

2021 New Jersey Beach-Nesting Bird Project Report



Plover chicks at Seaside Park. Photo courtesy of Teri Bowers

Prepared by:
Christina “Kashi” Davis & Emily Heiser

NJ Division of Fish & Wildlife - Endangered and Nongame Species Program

The New Jersey Division of Fish and Wildlife – Endangered and Nongame Species Program (NJDFW) is responsible for the monitoring and management of beach-nesting birds on all state, county, and municipal sites and the collation of statewide data (including federal and private properties).

This report offers a short summary of nesting in 2021 for the four primary species that comprise this group in NJ – Piping Plover (federally threatened, state endangered), Black Skimmer (state endangered), Least Tern (state endangered) and American Oystercatcher (species of special concern).

Due to a constraint on resources, not all potential sites in the state were surveyed for all species. All known nesting sites for Piping Plover and Least Tern were monitored. All known beach strand nesting sites for Black Skimmer were monitored but no marsh island sites were routinely monitored. All known beach strand nesting sites for American Oystercatcher were monitored but only a small percentage of marsh island sites were identified or monitored.

Each species has slightly different nesting phenology and habitat requirements. Some species are solitary nesters (plovers and oystercatchers) while others are colonial (terns and skimmers). These differences can lead to not only distinctive management strategies but also to vastly disparate reproductive outcomes (at a given site, one species may be successful while another may fail). It is therefore difficult to formulate conclusions for the group, so results are presented by species.

However, there were some across species commonalities. If there was one event that defined the 2021 field season, it was the three-day Memorial Day weekend nor’easter. High winds, heavy rain, and cold temperatures battered nesting areas and greatly impacted all species (except skimmers, who typically start nesting later and largely were unscathed by the storm). Prior to the storm, weather along the coast had been relatively calm and warm, and plovers and oystercatchers had initiated nesting on the earlier side of normal. The majority of plover and oystercatcher broods and nests from Sea Bright to Cape May were lost (Sandy Hook escaped the worst of the storm). In addition, even for nests that survived the storm, eggs hatched later and a lower rate than normal, suggesting there were some longer-term consequences to the weather event beyond acute loss.

Depredation also continued to be a major limiting factor for all species. This impacted all species’ eggs and chicks and contributed to adult mortality. Predator species from a variety of taxa played a role in these losses. Primary predators (of adults, eggs, and young) included coyote, red fox, gulls, and Peregrine Falcon while Great-horned Owl and ghost crab also likely played a role. Predation management efforts were sometimes thwarted due to logistical issues. Coupled with the nor’easter and additional flood/storm events, depredation issues in 2021 meant that the state posted low reproductive rates for all species (with the exception of skimmers).

The distribution of beach-nesting birds across the state continued to be species-specific. The pattern of Piping Plovers primarily nesting at federal sites in the central and northern portion of the state continued but a large bump in pairs and active sites was observed. Cape May County continued its recovery from record low pairs/active sites. The dominance of Seaview Harbor Marina as the premiere nesting area for Black Skimmers finally ended in 2021, with sites such as Stone Harbor Point expanding their proportion of the state’s population. Despite low productivity, the number of active sites for Least Terns increased and they continued to be distributed rather evenly throughout the state. American Oystercatcher

productivity was also dismal, but their pattern of relatively high number of pairs nesting throughout the state in a variety of habitats continued.

Interestingly, and perhaps tellingly, the only species where the majority of individuals nested on federal properties is Piping Plover; the other three species do not show this pattern. There is not an obvious reason for this difference, but as Piping Plovers are the only of the four species that must have suitable foraging habitat close to the nest (their chicks have to feed themselves, while the other species can/do forage away from the immediate nest area and bring food back to young) it does raise questions about the quality and abundance of foraging habitat at federal versus non-federal sites and, in particular, how beach replenishments and beach grooming practices may be influencing this factor.

Of special note on the habitat front are the Barnegat Light restoration area, Horseshoe Island, and South Cape May Meadows. The Barnegat Light restoration area not only increased in plover pairs, but also attracted Least Tern and Black Skimmers for the first time. Horseshoe Island, a newly formed (2018) offshore island just outside of Little Egg Inlet, delighted species managers with the first confirmation of nesting by large colonies of skimmers and terns, numerous oystercatchers, and utilization by thousands of migratory shorebirds and other avian species. The sand transfer at South Cape May Meadows that was completed prior to the field season by the U.S Army Corps of Engineers refreshed the habitat and increasing its suitability. Least Terns on The Nature Conservancy (TNC) property, with help from TNC staff that installed anti-predator fencing, posted higher reproductive success than they had in at least ten years.

Banding of plovers, skimmers and oystercatchers continued on a small scale in 2021. A modest number of plovers associated with the Barnegat Light restoration project and at a few specific sites in Cape May County were marked in 2021. The Wetlands Institute and NJDFW continued to band skimmers at Seaview Harbor Marina and Stone Harbor Point. The total number of skimmers banded was reduced compared to recent years, as the layout of the colonies in 2021 was not as conducive to banding. Due to extremely low reproductive success, only a small number of American Oystercatchers were banded in 2021.

Impacts from COVID-19 were still present in 2021, but were not nearly as severe as in 2020. For example, seasonal staff were able to start the season on-time, intern programs were resumed, there were no furloughs of full-time staff, cooperators were able to recommence enclosure deployments, and volunteers were permitted to return on a limited basis. Safety measures were still in place but the experience of 2020, coupled with the fact that many people were vaccinated, allowed staff to implement these measures in a more informed and structured manner than last year.

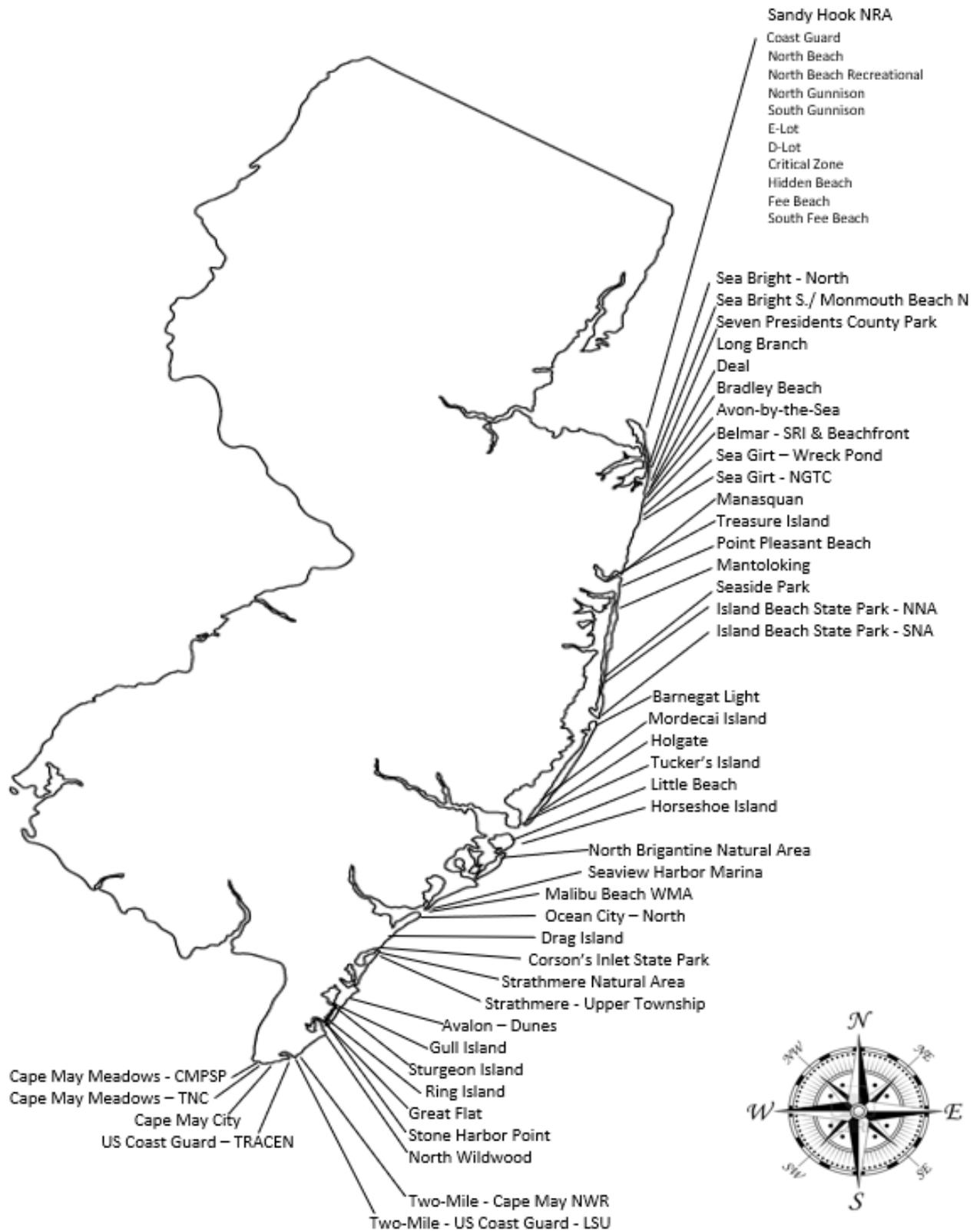
As always, and more with each passing year, the NJDFW wishes to express its profound gratitude to its seasonal staff and all the cooperators, interns, and volunteers that worked tirelessly to ensure that the birds were protected during the 2021 field season.

Special thanks to Alfred Breed for his help in compiling data in this report.

Data from partners was provided by USNPS -Gateway National Recreation Area – Sandy Hook Unit, USFWS – Edwin B. Forsythe National Wildlife Refuge & Cape May National Wildlife Refuge, Conserve Wildlife Foundation of New Jersey, USGG, The Nature Conservancy, The Wetlands Institute, & New Jersey Audubon Society.

A more detailed report for Piping Plover can be requested through NJDFW.

New Jersey Beach Nesting Bird Sites: 2021



** This map represents all the Atlantic Coast sites where breeding and breeding outcomes documented. It does not show sites that were monitored but no active nesting detected or sites that nesting did/may have occurred but where there was no monitoring, as was largely the case for the marsh islands of the Atlantic Coast.*

Piping Plover Nesting Summary

- One hundred and thirty-seven (137) pairs of Piping Plovers nested in New Jersey in 2021, an 33% increase from 2020 (103) and a 22% increase from 2019 (114). The increase is attributed to the higher-than-average productivity in recent years and the likely influx of plovers from surrounding states.
- Pairs nested at 28 sites statewide, an increase from 20 in 2020 and on par with 27 in 2019. The distribution continues to heavily favor the federal properties in the north and central part of the state, but significant growth was continued to be observed in the south in Cape May County (15 pairs in 2021 v. 3 in 2018).
- The 137 pairs laid 259 nests. Of those nests, 89 hatched (34%), 165 failed (64%) and five had an unknown outcome (2%). Of the 165 that failed, 76 were lost to predators (46% of failures), 60 to flooding (36% of failures), 19 to abandonment (12% of failures), one was blown over (<1% of failures), and nine had undetermined failure (5% of failures).
- Statewide pair-nest success (the percentage of pairs that successfully hatch at least one nest) decreased again in 2021 compared to 2020 (64% vs. 69%, respectively) and was lower than the period since federal listing (70%).
- The statewide productivity rate was 0.85 fledglings/pair, lower than 2020 (1.29 fledglings/pair) and ending a seven-season run of moderate-high productivity. The last time it dipped below 1.20 fledglings/pair was in 2013 (also 0.85 fledglings/pair).
- NJ biologists continued to use/resumed use of predator exclosures (after COVID restrictions prevented their use at some sites last year) in 2021. One hundred twenty-eight (128) nests were exclosed, or 49% of nesting attempts. The exclosed hatch rate was 59%. The abandonment rate for exclosed nests was 13%. Abandonments can suggest an adult mortality event, but it should be noted that some of these were storm-related and both adults confirmed still alive after the fact. The unexclosed hatch rate was 10%. Of the nests not exclosed, 54% were lost to predators.
- The majority of plovers (70%) are still nesting at two federal properties (Gateway NWA – Sandy Hook and EB Forsythe NWR) but that fraction was lower than in 2020 (77%). The recolonization and activation of new sites was encouraging, but many of these areas are already highly recreated, causing concern about their long-term viability. Cape May County continued its upward trend with 15 pairs at seven sites. Although still far from its peak of 43 pairs in 2002, it is significantly up from 2018 when there were three pairs at just one site.
- Although the increase in pair number and sites was welcomed, the longer-term unpredictable fluctuations in that metric continue to be a cause for concern. The low number of unpaired adults mimics recent year's trends of being combined with higher pair number, which is positive, but with the lower productivity rate in 2021, there are concerns that the lower pair number/higher unpaired adult trend will continue in 2022 and beyond.

New Jersey Piping Plover Nesting Summary by Site: 2021

SITE	2021					
	Pairs	Pairs Hatched	Chicks Fledged	Pair Success	Fledge Rate	SP Fledge Rate
<i>Sandy Hook NRA</i>	37	26	40	0.70	1.08	1.54
Coast Guard	2	1	1	0.50	0.50	1.00
North Beach	11	7	14	0.64	1.27	2.00
North Beach Recreational	1	1	1	1.00	1.00	1.00
North Gunnison	10	9	13	0.90	1.30	1.44
South Gunnison	4	2	0	0.50	0.00	0.00
Critical Zone	3	3	6	1.00	2.00	2.00
Hidden Beach	1	0	0	0.00	0.00	0.00
Fee Beach	3	1	2	0.33	0.67	2.00
South Fee Beach	2	2	3	1.00	1.50	1.50
Sea Bright - North	7 ¹	3	1	0.43	0.14	0.33
Monmouth Beach – North ²	5 ¹	1	1	0.20	0.20	1.00
Region 2 Subtotal	48	30	42	0.63	0.88	1.40
Sea Girt – Wreck Pond	1	1	4	1.00	4.00	4.00
Sea Girt - NGTC	1	1	3	1.00	3.00	3.00
Mantoloking	1 ¹	0	0	0.00	0.00	0.00
Seaside Park	2 ¹	2	4	1.00	2.00	2.00
Island Beach SP NNA	2	1	0	0.50	0.00	0.00
Barnegat Light	6	5	9	0.83	1.50	1.80
Region 3 Subtotal	12	10	20	0.83	1.67	2.00
<i>EB Forsythe NWR</i>	59	35	47	0.59	0.80	1.34
Holgate	46	26	43	0.57	0.93	1.65
Little Beach	13 ¹	9	4	0.69	0.31	0.44
North Brigantine NA	3 ¹	0	0	0.00	0.00	0.00
Region 4 Subtotal	61	35	47	0.57	0.77	1.34
Malibu Beach WMA	1	1	1	1.00	1.00	1.00
Ocean City North	3 ¹	3	2	1.00	0.67	0.67
Region 5 Subtotal	4	4	3	1.00	0.75	0.75
Corson's Inlet SP	3 ¹	2	3	0.67	1.00	1.50
Strathmere NA	1	0	0	0.00	0.00	0.00
Strathmere Upper Twp	1	1	0	1.00	0.00	0.00
Region 6 Subtotal	4	3	3	0.75	0.75	1.00
Stone Harbor Point	6	3	1	0.50	0.17	0.33
<i>Two-Mile Beach</i>	2	2	1	1.00	0.50	0.50
Cape May NWR	1	1	1	1.00	1.00	1.00
Coast Guard – LSU ³	1	1	0	1.00	0.00	0.00
Region 7 Subtotal	8	5	2	0.63	0.25	0.40
NJDFW sites TOTAL	41	25	29	0.61	0.71	1.16
All NJ sites TOTAL	137	87	117	0.64	0.85	1.34
# Active Sites	28					

¹The same pair nested at two nearby sites. Therefore “subtotals” and “totals” are less than sum of individual sites.

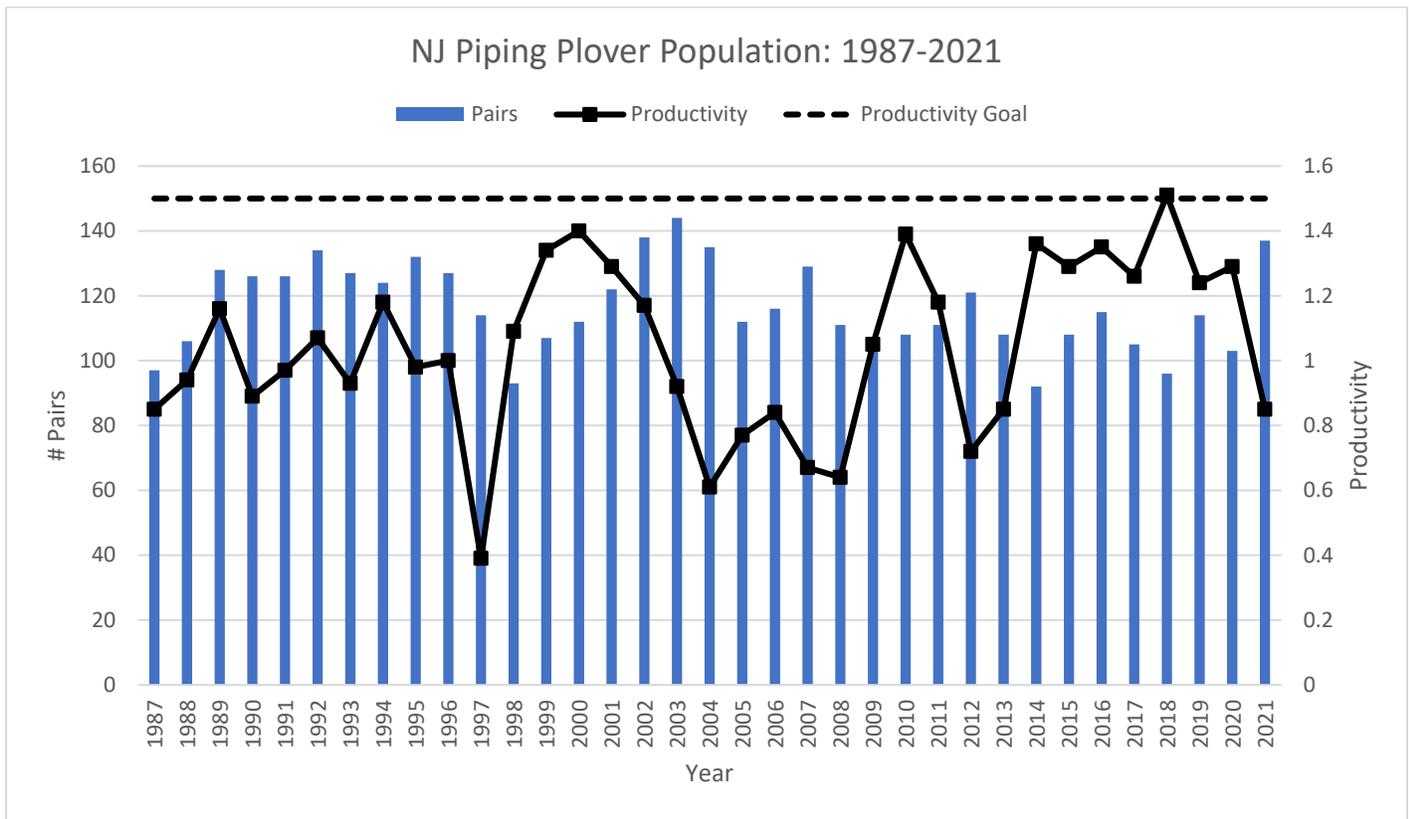
²This site includes Sea Bright – South and Monmouth Beach – North ³This is a federal property but NJDFW assists USCG with monitoring

Pair Success equals the percentage of pairs that hatched young (at least one chick observed).

Fledge Rate equals the number of chicks fledged per pair.

Successful Pair (SP) Fledge Rate equals the number of chicks fledged per pair that successfully hatched young.

New Jersey Piping Plover Population: 1987-2021



Black Skimmer Nesting Summary

- Black Skimmer breeding bird counts were conducted approximately every week at active sites from arrival (mid-May) until nesting ceased (September) on beaches along the entire Atlantic coast. Marsh islands were surveyed just one time, during an aerial survey, and breeding could not be confirmed with this method. Active nesting (at least one nest with eggs) was observed at six sites. Five sites were visited 3-7x/week for management and outreach for the duration of the nesting season and one site (Horseshoe Island) was visited 1x/week due to logistical challenges.
- A total of 2,099 adults were present at active sites. This figure is the cumulative total of site counts that occurred in the peak survey period, which took place 7-13 August. The sum of the peak adult number from each site was 2,128. The larger the difference between these two numbers, the more likely it is there was failure at any given colony and then relocation/re-nesting to another colony; that was not the case this year.
- A peak count of 502 incubating adult Black Skimmers was tallied in the 3-9 July survey period. The incubation number was lower than might be expected given the number of adults present and was almost certainly lower than how many nested. As is generally the case, vegetation at Seaview Harbor Marina (SHM) and Stone Harbor Point blocked observers from garnering the most accurate count of these ground nesters but walk-through colony counts are not safe or effective at these highly vegetated sites.
- Black skimmer statewide productivity appeared to be moderate-high with 1,362 fledglings produced statewide. This translates to 2.71 fledglings/pair if calculated on the peak incubating adult count (502). If we simply halve the peak period total adult number (1,050) and use that as pair count, the productivity is 1.30. The true rate is likely somewhere in the middle. Unlike the last few years, and other beach-nesting birds this year, distribution of fledglings were produced statewide with all but one colony successfully fledging young.
- For the first time since 2010, and as habitat conditions continue to become less suitable, SHM in Longport did not hold the majority of the nesting skimmers in NJ. In 2012, it peaked at 89% of the known NJ population and in 2020 it was down to 61%. In 2021, it was 37%, with significant colonies also occurring at Stone Harbor Point (35%) and Horseshoe Island (18%). Sixty-nine (69) individuals were tallied at seven marsh islands during the aerial survey of the Atlantic Coast marsh islands, but nesting was not confirmed so these birds are not included in state population tallies or on the map.
- The Wetlands Institute (TWI) and NJDFW worked cooperatively to band 40 Black Skimmer juveniles and adults on Stone Harbor Point and at SHM. Issues related to predators and the location of the colonies reduced the number of birds banded this year. Nocturnal efforts for banding juveniles continue to be the preferred technique, but diurnal efforts using noose mats, bow nets, and hand capture were the primary methods used in 2021 (given site conditions, these methods were deemed the safest for the birds this year). Five adults were also outfitted with GPS pin-point tags at Stone Harbor Point and provided the first ever spatial data on movements of this species in the state. Data from this effort is preliminary and not yet available but shows great promise.
- Over the course fall 2020-fall 2021, 117 individuals banded in NJ from 2016-2021 were observed either on migration or wintering grounds. Skimmers banded in NJ were observed in MD, VA, NC, SC, GA, and FL. Notably, one resight was from Mexico. A total of 311 skimmers have been banded in NJ since 2016.
- Please note that the data in the following table is presented both in terms of peak tallies of each site *and* the peak counts statewide in a given survey window. It is presented by site so that the use of any given location can be understood. However, simply tallying these peaks can lead to double counting individuals since this species is known to use multiple sites in one year (e.g. a colony fails at one site and they re-nest at another site.) so the statewide peak window count is an effort to reduce that issue and add context to the site total figures.

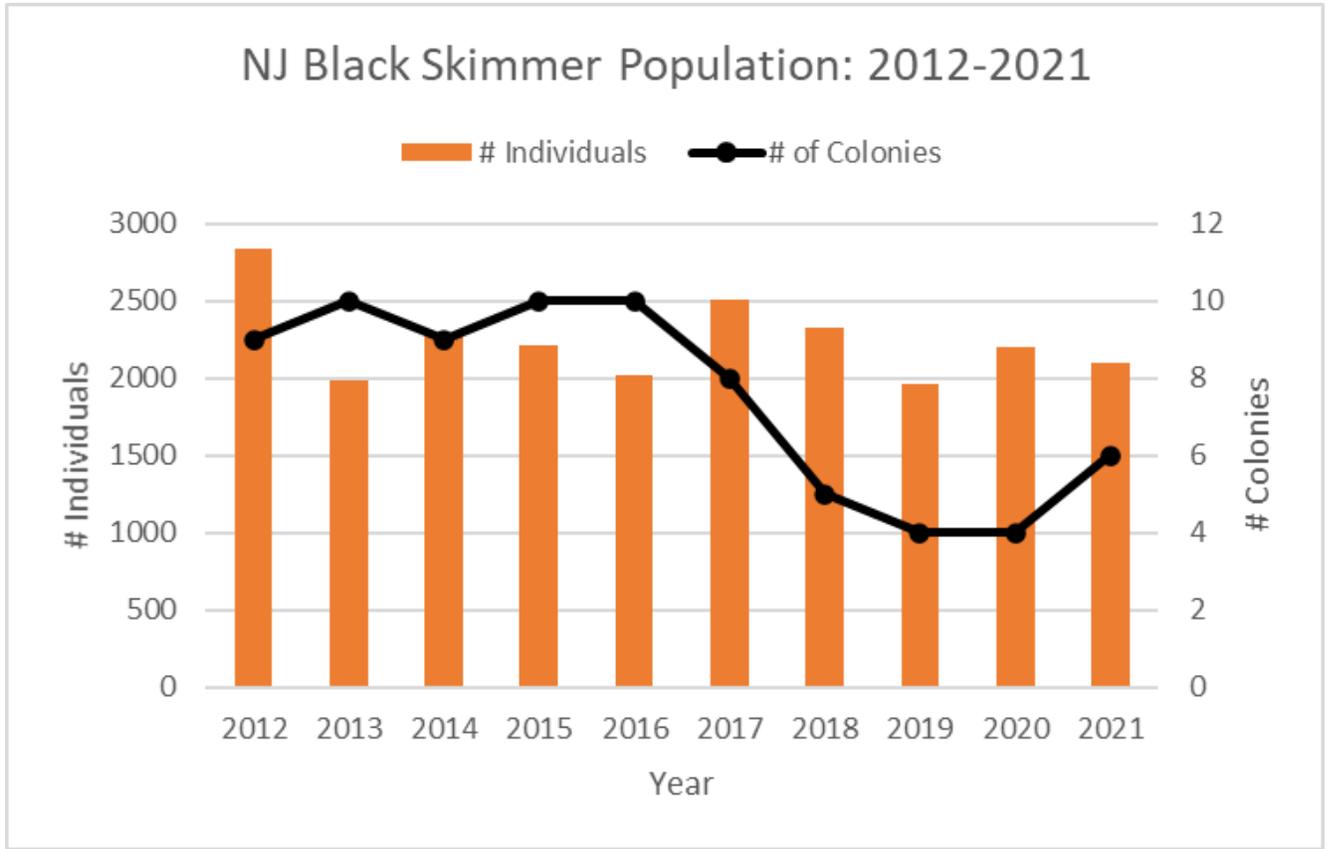
New Jersey Black Skimmer Nesting Summary by Site: 2021

SITE	Peak Total Adult Count	Peak Incubating Adult Count	Chicks Fledged	Fledge Rate
Point Pleasant Beach	124	30	90	3.00
Horseshoe Island	385	91	165	1.81
Barnegat Light (Restoration Area)	13	1	0	0.00
Seaview Harbor Marina	791	326	525	1.61
Malibu Beach WMA	78	46	32	0.70
Stone Harbor Point	737	221	550	2.49
NJDFW sites TOTAL	2128	715	1362	--
All NJ sites TOTAL	2128	715	1362	--
Statewide Peak Window Count	2099	502	--	--
	(8/7-8/13)	(7/3-7/9)		
# Active Sites	6			

“**Fledge Rate**” equals the number of chicks fledged per incubating adult. This number should be considered an estimate as there is not a high degree of confidence in the incubating adult and fledge number as these data points are very difficult to collect. Because of this difficulty, there is no statewide fledge rate tallied here.

“**Peak Total Adult Count**” & “**Peak Incubating Adult Count**” are the highest adult counts observed at any point during the breeding season. “**Statewide Peak Window Count**” represents the highest tally for one one-week survey window. This species exhibits a high degree of intra-year movements so both numbers are important to understand the distribution of adults and habitat use (on site and state levels) in NJ.

New Jersey Black Skimmer Population: 2012-2021



Note: The number of colonies only includes sites where active nesting was documented.

Least Tern Nesting Summary

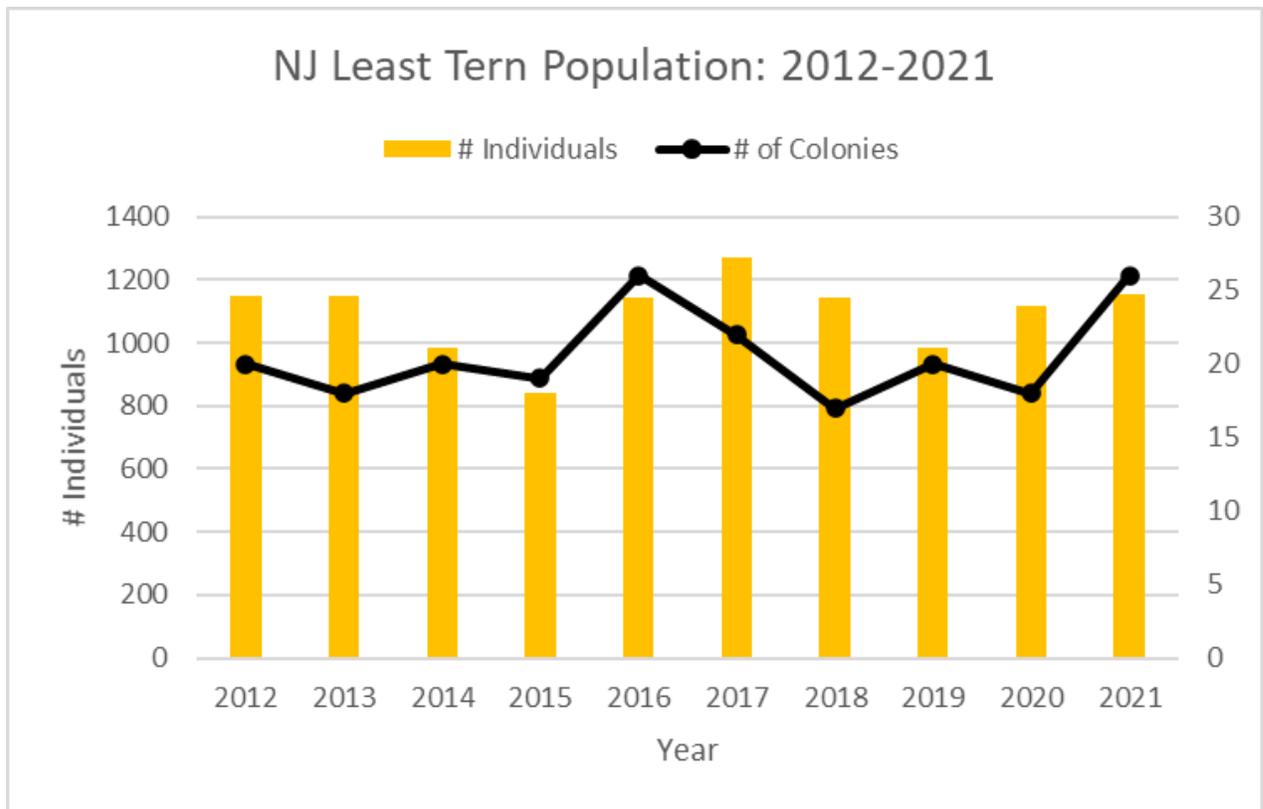
- Least Tern breeding bird surveys were conducted every week from mid-May until the end of August at beaches along the entire Atlantic coast. Active colonies (those where \geq one pair was observed with eggs) were located at 26 sites and observations were made at these locations for the duration of the season. Sites were visited 3-7x/week for management and outreach for the duration of the nesting season.
- A total of 1,153 adults were present at these sites (based on a cumulative total of peak site counts that occurred in the 3-9 July survey period). The summed peak adult number from each site was 2,178. A large difference between these two numbers can suggest failure at a given site and then relocation/renesting to another site; this appeared to be the case in 2021.
- A peak (census period of 3-9 July) of 584 adult Least Terns were observed incubating. Productivity was low for Least Terns with 301 fledglings produced statewide at 0.52 fledglings/pair, based on the peak number of incubating adults.
- The number of active Least Tern colonies (26) increased in 2021 compared to 2020 (18) and 2019 (20). Some of the increase is likely due to monitoring being resumed after COVID restrictions were lifted, but some of the increase was authentic. The species continues to be distributed rather evenly across sites and the state, in terms of location and number of individuals in colonies, and this is a positive note for this species. However, only 31% of sites produced fledglings, and even at most of those sites the productivity rates were extremely low. Further, 65% of fledges were produced from just one site (Point Pleasant Beach).
- Predators continue to be the primary limiting factor for this species. Every colony sustained catastrophic or near catastrophic loss by predators, causing the birds to re-nest multiple times. Due to their colonial and garrulous nature, they are easily located by predators. As with all terns, they will dive-bomb intruders, but their diminutive size often makes their defenses unsuccessful against their predators, who are generally much larger. Species managers are continuing to work on addressing this issue, not only through predator removal but also considering other options to manage predation. This has proven to be an especially difficult issue for this species. The experiment with metal predator fence at The Nature Conservancy showed excellent promise, though it is too labor intensive to be implemented state-wide.
- Please note that the data in the following table is presented both in terms of peak tallies of each site *and* the peak counts statewide in a given survey window. It is presented by site so that the use of any given location can be understood. However, simply tallying these peaks can lead to double counting individuals since this species is known to use multiple sites in one year (e.g. a colony fails at one site and they re-nest at another site.) so the statewide peak window count is an effort to reduce that issue and add context to the site total figures.

New Jersey Least Tern Nesting Summary by Site: 2021

SITE	Site Peak Total Adult Count	Site Peak Incubating Adult Count	Chicks Fledged	Fledge Rate
<i>Sandy Hook</i>				
North Beach	11	6	2	0.33
North Beach Rec	6	1	0	0.00
North Gunnison	17	7	0	0.00
Critical Zone	18	9	0	0.00
South Fee Beach	3	1	0	0.00
Sea Bright – North	97	44	0	0.00
Monmouth Beach - North/SBSO	87	28	0	0.00
Seven Presidents County Park	20	1	0	0.00
Long Branch	4	2	0	0.00
Deal	30	10	3	0.30
Belmar – Shark River Inlet	58	22	0	0.00
Sea Girt – Wreck Pond	37	3	0	0.00
Point Pleasant Beach	288	229	197	0.86
Mantoloking	31	10	0	0.00
Barnegat Light (Restoration Area)	30	13	6	0.46
<i>EB Forsythe NWR</i>				
Holgate – North	264	71	7	0.00
Holgate – South	134	70	0	0.10
Little Beach	12	6	0	0.00
Horseshoe Island	470	224	30	0.13
Malibu Beach WMA	90	26	6	0.23
Ocean City – North	191	53	0	0.00
Corson’s Inlet State Park	8	3	0	0.00
Strathmere Natural Area	26	4	0	0.00
Strathmere – Upper Township	21	11	0	0.00
Stone Harbor Point	35	20	0	0.00
Cape May NWR – 2 Mile	20	7	0	0.00
<i>South Cape May Meadows</i>				
The Nature Conservancy	145	47	50	1.06
Cape May Point State Park	25	11	0	0.00
NJDFW sites TOTAL	1548	714	242	--
All NJ sites TOTAL	2178	939	301	--
Statewide Peak Window Count	1153	584	--	--
	(7/3-7/9)	(7/3-7/9)		
# Active Sites	26			

- “Fledge Rate” equals the number of chicks fledged per incubating adult. This number should be considered an estimate as there is not a high degree of confidence in the incubating adult and fledge numbers. As these data points are very difficult to collect.
- “Peak Total Adult Count” & “Peak Incubating Adult Count” are the highest adult counts observed at any point during the breeding season. “Statewide Peak Window Count” represents the highest tally for one two-week survey window. This species exhibits a high degree of intra-year movements so both numbers are important to understand the distribution of adults and habitat use (on site and state levels) in NJ.

New Jersey Least Tern population: 2012-2021



Note: The number of colonies only includes sites where active nesting was documented.

American Oystercatcher Nesting Summary

- Although American Oystercatchers are a management priority in areas of high human disturbance, resource limitations dictate that the data collected on this non-listed species is not comprehensive to the state; it is well known that many individuals nest in the marsh, but the vast majority are not tracked. The locations listed in the table are all monitored sites with reproductive information available and were visited between 1x/week (or less) to 7x/week.
- There was another increase in the number of pairs that were monitored by NJDFW and partners compared to 2020 (169 vs. 152 pairs). However, since there is not yet an ability to monitor all the pairs in the state, it is difficult to put this into context. A better index may be to look at just Atlantic coast beach strand pairs, where a longer and more comprehensive dataset exists. In 2021, there was a slight increase in beach strand pairs to 143 (140 in 2020). The utilization of beach strand habitat has increased dramatically where there were 53 pairs monitored in 2003. The nesting sites with the highest pair numbers on the beach strand in 2021 were Holgate (37), Stone Harbor Point (27), Sandy Hook (25), and Little Beach (10). Of the 169 pairs, just 55 pairs (33%) hatched at least one egg.
- There were 320 nesting attempts but only 62 nests hatched (19%). Of the failed nests, 45% were lost to predators, 33% to flooding, 21% to an undetermined cause (many of these are likely predators, but there was not enough evidence to confirm), and 1% to abandonment. Similar to Piping Plovers, there was a notable up-tick this year in losses due to flooding, mostly attributed to the impact of the Memorial Day weekend nor'easter (33% in 2021 vs. 17% in 2020).
- The American Oystercatcher Working Group recommends a goal of 0.50 fledglings/pair but the reproductive output of monitored pairs in 2021 was only 0.24 fledglings/pair. Some of this rate is explained by the effect of the low hatch rate and hence the lost reproductive potential (only 124 chicks hatched from those 320 nesting attempts). For the chicks that did hatch, it was difficult to pinpoint the cause of chick loss, but it was almost certainly driven by predators. Stone Harbor Point was the only site that carried a significant number of pairs (27) that also hit the productivity goal (0.59 fledglings/pair). Just two sites (Stone Harbor Point and Holgate) fledged 56% of the state's fledglings.
- NJDFW and The Wetlands Institute banded a small number of American Oystercatchers this year. There were plans to band more birds, but the low hatch/fledge rates and recovery from the nor'easter hampered efforts. In total, 10 individuals were banded.
- Due to continuing uncertainties regarding the status of the state population (due to difficulty of fully surveying the marsh islands of the Atlantic coast and habitat along the Delaware Bay), an aerial survey effort was undertaken this year. The focus was the marsh islands from Mantoloking to Cape May and the survey was timed to coincide with peak incubation, in hopes that at least one adult would be present in each territory. Detection of single pairs in the marsh was not at a high enough rate (confirmed by comparing to ground surveys) for this to be considered a viable survey methodology. Biologists will continue to pursue methods to better census the state's population.
- Of the four species, American Oystercatchers continues to show the greatest elasticity in their nesting, utilizing natural areas of marsh islands and beaches. They also use a greater variety of atypical areas – highly groomed beaches, rooftops, and grassy strips in parking lots among them. The number of pairs that are monitored by NJDFW and partners continues to increase each year but the reasons for the increase are not fully understood. Reproductive success at monitored sites does not suggest that the population is increasing. Some of the increase could be due to pairs shifting to the beach strand, where focused monitoring is occurring, and they are now being captured in datasets (when they may have been absent from it when in marsh). It could be due to a continuing effort among all partners to increase monitoring of marsh and bayside pairs. As is observed with other species, there could be some immigration from other states. It is also possible that the reproductive output needed to increase this population is lower than previously presumed. More work is needed to understand the factors at play.

New Jersey American Oystercatcher Nesting Summary by Site: 2021

All Monitored Sites

SITE	Pairs	Pairs Hatched	Chicks Fledged	Pair Success	Fledge Rate
Sandy Hook NRA	25	0	0	0.00	0.00
<i>Coast Guard</i>	2	0	0	0.00	0.00
<i>North Beach</i>	4	0	0	0.00	0.00
<i>North Gunnison</i>	8	0	0	0.00	0.00
<i>South Gunnison</i>	3	0	0	0.00	0.00
<i>E-Lot</i>	1 ¹	0	0	0.00	0.00
<i>D-Lot</i>	1 ¹	0	0	0.00	0.00
<i>Critical Zone</i>	2	0	0	0.00	0.00
<i>Hidden Beach</i>	3	0	0	0.00	0.00
<i>Fee Beach</i>	1	0	0	0.00	0.00
<i>South Fee Beach</i>	1	0	0	0.00	0.00
Sea Bright North	1	0	0	0.00	0.00
Monmouth Beach North ²	1	0	0	0.00	0.00
Region 2 Subtotal	27	0	0	0.00	0.00
Long Branch	2	2	1	1.00	0.50
Bradley Beach	1	1	0	1.00	0.00
Avon	1	1	1	1.00	1.00
Belmar-Shark River Inlet	1	0	0	0.00	0.00
Belmar – Beachfront	1	1	0	1.00	0.00
Sea Girt – Wreck Pond	1	0	0	0.00	0.00
Manasquan	1	1	1	1.00	1.00
Treasure Island	1	1	0	1.00	0.00
Point Pleasant	1	1	1	1.00	1.00
Island Beach SP – SNA	1	0	0	0.00	0.00
Barnegat Light	1	1	1	1.00	1.00
Region 3 Subtotal	12	9	5	0.75	0.42
Mordecai Island	1	0	0	0.00	0.00
Holgate	37 ¹	12	9	0.32	0.24
Tucker’s Island	1 ¹	0	0	0.00	0.00
Little Beach	10	1	0	0.10	0.00
Horseshoe Island	6	1	1	0.17	0.17
Region 4 Subtotal	54	14	10	0.26	0.19
North Brigantine Natural Area	1	0	0	0.00	0.00
Seaview Harbor Marina	1	0	0	0.00	0.00
Malibu WMA	2	0	0	0.00	0.00
Region 5 Subtotal	4	0	0	0.00	0.00
Corson’s Inlet State Park	2	0	0	0.00	0.00
Strathmere NA	1	0	0	0.00	0.00
Avalon – Dunes	1	0	0	0.00	0.00
Region 6 Subtotal	4	0	0	0.00	0.00
Gull Island – Middle Township	11	6	5	0.55	0.45
Sturgeon Island	3	2	0	0.67	0.00
Ring Island	8	3	1	0.38	0.13
Great Flat	2	0	0	0.00	0.00
Stone Harbor Point	27	16	14	0.59	0.52
North Wildwood	1	1	1	1.00	1.00
Two-Mile Beach	7	5	5	0.71	0.71
<i>Cape May NWR</i>	3	1	0	0.33	0.00
<i>USCG LSU</i>	4	4	5	1.00	1.25
Coast Guard-TRACEN	3	0	0	0.00	0.00
Cape May City	1	1	0	1.00	0.00
Cape May Meadows	5	1	0	0.20	0.00
<i>The Nature Conservancy</i>	3	1	0	0.33	0.00
<i>Cape May Point State Park</i>	2	0	0	0.00	0.00
Region 7 Subtotal	68	35	26	0.51	0.38
All NJ sites TOTAL	169	58	41	0.34	0.24
# Active Sites	46				

¹ The same pair nested at two nearby sites. Therefore “subtotals” and “totals” are less than sum of individual sites.

² This site includes Sea Bright – South and Monmouth Beach – North