

2020 New Jersey Beach-Nesting Bird Project Report



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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 2020 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, which was exacerbated by challenges brought forth by SARS-CoV-2 (hereafter COVID), not all potential sites in the state were surveyed for all species. All known nesting sites for Piping Plover and most known nesting sites for Least Tern were monitored. All known beach strand nesting sites for Black Skimmer were monitored but only a small number of marsh island sites were monitored. All known beach strand nesting sites for American Oystercatcher were monitored but only very few marsh island and non-traditional (parking lots, rooftops) sites were identified or monitored.

No summary of the 2020 field season would be complete without considering the impact that COVID had on it. For many cooperators (including NJDFW) there were significant obstacles to overcome. Staff levels were lower than usual (including via furloughs), intern projects were cancelled, and volunteer help was modified or delayed in an effort to adhere to safety guidelines. This led to lower levels of monitoring for many partners and, in some cases, the inability to monitor at all. Management was impacted in that some sites could not utilize exclosures or fencing took longer to erect due to lower staff/volunteer levels and safety protocols. Outreach was extremely difficult to carry out; volunteers were not available to help with this task, all indoor trainings and programs were cancelled, and even one-on-one exchanges were mired in difficulties of maintaining social distance while communicating. Although there was a short period in the spring when many beaches were closed, all of these issues were compounded by the influx of people utilizing the beach when they reopened. Many cooperators (including NJDFW) reported higher than normal use of beaches, adding pressure to the habitat in a way most had not previously experienced, and law enforcement was stretched extremely thin. Nonetheless, resiliency and adaptation were on full display as partners adjusted their protocols to ensure safety measures were in place while still working to protect the birds. It was a season without precedent, but the NJ BNB team faced the challenge and still found some successes within it.

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. Depredation 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 confirmation by red fox, gulls and Peregrine Falcon while Great-horned Owl, and ghost crab were strongly suspected. Predation management efforts were increased at some sites, while others were not possible due to logistical issues. All partners continued to hone their techniques and explore ways in which to reduce the impact of predators on beach-nesting bird species.

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

and a decline in pairs occurred. This follows a troubling pattern of an unstable population in NJ, despite relatively high productivity for the last seven seasons. On a positive note, Cape May County picked up two nesting sites this year (Ocean City – North and Coast Guard-TRACEN) and the state’s overall productivity was higher than the long-term average, and markedly so at some sites and regions. The dominance of Seaview Harbor Marina as the premiere nesting area for Black Skimmers continued in 2020, but sites such as Stone Harbor Point continued to expand their proportion of the state’s population. Despite low productivity, Least Terns continued to be distributed rather evenly throughout the state. The same was true for American Oystercatchers, the one beach-nesting bird that continues to showcase its elasticity by utilizing a variety nesting site types throughout the beach strand of NJ.

Banding of plovers, skimmers and oystercatchers was impacted by COVID, resulting in fewer birds marked. The SUNY-ESF Piping Plover research projects, which resulted in hundreds of plovers banded from 2012-2019, were completed and this further reduced the number of birds banded. However, a small number of plovers associated with the Barnegat Light restoration project were marked in 2020. NJDFW and The Wetlands Institute adjusted protocols to allow them to safely trap and band Black Skimmers. The total number of skimmers banded was reduced from last year, but banding did occur for the first time at Seaview Harbor Marina, a positive step forward. A small number of juvenile American Oystercatchers were also banded at sites throughout the state.

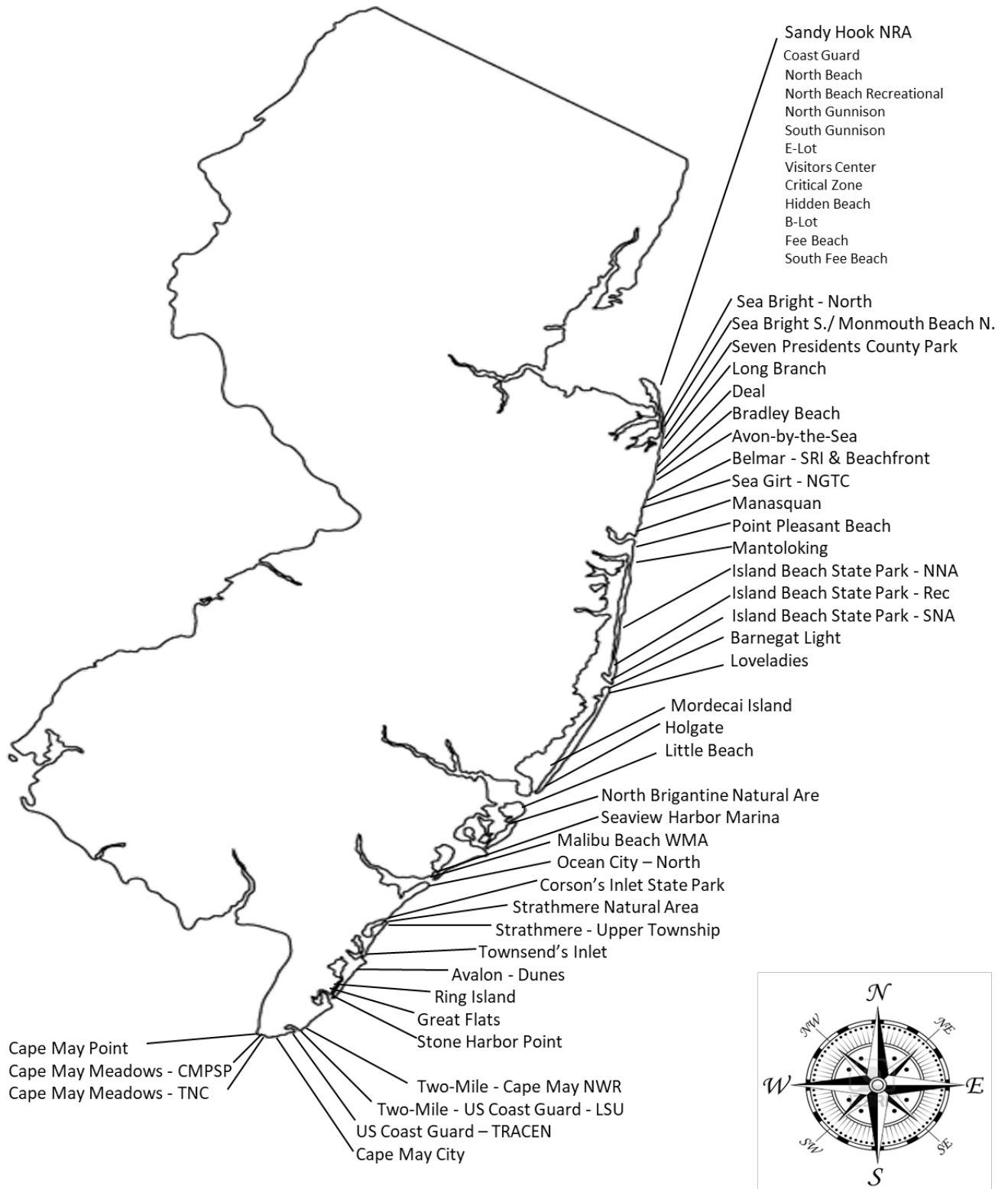
More so than any year in the recent past, the NJDFW wishes to express its profound gratitude to all the cooperators that worked tirelessly to ensure that the birds were protected during the 2020 field season.

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, USCG - TRACEN, The Nature Conservancy, The Wetlands Institute, & New Jersey Audubon Society.

A more detailed report for Piping Plover can be requested through NJDWF-ENSP.

New Jersey Beach Nesting Bird Sites: 2020



** This map represents all the Atlantic Coast sites where confirmed nesting was 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 three (103) pairs of Piping Plovers nested in New Jersey in 2020, an 10% decrease from 2019 (114) and a 7% increase from 2018 (96). This tally continued the highly unstable nature of the NJ population, despite higher than average productivity, over the last seven years.
- Pairs nested at 20 sites statewide, a sharp decrease from 27 in 2019 and back to the lower rates observed over the last 5+ years. The distribution continues to heavily favor the northern part of the state, but the only two new sites added were in Cape May County. Those two sites were Ocean City – North (last active in 2005) and Coast Guard - TRACEN (last active in 2013).
- The 103 pairs laid 154 nests. Of those nests, 71 hatched (46%), 82 failed (53%) and one had an unknown outcome (1%). Of the 82 that failed, 38 were lost to predators (46%), 15 to flooding (18%), four to abandonment (5%), two were blown over (3%), and 23 had undetermined failure (28%). Notably, only one of the abandonments was of an enclosed nest.
- Statewide pair-nest success (the percentage of pairs that successfully hatch at least one nest) decreased in 2020 compared to 2019 (69% vs. 83%, respectively), but was on par for the period since federal listing (70%).
- The statewide productivity rate was 1.29 fledglings/pair, similar to 2019 (1.24 fledglings/pair) and higher than the average since federal listing (1.05 fledglings/pair).
- NJ biologists continued to use predator exclosures in 2020, albeit at a much lower rate due to COVID restrictions and concerns of predators keying in on them. This year, just 30 nests were exclosed, or 19% of nesting attempts. The exclosed hatch rate was 77%. The abandonment rate for exclosed nests was 3% (abandonments can suggest an adult mortality event). The unexclosed hatch rate was 39%. Of the nests not exclosed, 31% were lost to predators.
- The majority of plovers (77%) are still nesting at two federal sites (Gateway NWA – Sandy Hook and EB Forsythe NWR). The loss of pairs this year at presumably less desirable sites highlighted this trend even more than in the past. Monmouth County non-federal properties lost both sites (no birds present) and pairs from sites (fewer pairs present at an active site). Cape May County continued its slow upward trend with seven pairs at four sites. Although still far from its peak of 43 pairs in 2002, it is up from 2018 when there were three pairs at just one site.
- The decrease in pair number ended the short-lived relief of 2019 when pair numbers rebounded. 2020 brought back the nagging questions that have dogged biologists since 2014, most especially why there is so much instability in the population when the productivity has been at its highest consecutive rates since monitoring began in the 1980s. In the 2019 report, biologists were concerned about the sustainability of that year's increase and those concerns were justified. As in 2017 and 2018, there were also a larger number of bachelor birds than average, reigniting concerns that there may not be enough breeding opportunities for plovers in NJ. More work is needed to understand these patterns and how to break out of this cycle.
- 2020 represented the seventh year that plovers were banded in the state. However, due to the conclusion of the State University New York-ESF study in 2019 and COVID restrictions in 2020, just seven plovers were banded, all chicks from the Barnegat Light Restoration Area. That brings the total number of plovers banded in NJ since 2012 to 654. Managers hope to increase the number of birds banded in future years, as this data provides a wealth of information on NJ plovers.

New Jersey Piping Plover Nesting Summary by Site: 2020

Site	2020					
	Pairs	Pairs Hatched	Chicks Fledged	Pair Success	Fledge Rate	SP Fledge Rate
Sandy Hook NRA	40	21	31	0.53	0.78	1.48
<i>Coast Guard</i>	2	0	0	0.00	0.00	0.00
<i>North Beach</i>	11	4	7	0.36	0.64	1.75
<i>North Beach Recreational</i>	2	2	1	1.00	0.50	0.50
<i>North Gunnison</i>	8	8	15	1.00	1.88	1.88
<i>South Gunnison</i>	4	4	5	1.00	1.25	1.25
<i>Critical Zone</i>	6	1	1	0.17	0.17	1.00
<i>Fee Beach</i>	4	1	0	0.25	0.00	0.00
<i>South Fee Beach</i>	3	1	2	0.33	0.67	2.00
Sea Bright - North	6	4	13	0.67	2.17	3.25
Monmouth Beach – North ¹	2	1	1	0.50	0.50	1.00
Region 2 Subtotal	48	26	45	0.54	0.94	1.73
Sea Girt - NGTC	1	1	3	1.00	3.00	3.00
Island Beach SP NNA	4	4	5	1.00	1.25	1.25
Barnegat Light	2	2	5	1.00	2.50	2.50
Region 3 Subtotal	7	7	13	1.00	1.86	1.86
EB Forsythe NWR	39	30	65	0.77	1.67	2.17
<i>Holgate</i>	29	21	51	0.72	1.76	2.43
<i>Little Beach</i>	10	9	14	0.90	1.40	1.56
North Brigantine NA	2	2	4	1.00	2.00	2.00
Region 4 Subtotal	41	32	69	0.78	1.68	2.16
Ocean City North	2	1	3	0.50	1.50	3.00
Region 5 Subtotal	2	1	3	0.50	1.50	3.00
Corson's Inlet SP	2	2	2	1.00	1.00	1.00
Region 6 Subtotal	2	2	2	1.00	1.00	1.00
Stone Harbor Point	2	2	0	1.00	0.00	0.00
Coast Guard – TRACEN	1	1	1	1.00	1.00	1.00
Region 7 Subtotal	3	3	1	1.00	0.33	0.33
NJDFW sites TOTAL	24	20	37	0.83	1.54	1.85
All NJ sites TOTAL	103	71	133	0.69	1.29	1.87
# Active Sites	20					

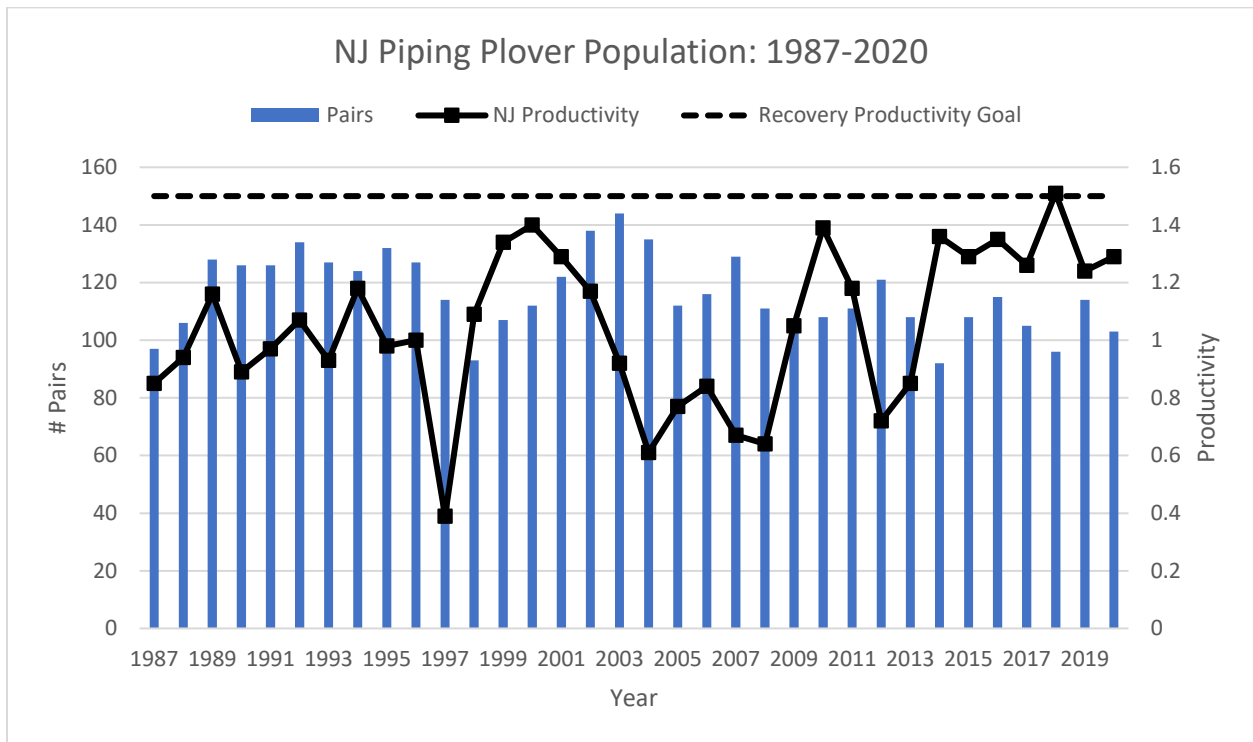
¹ This site includes Sea Bright – South and Monmouth Beach – North

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: 1987-2020



Black Skimmer Nesting Summary

- Black Skimmer breeding bird counts were conducted every week at active sites from arrival (mid-May) until nesting ceased (September-October) on beaches along the Atlantic coast. Marsh islands were not surveyed, due to lack of resources and COVID restrictions. Ground surveys took place at ten sites and active nesting (at least one nest with eggs) was observed at four sites. These four sites were visited 3-7x/week for management and outreach for the duration of the nesting season.
- A total of 2,197 adults were present at the 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 2,554. The larger the difference between these two numbers, the more likely it is there was failure at any given colony and then relocation/renesting to another colony and that does appear to have happened this year. As has now been the case since 2010, the majority (61%) of the state's known population was present at Seaview Harbor Marina (SHM) in Longport (1,340 peak adult count). However, the percent majority continued its downward trend, which peaked at 89% of the state's population in 2012. Skimmers were documented continuing to visit the sandy restored areas of marsh islands (Ring Island and Mordecai Island), but no nesting was documented this year.
- A peak count of 530 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, the vegetation at SHM blocked observers from garnering an accurate perimeter count of these ground nesters.
- Black Skimmer statewide productivity appeared to be low-moderate with 511 fledglings produced statewide. This translates to 0.96 fledglings/pair if calculated on the peak incubating adult count. If the peak period total adult number is halved and used as the pair count, the productivity is 0.40. The true rate is likely somewhere in the middle. Unlike 2019, when fledges were distributed more evenly around the state, SHM produced the bulk of the state's fledges, at 80%. Stone Harbor Point produced 20% and Point Pleasant Beach and Holgate produced no fledges. After a promising start at Point Pleasant Beach in 2019, the lack of productivity in 2020 was a disappointment. Depredation and human disturbance were the primary factors responsible for nest and chick loss at these sites.
- NJDFW and The Wetlands Institute (TWI) worked cooperatively to band 70 Black Skimmer near-fledglings, fledglings and adults on/around Stone Harbor Point and SHM. COVID greatly reduced the ability for staff to band birds, but this effort did represent the first time skimmers were banded at SHM. Nocturnal efforts for banding near-fledglings continued to be the preferred technique for this age group, but noose mats were used to good effect diurnally for fledglings and adults. Long-term goals of banding include better understanding of site fidelity and inter-state movements (particularly with New York breeding birds).
- Over the course of fall 2019 - fall 2020, 98 individuals banded in NJ from 2016-2020 were observed either on migration or wintering grounds. Banded skimmers from MA (3), NY (25), Virginia (1), and North Carolina (1) were observed in NJ as migrants. A total of 270 skimmers have been banded in NJ since 2016.

New Jersey Black Skimmer Nesting Summary by Site: 2020

SITE	Peak Total Adult Count	Peak Incubating Adult Count	Chicks Fledged	Fledge Rate
Point Pleasant Beach	109	25	0	0.00
Holgate - South	169	64	0	0.00
Seaview Harbor Marina	1340	253	408	1.61
Stone Harbor Point	936	297	103	0.34
NJDFW sites TOTAL	2385	801	511	--
All NJ sites TOTAL	2554	837	511	--
Statewide Peak Window Count	2197	530	--	--
	(8/7-8/13)	(7/3-7/9)		
# Active Sites	4			

“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.

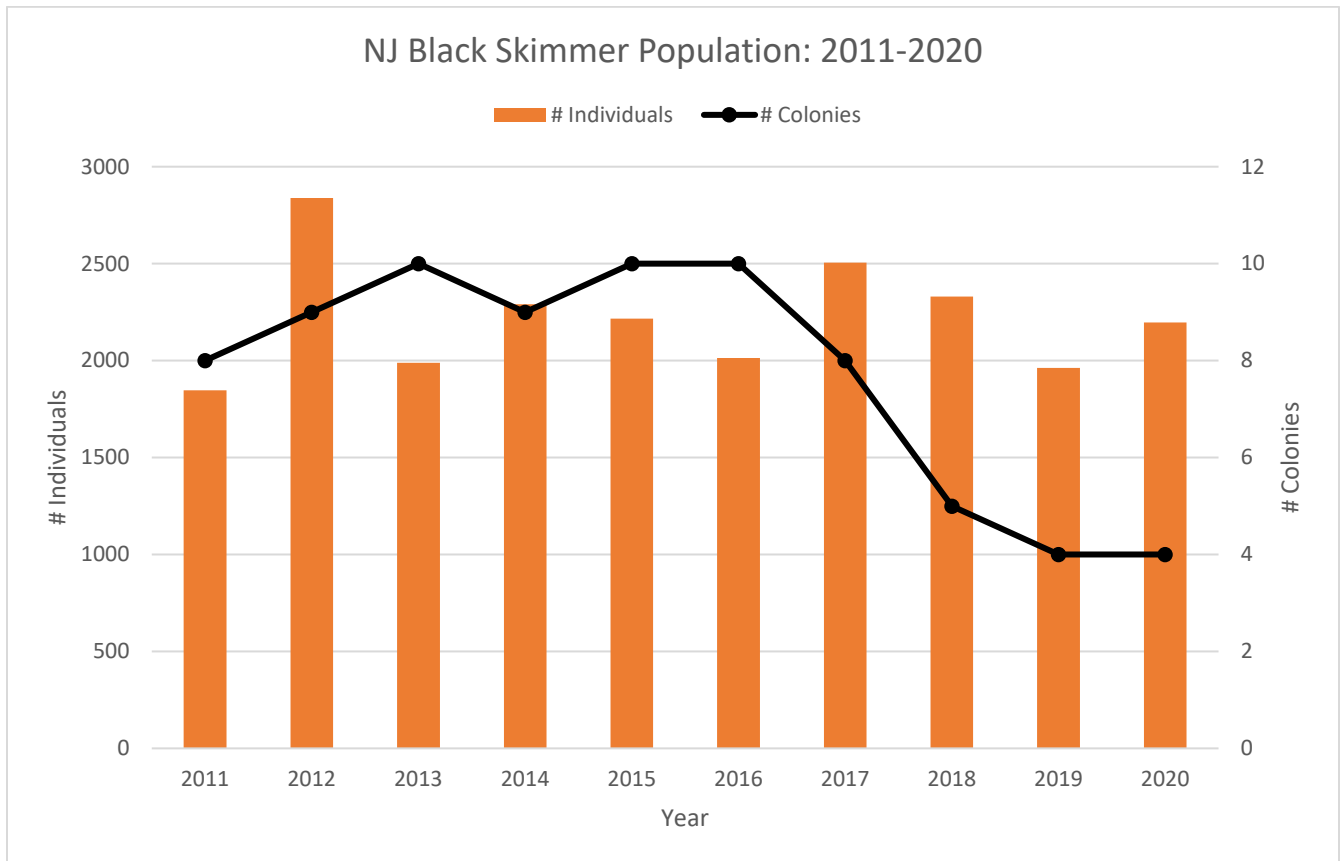
“Peak Total Adult Count” & “Peak Incubating Adult Count” are the highest adult counts observed at any point during the breeding season. “Statewide Peak Window Count” represents the highest tally for one one-week survey window. This species exhibits a high degree of intra-year movements so both numbers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

The following sites had adults present during some surveys but nesting was not confirmed.

- Belmar – Shark River Inlet
- Mantoloking
- Mordecai Island
- Ocean City – North
- Ring Island
- Corson’s Inlet State Park

Please note that the data in the 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 Population: 2011-2020



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

Least Tern Nesting Summary

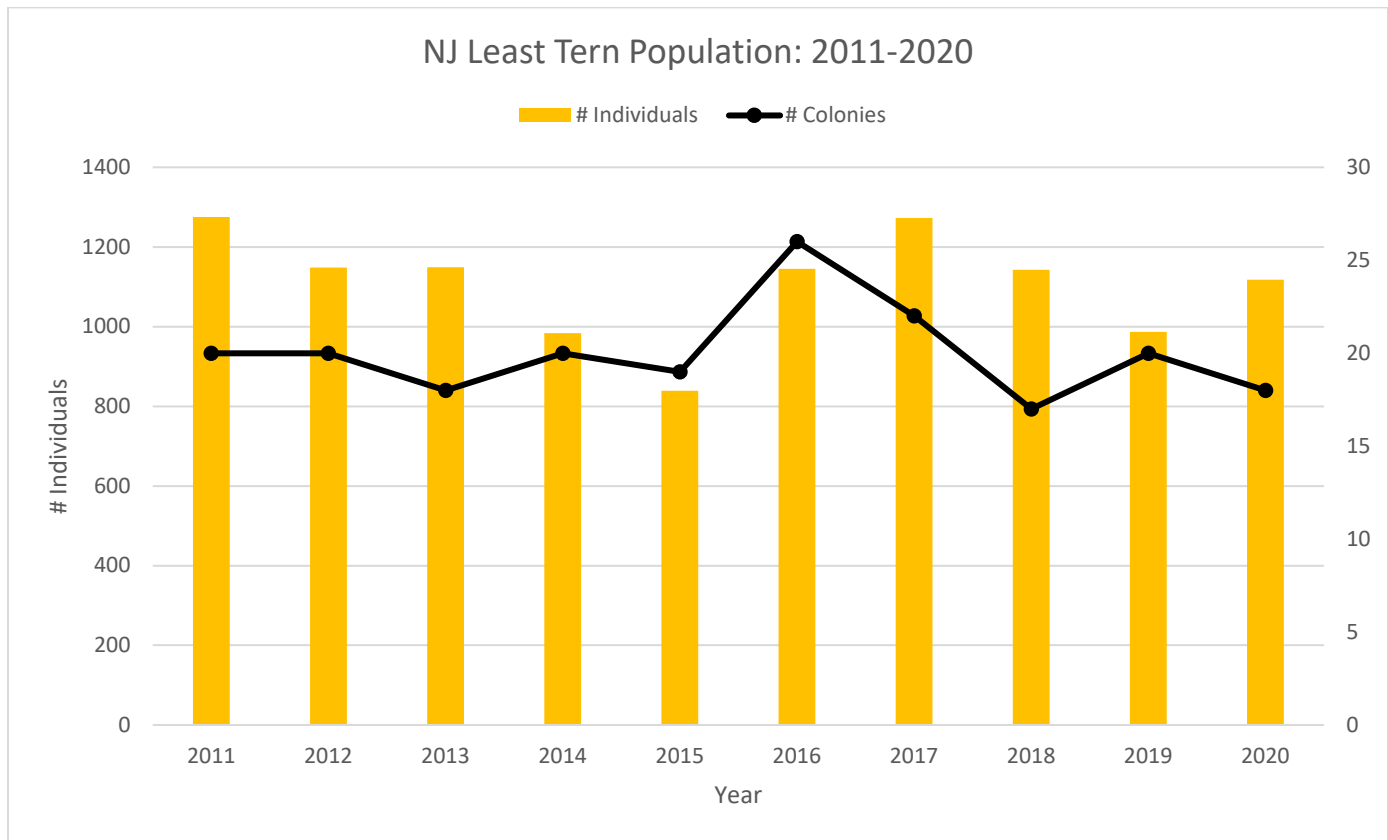
- Least Tern breeding bird surveys were conducted every week from mid-May until the end of August at beaches along the Atlantic coast. Active colonies (those where \geq one pair was observed with eggs) were located at 18 sites and observations were made at these locations for the duration of the season. Sites were visited 3-7x/week for management and outreach for the duration of the nesting season. Due to COVID, monitoring of some sites with terns was not possible, so the population and colony numbers are likely underestimates.
- A total of 1,118 adults were present at these sites (based on a cumulative total of peak site counts that occurred in the 12-18 June survey period). The summed peak adult number from each site was 1,515. A large difference between these two numbers can suggest failure at a given colony and then relocation/re-nesting to another colony, which given the data and on-the-ground observations appears to have happened in 2020.
- A peak (census period of 19-25 June) of 586 adult Least Terns were observed incubating. Productivity was low for Least Terns with 124 fledglings produced statewide (0.21 fledglings/pair, based on the peak number of incubating adults).
- The population was distributed fairly evenly throughout the state and six colonies had >100 adults. The largest colony was at Holgate - South, with 293 adults on its peak count, followed by Holgate - North with 220 adults at its peak. These two colonies very likely had a fair bit of exchange. The next largest colony was at Point Pleasant Beach with 205 adults at its peak. After a promising start in 2019, Point Pleasant Beach's productivity (16 fledglings) was a disappointment.
- 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.
- 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: 2020

SITE	Site Peak Total Adult Count	Site Peak Incubating Adult Count	Chicks Fledged	Fledge Rate
Sandy Hook – North Beach Rec	14	11	--	--
Sea Bright - North	100	63	3	0.05
Monmouth Beach - North/SBSO	27	4	0	0.00
Seven Presidents County Park	29	6	0	0.00
Belmar – Shark River Inlet	57	16	0	0.00
Point Pleasant Beach	205	132	16	0.12
Mantoloking	75	40	4	--
EB Forsythe NWR				
<i>Holgate – North</i>	220	81	20	0.25
<i>Holgate – South</i>	283	167	21	0.13
<i>Little Beach</i>	2	2	0	0.00
North Brigantine Natural Area	7	7	0	0.00
Malibu Beach WMA	38	6	7	1.17
Ocean City - North	197	138	36	0.26
Corson’s Inlet State Park	117	56	9	0.16
Strathmere Natural Area	86	44	0	0.00
Stone Harbor Point	84	61	0	0.00
Cape May City – Poverty Beach	4	2	0	0.00
Cape May Meadows - TNC	81	19	8	0.42
NJDFW sites TOTAL	1026	575	75	
All NJ sites TOTAL	1515*	855	124	
Statewide Peak Window Count	1118	586		
	(6/12-6/18)	(6/19 - 6/25)		
# Active Sites	18			

- “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.
- There were adults present at multiple sites in the state during one or more survey periods, but they are not included here as no nesting was ever confirmed and for space constraints.
- * This tally uses a peak for Holgate provided by the cooperator (392) and not the individual tallies of the north and south sub-colonies presented here. Substantial interplay between the sub-colonies was observed so simply summing would lead to a known overestimate.

New Jersey Least Tern population: 2011-2020



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 neither comprehensive to the state (it is well known that many individuals nest in the marsh, but the vast majority are not tracked) nor is the data broken down in the same way it is for the listed species. The sites listed in the table were visited anytime from 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 2019 (152 vs. 148 pairs). However, since there is not an ability to monitor all the pairs in the state, it is difficult to put this into context (COVID halted a planned 2020 effort to aerially survey the marsh islands to better estimate the state's population. It is currently rescheduled for 2021). The nesting sites with the highest pair numbers on the beach strand were Holgate (36), Stone Harbor Point (26), Sandy Hook (20), and Little Beach (13). An eleven pair increase at Holgate (compared to 2019) was notable and it is not clear whether this suggests more adults in the state's population or adults migrating away from marsh island nesting areas. Of the 152 pairs, just 55 pairs (36%) hatched at least one egg.
- There were 291 nesting attempts but only 55 nests hatched (19%). Of the failed nests, 48% were lost to predators, 35% to an undetermined cause (many of these are likely predators, but there was not enough evidence to confirm), and 17% to flooding.
- The American Oystercatcher Working Group recommends a goal of 0.50 fledglings/pair and the reproductive output of monitored pairs was 0.34 fledglings/pair. It is difficult to pinpoint the cause of chick loss, but it is almost certainly driven by predators. Counterintuitively, the most natural sites did not have the highest fledge rates. There are likely many reasons for this, including that some sites with only one pair (and no other BNB species) may fly under the radar of many predators, who likely are spending more time in the natural areas, where food of all types is more prevalent.
- NJDFW and The Wetlands Institute banded American Oystercatchers, although COVID impacted the ability to do this at the scale that was planned. In total, 20 individuals were banded.
- Of the four species, American Oystercatchers show the greatest elasticity in their nesting, utilizing natural areas of marsh islands and beaches. However, they also are using more atypical areas – highly groomed beaches, rooftops, and grassy strips in parking lots among them. NJDFW and SUNY-ESF ran a preliminary analysis to help explain site selection in non-natural areas and discovered some landscape features that may be driving nesting in these areas. They expect to release these findings, as they are finalized, over the coming months.
- Marine debris is an ever-present problem for all beach-nesting bird species but oystercatcher is the most frequent victim of fishing line entanglements, likely due to its proclivity for foraging on jetties. Their legs get tangled but they can still fly, making them exceptionally difficult to trap if they are not associated with a nest or chicks (which can be used as a lure). If the line is not removed, observers note the legs getting increasingly swollen and infected and then the bird disappears, presumably because it perished. It is a frustrating issue because if the bird is trapped, treatment in the field (removing the line and applying medication to any cuts or wounds) can be highly effective. Few individuals have required follow-up with a rehabilitator post-capture. NJDFW has increased educational efforts on this issue and is actively testing methods to trap hard-to-capture entangled birds. In 2020, whoosh nets and net guns were used to attempt trapping this species, and other BNB, that were entangled. This is an area that still needs further work to identify the most successful options.

American Oystercatcher Nesting Summary by Site: New Jersey 2020

All Monitored Sites

SITE	Pairs	Pairs Hatched	Chicks Fledged	Pair Success	Fledge Rate
Sandy Hook NRA	20	2	0	0.10	0.00
<i>Coast Guard</i>	2	0	0	0.00	0.00
<i>North Beach</i>	8	1	0	0.13	0.00
<i>North Gunnison</i>	4	1	0	0.25	0.00
<i>South Gunnison</i>	2	0	0	0.00	0.00
<i>E-Lot</i>	1	0	0	0.00	0.00
<i>Visitor's Center</i>	1	0	0	0.00	0.00
<i>Fee Beach</i>	2	0	0	0.00	0.00
Sea Bright North	2	0	0	0.00	0.00
Monmouth Beach North ²	1	0	0	0.00	0.00
Region 2 Subtotal	23	2	0	0.09	0.00
Long Branch	1	1	2	1.00	2.00
Deal	1	0	0	0.00	0.00
Bradley Beach	1	1	2	1.00	2.00
Avon	1	1	1	1.00	1.00
Belmar-Shark River Inlet	1	0	0	0.00	0.00
Belmar – Beachfront	1	0	0	0.00	0.00
Sea Girt – NGTC	1	0	0	0.00	0.00
Manasquan	1	1	0	1.00	0.00
Point Pleasant	1	0	0	0.00	0.00
Island Beach SP – NNA	1	0	0	0.00	0.00
Island Beach SP – Recreational	1	0	0	0.00	0.00
Island Beach SP – SNA	1	0	0	0.00	0.00
Barneгат Light	2	0	0	0.00	0.00
Loveladies	1	0	0	0.00	0.00
Region 3 Subtotal	15	4	5	0.27	0.33
Mordecai Island	2	0	0	0.00	0.00
Holgate	36	14	10	0.39	0.28
Little Beach	13	4	3	0.31	0.23
Region 4 Subtotal	51	18	13	0.35	0.25
North Brigantine Natural Area	1	0	0	0.00	0.00
Seaview Harbor Marina	1	1	3	1.00	3.00
Malibu WMA	2	2	6	1.00	3.00
Region 5 Subtotal	4	3	9	0.75	2.25
Corson's Inlet State Park	2 ¹	1	3	0.50	1.50
Strathmere NA	2 ¹	1	0	0.50	0.00
Strathmere Upper Twp	1 ¹	0	0	0.00	0.00
Townsend's Inlet	1	0	0	0.00	0.00
Avalon – Dunes	1	1	1	1.00	1.00
Region 6 Subtotal	5	3	4	0.60	0.80
Ring Island	9	5	5	0.56	0.56
Great Flat	1	1	2	1.00	2.00
Stone Harbor Point	26	10	7	0.38	0.27
Two-Mile Beach	7	5	6	0.71	0.86
<i>Cape May NWR</i>	3	1	2	0.33	0.67
<i>USCG LSU</i>	4	4	4	1.00	1.00
Coast Guard-TRACEN	4	1	0	0.25	0.00
Cape May City	1	1	1	1.00	1.00
Cape May Meadows	5	2	0	0.40	0.00
<i>The Nature Conservancy</i>	3	2	0	0.67	0.00
<i>Cape May Point State Park</i>	2	0	0	0.00	0.00
Cape May Point	1	0	0	0.00	0.00
Region 7 Subtotal	54	25	21	0.46	0.39
All NJ sites TOTAL	152	55	52	0.36	0.34

Active Sites

44

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