Status of Osprey Breeding Activity in Essex County Massachusetts 2013

Prepared by: Essex County Greenbelt Association

Introduction

Osprey are one of the most widely distributed raptors in the world, found breeding on every continent except Antarctica. In North America, Osprey occur in all 50 states but populations decreased dramatically in the 1950s-1970s due to unregulated use of pesticides, which weakened Osprey eggshells and caused nesting failure and poor productivity. In the 1970s, new US laws regulated pesticide use and as a result Osprey numbers began to rebound across North America.

In Essex County, as far back as the 1850s and through the 1970s, Osprey were only observed as migrants in the county, despite well established breeding populations to the north and the south. In the early 1980s, the first confirmed pair of nesting Osprey were observed on a man-made platform located in open salt marsh in Essex. Over the ensuing years, nesting pairs of Osprey gradually increased in numbers on various man-made structures including nesting platforms, duck blinds and coastal navigational markers. In 2007, Greenbelt began more comprehensively monitoring Osprey activity in Essex County and that same year installed its first Osprey platform at the Cox Reservation in Essex. From 2007-2013, Greenbelt installed seven more new nesting platforms (including 1 in 2013) and was involved in the repair and upkeep of many other nest structures throughout the Great Marsh from Salisbury to Gloucester to Marblehead.

In 2013 Greenbelt established the Osprey Program with 4 focus areas: management, monitoring, research and outreach/education. The management focused on nesting site/structure oversight; the monitoring was a combination of staff and volunteers tracking individual nesting pairs; the research involved banding flightless chicks and working with leading raptor biologist Dr. Richard Bierregaard tracking Osprey during migration and; the outreach/education centered on the installation of a real-time webcam on an active Osprey nest displayed on the Greenbelt website as well as the installation of informational kiosks and other public outreach. The overall goal of Greenbelt's Osprey Program is to advance Osprey conservation.

Results

Greenbelt was able to collect the most comprehensive nesting and productivity data to date on Osprey breeding activity in Essex County in 2013 due in large part to the volunteer Osprey nest monitors who were recruited and trained to submit detailed accounts of Osprey activity at assigned nests using an online reporting process. Greenbelt staff also participated in monitoring.

In late March the first observations of Osprey were reported in Essex County. Soon thereafter, Osprey pairs were visible from Salem to Salisbury occupying old nests or constructing new ones. Most pairs laid eggs in April and were observed incubating through May and into June. Some nesting attempts failed in May and others in June, resulting in nest abandonment in many but not all cases. One pair stayed on the nest until August after losing their only chick in early June. Nesting pairs with chicks were observed in many locations in June and the first fledglings were observed in late July. Most of the resident adult and juvenile Osprey had departed Essex County on their southward migration by October.

The data from over 200 online reports submitted by volunteer nest monitors and Greenbelt staff, plus other observations and data, shows that 32 active nests were observed in 2013. All nest site locations and descriptions are shown on a map accessible via a link at www.ecga.org. Nest sites included a wide variety of man-made platforms on poles or tripods, coastal navigational markers, electrical transmission towers or other structures like salt marsh camps and hunting blinds. In all, 32 different active nests were observed where Osprey made some type of nest, including 5 nests on hunting blinds, 2 nests on hunting camps, 3 nests on navigational markers, 1 nest on an electrical transmission tower and 21 nests on man-made nest platforms.

Table 1 shows the fate of the 32 nests, some of which were unknown. Based on all the available information, it is estimated that 26 breeding pairs of Osprey were active in 2013, suggesting that some pairs may have built multiple nests at different locations. There is also a chance, perhaps even a likelihood, that additional breeding pairs were associated with some of the nests with an unknown fate; this could not be confirmed due to gaps in the monitoring data. Two pairs were observed that built and occupied a nest for 2 months or more but never laid a single egg. These two pairs were counted in the active pair total. In the end, the data only allowed for an estimate of breeding pair but the 26 pairs is reported with a high confidence level.

Table 1. Distribution and status of Osprey nests and breeding pairs in Essex County by town in 2013.

Town/City	# Nests Observed	# Active Pairs (est.)	# Successful Nests	# Unsuccessful or No Egg Nests	# Nests with Unknown Fate	# Fledglings Observed
Marblehead	2	2	2	0	0	2
Salem	1	1	0	1	0	0
Danvers	1	1	1	0	0	1
Gloucester	1	1	1	0	0	2
Essex	4	4	2	2	0	6
Ipswich	9	6	0	6	3	0
Rowley	6	4	0	4	2	0
Newbury	2	2	1	1	0	3
Newburyport	1	1	1	0	0	3
Salisbury	5	4	2	2	1	4
Totals	32	26	10	16	6	21

Table 1 shows that only 38% (10/26) of active breeding pairs were successful in 2013, with an average productivity of approximately 2.0 fledglings per successful pair. The failure rate of active breeding pairs that laid eggs was 54% (14/24) and although it is suspected that predation was the main cause of nest failure, it was never confirmed. As noted above, two active pairs (8%) occupied a nest but never laid eggs. The overall productivity rate was 0.88 fledglings per active breeding pairs that laid eggs, which research suggests is slightly below the productivity level believed necessary long-term to maintain and/or grow an Osprey population.

Greenbelt placed US Fish and Wildlife Service aluminum leg bands on 13 flightless chicks. Greenbelt also collaborated with Dr. Richard Bierregaard to place satellite transmitters on 2 of these banded young after they fledged as part of a larger study of Osprey migration behavior. Both tagged Osprey departed Essex County in September. One of the juvenile birds perished in Pennsylvania in late September, but the other juvenile Osprey made it successfully to the north coast of Venezuela and is alive there as of January 2014. A map showing the Osprey tracking data is available at www.ecga.org.

Summary

The population of breeding Osprey in Essex County continued to expand in 2013, increasing over the past four years from an estimate of 11 pairs in 2010; to 14 pairs in 2011; to 18 pairs in 2012; and to 26 pairs in 2013. Despite low productivity in 2013, the upward trend in the number of nesting pairs since 2010 suggests that productivity been at or above the level believed necessary long-term to maintain and/or grow an Osprey population. Greenbelt is expecting the nesting Osprey population in Essex County to continue to expand in 2014.

Greenbelt played an important role in Osprey conservation in Essex County in 2013 by ensuring nest sites/structures were stable and well monitored by volunteers and staff, by expanding public outreach and education, and by conducting research. Greenbelt plans to continue with and expand the Osprey Program in 2014.

For more information about Greenbelt's Osprey Program, contact Dave Rimmer, Greenbelt Director of Stewardship at dwr@ecga.org or 978-768-7241 X14. Or visit www.ecga.org and click on the Osprey page.