

# Status of Osprey Breeding Activity in Northeastern Massachusetts 2014

*Prepared by: Essex County Greenbelt Association*

## Introduction

Ospreys 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 northeastern Massachusetts (Boston to NH border), 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 Ospreys was observed on a man-made platform located on 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 northeastern Massachusetts and that same year installed its first Osprey platform at the Cox Reservation in Essex. From 2007-2014, Greenbelt installed nine more new nesting platforms (including 2 in 2014) and was involved in the repair and upkeep of many other nest structures throughout the Great Marsh from Salisbury to Gloucester to Revere.

In 2014 the Osprey Program continued with four 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 northeastern Massachusetts in 2014 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 northeastern Massachusetts. Soon thereafter, Osprey pairs were visible from East Boston 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. One adult Osprey was confirmed as predated on its nest, most likely by a Great-Horned Owl. 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 northeastern Massachusetts on their southward migration by October.

The data from over 750 online reports submitted by volunteer nest monitors and Greenbelt staff, plus other observations and data, shows that 34 active nests were observed in 2014 (Table 1). All nest site locations and descriptions are shown on a map accessible via a link at [www.ecga.org](http://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 hunting blinds and an old section of wooden dock. In all, 34 different active nests were observed where Osprey made some type of nest, including 5 nests on hunting blinds, 4 nests on navigational markers, 3 nest on an electrical transmission tower, 1 on an industrial smokestack, 1 on an old dock up on salt marsh and 20 nests on man-made nest platforms.

Table 1 shows the fate of the 34 nests, some of which were unknown. Based on all the available information, it is estimated that 30 breeding pairs of Osprey were active in 2014, suggesting that some pairs may have built multiple nests at different locations or became late-season housekeeping pairs after a failed first nest attempt. Table 1 represents the most accurate data we were able to collect in 2014.

**Table 1.** *Distribution and status of Osprey nests and breeding pairs in the region north of Boston to the New Hampshire border by town in 2014.*

Town/City	# Nests Observed	# Active Pairs with Eggs	House-keeping Pairs with No Eggs	# Nests Hatching Eggs	# Nests not Hatching Eggs	# Nests with Unknown Fate	# Fledglings Observed
East Boston*	1	1	0	1	0	0	1
Revere	1	1	0	1	0	0	2
Saugus	2	2	0	1	0	1	3
Marblehead	2	2	0	2	0	0	6
Salem	2	1	1	1	0	0	1
Beverly	1	1	0	0	1	0	0
Gloucester	2	2	0	1	0	1	0
Essex	4	4	0	3	1	0	7
Ipswich	7	7	0	5	2	0	9
Rowley	3	2	1	0	2	0	0
Newbury	3	2	1	1	1	0	2
Newburypt	2	2	0	1	1	0	2
Salisbury	4	3	1	2	1	0	5
Totals	34	30	4	19	9	2	38

\* This active nest in East Boston was not known about by Greenbelt until 2015, so is included in this report but not in all 2014 reports.

Table 1 shows that 63% (19/30) of active breeding pairs were successful hatching eggs in 2014, compared to only 38% of nests in 2013. Pairs hatching eggs in 2014 had an average productivity rate of 2.0 fledglings per successful pair, which was similar to 2013, resulting in almost twice as many fledglings observed in 2014 (38) compared to 2013 (21). The failure rate of active breeding pairs that laid eggs was 30% (9/30), with predation suspected as the main cause of nest failure. Evidence of predation included an adult Osprey wing found in an abandoned nest in Rowley, probably by a Great-Horned Owl. At least 4 housekeeping pairs built and occupied nests but never laid eggs. The overall productivity rate was 1.3 fledglings per active breeding pairs that laid eggs (30/pairs/38 fledglings), which research suggests is slightly above 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 20 flightless chicks. Greenbelt also collaborated with Dr. Richard Bierregaard to place satellite transmitters on 2 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 likely perished in New Jersey in October, but the other juvenile Osprey made it successfully to Cuba and is alive there as of April 2015. A map showing the Osprey tracking data is available at [www.ecga.org](http://www.ecga.org).

### Summary

The population of breeding Osprey in Essex County continued to expand in 2014, increasing about 15% from 2013. Over the past five years the population has grown from an estimate of 11 pairs in 2010; to 14 pairs in 2011; to 18 pairs in 2012; to 26 pairs in 2013; to 30 pairs in 2014. Some of the growth is due to more thorough monitoring, as we continue to learn of new nests, some which may have been active for multiple years previously. But new pairs are occupying new sites as well, indicating real population growth. There are now

numerous unoccupied newer nesting platforms across the region and it will be interesting to observe their occupancy rate in the coming years. We continue to believe that the breeding population of Osprey can expand in northeastern Massachusetts.

Greenbelt again played an important role in Osprey conservation in Essex County in 2014 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 2015.

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