

PIPING PLOVER TRENDS

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The Piping Plover was listed as an endangered species in New Jersey in 1979, and the Atlantic Coast population of the bird was federally listed as a threatened species in 1986. Surveys have been done in the state since 1976, with intensive statewide surveys being conducted every year since federal listing. In the years immediately following listing, the number of known breeding pairs notably increased – from 97 pairs in 1987 to 128 pairs in 1989. However, a portion of that rise is believed to be the result of the increased survey effort. During the eight-year period between 1989 and 1996 the population remained consistent, only ranging from 124 to 134 pairs. Starting in 1997 and continuing to the present, the population has shown much greater fluctuation, dropping to a low of just 93 pairs in 1998 and peaking at 144 pairs in 2004. Since the peak year, the population dropped steeply again, only to rise more recently. In 2007, the breeding pair count stood at 129, a healthy 11 percent increase from the previous year and above average for the entire period since federal listing.

The precise factors driving the wider fluctuations in the state's Piping Plover population over the past decade are difficult to pinpoint. However, an assessment of trends in productivity and productivity appear to be closely correlated. In general, the statewide population has risen in the year or two following years when stronger statewide productivity was recorded. Conversely, population has usually dropped or been stagnant following years when productivity was poor.

In 2007 the population trend deviated slightly – productivity had increased slightly the previous two years, but was at sufficiently low levels that the extent of the population increase was somewhat unexpected. There are several possible explanations for the increase in breeding pairs seen in New



Piping Plover PHOTO BY GENE NIEMINEN USFWS

Jersey in 2007 in the absence of strong statewide productivity in recent years. The two areas where population growth occurred in the state in 2007 (northern Monmouth County and to a lesser extent lower Cape May County) correspond to areas where particularly robust productivity has been recorded the past three to four years. Another possibility is that New Jersey is benefiting from large populations and stronger productivity from nearby states (i.e. recruitment into the population from outside the state). Several states north of us (Massachusetts and New York) have sizeable breeding populations of Piping Plovers (480 and 420 pairs respectively as of 2006) and Virginia has doubled its population since 2000 (up to 202 pairs as of 2006). Without a population of marked (banded) birds, the recruitment theory is speculative but is an intriguing prospect.

Although the increase in nesting pairs in 2007 was encouraging, the ongoing recent trend of low statewide productivity continues to be of particular concern. Statewide productivity levels have been below the level believed necessary to sustain the population (1.24 fledges per pair, based on population modeling conducted as part of the federal recovery plan) for six consecutive years, and well below the recovery goal (1.50 fledges per pair). By any measure, and even taking into account possible regional differences in sustainability/recovery rates, New Jersey's Piping Plover productivity is low. The fact that the statewide Piping Plover population might be buoyed by stronger regional productivity within

the state, or from recruitment outside the state offers hope, but the overall trends suggest we must maximize reproductive success within the state if our population is to grow.

Although it is beyond the scope of this discussion to provide an in-depth analysis of population shifts by region and individual sites, the data, nonetheless, reveal interesting patterns. It is difficult to assess specific trends without overlaying changes in habitat, predator densities, human activity, and productivity.

The large increase in nesting pairs at Stone Harbor Point in recent years is clearly related to the increase in available habitat. Similarly, the dramatic increase in pairs at North Brigantine Natural Area starting in 1995 is directly linked to the availability of more suitable habitat, storm events having created an overwash area at the site. That overwash area has, over time, become less suitable for nesting, as it is now thickly vegetated. Not surprisingly, the nesting population in that area has now declined.

Areas such as Whale Beach (Sea Isle City/Upper Township) and Ocean City North, once important nesting areas for Piping Plovers, are now vacant, as these beaches have nearly completely disappeared due to erosion. The southern end of Brigantine Beach, a stronghold for Piping Plovers in the late 1980s and early 1990s, has only had one nesting pair in the past ten years, as human usage and predator activity has increased and the beach has been managed in a way less conducive to nesting.

Habitat at Corson's Inlet State Park has remained highly suitable while nesting pairs have declined – intense predator activity (Red Fox) is believed to be a factor in this case. Clearly, the factors influencing Piping Plover populations and their reproductive successes are complex, further illustrating the need for a comprehensive recovery strategy. ■