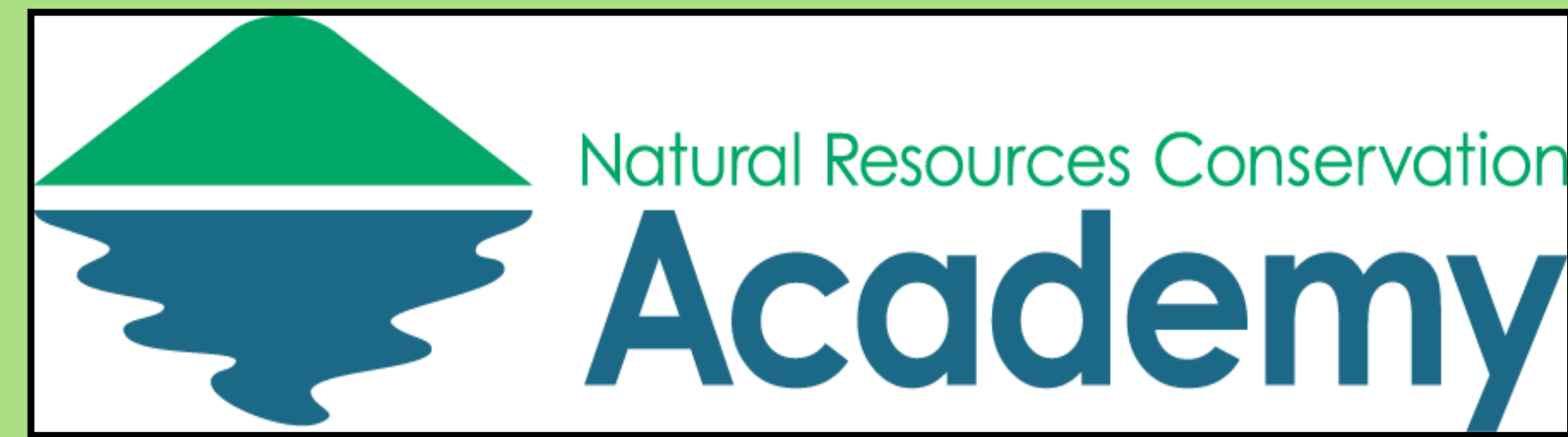


# Bird's Eye View: Evaluating Avian Community Composition of the Dodge Paddock and Beal Preserve



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## ABSTRACT

Biodiversity is the foundation of life. The variety of genes, species and habitats allows earth to function properly and sustain life. Today, many places are struggling to maintain biodiversity and many are trying to restore land to bringing a variety of life back to a specific area. Dodge Paddock and Beal Preserve (Figs. 1 & 2) in Stonington Borough Connecticut has been diligently restoring it's march and were hoping to see new bird species migrate to the area. The objectives of this project were to (1) survey bird species in restored seaside habitats on the Dodge Paddock and Beal Preserve, and (2) to compare community composition to that observed before restoration activities to evaluate restoration success. To complete this project, my community partner (MaryEllen Mateleska) and I surveyed the area every two weeks over the span of six weeks from October to November 2015. We split the property into three quadrants (i.e. grassland, marsh and rocky shore) and surveyed each quadrant during each visit. We surveyed for a half hour in silence in each area. By doing this survey, we found that many new species of bird have moved onto the property compared to that observed from surveys previously conducted. New species observations on the property included: Northern Mockingbird (*Mimus polyglottos*), American Crow (*Corvus brachyrhynchos*), Ovenbird (*Seiurus*), White-breasted Nuthatch (*Sitta carolinensis*) and House Sparrow (*Passer domesticus*). We also found that many species observed previously were still present on the property. Due to the restoration of the marsh, it is evident that many species (both new and consistent) call this area home.



Fig 1. Dodge Paddock and Beal Preserve in Stonington Borough Connecticut offers three major habitats: grassland (orange), marsh (green) and rocky shore (blue).



Fig 2. Dodge Paddock and Beal Preserve in Stonington Borough Connecticut before restoration (left) and after restoration (right).

## METHODS

I used the following methods to assess how restoration affects the bird community at the Dodge Paddock and Beal Preserve in Stonington Borough, Connecticut.

### Study Area

- The study was conducted at Dodge Paddock and Beal Preserve in Stonington Borough, Connecticut (Fig. 1).
- The study site was broken into three sites (Fig. 1): grasslands, marsh, and rocky shore.

### Data Collection Protocol and Analysis

- Surveys for birds were conducted from October 2015 to November 2015.
- The preserve was visited three times.
- Each time we surveyed, we:
  - Began surveys around 10 A.M.;
  - Waited 3 to 5 minutes after arrival to let the birds settle before monitoring;
  - Used the "Peterson Field Guide to Birds of Eastern and Central North America" to help identify bird species; and
  - Monitored for 30 minutes in each of the study sites (i.e. grassland, marsh and rocky shore) and recorded the species we saw.
- We compared our data to that of avian records that were collected prior to the restoration process. We only compared native species and species that are present between October and March.

## RESULTS

Through these surveys we found that many species of birds were still present in the area compared to previous surveys (Fig. 3). We also found that many species of birds moved into the area (Fig. 3).

### New Bird Species Observations

- Northern Mockingbird (Fig. 4)
- American Crow
- Ovenbird (Fig. 4)
- White-breasted Nuthatch
- House Sparrow

### Difference in Habitats

- In the grassland, many sparrows and finches were seen as well as a few cardinals, a nuthatch, a mockingbird and a Black-Capped Chickadee (*Parus atricapillus*).
- In the marsh, Mourning Doves (*Zenaidura macroura*), Song Sparrows (*Melospiza melodia*), and American Crows were the most common. An ovenbird was also spotted on the edge of the marsh.
- On the rock-shore, many gulls and cormorants were seen in and around the water. On one occasion a Great Blue Heron (*Ardea herodias*) was seen.



Fig 4. Two of the new species seen on the property were (left) Ovenbirds (*Seiurus*) and (right) Northern Mockingbird (*Mimus polyglottos*).

## INTRODUCTION

Loss of seaside habitats have caused detrimental effects on the organisms that call these habitats home. Dodge Paddock and Beal Preserve (Fig. 1) in Stonington Borough, Connecticut is a seaside ecosystem that has experienced significant degradation as it was once the home of the states pottery factories. Recently, the Avalonia Land Conservancy acquired this land. Over the last few years, Mystic Aquarium, Avalonia Conservancy, and Connecticut Department of Energy and Environmental Protection have diligently worked together to restore the marsh (Fig. 2; 3.68 acres) by planting native species to encourage wildlife to return and increase biodiversity of all species in the area. Also, they have removed many invasive species and helped restore tidal flow in the marsh (Newton, 2013).

The objectives of this project were to survey the avian community of Dodge Paddock and Beal Preserve following restoration and compare it to the community observed before restoration activities. This baseline data collected can be used by Mystic Aquarium to support the success of restoration. I predict that new species would be present due to the restoration of the marsh.

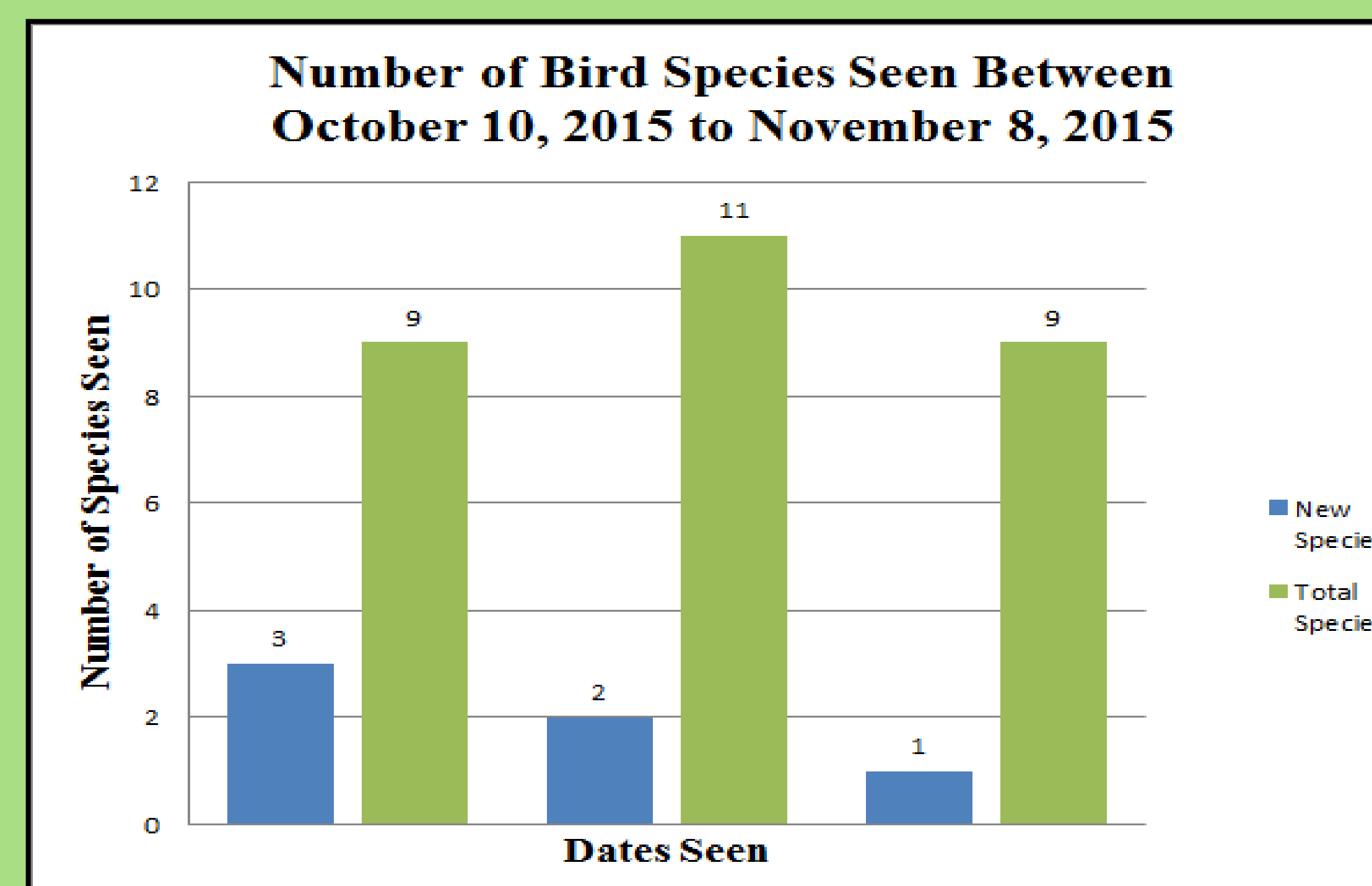


Fig 3. Comparison of new species to that of total amount of species seen on each day.

## CONCLUSIONS

The number of species of birds at Dodge Paddock and Beal Preserve increased, likely due to the restoration of the marsh. Numerous new species were seen and many other species remained on the property. The removal of invasive species, restoration of tidal flow and planting of native species most likely attracted the new bird species as well as the diverse ecosystems the land has to offer (Metzler, 1992). Other studies and projects concluded that restoration of a habitat can bring in new species as well.

## ACKNOWLEDGEMENTS

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