2023

NEW JERSEY OSPREY PROJECT REPORT

Osprey 44/K with Atlantic bluefish. Stafford Township, New Jersey. July 10, 2023.

Ben Wurst,
Conserve Wildlife Foundation of NJ
&
Kathleen Clark,
Endangered and Nongame Species Program
NJDEP Fish and Wildlife

NEW JERSEY DEP
Fish and Wildlife

NEW JERSEY OSPREY PROJECT

CONSERVE WILDLIFE
FOUNDATION OF NEW JERSEY

Published February 2024

More frequent and turbulent storms seem to be the norm now. Last year we started off by saying how ospreys "*faced one of their toughest years in recent history.*" Well, 2023 was another very challenging year — smoke from Canadian wildfires and a midsummer nor'easter that caused a widespread ripple effect to nesting ospreys along the coast. The harsh mid-summer weather resulted in a lack of natural resources — specifically Atlantic menhaden — which caused many nesting pairs along the coast (which contains more than three quarters of the state population) to be less productive. While many nests failed to produce young, we continued to see the population grow and occupy new locations throughout the state.

The breeding season started off like others, with ospreys arriving in mid-March through early-April to reclaim and rebuild their seasonal homes. This year we documented 54 new nests throughout the state. The majority were on utility poles, nest platforms and trees (live and dead). Several others were found after the end of the nesting season during other fieldwork. We really appreciate those who install nest platforms and report them to us or online at Osprey-Watch.org!

A female osprey sits atop a nest platform at Edwin B. Forsythe NWR in Oceanville, NJ.

As with previous years' we began to record occupancy when ospreys arrived and laid eggs. We record nest activity, including presence of adults, whether a nest is active (with young or eggs) and if the nest attempt failed through field observations, nest surveys and online reports. This year our devoted volunteers and citizen scientists documented a total of 808 occupied nests, which is the most ever in the history of the project. Over the past decade, the population has grown by 30%. Overall, survey results indicated that the statewide productivity rate declined in 2023, even below the poor results observed last year.

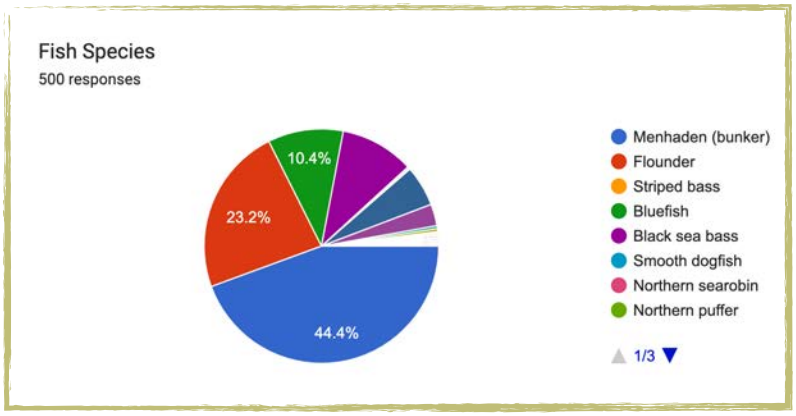
Seasonal field technician Victoria Rosikiewicz carries a ladder to an active nest on the Mullica River with smoke from a nearby wildfire in the background. June 1, 2023.

Two-thirds of the population had reduced productivity, as compared to the previous year, though there were a few glimmers of hope nestled in some colonies. The worst results were observed in the Little Egg Harbor, Great Bay and Atlantic City colony. There 100 pairs produced only 59 young for a productivity rate of only 0.59 young/active nest, and on the Mullica River, located within that region, 19 pairs produced only 5 young (0.26 young/active nest). For reference, a productivity rate of 1.0 to 1.1 is needed to support a stable population over time.

As stated above and in a blog post last summer, many ospreys had a difficult time finding and catching prey. This occurred after a nor'easter impacted the coast of New Jersey during the third week of June. The nor'easter brought stiff onshore wind and waves, flooding and precipitation along the coast, lasting for three days. For ospreys, this is during the nestling period, when demands for food are increasing daily, with many nestlings that are 2-3 weeks old and eating half their body weight every day. This severe weather is common along the coast, but it seems to be occurring more frequently and with more lasting effects. Storms causing high wave action in the ocean make it very difficult for ospreys to find and catch prey, specifically Atlantic menhaden, a forage fish that is a staple in the osprey diet.

As an example, one particular nest, located along the bay in Barnegat Light, had three nestlings that were around 21 days old. There we witnessed the effects of the storm via a live streaming camera, where the 17 year old male, named "Duke" disappeared for 72 hours. During the beginning of that time, no food was brought to the nest. Two nestlings perished from starvation. The adult female, named "Daisy" eventually started to forage for herself and was able to catch some prey. When Duke finally returned, he looked famished and took prey from his mate, an unusual behavior among osprey pairs. Luckily, one nestling survived to fledge successfully.

Sadly, many other pairs did not fare as well. This past summer we received many reports from concerned citizens about young ospreys left on their nests, some to starve. It was also witnessed on four other osprey cams from Oceanville to Cape May, where brood sizes were reduced through the lack of natural resources, after the nor'easter. A few surveys late in the season confirmed that many nests failed to fledge young. In 2024, we plan to conduct more follow up surveys to better determine outcomes at nests.



Prey deliveries at the Barnegat Light Osprey Cam in 2023.

Brood reduction is quite common in ospreys as they're adapted for variations in food availability, with eggs hatching asynchronously in the order laid. This helps ensure that when food is limiting, the strongest nestling(s) have a better chance of surviving to fledge. The effects of this adaptation of brood reduction seems to be more frequent along with increasingly severe storms reducing prey availability during the nesting season. At the Barnegat Light Osprey Cam data is collected on prey deliveries by viewers and last year, deliveries of menhaden was reduced by 30% and catches of summer flounder and black sea bass

increased. Sightings of adult menhaden during this time were also sparse, as reported by a commercial fisherman who targets this forage fish for bait. Of course, this could also be linked to the commercial menhaden fishery offshore that targets very large schools of adult menhaden for fish oil and fish meal for aquaculture industry, supplements, and fertilizer. We're planning to look more closely at the diet of ospreys and their dependence on menhaden in several different colonies in the future.

A GoPro on an extension pole is remotely controlled to record presence of eggs or young in an osprey nest.

METHODS

Nesting surveys are conducted by staff and specially trained volunteers primarily in late June and early July. This is when ospreys have nestlings that are 3-4 weeks old and are unable to fly, well before their fledging age of 8 weeks. This is also the perfect age when they can be banded for future tracking. Surveys are conducted in all major colonies from Point Pleasant south to Cape May and west along the Delaware Bayshore (see table 1 for list of all colonies). Other regions are surveyed by partners, consultants and many volunteer "Osprey Watchers" who report nest observations online on Osprey-Watch.org.

Most colonies are surveyed by boat, since most nests on wood platforms are located within saltmarsh habitat. Nest occupancy is noted by the presence or absence of adults. To determine the outcome, nests are either climbed with a ladder, viewed with a mirror/GoPro on an extendable pole, camera with telephoto lens or with a sUAS/drone (under permit). In more recent years the use of a GoPro has been used primarily by the lead author, as it helps reduce time spent at nests, which reduces disturbance to adults. However, nests with visible plastic marine debris are climbed to remove that risk of suffocation or entanglement. Nests are also climbed when the young are old enough to band with aluminum USGS bird bands and red auxiliary bands (Barnegat Bay). Lastly, at nests where we band young, we leave fresh menhaden to offset our disturbance to adults and young.

When first entering a colony and nest, it is viewed from a distance with optics. This is done to first determine occupancy. If adults are present then the nest is considered occupied. Their behavior is noted during this time. If an adult is sitting low in the nest with a flat back, then they are likely incubating eggs. If they are standing beside the nest bowl or without a flat back, then they likely have young. When approaching a nest, if adults fly off their nest and actively defend it, then that is usually a sign that young are present. Presence of young is confirmed by the visual methods stated above. Documenting nest failures is based on behavior of the adults and inspecting nest for signs of current-season use.

Two five week old osprey nestlings (and a mylar balloon) laying low in a nest on Barnegat Bay. June 2023.

In 2023, we determined the nest outcomes by conducting several early (incubation) and follow up (pre-fledgling age) surveys. Many well established nests that did not produce young were empty during our time of surveys and were recorded as failed to produce young. Special thanks to Rob Carrier, CWF Summer Field Technician who assisted with NJ Osprey Project last summer!

We continue to seek new volunteers to help survey areas that are not covered by current volunteer corps. These areas include Shrewsbury/Navesink Rivers, Sandy Hook, Raritan Bayshore, including Cheesequake State Park, lower Delaware River, and parts of Salem County. These Osprey Watchers visit established nests and use optics to determine if they still exist and if they are occupied and productive. Nest surveys, which should take less than an hour once a week/month from the beginning of May until the end of July. If you live in any of these areas and are interested in volunteering, please reach out to Ben Wurst.

In addition, in 2024 we hope to recruit a couple more volunteers who have access to a boat to assist with osprey surveys and nest maintenance within the Little Egg, Great Bay and the Atlantic City region. No raptor or banding experience is needed but a long term commitment is desirable. Reach out to Ben Wurst for more information.

RESULTS

We recorded a total of 808 occupied nests in 2023, which is the most ever in the history of the project. The actual size of the population is greater than that, but those are nests confirmed occupied. The majority of the population continues to reside along the Atlantic Coast (83%) with others nesting inland and along the Delaware Bay. Of the 54 new nests recorded, they were distributed throughout all regions of the state.

The overall productivity rate, which is a measure of the health of the population, is determined by knowing the outcome of nests. In 2023, our collective efforts were able to determine the outcome of 79% of occupied nests (657). Those pairs produced a total of 762 young, for a productivity rate of 1.16 young/known-outcome nest. One hundred forty-four nestlings were banded for future tracking.

Map of new nests throughout New Jersey.

CWF Summer Field Tech. Rob Carrier records data during a nest survey. July 2023.

Just over 200 pairs that laid eggs failed to produce young that fledged — a 32% failure rate and similar to 2022. The statewide average productivity rate (1.16) was the lowest recorded since 2003 (0.86). All colonies had reduced productivity from year to year except for Sedge Island, Sea Isle, Avalon/Stone Harbor and Wildwood/ Cape May. Delaware Bay nests had higher productivity than Atlantic Coastal nests, which is no surprise (1.62 vs. 1.08). Despite the low productivity, in most colonies it was above the level needed to sustain the population.

Thankfully this year we had a field technician who conducted surveys at locations typically not surveyed. This includes Gateway National Recreation Area-Sandy Hook, Raritan Bayshore and locations in southwestern Salem County. Results from these additional “ground” surveys helped us to better determine the overall size and health of the population.

We plan to continue to offer this field position to help our monitoring efforts while providing a unique experience for young wildlife biologists. To learn more about the 2024 NJ Osprey Project Field Technician position, click here.

Osprey 788-48915, who originated at a nest on the Maurice River in 2006, was re-sighted this year at her nest in Port Mahon, Delaware which produced one fledgling. Photo by Kim Sheaffer

BAND RECOVERIES & RED BAND RE-SIGHTINGS

In 2023, a total of 50 banded ospreys were re-sighted or encountered, which is the most in the history of the project. Since banding young with red auxiliary bands, through Project RedBand which was established in 2014, 577 red "field readable" bands have been deployed. Since then, the number of encounters associated with live ospreys has increased. We are also seeing more "readings" of USGS bands - a difficult task to read nine digits on those bands, thanks to advances in high resolution digital cameras and telephoto lenses. This is a stark contrast to many past years when most band encounters were of injured or dead birds. This is the exact reason for using field-readable auxiliary bands. It allows us, through re-sightings or encounters with the bands, to learn more about these birds while they're alive.

Of the 50 individuals re-sighted, 41 were red bands (four were re-sighted more than once). A few were observed multiple times through the season. Only 8 were found injured (all later died) or dead. The majority of ospreys were re-sighted during nesting surveys in New Jersey and had red bands. A total of 21 ospreys were re-sighted at nests, and of those four had only USGS bird bands. One female was re-sighted at a nest on the Delaware Bay in Port Mahon, DE (see photo above). She was 17 years old and the same age as the long standing male, "Duke" who

nests at the Barnegat Light Osprey Cam. Others were re-sighted in nesting colonies or foraging along the coast.

The life of a Long Beach Island osprey. We hope to see 10/N return to New Jersey in 2025.

A notable encounter was of a 19 year old osprey that was banded in 2004 in Wildwood and found on the ground in Ocean View, NJ in July. Sadly, it did not survive. A memorable encounter was with osprey 10/N, who was produced at a nest behind the Long Beach Island Foundation of the Arts & Sciences in Loveladies, NJ. After fledgling in late-July, it landed on a nearby rooftop deck from which it could not fly, due to the high railing. After being rescued and placed back on its nest nearby, it was encountered around a month later foraging along the beach near its natal area in Loveladies. Thank you to everyone who reports band observations to us and online to USGS. Full details of each band encounter are in Table 2 (page 11).

In conclusion, ospreys had one of their worst breeding seasons in recent years. This was due to severe weather that limited the availability of prey, specifically Atlantic menhaden, during the nestling period. This illustrates how adverse weather and reduced prey availability can play a role in the successful reproduction of a species over large areas. We had not previously seen or experienced the widespread effects of limited prey during their nesting season, but osprey cams throughout the state have helped us learn more about the effects of weather and the lack of natural resources. In other regions, like on the Chesapeake Bay, ospreys have been hit hard by reduced availability of menhaden. Here, we hope to learn more about their diets by collecting samples of prey remains, fielding remote trail cams and collecting citizen scientist observations from live nest cams.

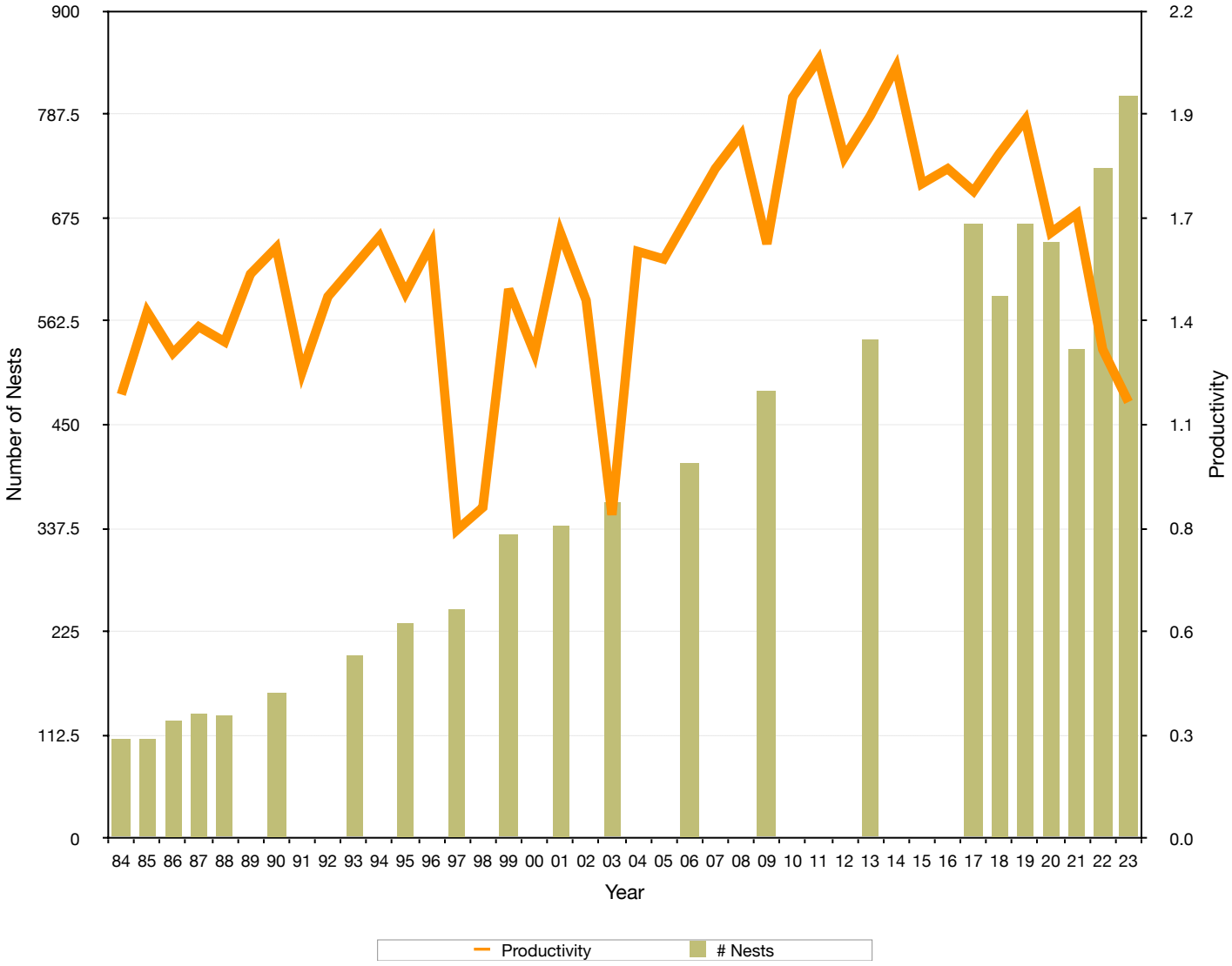
Even though it wasn't a great year, results from our surveys were more accurate, given the fact that many included follow up surveys to learn true outcomes at nests. The population also continues to grow, with around 50 new nests each year over the past 5 years. Even if their productivity is relatively lower, it is still sufficient to maintain a stable population. Overall population stability, and banding and encounter data suggests they live long, productive lives, and there may be "extra" adults who are present and not currently nesting. Nest platforms are being better maintained to support a stable population, but the food resources must be there to maintain it. Protecting our coastal resources will only help ospreys thrive.

Project Staff: Ben Wurst, Kathy Clark, Larissa Smith, Rob Carrier

Table 1. Osprey productivity in 2022 in all major nesting areas. Productivity was determined by ground surveys in June-July. Productivity rates in 2021-2022 provided for comparison.

						PREVIOUS YEARS		
NESTING AREA	**# NESTS**	**KNOWN-OUTCOME NESTS**	**# YOUNG**	**# BANDED**	**PRODUCTION 2023**	**2022**	**2021**	**2020**
Delaware River Basin & North/ Central Jersey	35	27	47	0	1.74	2.08	1.53	2.18
Hackensack/Hudson Rivers	14	12	16	0	1.33	1.69	1.70	1.57
Raritan River & Bay	26	17	18	0	1.06	1.83		2.17
Monmouth County	88	33	38	0	1.15	1.93	0.88	1.82
Barnegat Bay	141	114	146	41	1.28	1.47	1.53	1.45
Sedge Islands	36	33	51	48	1.55	0.82	1.50	1.24
Great Bay to Atlantic City	111	100	59	0	0.59	1.25	1.70	1.38
Great Egg Harbor/ Ocean City	97	96	98	0	1.02	1.35	1.60	2.14
Sea Isle City	52	46	59	4	1.28	0.77	1.47	2.03
Avalon & Stone Harbor	90	86	77	9	0.90	0.55	1.60	1.26
Wildwood & Cape May	32	21	42	0	2.00	1.11	1.84	1.38
Delaware Bay & Maurice River	86	72	111	42	1.54	1.81	2.10	1.65
TOTAL of Study Areas	808	657	762	144	1.16	1.30	1.66	1.61
Barnegat Bay	139	92	120	2	1.30	1.32	1.51	1.35
D. River/N. Jersey	45	38	74	0	1.95	1.95	1.59	2.03
Atlantic Coast	590	432	491	35	1.14	1.16	1.60	1.58
Delaware Bay	76	73	132	90	1.81	1.81	2.10	1.65
TOTAL STATEWIDE	**808**	**657**	**762**	**144**	**1.16**			

Chart 1: Number of osprey nests and average productivity in New Jersey, 1984-2023.



Volunteer Osprey Banders: Fred Akers - Great Egg Harbor Watershed Association, Jane and Peter Galetto - Citizens United to Protect the Maurice River and its Tributaries, Trish Miller - Conservation Science Global, Northside Jim - Nest Story/Little Egg Foundation, David and Kelly Natkie, Damon Noe - The Nature Conservancy, Bill Stuempfig, Matt Tribulski, Hans and Hanna Toft, John King and Wayne Russell.

Special thanks to: Bill Clarke and the Osprey Foundation for his continued support of our efforts to monitor and manage New Jersey's ospreys.

Thank you to everyone who donates to Conserve Wildlife Foundation of NJ, contributes to the Endangered and Nongame Species Program through the Check-Off for Wildlife on their NJ State Income Tax, and by purchasing Conserve Wildlife License Plates!

Funding also provided by the U.S. Fish & Wildlife Service, with matching contributions from New Jersey Osprey Project volunteers.

Thanks to: Jim Verhagen – NestStory; Zoological Society of New Jersey; Don and Karen Bonica; Dr. Andrew Wurst - Barnegat Animal Clinic; Dr. Erica Miller; Osprey-Watch.org; Hugh Carola - Hackensack Riverkeeper; Bill Schultz - Raritan Riverkeeper; Borough of Seaside Heights - Public Works; Woodhaven Lumber & Millwork - Manahawkin; Joe Fallon - FMERA; Tim McGuire - McCormick Taylor; Scott T. Northey - The Chemours Company; 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; USDA-APHIS-Wildlife Services; Friends of Forsythe NWR; Friends of IBSP; Toms River Avian Care; Tri-State Bird Rescue & Research; The Raptor Trust; The Wetlands Institute; PSE&G; Atlantic City Electric; NJ-NY Baykeeper; Garden Club of LBI and all other donors and volunteers who assist with and support the project.

Table 2. Auxiliary banded osprey recoveries and re-sightings in New Jersey in 2023.

Federal Band	Aux Band	Origin Nest ID #	Date banded	Date of re-sighting	Years previously re-sighted	Distance from natal nest (miles)	Present Condition	Status / Location	Sex	Age	Encountered By
1088-08856	-	135-A-032	7/1/2016	3/22/2023	2022	1.22	Live	BL Osprey Cam, Barnegat Light (2nd occurrence)	M	6	Maryanne Miller
788-49033	-	123-A-013	7/12/2006	3/28/2023	2018-present	2.6	Live	Breeding at Osprey Cam, Barnegat Light, NJ	M	17	Ben Wurst
1218-00842	63/K	147-B-030	7/8/2019	4/3/2023	-	57.40	Live	Foraging at Old Wharf Park. Oceanport, NJ	M	4	Mark Ceres
1088-14605	27/H	123-A-038	7/9/2017	4/20/2023	2022	3.00	Live	Perched in backyard. High Bar Harbor, LBI, NJ	M	6	Barbara Annarumma
1218-02748	41/M	123-A-028	7/15/2020	4/25/2023	2022	37.00	Live	Perched at Fort Monmouth, NJ	UNK	3	Ken Ostrom
1088-06487	63/C	135-A-025	6/25/2015	6/1/2023	2020-present	15.3	Live	Nesting on Mullica River, NJ	F	8	Ben Wurst
1218-02937	95/M	123-A-021	7/13/2021	6/1/2023	-	38.00	Live	Foraging at Thompson Park, Monmouth Co, NJ	M	2	Blake Bohinc (Blake Allen Photo)
1088-06094	-	163-A-010	7/4/2015	4/23/2023	-	-	Dead	Caught due to injury. Millville, NJ	UNK	8	Kathy Clark/NJDEP
928-14640	-	170 A 003	7/5/2013	4/17/2023	-	0.16	Live	Nesting at Terrapin Cove. Leesburg, NJ	M	10	Meghan Morrison
1088-14605	27/H	123-A-038	7/9/2017	5/20/2023	2022	3.00	Live	Eating fish in backyard. High Bar Harbor, NJ	M	6	Barbara Annarumma
928-12789	-	147-A-002	6/27/2011	7/13/2023	-	7.27	Live	Nesting at Edwin B Forsythe NWR, Oceanville, NJ	F	12	Steven Forman

Federal Band	Aux Band	Origin Nest ID #	Date banded	Date of re-sighting	Years previously re-sighted	Distance from natal nest (miles)	Present Condition	Status / Location	Sex	Age	Encountered By
1218-01045	-	163-A-021	6/30/2019	5/10/2023	-	99.10	Live	Previously banded bird trapped and released during banding operations. Jackson Landing, MD	UNK	4	Greg Kearns
1218-02747	40/M	123-A-028	7/15/2020	6/8/2023	-	0.96	Live	Photographed during osprey nest survey. Unsure if nesting. Sedge Island, NJ	M	3	Ben Wurst
1218-02810	49/M	122-B-014	8/1/2020	6/23/2023	-	1.88	Live	Landed on osprey cam nest. Barnegat Light, NJ	M	3	Ben Wurst
1088-14891	21/K	122-B-014	7/13/2018	6/20/2023	-	1.2	Live	Nesting in High Bar Harbor, NJ	M	4	Ben Wurst
1218-00888	11/M	135-A-026	7/3/2020	6/28/2023	-	6.48	Live	Perched on boat lift with nest. Loveladies, NJ	M	3	Ben Wurst
1088-14638	60/H	122-A-008	7/19/2017	6/27/2023	-	0.37	Live	Male (?), in flight over sunrise beach, Forked River	M?	6	Rich Nicol
788-48464	-	178-A-026	7/1/2004	7/3/2023	-	-	Dead	Injured bird found on golf course. Oceanview, NJ	UNK	19	Matt Tribulski
1088-06434	23/C	111-A-025	7/9/2014	7/3/2023	2019	5.11	Live	Nesting in Ocean Gate, NJ	M	9	Ben Wurst
1088-11619	65/D	147-B-036	6/26/2017	6/29/2013	2020	11.22	Live	Nesting in Loveladies, NJ	F	4	Ben Wurst
1088-14610	32/H	123-A-002	7/9/2017	6/27/2023	2021	4.87	Live	Nesting in Stafford Twp, NJ	F	4	Ben Wurst
1088-11630	74/D	135-A-015	6/27/2017	6/27/2023	2020	2.3	Live	Pair bond with 32/H. Stafford Twp, NJ	M	4	Ben Wurst
1218-00858	97/K	123-A-032	7/12/2019	7/7/2023	-	1.2	Live	Nesting at Sedge Island, NJ	M	4	Ben Wurst
1088-14593	15/H	123-A-021	7/9/2017	7/7/2023	-	0.92	Live	Nesting at Sedge Island, NJ	M	4	Ben Wurst
1088-14639	61/H	122-A-008	7/19/2017	7/7/2023	-	3.59	Live	Pair bond with 15/H	F	4	Ben Wurst
1088-08899	44/D	135-A-025	7/18/2016	7/10/2023	2021	1.1	Live	Nesting in Stafford Twp, NJ	M	5	Ben Wurst
1088-14897	26/K	147-B-036	7/19/2018	7/10/2023	-	3.72	Live	Perched on sign during nest survey. Not sure if he is part of a mated pair.	M	5	Ben Wurst
1088-06491	67/C	135-A-032	6/25/2015	7/7/2023	2020	3.92	Live	Nesting at Sedge Island, NJ	M	6	Ben Wurst
1088-11608	54/D	123-A-041	7/19/2016	7/31/2023	2020	0.72	Live	Nesting at Sedge Island, NJ	M	4	Ben Wurst
928-14958	-	176-B-016	7/6/2013	7/17/2023	-		Dead	FAA Tech Center, Egg Harbor Twp, NJ	UNK	10	Jocelyn Rudisill
—	E/37	Sunset Cove, Jamaica Bay	6/26/2018	3/27/2022	2021	55	Live	Rich Nicol got her at Sunrise Beach. I had her last year at 122-A-008 but could not read her band.	F	4	Rich Nicol
1088-06194	00/C	135-A-029	7/7/2014	7/7/2023	-	4.3	Live	Nesting at Sedge Island, NJ	M	7	Ben Wurst
1218-02939	97/M	123-A-028	7/16/2021	7/24/2023	-	1.73	Live	Perched on snag. High Bar Harbor, NJ	M	2	Ben Wurst
1088-14621	43/H	123-A-044	7/9/2017	7/24/2023	2020	0.20	Live	Nesting at Sedge Island, NJ	M	3	Ben Wurst
1218-02964	10/N	135-A-022	6/28/2023	7/27/2023	-	0.09	Live	Fledgling landed on nearby deck on 7/27 and could not take off above railing. Captured and released back on origin nest.	M	>1	Ben Wurst

Federal Band	Aux Band	Origin Nest ID #	Date banded	Date of re-sighting	Years previously re-sighted	Distance from natal nest (miles)	Present Condition	Status / Location	Sex	Age	Encountered By
1218-02975	21/N	135-A-029	6/29/2023	7/30/2023	-	1.58	Live	Observed at osprey cam. Barnegat Light, NJ	UNK	>1	Maryann Miller
1218-02933	91/M	122-B-014	7/13/2021	7/24/2023	-	2.83	Live	In flight over marsh. Loveladies, NJ	M	2	Ben Wurst
1088-14567	89/D	111-A-025	7/8/2017	7/10/2023	2020	25.4	Live	Perched on low post. Stafford Twp, NJ	F	6	Ben Wurst
1088-14589	11/H	123-A-014	7/9/2017	8/13/2023	2022	0.64	Live	Perched in tree. Sedge Island, NJ	M	6	Ben Wurst
1218-00848	69/K	135-A-029	7/8/2019	8/12/2023	2021	6.83	Live	In flight at beach. Ship Bottom, NJ	M?	4	Ben Wurst
1088-11634	-	158-B-033	6/28/2017	7/21/2023	-	2.34	Live	Nesting in Absecon, NJ	M	6	Ben Wurst
1088-11608	54/D	123-A-041	7/19/2016	7/31/2023	2020	0.71	Live	Nesting at Sedge Island, NJ	M	7	Ben Wurst
1218-00888	11/M	135-A-026	7/3/2020	8/23/2023	June 2023	1.52	Live	Adult in flight (foraging at beach) in Ship Bottom, NJ	M	3	Ben Wurst
1218-05897	-	163-A-019	7/3/2023	8/23/2023	-	-	Dead	Hit by motor vehicle. NC	UNK	>1	UNK
1218-02964	10/N	135-A-022	6/28/2023	9/7/2023	-	0.44	Live	Foraging off beach. Loveladies, NJ	M	>1	Ben Wurst
1218-05740	71/N	147-C-002	7/10/2023	9/2/2023	-	-	Dead	Observed dead in nest. Mordecai Island, NJ	UNK	>1	Michele Budd
1218-05741	72/N	147-C-002	7/10/2023	8/2/2023	-	-	Dead	Found dead on ground under nest. Mordecai Island, NJ	UNK	>1	Michele Budd
1088-06462	51/C	123-A-008	7/12/2014	7/7/2023	-	0.62	Live	Nesting at Sedge Island, NJ	M	9	Ben Wurst
1218-02847	57/M	122-B-021	7/9/2021	7/10/2023	-	0.0	Live	Observed at osprey cam (origin nest). Barnegat Light, NJ	F	2	Maryann Miller
788-48915	-	164-A-009	6/25/2006	7/5/2023	-	23.6	Live	Nesting at Port Mahon, DE	F	17	Kim Sheaffer
1218-01031	-	163-A-040	6/30/2019	7/16/2023	-	1.5	Dead	Band found along road. Mauricetown, NJ	UNK	4	Ralph Campbell
1218-03020	-	163-A-005	6/23/2021	7/16/2023	-	1.94	Dead	Band found along road. Mauricetown, NJ	UNK	2	Ralph Campbell
1218-02999	45/N	123-A-004	7/7/2023	9/1/2023	-	528	Live	Live, observed during fall migration. Harveysburg, OH	UNK	>1	Cassie Crawford