

# **Piping Plover Nesting Results in New Jersey – 2004**

**Provided by**

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A total of 135 pairs of piping plover nested in New Jersey in 2004, a six percent decrease from 2003 (144 pairs) and the first drop in pairs in six years. A notable decrease in breeding pairs was recorded at North Brigantine Natural Area (8 pairs vs. 17 in 2003) and Sandy Hook (32 pairs vs. 38 in 2003).

The number of active nesting sites increased slightly to 30 in 2004, up from 29 in 2003. This is the most sites recorded in the state since federal listing in 1986. New or re-populated sites in 2004 were Champagne Island and Cape May City (Poverty Beach).

A total of 261 piping plovers, including 112 pairs and 37 unpaired adults, were counted during the “census window” conducted June 1-9, 2004. The total number of adults counted during the census period (261) was lower than the final season count (275), which is typical for most years in New Jersey. The number of pairs counted during the census (112) was significantly lower than the final season count (135), however, 26 of the 37 “unpaired” adults counted during the census were recorded at Holgate and Little Beach and likely reflect differences in survey methods rather than actual unpaired status.

The statewide fledging rate, which incorporates data collected from cooperators (U.S. Fish & Wildlife Service, National Park Service and The Nature Conservancy), was 0.61 chicks per nesting pair (based on 100% of pairs). Methodologies used by cooperators, including surveying intensity and techniques, may differ from those used by NJDFW. Differences may affect accuracy and precision of nesting success and productivity estimates. Productivity at sites monitored by NJDFW was 0.70 chicks per nesting pair (based on 66 pairs, which represents 49% of the statewide pairs).

Looking at data from NJDFW monitored sites; productivity (young fledged per nesting pair) was down for the third consecutive year (1.00 in 2002, 0.77 in 2003, 0.70 in 2004), after several robust years between 1998-2001 when productivity ranged from 1.34-1.46. The recent slide in productivity is likely driving this year’s drop in pair numbers, and if productivity remains at low levels the downward trend in pair numbers is likely to continue.

Pair hatching success at NJDFW sites was up somewhat compared to last year (62% in 2004 vs. 56% in 2003), but still below the cumulative average from 1987-2004 (68%). The successful pair fledging rate at NJDFW sites was down compared to last year (1.12 chicks per successful pair in 2004 vs. 1.38 in 2003) and also below the cumulative average from 1987-2004 (1.35).

Nest failure and brood reduction contributed nearly evenly to low productivity at NJDFW sites in 2004. Of the failed nests at NJDFW sites, predation was the leading cause (43% of failures), followed by abandonment (26%) and flooding (26%). Flooding had been the major cause of nest failure for the previous three years. Abandonment rose notably in 2004, largely because of predator harassment of enclosed nests.

Looking at the major nesting sites across the state, Sandy Hook had one its poorest years on record with just a 34% pair hatching success and only 0.66 chicks fledged per pair (for 32 total pairs). Fox problems plagued Sandy Hook for the second consecutive year, resulting in high rates of both nest predation and abandonment. Both Holgate and Little Beach, the state’s other major nesting sites (with 16 and 19 pairs,

respectively) recorded poor fledging rates (0.50 and 0.21 chicks per pair, respectively).

Flooding was a factor at both sites, as well as predation of nests by fox at Little Beach.

**Other notable sites include Stone Harbor Point, where 9 pairs produced only one fledged chick (0.11 chicks per pair). Low productivity at this site was largely due to flooding of nests and high levels of predator activity (laughing gulls and cats) that resulted in predation of nest and young, as well as harassment of breeding adults. North Brigantine Natural Area had 8 nesting pairs, resulting in 0.88 chicks fledged per pair. Flooding was a problem at this site, as it has been for the past several years. Severe degradation of overwash habitat at the site significantly reduced the amount of suitable habitat available and may account for the sharp drop in the number of pairs nesting at the site. Eight (8) pairs nested in Ocean City - Center, but no chicks fledged from the site. The poor fledging rate was due to both nest predation (fox and possibly laughing gulls) and low chick survival. Avalon - Dunes, where 8 pairs fledged 0.75 chicks per pair, also experienced predator problems (primarily cats) which resulted in high levels of nest abandonment and nest predation.**

**Table 1. Number of pairs of piping plovers at New Jersey nesting sites: 1994-2004.**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
<i>Sandy Hook NRA:</i>	36	43	40	42	29	29	29	31	35	38	32
<i>Coast Guard</i>	10	10	10	11	7	9	5	6	7	8	7
<i>North Beach</i>	10	12	14	13	10	11	12	11	9	9	10
<i>North Gunnison</i>	3	4	7	8	4	3	3	3	4	5	3
<i>South Gunnison</i>	8	11	7	4	3	0	0	0	1	1	1
<i>Critical Zone</i>	5	6	2	0	0	0	0	1	2	4	3
<i>Hidden Beach</i>	0	0	0	6	4	4	3	3	5	4	3
<i>Fee Beach</i>	0	0	0	0	1	2	6	7	7	6	4
<i>South Fee Beach</i>	0	0	0	0	0	0	0	0	0	1	1
Sea Bright North	0	0	0	0	2	4	3	3	5	7	5
Monmouth Beach North	0	0	0	1	2	3	4	4	3	2	4
Monmouth Beach South	0	0	0	0	0	0	1	1	1	0	0
Seven Presidents Park	0	0	0	0	0	0	0	0	0	1	1
Long Branch	0	0	0	0	0	0	0	0	0	1	0
<b>Region 2 subtotal</b>	<b>36</b>	<b>43</b>	<b>40</b>	<b>43</b>	<b>33</b>	<b>36</b>	<b>37</b>	<b>39</b>	<b>44</b>	<b>49</b>	<b>42</b>
Sea Girt – Wreck Pond	0	0	0	0	0	0	0	0	0	1	1
Sea Girt - NGTC	0	0	0	0	0	0	0	0	1	0	0
Mantoloking	5	4	3	1	0	0	0	0	0	0	0
Island Beach SP - Dike	0	0	0	0	0	0	0	0	0	2	3
Barneget Light	9	6	5	5	2	4	3	2	3	3	3
Loveladies	1	1	1	0	0	0	0	0	0	0	0
<b>Region 3 subtotal</b>	<b>15</b>	<b>11</b>	<b>9</b>	<b>6</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>7</b>
<i>Holgate</i>	15	10	11	11	17	24	19	19	14	13	16
<i>Little Beach</i>	10	15	13	8	8	7	8	12	17	19	19
North Brigantine NA	0	1	5	8	8	6	11	12	15	17	8
<b>Region 4 subtotal</b>	<b>25</b>	<b>26</b>	<b>29</b>	<b>27</b>	<b>33</b>	<b>37</b>	<b>38</b>	<b>43</b>	<b>46</b>	<b>49</b>	<b>43</b>
Brigantine Beach	4	5	5	2	0	0	0	0	0	0	0
Brigantine - Inlet (Cove)	1	1	0	0	0	0	0	0	1	0	0
Ocean City - North	2	3	4	4	3	4	5	8	8	2	1
Ocean City - Center	3	3	5	5	6	7	8	9	8	8	8
<b>Region 5 subtotal</b>	<b>10</b>	<b>12</b>	<b>14</b>	<b>11</b>	<b>9</b>	<b>11</b>	<b>13</b>	<b>17</b>	<b>17</b>	<b>10</b>	<b>9</b>
Corson's Inlet SP	5	3	2	3	0	1	1	1	1	2	3
Strathmere (Upper Twp.)	3	2	1	0	0	0	0	0	0	1	1
Whale Beach	4	5	2	2	1	0	0	0	1	0	0
Sea Isle - North	2	2	3	1	0	0	0	0	0	0	0
Sea Isle - South	4	3	3	2	0	0	0	1	0	0	0
Townsend's Inlet	1	0	0	0	0	0	0	1	1	1	1
Avalon – North	4	3	2	3	1	1	1	1	0	0	0
Avalon - Dunes	1	2	4	3	2	4	3	4	7	8	8
<b>Region 6 subtotal</b>	<b>24</b>	<b>20</b>	<b>17</b>	<b>14</b>	<b>4</b>	<b>6</b>	<b>5</b>	<b>8</b>	<b>10</b>	<b>12</b>	<b>13</b>
Stone Harbor Point	0	0	0	0	0	3	5	5	6	6	9
Champagne Island	0	0	0	0	0	0	0	0	0	0	1
N. Wildwood - Hereford	0	0	0	0	0	0	0	0	3	3	4
N. Wildwood - Oceanfront	2	2	1	0	0	0	0	0	0	0	0
Wildwood Crest	0	0	0	0	1	0	0	0	0	0	0
<i>Coast Guard - LSU<sup>1</sup></i>	1	0	0	0	0	0	1	1	2	2	1
Coast Guard - TRACEN	7	6	7	3	3	5	5	2	3	4	1
Cape May City	0	0	0	1	1	1	1	2	1	0	1
<i>Cape May Meadows</i>	4	12	10	9	7	4	4	3	2	3	4
<i>The Nature Conservancy</i>	3	11	9	8	7	4	3	2	2	2	1
Cape May Point SP <sup>2</sup>	1	1	1	1	0	0	1	1	0	1	3
<b>Region 7 subtotal</b>	<b>14</b>	<b>20</b>	<b>18</b>	<b>13</b>	<b>12</b>	<b>13</b>	<b>16</b>	<b>13</b>	<b>17</b>	<b>18</b>	<b>21</b>
<b>Total Pairs</b>	<b>124</b>	<b>132</b>	<b>127</b>	<b>114</b>	<b>93</b>	<b>107</b>	<b>112</b>	<b>122</b>	<b>138</b>	<b>144</b>	<b>135</b>
<b>Pairs at NJDFW sites</b>	<b>59</b>	<b>52</b>	<b>53</b>	<b>44</b>	<b>32</b>	<b>43</b>	<b>52</b>	<b>57</b>	<b>68</b>	<b>70</b>	<b>66</b>

<sup>1</sup> Prior to 2002, this site was co-monitored by NJDFW.

<sup>2</sup> This site was tabulated as a NJDFW site beginning in 2003.

Note: Sites in italics monitored by agencies other than NJDFW.

**Table 2. New Jersey piping plover window census results: June 1-9 2004.**

	Census Count			Final Count		
	# Pairs	# Unpaired Adults	# Total Adults	# Pairs	# Unpaired Adults	# Total Adults
Sandy Hook Coast Guard	5	0	10	7	0	14
Sandy Hook North Beach	10	0	20	10	0	20
Sandy Hook North Gunnison	3	0	6	3	0	6
Sandy Hook South Gunnison	1	0	2	1	0	2
Sandy Hook Critical Zone	3	0	6	3	0	6
Sandy Hook Hidden Beach	3	0	6	3	0	6
Sandy Hook Fee Beach	4	0	8	4	0	8
Sandy Hook South Fee Beach	1	0	2	1	0	2
Sea Bright North	5	1	11	5	0	10
Monmouth Beach North	3	1	7	4	1	9
Monmouth Beach South	0	0	0	0	0	0
Seven Presidents Park	1	0	2	1	0	2
Long Branch	0	0	0	0	0	0
<b>Region 2 subtotal</b>	<b>39</b>	<b>2</b>	<b>80</b>	<b>42</b>	<b>1</b>	<b>85</b>
Sea Girt - Wreck Pond	1	0	2	1	0	2
Sea Girt - NGTC	0	0	0	0	0	0
Island Beach SP - Oceanfront	0	0	0	0	0	0
Island Beach SP - Dike	2	1	5	3	0	6
High Bar	0	0	0	0	0	0
Barnegat Light	3	1	7	3	1	7
<b>Region 3 subtotal</b>	<b>6</b>	<b>2</b>	<b>14</b>	<b>7</b>	<b>1</b>	<b>15</b>
Holgate	10	11	31	16	1	33
Little Beach	10	15	35	19	0	38
North Brigantine NA	8	2	18	8	1	17
<b>Region 4 subtotal</b>	<b>28</b>	<b>28</b>	<b>84</b>	<b>43</b>	<b>2</b>	<b>88</b>
Brigantine Beach	0	0	0	0	0	0
Brigantine - Inlet (Cove)	0	0	0	0	0	0
Longport Sodbanks	0	0	0	0	0	0
Ocean City - North	1	0	2	1	0	2
Ocean City - Center	7	0	14	8	0	16
<b>Region 5 subtotal</b>	<b>8</b>	<b>0</b>	<b>16</b>	<b>9</b>	<b>0</b>	<b>18</b>
Corson's Inlet SP	3	1	7	3	0	6
Strathmere Natural Area	0	0	0	0	0	0
Strathmere (Upper Twp.)	1	0	2	1	0	2
Whale Beach	0	1	1	0	0	0
Sea Isle - North	0	0	0	0	0	0
Sea Isle - South	0	0	0	0	0	0
Townsend's Inlet	1	0	2	1	0	2
Avalon - North	0	0	0	0	0	0
Avalon - Dunes	8	1	17	8	0	16
<b>Region 6 subtotal</b>	<b>13</b>	<b>3</b>	<b>29</b>	<b>13</b>	<b>0</b>	<b>26</b>
Stone Harbor Point	9	0	18	9	0	18
Champagne Island	0	1	1	1	0	2
N. Wildwood - Hereford Inlet	4	0	8	4	0	8
N. Wildwood - Oceanfront	0	0	0	0	0	0
Coast Guard - LSU	1	0	2	1	0	2
Coast Guard - TRACEN	0	1	1	1	1	3
Cape May City	0	0	0	1	0	2
Cape May Meadows - TNC	1	0	2	1	0	2
Cape May Meadows - CMPSP	3	0	6	3	0	6
<b>Region 7 subtotal</b>	<b>18</b>	<b>2</b>	<b>38</b>	<b>21</b>	<b>1</b>	<b>43</b>
<b>Total Pairs</b>	<b>112</b>	<b>37</b>	<b>261</b>	<b>135</b>	<b>5</b>	<b>275</b>

**Table 3. New Jersey piping plover nesting summary by sites: 2004.**

SITE	2004					
	Pairs	Pairs Hatch	Chicks Fledge	Pair Success	Fledge Rate	SP Fledge Rate
Sandy Hook NRA	32	11	21	0.34	0.66	1.91
<i>Coast Guard</i>	7	1	4	0.14	0.57	4.00
<i>North Beach</i>	10	4	5	0.40	0.50	1.25
<i>North Gunnison</i>	3	0	0	0.00	0.00	0.00
<i>South Gunnison</i>	1	0	0	0.00	0.00	0.00
<i>Critical Zone</i>	3	2	2	0.67	0.67	1.00
<i>Hidden Beach</i>	3	1	3	0.33	1.00	3.00
<i>Fee Beach</i>	4	2	5	0.50	1.25	2.50
<i>South Fee Beach</i>	1	1	2	1.00	2.00	2.00
Sea Bright North	5	4	7	0.80	1.40	1.75
Monmouth Beach North	4	2	4	0.50	1.00	2.00
Seven Presidents Park	1	0	0	0.00	0.00	0.00
<b>Region 2 Subtotal</b>	<b>42</b>	<b>17</b>	<b>32</b>	<b>0.40</b>	<b>0.76</b>	<b>1.88</b>
Sea Girt - Wreck Pond	1	1	2	1.00	2.00	2.00
Island Beach SP - Dike	3	1	2	0.33	0.67	2.00
Barnegat Light	3	3	2	1.00	0.67	0.67
<b>Region 3 Subtotal</b>	<b>7</b>	<b>5</b>	<b>6</b>	<b>0.71</b>	<b>0.86</b>	<b>1.20</b>
Holgate	16	8	8	0.50	0.50	1.00
Little Beach	19	7	4	0.37	0.21	0.57
North Brigantine NA	8	5	7	0.63	0.88	1.40
<b>Region 4 Subtotal</b>	<b>43</b>	<b>20</b>	<b>19</b>	<b>0.47</b>	<b>0.44</b>	<b>0.95</b>
Ocean City - North	1	1	1	1.00	1.00	1.00
Ocean City - Center	8	4	0	0.50	0.00	0.00
<b>Region 5 Subtotal</b>	<b>9</b>	<b>5</b>	<b>1</b>	<b>0.56</b>	<b>0.11</b>	<b>0.20</b>
Corson's Inlet SP	3	3	5	1.00	1.67	1.67
Strathmere (Upper Twp.)	1	1	0	1.00	0.00	0.00
Townsend's Inlet	1	1	2	1.00	2.00	2.00
Avalon Dunes	8	4	6	0.50	0.75	1.50
<b>Region 6 Subtotal</b>	<b>13</b>	<b>9</b>	<b>13</b>	<b>0.69</b>	<b>1.00</b>	<b>1.44</b>
Stone Harbor Point	9	4	1	0.44	0.11	0.25
Champagne Island	1	0	0	0.00	0.00	0.00
N. Wildwood – Hereford	4	3	2	0.75	0.50	0.67
Coast Guard – LSU	1	0	0	0.00	0.00	0.00
Coast Guard – TRACEN	1	1	1	1.00	1.00	1.00
Cape May City	1	1	0	1.00	0.00	0.00
Cape May Meadows	4	3	7	0.75	1.75	2.33
<i>The Nature Conservancy</i>	1	1	3	1.00	3.00	3.00
<i>Cape May Point SP</i>	3	2	4	0.67	1.33	2.00
<b>Region 7 Subtotal</b>	<b>21</b>	<b>12</b>	<b>11</b>	<b>0.57</b>	<b>0.52</b>	<b>0.92</b>
<b>All NJ sites TOTAL</b>	<b>135</b>	<b>68</b>	<b>82</b>	<b>0.50</b>	<b>0.61</b>	<b>1.21</b>
<b>NJDFW sites TOTAL</b>	<b>66</b>	<b>41</b>	<b>46</b>	<b>0.62</b>	<b>0.70</b>	<b>1.12</b>

Data for Sandy Hook provided by National Park Service - Gateway National Recreation Area.

Date for Holgate and Little Beach provided by USFWS - Edwin B. Forsythe NWR.

Data for Coast Guard - LSU provided by USFWS - Cape May NWR.

Data for Cape May Meadows - TNC provided by The Nature Conservancy - Delaware Bayshores Office.