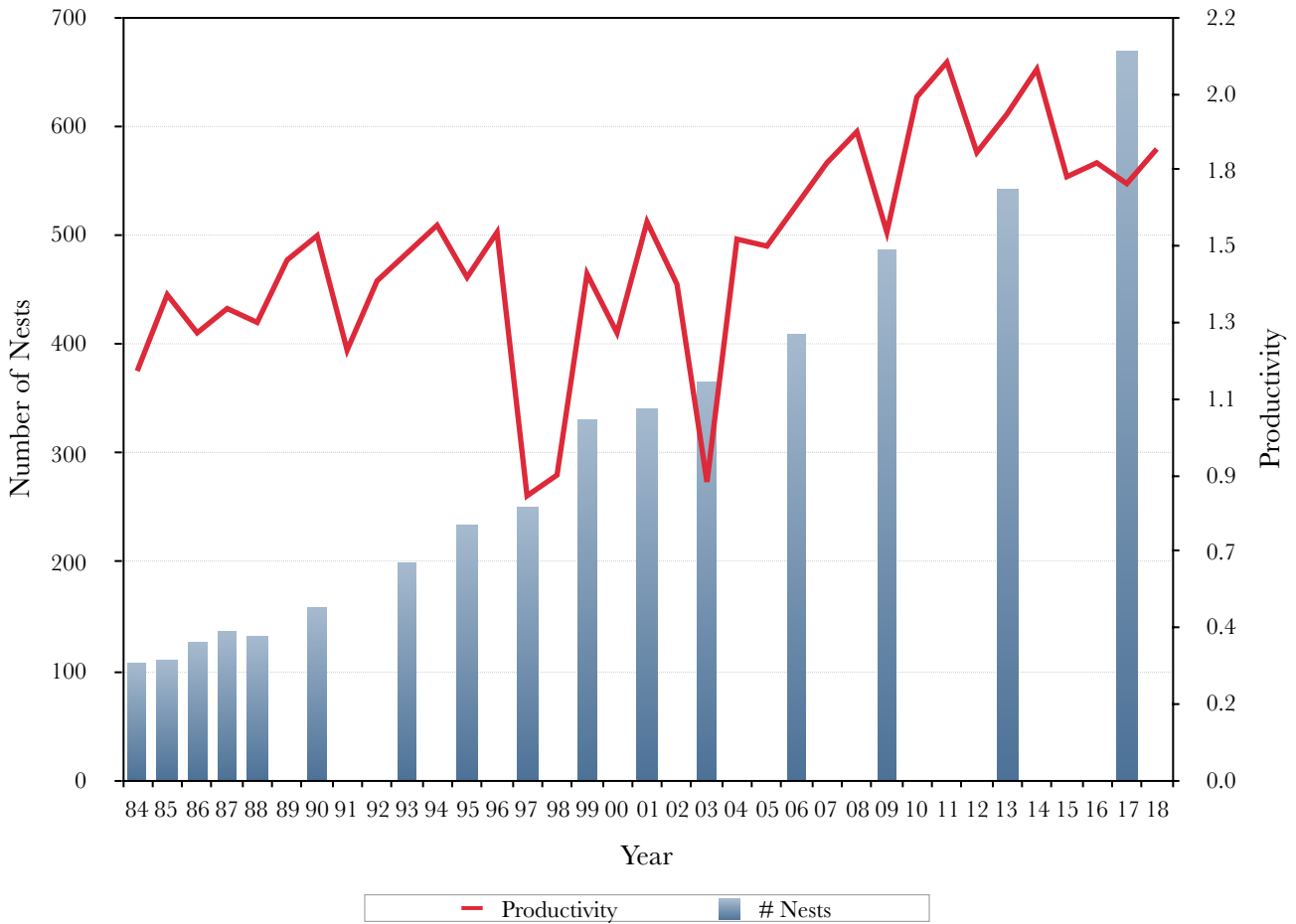


Figure 1. Osprey nesting population (bar) and productivity (line) 1984-2018 in New Jersey.

Nesting Area	# Nests	Known- Outcome Nests	# Young	# Banded	Production 2018	Previous Years		
						2017	2016	2015
Delaware River & North Jersey	2	2	4	n/a		2	2	2.00
Hackensack-Hudson Rivers	4	4	10	n/a	2.50	1.38	0.60	1.00
Raritan Bay area (w/ Cheesequake)	45	38	44	8	1.16	1.81	1.77	1.93
Monmouth County	27	19	39	n/a	2.05	1.46	1.91	1.27
Barnegat Bay	56	42	72	45	1.71	1.34	1.78	1.33
Sedge Islands WMA	32	28	37	21	1.32	2.04	2.18	1.65
Great Bay to Atlantic City	88	65	107	13	1.65	1.46	2.05	1.46
Great Egg Harbor/Ocean City	83	81	161	67	1.99	1.90	2.12	1.83
Sea Isle City	43	42	61	15	1.45	1.95	1.46	1.87
Avalon/Stone Harbor Bays	86	80	153	79	1.91	1.89	1.51	1.75
Wildwood Bays & Cape May	45	35	74	8	2.11	1.81	1.28	1.88
Delaware Bay & Maurice River	78	76	170	131	2.24	2.01	1.93	2.11
TOTAL of Study Areas	589	512	932	387	1.82	1.72	1.78	1.74
						668		
D. River Basin/N. Jersey	6	6	14	n/a				
Atlantic Coast only	505	436	762	256	1.75	1.67	1.66	1.66
Delaware Bay only	78	76	170	131	2.24	2.01		2.11
Total Checked Statewide	589	512	937	387	1.82	1.78	1.74	542 (# nests)

Table 1. Osprey nesting and productivity in 2018 in all major nesting areas. Productivity was determined by ground surveys in June-July. Productivity rates in 2015-2017 provided for comparison.