



Osprey Nation Report



2015 Season

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Osprey Nation is a project of the Connecticut Audubon Society

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Dedicated to the Osprey Stewards with Our Gratitude!

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Executive Summary

The Connecticut Audubon Society's citizen science project, Osprey Nation, began in June 2014, to an immediate and enthusiastic response. Volunteers, known as Osprey Stewards, emerged, and by the end of the 2014 breeding season, approximately 100 stewards were recording and sending Osprey data to the Connecticut Audubon Society (CAS). As of September 2014, 414 nest sites were located, and at least 174 of these nests were actively used that season. In 2015, the number of stewards increased to 146; they helped map 515 Osprey nest sites, of which 250 were active. Of those nests, 198 had at least one hatchling (although many had more than one); a total of 415 chicks hatched and 356 fledged. (Table 1 shows a comparison of data between the 2014 and 2015 seasons.)

The increase in active nests and successful juveniles recorded in our 2014 and 2015 data reflects an increase in stewards rather than an increase in nest success: more people were looking for nests and recording information, so more nests were found and more data submitted. As the number of volunteers stewarding and observing nests continues to increase, more precise data will be examined from year to year and we will begin to be able to draw conclusions about population trends and breeding success rates.

However, it is obvious that the state's Osprey population has grown dramatically over the past several decades. For reasons explained in the following section, we believe we can safely conclude that their success in the state indicates that there is abundant fish for them to eat in local rivers and lakes, as well as in Long Island Sound; and that those fish seem to be free of toxins that would harm Ospreys and reduce their breeding success. Data collected by Osprey Nation stewards will help determine if those trends are continuing.

Table 1. Comparison of ON data between the 2014 and 2015 seasons

| Category | 2014 | 2015 |
|--|---------|------|
| Total number of Nest Locations | 414 | 515 |
| Number of Stewards | 100 | 146 |
| Number of Nests observed | 174 | 322 |
| CT Counties with Nests | 5 | 7 |
| CT Towns with Nests | 42 | 56 |
| Active Nests | 210 | 250 |
| Non Active Nests | 29 | 36 |
| Abandoned Nests | 9 | 24 |
| Number of Nests with Reported Hatchlings | 96 | 198 |
| Total Number of Hatchlings | 221 | 415 |
| Number of Nests with Reported Fledglings | unknown | 171 |
| Total Number of Fledglings | unknown | 356 |



Background

Ospreys are large raptors whose main diet consists of live fish. Ospreys can dive feet-first in as little as three feet of water to catch fish. In the northeastern United States, the breeding season can begin as early as the first week of March and last until the end of August. In some cases, birds depart for South America, their wintering grounds, as late as September.

Ospreys were nearly wiped out in the last century because of DDT and other pesticides that bio-accumulated in fish and were eaten by adult Ospreys and fed to juveniles. DDT in particular interfered with calcium deposition, leading to shell-thinning in the eggs. This caused shells to break during incubation, resulting in failed nests. Before DDT was banned in 1972, the Osprey population was at an all-time low: In 1970 there were only eight known nesting pairs in the state. (Please see our [2014 Osprey Nation report](#) for more details about DDT and its effects on Ospreys.)

Because of their diet of fresh fish, Ospreys are a natural indicator of water quality and of environmental health in general. We can determine areas where fish are abundant based on the nesting density of Ospreys. Successful nests indicate that DDT, though a persistent pesticide, is no longer affecting egg shell production. Additionally, Osprey Nation stewards monitor not only how many juveniles hatch but how many successfully fledge at the end of the season. Having successful young tells us food is plentiful and its quality high. We conclude, therefore, that the concentration of toxins in Connecticut's waters and in Long Island Sound is likely below the level that will negatively affect Ospreys.



Collection of Data

Data collection in 2015 followed the same procedure as the previous year (see 2014 report). For some nests, data collection began in the first week of March. Starting in May, nest data were added to an interactive digital map created by Connecticut Audubon (Figure 1). The online map can be viewed on the [CAS website](#). More nests were added to the map as CAS became aware of them. For the most part, data collection continued until August, but in some cases it continued until the end of September, since Ospreys were still present at some nest sites until quite late in this very warm extended season.

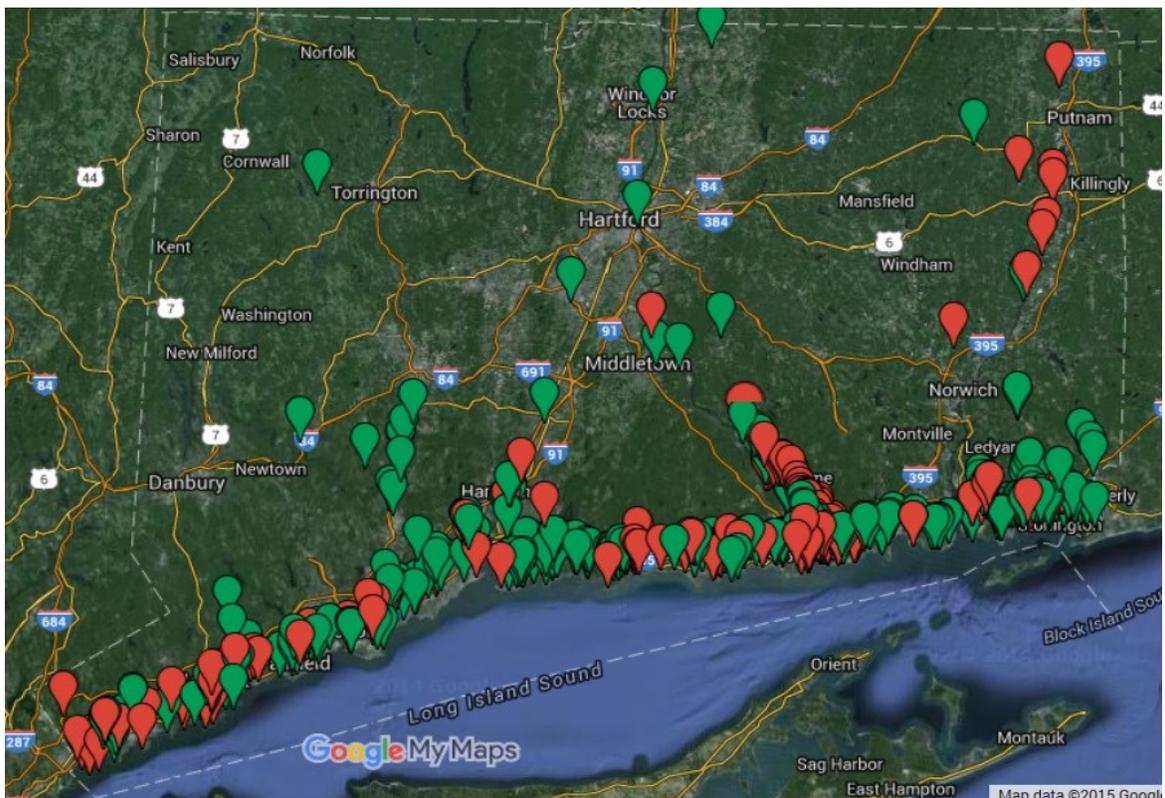


Figure 1. Osprey Nation interactive Google map. When viewing the map online, observers can zoom in for more detail on the approximate nest location and click on a pin to see information CAS has gathered.

Data collection focused on the activity status of nests, the number of juveniles that hatched, and the number of juveniles that fledged. These three data points are generally accepted as the best indicators of overall nesting success. Young were considered fledged when they were confirmed flying from the nest. Until they flew from the nest, all young were considered hatchlings. Additional nest details and events, such as incubation, were likewise recorded on the database and shown on the map.

Recap of 2014 Findings

In 2014, the first year of Osprey Nation, data collection did not begin until June, and most stewards therefore did not begin their observations until late in the breeding season, when many juveniles had already fledged. Approximately 100 volunteer stewards found 414 nests sites, 210 of which were observed as being occupied by an Osprey at one point during the season, classifying them as “active.” An additional 29 nests were confirmed by a steward as being “vacant.”



Of the 210 “active” nests, 174 were continually monitored throughout the summer. From the original 414, there were 175 nest locations that could not be confirmed as either “active” or “vacant.” Osprey Nation stewards confirmed that 78 young Osprey successfully fledged in 2014. However, because observations and data collection did not start until June, we believe there were additional fledglings that we were not able to observe.

2015 Findings

With its strong base of support and interest from 2014, Osprey Nation had a head start in its second year. By the end of the 2015 breeding season (October 2015), 146 stewards had mapped 515 Osprey nest sites in Connecticut. Observations varied for each nest. Some stewards began their effort in March; some continued late into the fall, when the last Ospreys migrated south for the season.



Of the 515 locations, at least 250 nests were active, 198 of which were believed to have eggs, 24 nests were abandoned early in the season, and 36 were not observed to have any Osprey activity. The activity level at the remaining 205 nests is unknown, either because no stewards were available to collect data or the nests were in inaccessible locations. Most nests were found in coastal towns and harbor areas, while nests further inland were generally on larger rivers, such as the Connecticut, Mystic, Housatonic, Naugatuck and Quinnipiac.

To sum up, in 2015, Osprey Nation stewards observed 322 nest sites in Connecticut.



- 250 nests were confirmed as active.
- 198 nests had hatchlings (a minimum of one)
- At least 415 chicks hatched
- 171 nests had fledglings (a minimum of one)
- 356 chicks were confirmed as fledglings.

(Fledgling success reported as of Nov 1st, 2015 can be seen in Figure 2.)

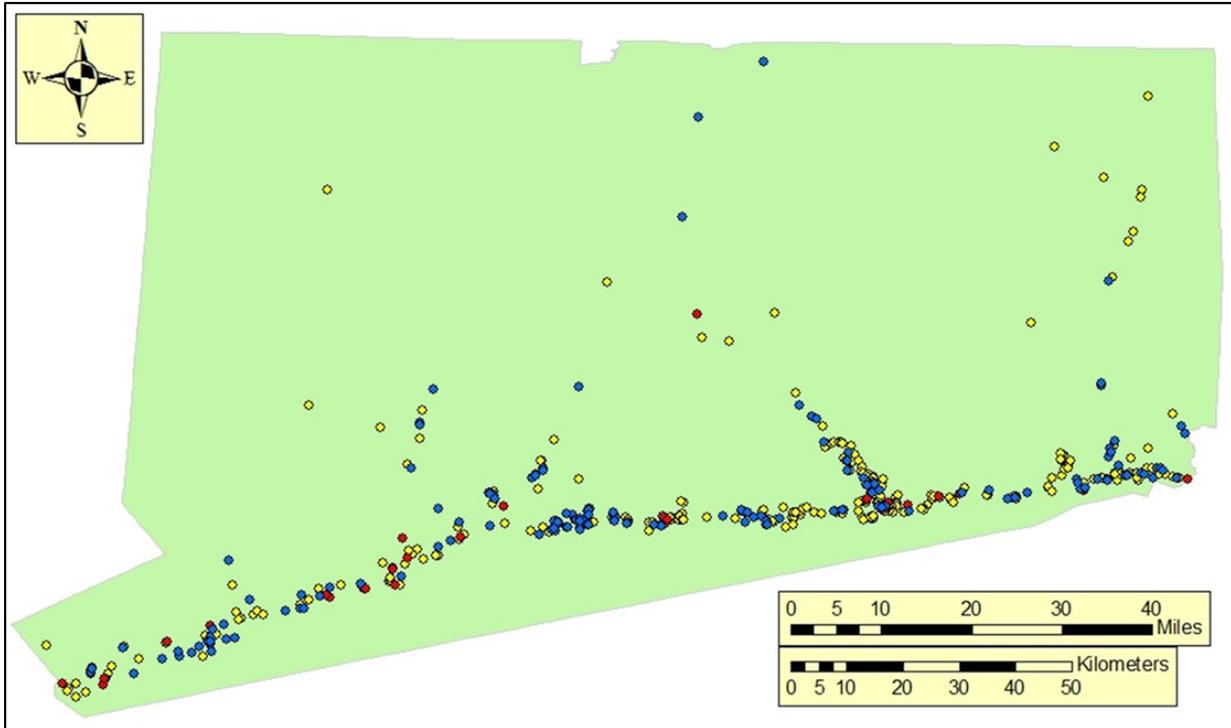


Figure 2. All points on the above map indicate an Osprey nest. Yellow points are nests that did not report any juveniles. Red points are nests that confirmed hatchlings, but did not confirm fledglings. Blue are nests that were able to confirm successful fledglings.

Some known nests remain un-monitored, and we presume that there are a number of nests still to be found and added to our database. Some nests, especially those on communications towers, are extraordinarily high up and therefore difficult to see into, often making it impossible for a steward to see chicks until they are nearly large enough to fly. By this time, unless the steward has powerful optical equipment, the young may resemble adults, leaving the steward unable to confirm the presence of young in the nest. We conclude therefore that the total number of nests with young and fledglings in Connecticut is higher than what our data show.



Conditions of Nest Sites

Historically Ospreys nested in tall dead trees or on the ground. The removal of dead trees associated with building construction and active landscape management at shoreline properties has limited the use of historical sites. Instead, during the past several decades, Ospreys have nested on human-provided platforms, navigation aids, radio towers, and the like. While Ospreys are disturbed by nearby human activity, many have had little choice but to become habituated to noise, people, and vehicles. Since the 1960s an ever-growing cadre of Osprey supporters has been building nesting platforms throughout the state, particularly in coastal marshes, around ponds, and near large rivers. In 2015, the number of nests on platforms (286) outnumbered nests in trees (24). Additionally, Ospreys have taken advantage of man-made structures not intended for nesting and in some cases have attempted to nest on the ground, which has been reported in the Charles E. Wheeler Wildlife Management Area, along the Housatonic River and on Great island, in Old Lyme. Although this gives a nesting pair more options for locations near an abundant food source, some of these locations can create safety and nuisance issues.

Live (electrified) wires on utility poles, for example, create dangerous situations for Osprey families. A nest at the athletic field at Scalzi Park in Stamford caught fire in 2015; fortunately all the juveniles had already fledged. Another nest (shown on the map as Westport #1 nest) was moved to a platform between the 2014 and 2015 seasons. Nests on light fixtures, such as at athletic fields or parking lots, increase the odds for human interference. In another case, a nest that had been built on an old dock structure on the Connecticut River was detached during a storm and floated away on the high waves. The juveniles, still in the nest, were rescued and adopted into nests on Great Island in Old Lyme. (Further information on this can be found on [TheDay.com](http://www.theday.com)¹.)

¹Judy Benson. Orphaned osprey chick finds new adoptive home. July 11, 2015. The Day. <http://www.theday.com/article/20150710/NWS01/150719877>

In summary, in 2015 Ospreys in Connecticut built nests on 286 platforms, 31 communication towers, and 27 utility poles. Twenty-four nests were in trees, 21 on light poles, 14 on navigational aids, 11 on docks, 6 in electrical towers, 5 on bridges, 4 on railroad trestles, 3 on buildings, 2 on lighthouses, 1 ground nest, 1 on an emergency speaker, and 1 on a statue. The remaining 77 of the 515 nest sites either were not specifically identified (but were located on the map only) or else information provided for them was unclear. (The overall collection of nests reported as of Nov. 1, 2015 can be seen on Figure 3.)

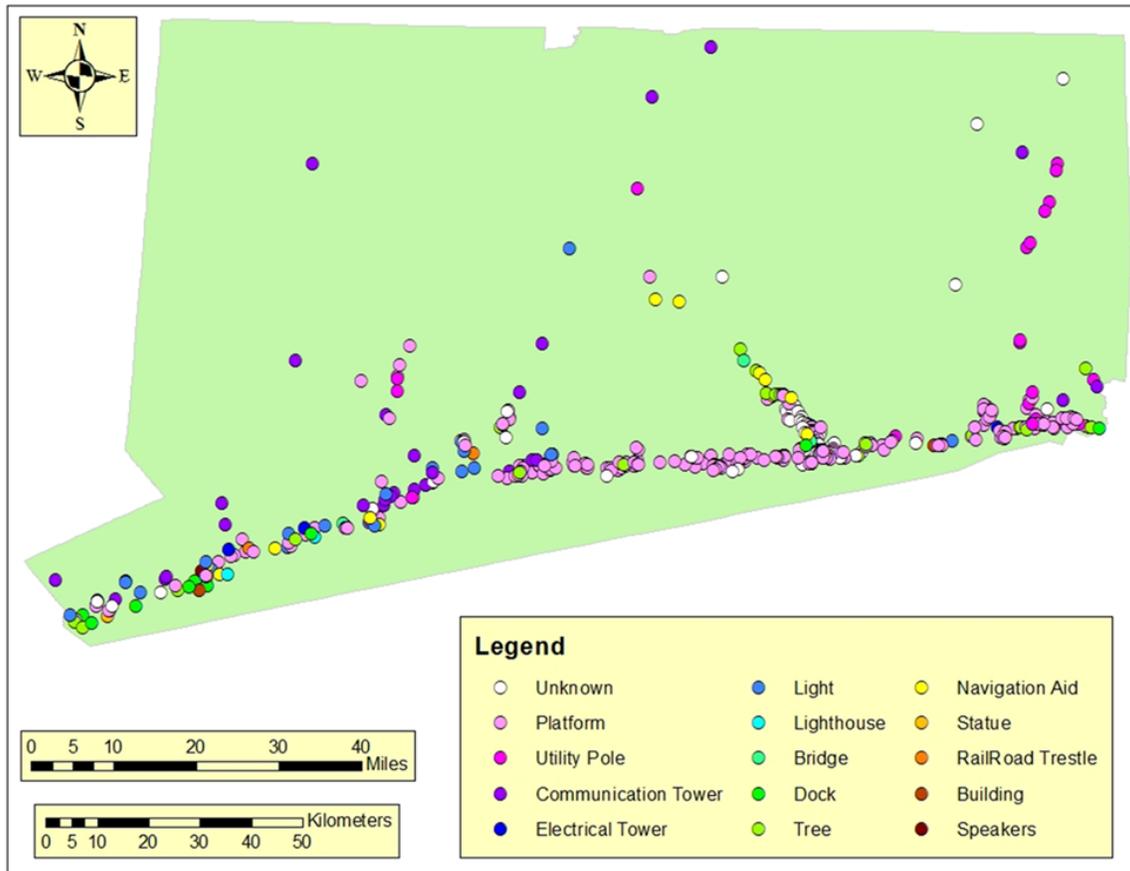


Figure 3. Points on the map indicate the distribution of nest structures.

Predators

While platforms provide sturdy locations for nests, predator guards should be placed on platform poles for protection. Typically these are 24 inches of sheet metal wrapped around the pole so that rats, raccoons, and other animals cannot scale the pole. However, when sheet metal corrodes, it becomes easier for raccoons to grip, so cones are often a better choice. Many platforms are located in marsh areas, the open nature of which often exposes the nest to dangers from Great Horned Owls, eagles, and other avian predators. Bald Eagles, which were previously Federally Endangered, are recovering in Connecticut and throughout their original range, creating more competition for Ospreys. Eagles are known to steal Osprey hatchlings from nests and along with Great Horned Owls are Ospreys' major avian predator². At least one steward confirmed an attempted eagle attack in 2015, on the Naugatuck #1 nest. The Osprey pair at Old Lyme #73 has been the victim of a Great Horned Owl for the past two seasons.

Early in the summer, a large menhaden die-off was reported on the Quinnipiac, the lower Connecticut, and the Thames rivers, as well as in Clinton Harbor, Guilford, and Westbrook. Menhaden, a large member of the herring family, are the most common prey species taken by Ospreys along the coast. Connecticut fisheries biologists attributed the die-off to a viral "spinning" disease. Although this caused some concern, menhaden die-offs are not uncommon and are often the result of low oxygen conditions in the water. If this had any negative effects on the Osprey population, it was not large enough to be perceived. Later in the season, warm weather kept menhaden in the area until quite late, and indeed menhaden were still in the Connecticut River through late December.

²Emily Silber. Rachel and Steve Left Chick-less After Eagle Raids Nest. June 29, 2015. National Audubon Society. <https://www.audubon.org/news/rachel-and-steve-left-chick-less-after-eagle-raids-nest>

Future Work

Looking forward, our main goal is to find, observe, and collect data on additional nests. These include nests that we do not yet know about as well as nests that we have mapped but which stewards have not been able to observe (some nests, because of their locations, probably will never be accessible enough for regular data collection).

To increase the flexibility of reporting data, we will be introducing an online data form for the 2016 season, allowing information to be added immediately to the database. The Osprey Nation staff will transfer the data to the public map. Those who would prefer to continue with the printable monitoring forms will still be able to send in data that way as well. We hope this flexibility will allow for more volunteers to be able to continuously monitor nests throughout the season. Over the longer term, our goal is to recruit a group of volunteers to repair and maintain Osprey nests throughout the state.



³ Patrick Skahill. A Possible Cause for a Fish Die-Off in Connecticut. June 5, 2015. WNPR. <http://wnpr.org/post/possible-cause-fish-die-connecticut#stream/0>

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| | |
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