

Finding A Home: Providing Habitat for Shrubland Species on the Connecticut Coast

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ABSTRACT

Early-successional habitats (e.g. shrublands, shrub-scrub) for wildlife have become increasingly and critically uncommon in much of the eastern United States¹. Consequently, many animals dependent on these shrubland habitats have become threatened, extirpated, or extinct². The Stewart B. McKinney National Wildlife Refuge located along 70 miles of the coastline in Connecticut is one of many organizations that are helping increase the amount of early successional habitats in the eastern U.S.

Currently, the Refuge manages 5-acres of early-successional habitat at the Salt Meadow Unit in Westbrook. This habitat is unique because it must be managed in a rotational way so that the process of forest succession is constantly “set back” and the forest cannot mature. The Refuge began this process of “setting back succession” in 2012 by mowing certain areas of the larger 5-acre block (see Fig. 2). Employees then monitored the areas for wildlife use to see what types of animals were using the openings in the early-successional area. My portion of this project involved monitoring a sub-sample of these same areas – which are now filled with very young trees, shrubs, and grasses from November 3rd to December 18th, 2014 to see what species of animals might be using this habitat as it matures. Trail cameras were set up in each of two sub-sample plots to record wildlife usage.

The research revealed five different species using the habitat at the time, which will be used in future studies demonstrating the importance of shrub-scrub habitats to the Connecticut Coast.

INTRODUCTION

While forested land covers a third of the United States as a whole, only about 16% of that is early-successional habitat in the Northeastern part of the United States³, ranging from Virginia to Maine. The habitats were once naturally created before pre-settlement of North America by wind, fire, flooding, beavers, and even Native American agriculture¹. As a result of decreased natural disturbances, management that mimic these disturbances is required in order to provide the habitats for species dependent on them (Fig. 1).



Fig. 1: (Left) A cottontail rabbit in shrubland habitat 1. (Right) A white-tailed deer in shrubland habitat 2.



Various studies conducted by organizations such as the U.S. Department of Agriculture Natural Resources Conservation Service, U.S. Fish and Wildlife Service, and the Environmental Defense Fund, ultimately connect the decrease of early successional habitats to the decline of disturbance-dependent species⁴. In order to protect populations of these shrubland dependent species, land managers and private landowners have begun creating and restoring early-successional habitat for wildlife. By increasing the amount of shrubland habitats, it creates a stable environment for these species to use as a permanent homes or a place to stop along a migration route (Fig. 1).

This project - *Finding a Home: Providing Habitat for Shrubland Species on the Connecticut Coast*, provided the Refuge with a small glimpse of what wildlife species are using the young shrub habitat during the late-fall and early-winter months.

MATERIAL AND METHODS

Study Area

- Location: Stewart B. McKinney National Wildlife Refuge, Salt Meadow Unit, Westbrook, CT (Fig. 2).
- Environment: Two young shrubby areas (cut in 2012) within a larger early-successional block (Fig. 2).
- Study Organisms: Multiple shrubland species, such as white-tailed deer, cottontail rabbits, raccoons, red foxes, birds, and squirrels.

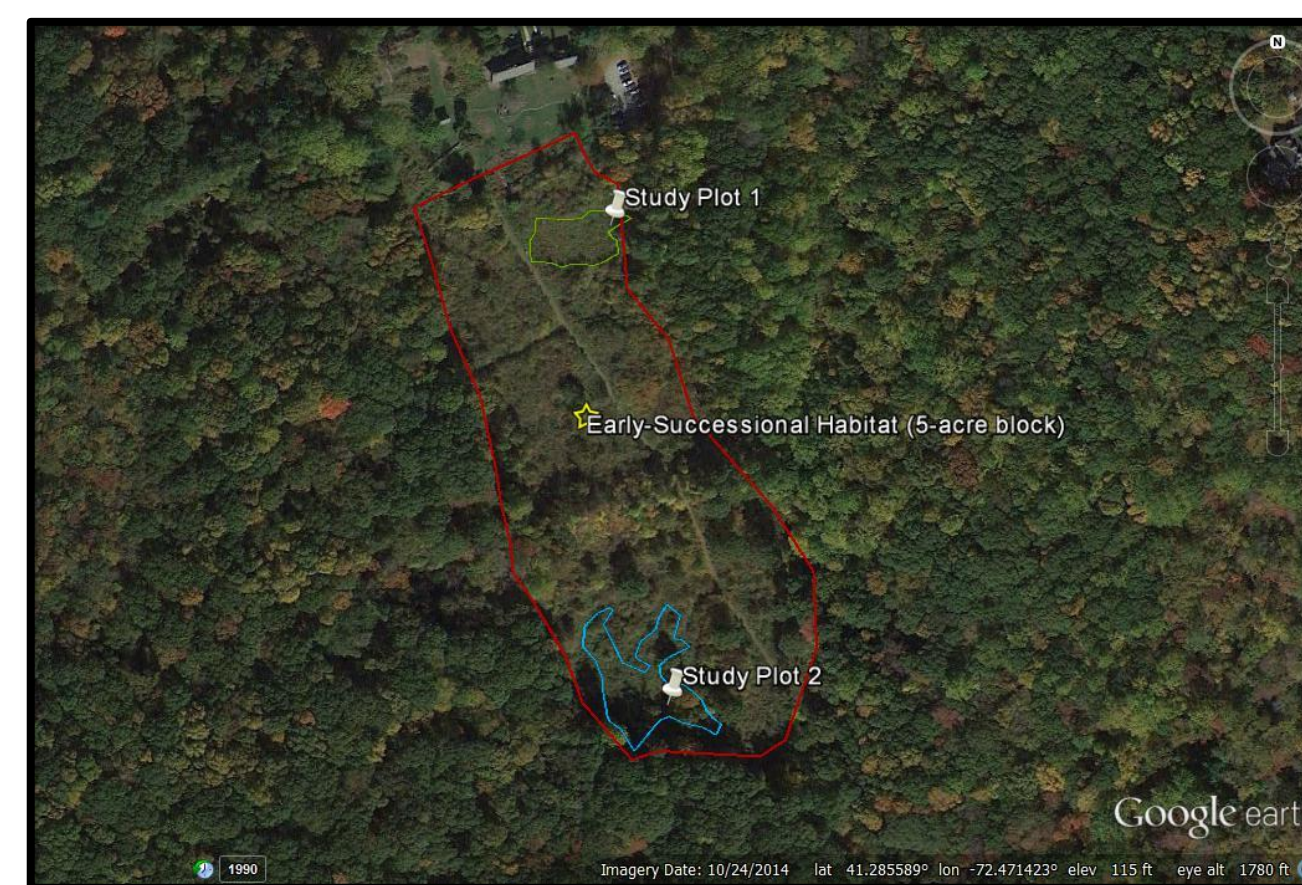
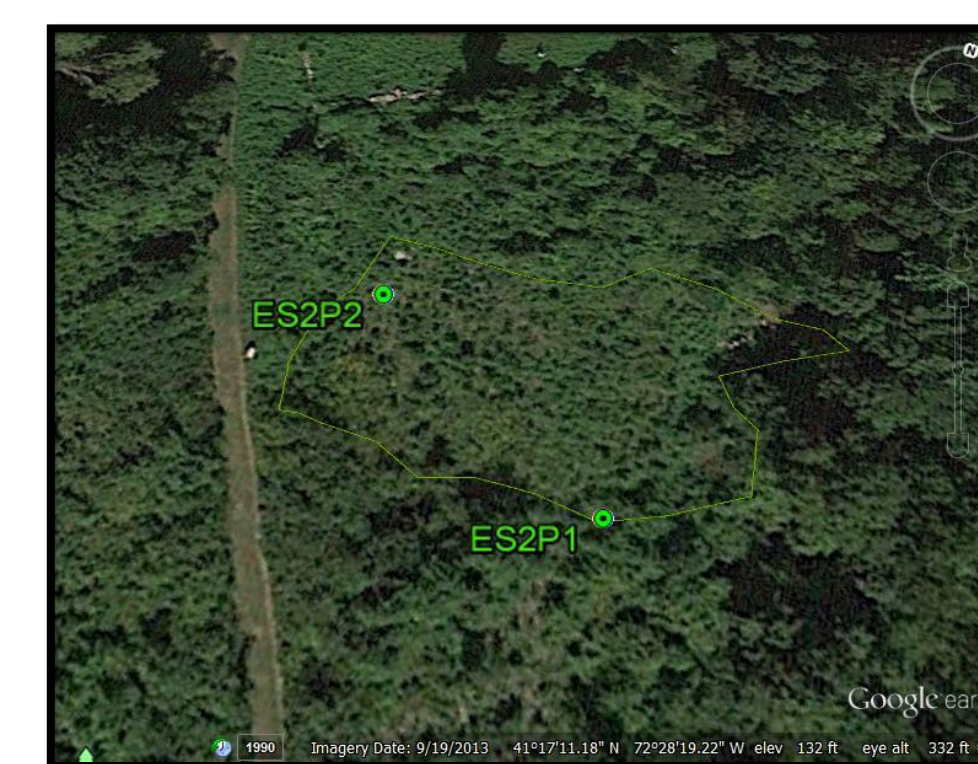
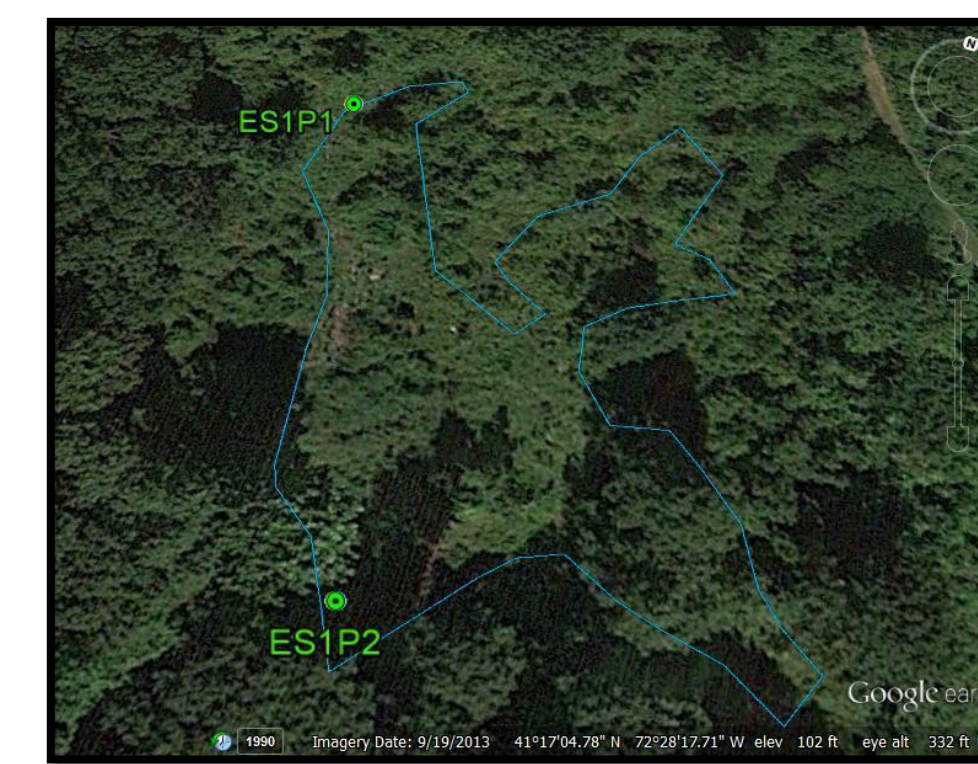


Fig. 2: (Upper left) An overview of the study site at the Salt Meadow Unit of Stewart B. McKinney National Wildlife Refuge. (Upper right) Study Plot 1 with trail camera locations (ES1P1 and ES1P2) (Lower right) Study Plot 2 with trail camera locations (ES2P1 and ES2P2)



Materials

- ArcGIS mapping software
- Google Earth
- Microsoft Offices
- GPS mapping unit
- Tiny Spypoint trail cameras with locks and T-posts

Procedure

- Read various sources and studies on early successional habitats
- Use a GPS to digitize the border of each early successional habitat (Fig. 3)
- Create a map using ArcGIS and Google Earth of the habitats (Fig. 2)
- Using the two maps, pick two locations in each plot to place camera stands (Fig. 2)
- Label each stand with an ES followed by the Study Plot number (1 or 2) and then with the pole (P) number: ES1P1, ES1P2, ES2P1, and ES2P2
- Obtain 4 SD cards and 100 AA batteries
- Set up cameras on November 3, 2014 (Fig. 3)
- Take one of the two cameras and place on ES1P1 and the other on ES2P1
- In one week switch out the SD cards and replace the batteries of each camera and move the location of the cameras to ES1P2 and ES2P2
- Download the photos on the SD cards onto a computer and take a count of how many photos of each species are present at the times and date provided
- Continue to switch the camera location, SD cards, replace the batteries and review photos every week for 6 weeks
- Collect cameras on December 18, 2014
- Review and count all the photos to get a total count of what species used the habitats during the months of recordings and create an Excel spreadsheet with the information



Fig. 3: (Left) Using a GPS unit to map the boundaries of the two study sites. (Right) Setting up a trail camera in Study Plot 2

RESULTS

The results of this study provided the refuge with baseline data on some of the species using the early-successional openings after two years of growth (Fig. 4). Photographs provide evidence of the presence of red fox, cottontail rabbits (Fig. 1), white-tailed deer (Fig. 1), raccoons, and squirrels. Other evidence included white-tailed deer and cottontail scat, as well as branches that had the bite marks of white-tailed deer and a deer hoof print (Fig. 5).

Having two camera stands in each habitat, one towards the edge of the field and the other towards the middle, provided us with different view points in which to observe animals. This indicated that animals, preferred to remain along the dense, edge vegetation, than the open area in the middle of the plot (Fig. 4).

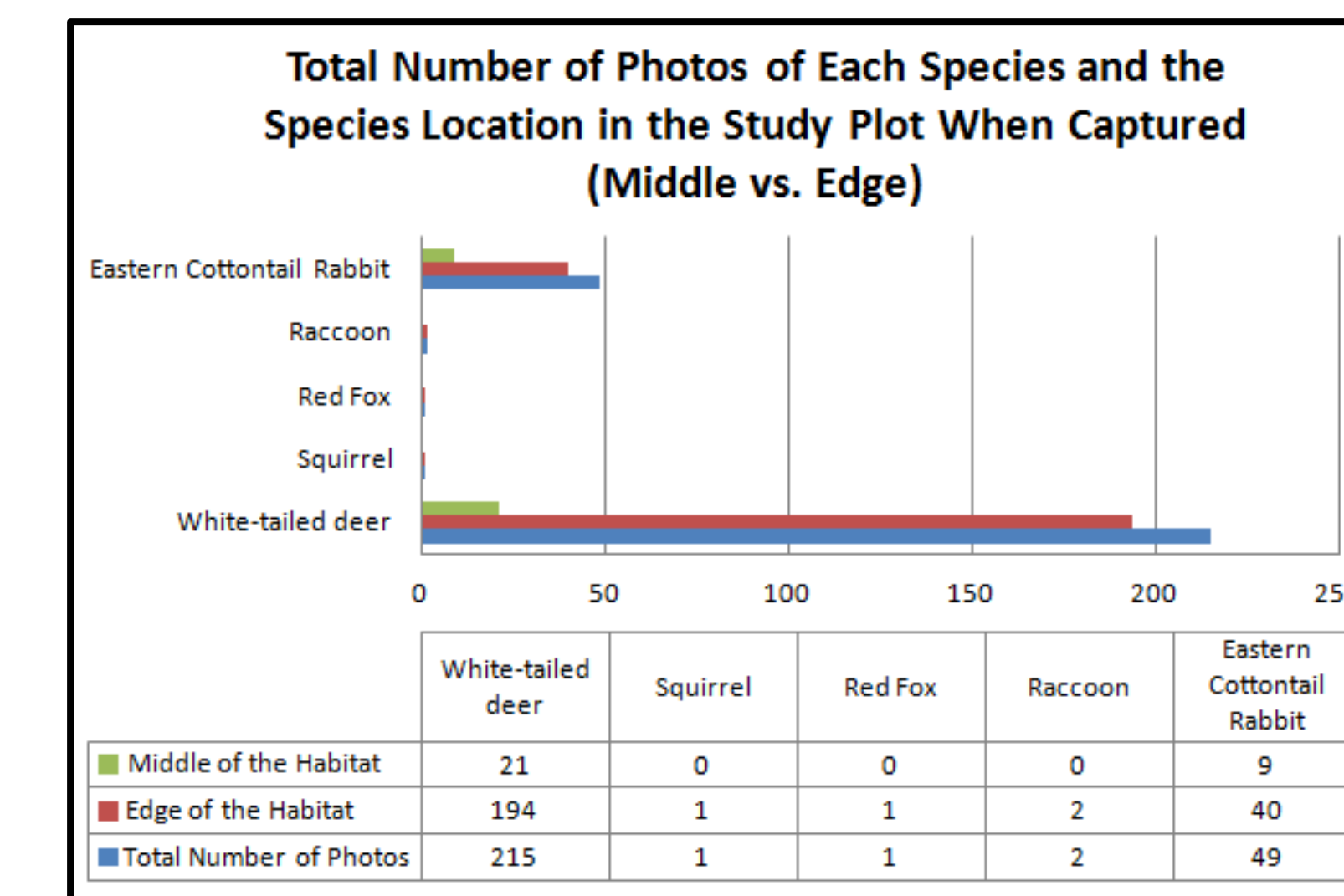


Fig. 4: A graph featuring the total number of photos collected in the middle and edge of the habitats and in all



Fig. 5: (Left) A branch bitten by a cottontail rabbit. (Right) White-tailed deer hoof print.

CONCLUSIONS

Finding a Home: Providing Habitat for Shrubland Species on the Connecticut Coast demonstrated that early successional habitats is important to many species living in Connecticut. The data collected showed that a variety of wildlife species use this type of habitat for forage and cover.

In the future the results from this study will be used to examine changes in the use of these areas as succession continues to occur and when combined with other surveys, will add to our knowledge of the importance of this type of habitat to Connecticut wildlife species.

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