

Virginia Department of Conservation & Recreation
Virginia State Parks
Final Report for
Kiptopeke Habitat Management & Education Grant
At Kiptopeke State Park

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Virginia Coastal Zone Management Program

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Task # 1103

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The views expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Department of Commerce, NOAA, or any of its subagencies.

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Executive Summary

Kiptopeke State Park is a 562-acre state park located on the southern tip of Virginia's Eastern Shore. Bordering the Chesapeake Bay, the park is a mix of coastal forest and former agricultural land that is being managed to accelerate natural succession to coastal forest. Balancing its conservation mission, the park also features a 200+ site campground, six 6-bedroom cabins, a yurt, bunkhouse, swimming beach and fishing pier. The park's recreational opportunities coupled with its conservation mission provide an excellent opportunity to introduce the public to issues and outcomes related to habitat management, deer management, and migratory bird stewardship.

In years past, the park has received grant funding to accelerate the natural succession of farm land to coastal forest by planting hardwoods to create habitat for migratory songbirds. However, the natural recruitment of pines has started choking out the hardwoods resulting in a need to clear the pines to improve the survival rate of the hardwoods and create more migratory birding habitat in the long term. The original plan was to start this project in early spring to minimize the effects of heat and humidity on park staff. However, delays in executing and finalizing funding as well hiring staff and hosting appropriate chainsaw training meant that pine thinning started in July creating unfavorable working conditions and further contributing to staff turnover. Pine thinning was completed in November. While the park exceeded the total acreage of pines thinned by 1.2 acres for a total of 9.9 acres, the project revealed that the thickness and density of the pines is such that additional pine thinning should occur in the park to continually improve habitat. Future projects should include funding to contract out the pine thinning rather than use park staff due to the difficult nature of the work and specialized training needed.

Seven 16' deer stands were installed in the park to improve deer harvest during managed hunts. Use of the deer stands resulted in a total of 37 deer taken over 4 days of hunting and significant improvement over the 26 deer taken during 7 days of hunting in 2012. It is clear that over the years, the installation of these deer stands will significantly reduce the deer population and mitigate the effects of

deer browse on shrubs and trees. The portable use of the stands will allow park management to relocate the stands as needed to provide hunting pressure throughout the restoration fields.

The grant funds allowed the park to offer a full complement of interpretive education programs related to migratory birds, wetlands management, coastal management, water quality, species identification, and water-based recreation to the visiting public. The cumulative effect of these interpretive programs is that the visiting public begins to develop a stewardship ethic and begins to advocate for and understand conservation-based projects. Several new interpretive signs are being installed near the playground and hawk observatory to further help the public understand migratory birds and habitat management.

Due to decreased funds over the last few years, the park's hawk observatory platform had fallen in disrepair. This grant provided funds to repair joists, handrails, and platforms to allow for more public programs and hawk counts in the future.

An additional deliverable of planting six migratory bird habitats was added to the project. Designed to provide an opportunity for lodge guests to observe migratory songbirds on site, the micro habitats included a mix of trees and shrubs providing spring and fall food sources for the birds.

Pine Thinning Project Description

The pine thinning project of this grant required the thinning of 8.7 acres of naturally occurring pines to improve the survival rates of planted hardwoods and improve migratory birding habitat. Four test plots were placed throughout the thinning area order to provide data about the pines that were being removed. The final outcome of the project was the thinning of 9.9 acres, an additional 1.2 acres above the requirement.

Pine Thinning Area Plot Data

Purpose:

- Obtain an estimate of the number of pines that were removed during the thinning project.
- Obtain an estimate of the number of planted species and volunteers that exist in the pine thinning area.
- Obtain an estimate of the average height of the pines removed during the thinning.
- Obtain an estimate of the average height of the planted and volunteer species that exist in the restoration area.

Methodology:

- Circular plots were placed in 4 different locations throughout the pine thinning area.
- Each plot was 1/10 of an acre in size: 37.2 foot radius.
- The total number of pines and the total number of planted species in each 1/10 acre plot were recorded, then estimated per acre.
- An average number of pines in the 4 plots were determined to give an overall estimate of the number of pines removed throughout the entire pine thinning area.
- The average height of the pines and planted species were also recorded.
- Other observations such as the presence of deer browse and invasive species were also recorded for each plot.

Plot Results:

Plot 1:

- 124 pines were counted: Estimate of 1,240 pines per acre
- Average height of pines: 15-20 ft
- 7 planted/volunteer species were present: Estimate of 70 species per acre
- Average height of planted/volunteer species: 1-2 ft.
- Observations: American holly, *Baccharis halimifolia*, and oak species were the primary planted/volunteer species that were observed in the plot. All the oak species had suffered deer browse damage, and were resprouting off the browsed stump.

Plot 2:

- 186 pines were counted: Estimate of 1,860 pines per acre
- Average height of pines: 10-15 ft
- 14 planted/volunteer species were present: Estimate of 140 species per acre
- Average height of planted/volunteer species: 3-4 ft.
- Observations: American holly and *Baccharis halimifolia* were the primary planted/volunteer species that were observed in the plot.

Plot 3:

- 28 pines were counted: Estimate of 280 pines per acre
- Average height of pines: 10-15 ft
- 16 planted/volunteer species were present: Estimate of 160 species per acre
- Average height of planted/volunteer species: 2-4 ft.
- Observations: American holly, wax myrtle, and *Baccharis halimifolia* were the primary planted/volunteer species that were observed in the plot.

Plot 4:

- 76 pines were counted: Estimate of 760 pines per acre
- Average height of pines: 12-18 ft
- 18 planted/volunteer species were present: Estimate of 180 species per acre
- Average height of planted/volunteer species: 4-7 ft.
- Observations: Wax myrtle, red cedar, and blackberry were the primary planted/volunteer species that were observed in the plot.

Other Observations:

- The primary planted trees that were still existing in the plots were oak species and wax myrtle, ranging in size from 1-5ft (Oak) and 5-7ft (wax myrtle).
- Non-native species that were found throughout the thinning area were lespedeza, Japanese honeysuckle, Autumn olive, Chinese privet, and multi-flora rose.

Findings:

- Estimated pines per acre: $1240+1860+280+760/4=$ **1,035 pines**
- Estimated number of pines removed: 1,035 pines x 9.9 acres thinned = **10,246 pines**
- Estimated planted/volunteer species per acre: $70+140+160+180/4=$ **137 plants per acre.**
- Estimated number of planted/volunteers in the pine thinning area: 137 x 9.9 acres= **1356 plants**
- Average height of pines removed: **14.5 feet**
- Average height of planted/volunteer species: **3.5 feet**

Total Acres Thinned:

Northern section: 3.4 acres

Southern section: 6.5 acres

Total: 9.9 acres

Monitoring Plot Location Map





Aerial Photos Before & After Pine Thinning (North Area)
***additional photos provided on CD**

Before

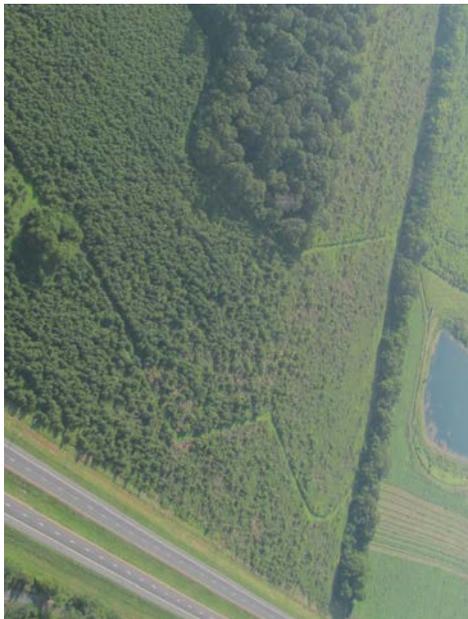


After



Aerial Photos Before & After Pine Thinning (Parsons)
***additional photos provided on CD**

Before



After



Sawyer Training

*additional pictures provided on CD



Pine Thinning Work

*Additional pictures on CD



Deer Management Project Description

Seven deer 16' high deer stands were installed in the park in early November in anticipation of four days of management deer hunts. 37 deer were taken in the four hunting days in 2013 as compared to 26 deer in seven hunting days in 2012. The 47% increase in deer being taken will have a significant effect in reducing habitat damage due to deer browse.

Photos of Deer Stand Installation

***Additional pictures on CD**



Education Programs Project Description

In the months of May 2013 through October 2013 over 300 interpretive programs were offered funded by the grant. Programs ranged from migratory bird programs and watershed education to water-based recreation and species identification. Due to the varied demographics of the visiting public, programs were targeted to appeal mainly to children and their parents. The goal of the programs was to help the visiting public understand the challenges of conversation-based management projects, connect with nature, and begin to create a personal stewardship ethic. Over 3,000 individuals attended these programs. Interpretive signage will be placed at the Hawk Observatory and the playground.

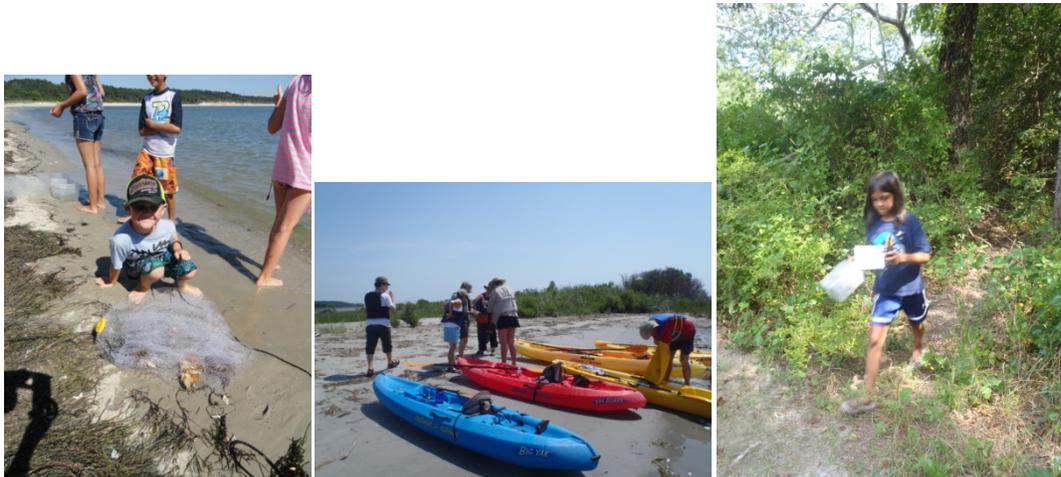
Sample Schedule of Programs

*full schedule on CD

<p>Wednesday, May 29 Co-N-Settle* Learn how to settle and catch critters in the Chesapeake Bay. FREE</p> <p>Thursday, May 30 All Tied Up! The various knots used on the Bay through kit purpose storytelling. FREE</p> <p>Friday, May 31 Castling for Critters* Join us while we gain knowledge about creatures in the Chesapeake Bay through cast and tag throwing. FREE</p> <p>Saturday, June 1 Clean the Bay Day! This is a special day to help clean up the Bay. We will be doing a "Clean the Bay Day" event. FREE</p>	<p>Sunday, June 2 Adventurous Explorer* Learn how to settle and catch critters in the Chesapeake Bay. FREE</p> <p>Monday, June 3 Beach Safari* Create your own Bay life collage while we search the beach for various remains from Bay creatures. FREE</p> <p>Tuesday, June 4 ALL Tied Up! The various knots used on the Bay through kit purpose storytelling. FREE</p>	<p>Co-N-Settle* Learn how to settle and catch critters in the Chesapeake Bay. FREE</p> <p>Kit Purpose Storytelling The various knots used on the Bay through kit purpose storytelling. FREE</p> <p>Kit Purpose Storytelling The various knots used on the Bay through kit purpose storytelling. FREE</p> <p>Kit Purpose Storytelling The various knots used on the Bay through kit purpose storytelling. FREE</p> <p>Kit Purpose Storytelling The various knots used on the Bay through kit purpose storytelling. FREE</p> <p>Kit Purpose Storytelling The various knots used on the Bay through kit purpose storytelling. FREE</p>	
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Photos of Programs

Additional pictures on CD



Drafts of Interpretive Signage

Kiptopeke State Park



HAWK OBSERVATION

The annual Kiptopeke Hawkwatch began 1977 by volunteers. Since 1995, Coastal Virginia Wildlife Observatory (www.cvwo.org) has hired full-time hawk watchers, who, along with a group of skilled volunteers, record migrating hawks daily from September 1 to November 30.

Visitors are always welcome. The data is sent to the Hawkcount.org website, operated by the Hawk Migration Association of North America. Collecting this data is important to learning about hawk populations, educating the public, and conserving vital habitats.

Of particular interest is the spectacular falcon flight. The record one day count for Peregrines is 364 and for Merlins 462. The total number of hawk species recorded in a single day is 18.

Turkey Vultures and Black Vultures were counted for 30 years, but their movements back and forth during the season make it difficult to determine their true migration numbers and the Observatory no longer records that data.



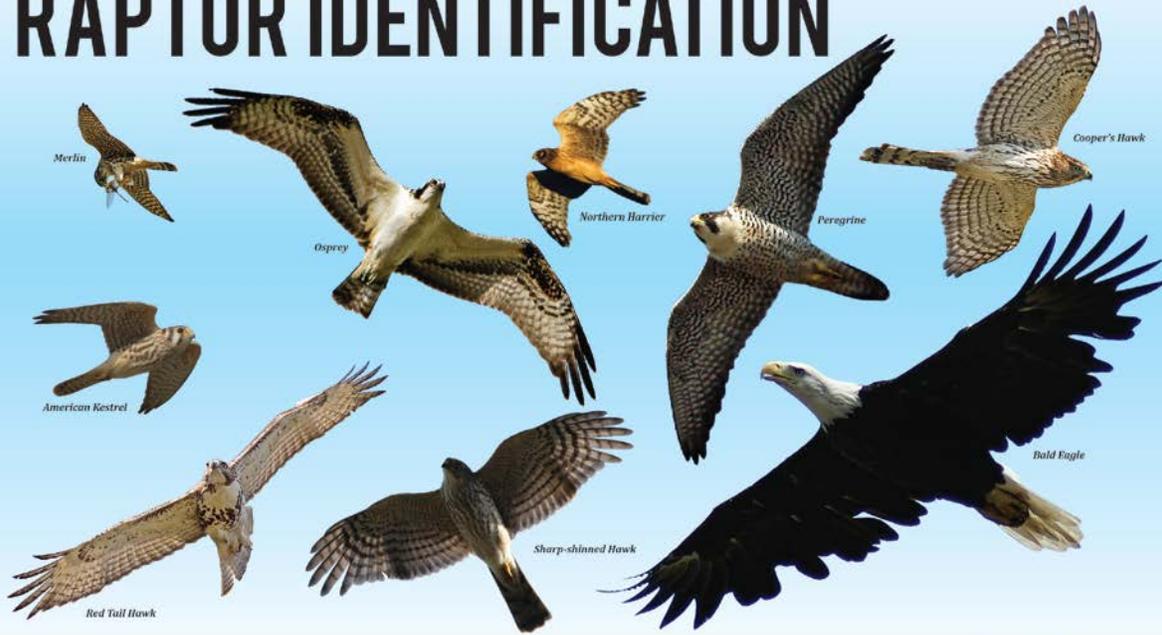
Red Tail Hawk



Virginia Coastal Zone
MANAGEMENT PROGRAM



RAPTOR IDENTIFICATION



Virginia Coastal Zone
WATERFRONT PLANNING

1ft 2ft 3ft 4ft 5ft 6ft 7ft 8ft 9ft 10ft

WHAT'S YOUR WINGSPAN?

Bald Eagle 7'6"
Osprey 4'8"
Peregrine 3'3"
Red Tail Hawk 4'2"
Cooper's Hawk 2'6"
American Kestrel 2'0"
Bald Eagle
Osprey
Peregrine
Red Tail Hawk
American Kestrel

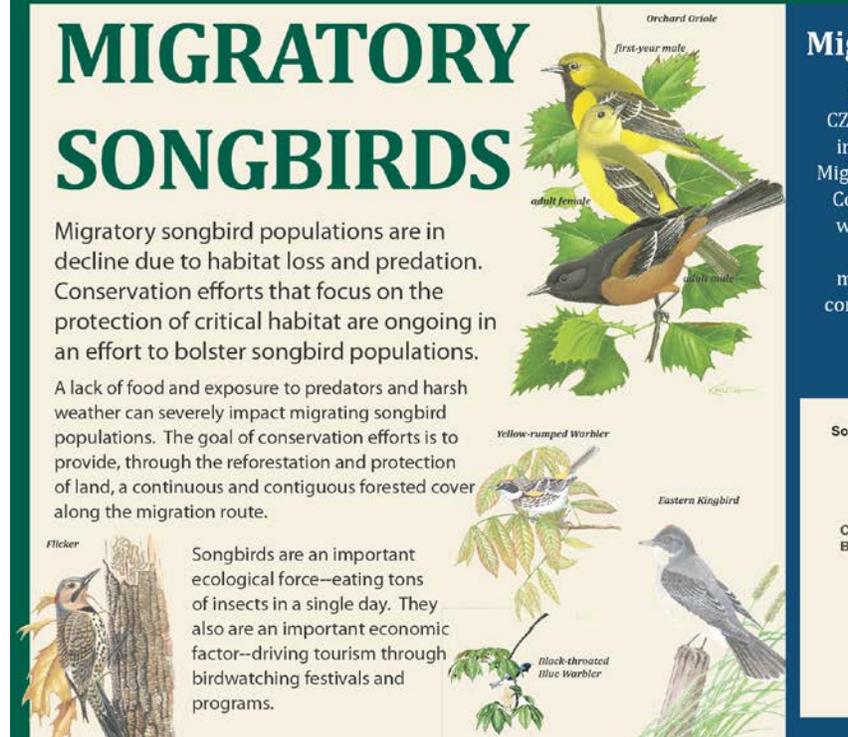
Kiptopeke State Park

MIGRATORY SONGBIRDS

Migratory songbird populations are in decline due to habitat loss and predation. Conservation efforts that focus on the protection of critical habitat are ongoing in an effort to bolster songbird populations.

A lack of food and exposure to predators and harsh weather can severely impact migrating songbird populations. The goal of conservation efforts is to provide, through the reforestation and protection of land, a continuous and contiguous forested cover along the migration route.

Songbirds are an important ecological force—eating tons of insects in a single day. They also are an important economic factor—driving tourism through birdwatching festivals and programs.



Orchard Oriole
first-year male
adult female

Yellow-rumped Warbler

Eastern Kingbird

Black-throated Blue Warbler

Flicker

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Hawk Observatory Repairs Description

In late summer of 2013, repairs to the hawk observatory were made including replacing joists, handrails, and platform planks. The repairs have made it possible to hold group programs, volunteer managed bird counts, and research groups on the hawk observatory platform.

Photos of Hawk Observatory Repairs

Additional Photos on CD



Lodge Micro Habitats Project Description

Due to budget savings and in-kind match provided, an additional deliverable of planting six migratory bird habitats at each six bedroom lodge in the park was completed. The plantings included a mix of hardwoods and fruit-bearing shrubs and were all Eastern Shore native species.

Lodge Micro Habitat Photos

