



# The Importance of Citizen Science Regarding Osprey (*Pandion haliaetus*) Populations



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## NORTH AMERICAN OSPREY

- Migratory bird of prey arriving in Connecticut to breed in late March and departing South in mid-August. They may be found in North America, South America, Europe, and Australia.
- Although Ospreys are monogamous, they are solitary during their Fall migration and do not travel with their mate.
- Ospreys are primarily piscivorous; nesting near shallow bodies of water such as on man-made platforms, dead trees, cell towers, telephone poles, channel markers, etc.
- They forage by hovering above the water then plunge diving to capture prey. When plunge diving, Osprey put their feet first to strike their prey with precision.
- Osprey are known to readjust their prey when flying, positioning the fish facing forward.
- Their long, sharp talons have been said to shut in 2/100 of a second (Ruppell 1981).



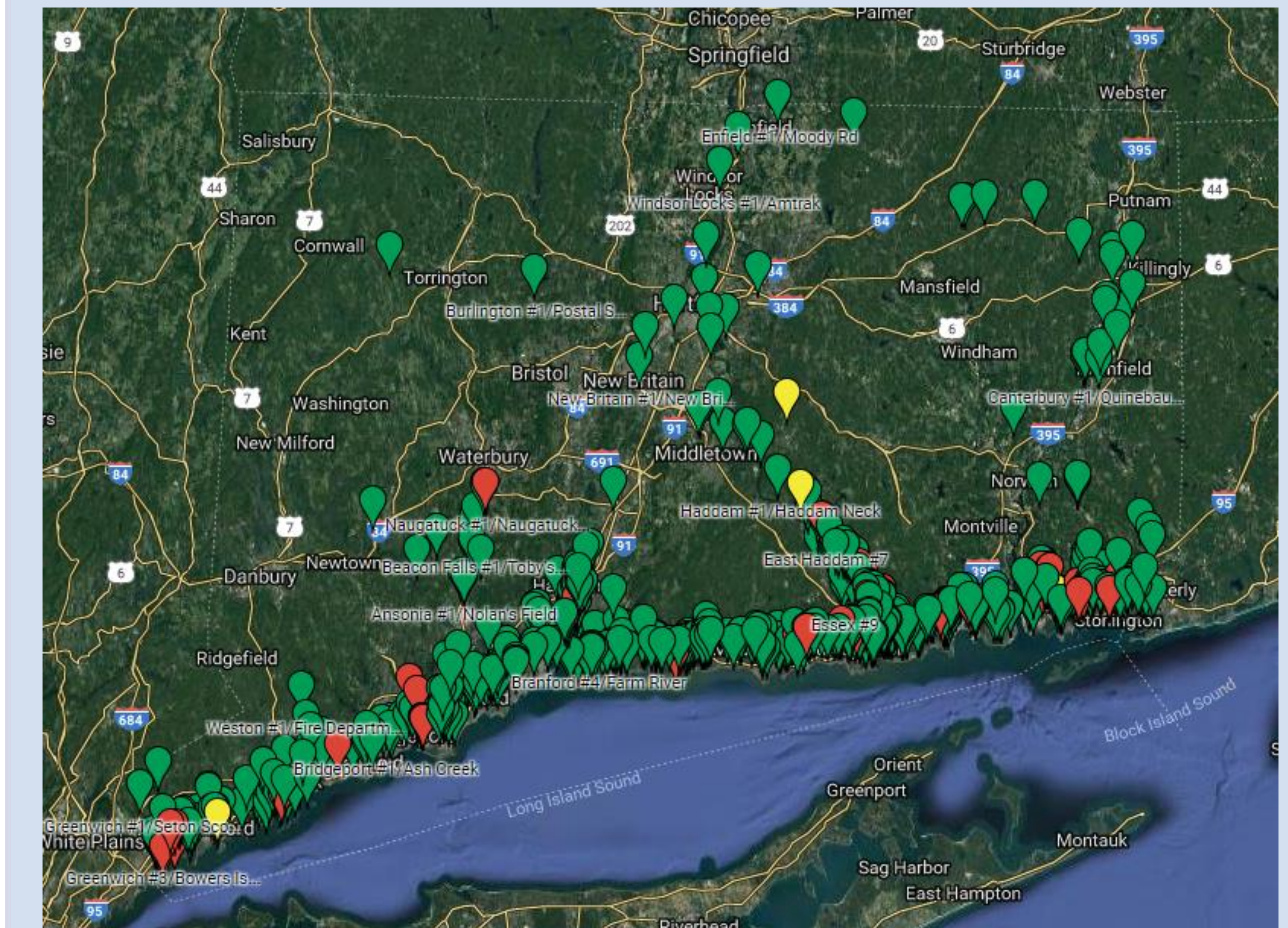
Photos by Joseph Szalay

## IMPORTANCE

- Ospreys are indicators of fish health and populations in various bodies of water such as rivers, lakes, estuaries, and bays. Fish being the principal diet of Ospreys, will bioaccumulate any contaminants from the water source. Contaminated fish can lead to a decline in the commercial fishing industries leading to a lack of jobs statewide and a major loss of money. It will also effect humans if contaminated fish are consumed. DDT not only affected Ospreys but other birds of prey such as the Bald Eagle. Their population also decreased due to egg-shell thinning. Since the ban of DDT, we are now starting to see an increase in the Bald Eagle population in Connecticut.
- Bird watching is a major hobby of many residents and visitors of Connecticut. People travel from out of state to observe different bird species and the natural resources of the state.
- With the help of citizen science programs such as Osprey Nation, that monitor Osprey populations and activity, we are now seeing an increase.



## OSPREY NESTS IN CT (2018)

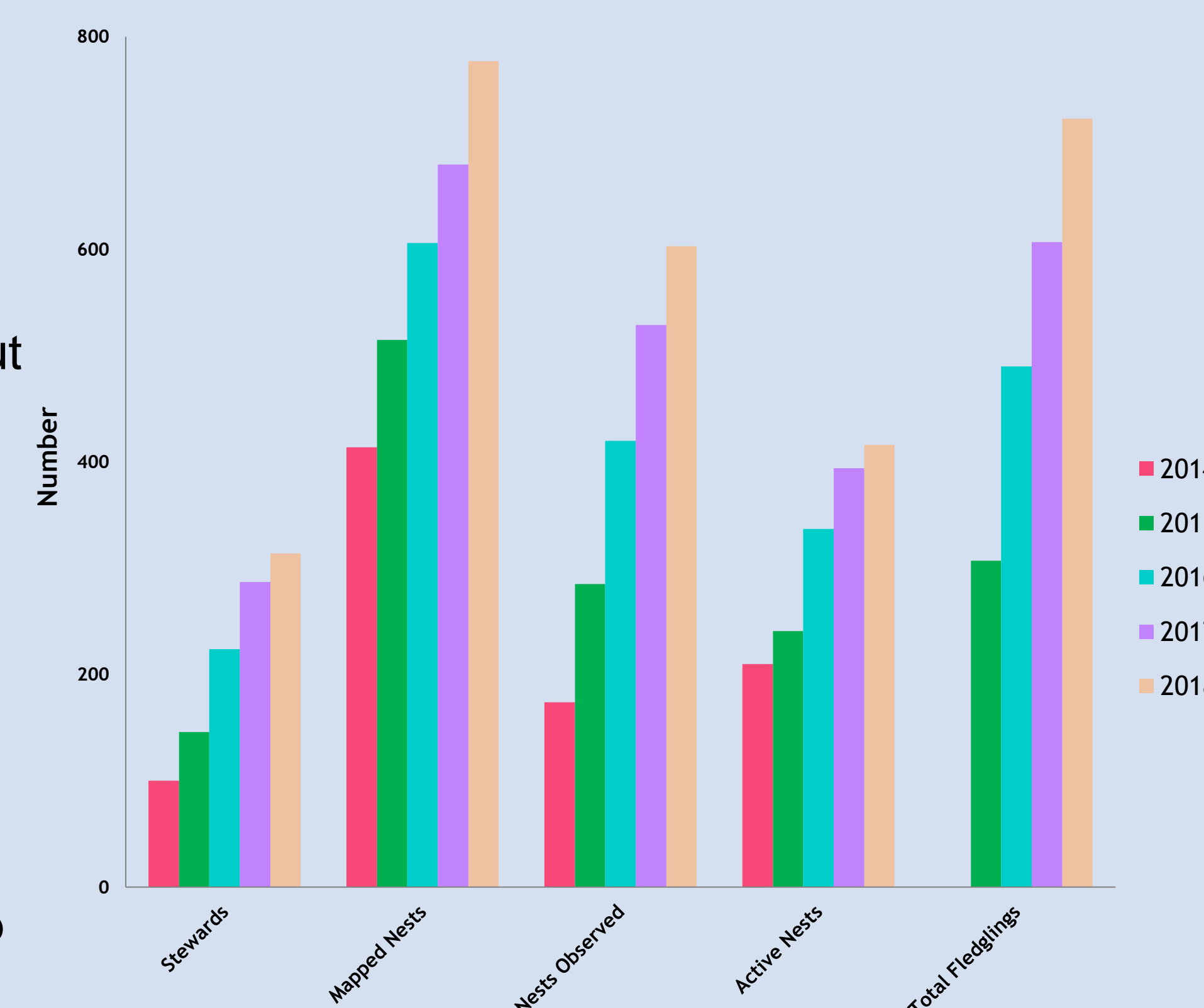


## CONSERVATION

- Osprey populations declined in the 1950's and 1960's due to pesticides Dichlorodiphenyltrichloroethane (DDT) and Dichlorodiphenyldichloroethylene (DDE) found in waters which, was then being bioaccumulated by fish. DDT prevented the production of calcium, leading to egg-shell thinning or inability to create egg shells. In 1969, Osprey fledglings were as low as 10 individuals continuing into the mid-1970's there were less than 20 pairs in Connecticut (Bierregaard et al. 2014). DDT was banned in 1972 worldwide. To this day, populations have been steadily increasing (Connecticut Audubon Society) and there are now 700+ nests and 725 reported fledglings.
- The Connecticut Audubon Society organizes educational presentations regarding conservation efforts and training sessions to monitor Ospreys in various parts of Connecticut.
- A new arising threat facing Ospreys are monofilament entanglements. In 2018, there were several cases of juvenile Osprey entanglements with only one survival. Entanglements cause severe injuries such as loss of circulation and blood loss that they can't recover from. This does not apply just to Ospreys but to other wildlife. To reduce entanglements, organizations have been creating fishing line recycle bin projects.

## CITIZEN SCIENCE

- **Osprey Nation**, a citizen science program that started in 2014, run by the Connecticut Audubon Society in collaboration with the Connecticut Department of Energy and Environmental Protection (DEEP).
- Stewards are assigned to observe an Osprey nest from late March to August in which they record data and submit online to the Connecticut Audubon Society.
- By collecting data using citizen science, population trends can be viewed to see where the osprey population is headed.
- Data is entered on a map where every site can be accessed publicly to view photos and nest activity for that particular site (top right).
- These population and migratory trends can help scientists deduce if there are any issues within the Osprey population itself or whether there are cascading problems with fish populations or water quality.



Data collected by stewards from 2014 to 2018.

## REFERENCES

- Bierregaard RO, Nc USA, Poole AF, Cheibel MISS. 2014. Post-DDT Recovery of Osprey (*Pandion Haliaetus*) populations in southern New England and Long Island, New York, 1970 – 2013 *Birds of North America Online*, Cornell Laboratory of Ornithology, 159
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- Ruppell, G. 1981. Analysis of the prey-catching behavior of the Osprey. *Journal fur Ornithologie*, 122, 285-305 In: Poole A. 1985. Courtship Feeding and Osprey Reproduction. *Auk* 102:479–492.

Interested in becoming a steward for Osprey Nation?

Please visit <https://www.ctaudubon.org/osprey-nation-home/> or email Melina, at [mgiantomidis@ctaudubon.org](mailto:mgiantomidis@ctaudubon.org)