The 2004 Osprey Project in New Jersey

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In 2003 the Endangered and Nongame Species Program conducted the biannual census of the osprey population, and tallied 366 nests statewide, a 7% increase from the census in 2001 and a new high for the population since DDT-induced declines in the 1950's and 1960's. Biologists conducted two aerial surveys along the coast in May and June, and counted the remainder of the population with assistance from cooperators and Citizen Scientists from around the state.

The population count represented a more moderate rate of increase than we have seen in the last ten years. This suggests that the drop in nest success observed on the Atlantic coast in the late 1990's resulted in fewer maturing adults returning to nest in NJ. Alternatively, it could suggest a limitation imposed by insufficient resources (like fish or nest platforms), but we found that a number of nest platforms went unused this year.

During nest checks in June and July, when banding nestlings or recording nest locations, biologists and volunteers checked 220 nests and found that osprey production was well below normal. On average, 0.86 young were produced per active nest. Banders tagged 102 nestlings with leg bands for future tracking.

While the statewide average production was 0.86 young per active nest, it was somewhat better in Delaware Bay nests, at 1.09, than in Atlantic Coast nests, 0.73. Productivity was depressed at all study areas, however, from Raritan Bay to Cape May to Delaware Bay. Overall, productivity was down 27% from the 1997-2002 average of 1.18 young per nest. This year it hovered close to the 0.80 young per nest considered necessary to maintain a population.

The most likely cause of this year's nest failures is the weather during April and May, when ospreys were incubating and just hatching. It was unusually cool and wet, and those conditions can have several implications for ospreys: the high precipitation may have delayed fish migration and spawning, making prey harder to find; it may also have increased water turbidity, making it more difficult for ospreys to see fish. As ospreys spent more time hunting with less success, their incubating partners may have been forced to leave the nest – exposing eggs or young chicks to weather and predators – to hunt for themselves. In addition, we found that many young nestlings died when they were just two to three weeks old in June and early July, most from starvation, so the effects of the cool spring were far-reaching. Unlike previous years when nest success declined in one region or another (primarily the Atlantic Coast), this year's problems were statewide, which supports the theory that weather was the predominant cause.

Even though nest success suffered this year, we are encouraged by the moderate increase in the population, to its new high of 366 nesting pairs. By far most ospreys used platforms built especially for them: in 2003, 74% of pairs used platforms (1-post, 4-post or modified telephone poles). Fourteen percent used other structures in the coastal areas, including channel markers, duck blinds, pilings and shack roofs. The balance of nests (9%) were on transmission, cell and antenna towers. Just 14 nests (4%) were known to occur in trees.

Ospreys' reliance on human-made structures for nesting emphasizes the importance of building and maintaining nests. We are ***very grateful*** to our Osprey Project volunteers for their good work installing and maintaining nests, and recording nest results each season. These folks are helping to sustain ospreys in NJ and making it possible for us to track their success.

Project Staff: Kathleen Clark, Dave Jenkins, Todd Pover, Dave Golden and Cristina Frank

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Young osprey on the nest

Placing a new nest structure on the Maurice River

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Table 1. Osprey nesting and productivity in New Jersey in 2003, in the major nesting areas. Productivity figures from 1997-2002 are included for comparison.

Nesting Area	No. Nests Surveyed	Known-Outcome Nests	No. Young	No. Banded	Production Rate	Previous Years' Production					
					2003	2002	2001	2000	1999	1998	1997
Raritan Bay area	23	14	15	3	1.07	0.56	1.38	1.67	1.00	0.78	1.57
Sedge Islands WMA	25	24	20	10	0.83	2.00	1.77	1.54	1.57	1.27	0.30
Great Bay to Atlantic City	35	18	14	11	0.78	1.44	1.37	2.00	1.07	0.23	0.15
Great Egg Harbor & Ocean City	34	30	26	9	0.87	0.88	1.09	0.67	n/a	n/a	n/a
Sea Isle City	20	16	18	0	1.13	1.39	1.82	n/a	n/a	n/a	n/a
Avalon/Stone Harbor Bays	65	44	21	16	0.48	0.60	1.88	0.88	1.35	0.36	0.96
Wildwood Bays & Cape May	33	28	13	8	0.46	1.70	1.23	1.06	0.93	0.53	0.71
Maurice River & Estuary Marshes	47	44	48	45	1.09	2.30	1.77	1.85	2.36	2.05	2.07
Salem / Artificial Island / Delaware R.	25[a]	2	2	0	1.00	2.00	1.79	1.40	2.00	0.72	1.10
Total of Study Areas	**307**	**220**	**177**	**102**	**0.86**	**1.43**	**1.61[b]**	**1.29**	**1.46**	**0.88**	**0.82**
Atlantic Coast only	235	174	127	57	0.73	1.04	1.57	1.10[a]	1.26	0.66	0.59
Delaware Bay only	72	46	50	45	1.09	2.29	1.78	1.74	2.27	1.57	1.59
TOTAL Statewide Survey	**366**						**340**		**331**		**250**

[a] Number of nests for Artificial Island were estimated at 12 in 2003
[b] Total and AC figures exclude Brigantine in 2000

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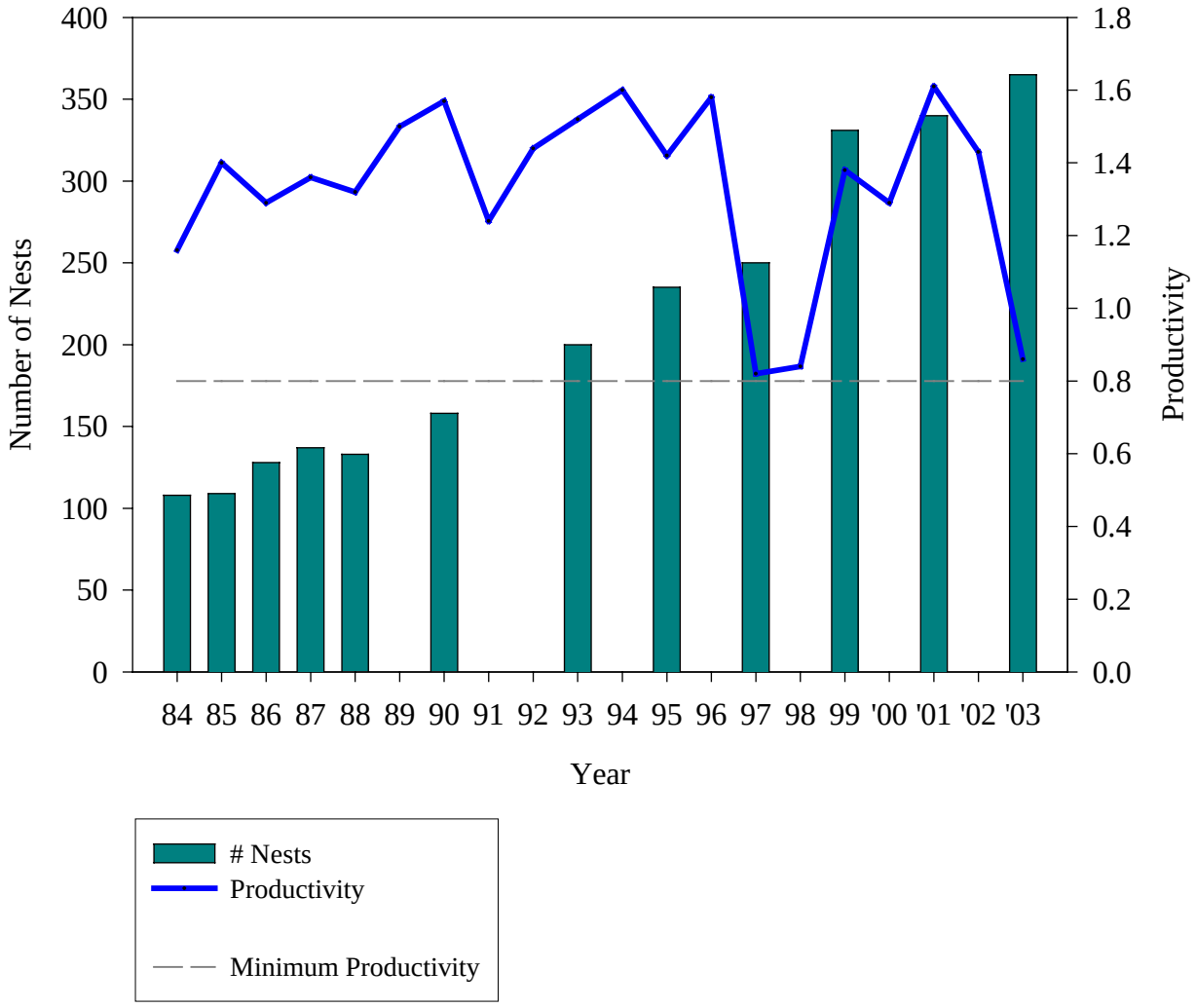
Figure 1. Osprey nesting population (bar) and productivity (heavy line) from 1984 through 2003 in New Jersey. Statewide productivity was above the minimum necessary in 2003, but was below the minimum in Atlantic coast nests.



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