MIGRATORY BIRDS OF THE LOWER DELMARVA

A HABITAT MANAGEMENT GUIDE FOR LANDOWNERS

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THE CENTER FOR CONSERVATION BIOLOGY AT WILLIAM & MARY

COUNTY OF NORTHAMPTON VIRGINIA

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE

Cover art by Marian Urbi Watts.

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UNDERSTANDING THE MIGRATORY BIRD / EASTERN SHORE CONNECTION

The Human Factor

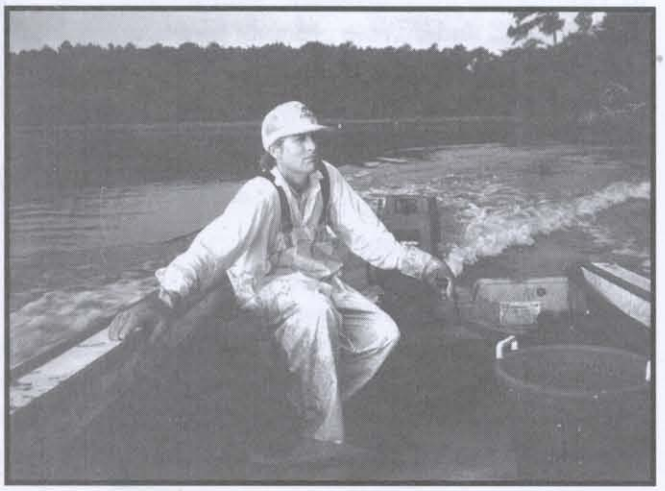
Virginia's Eastern Shore has been valued for its abundant natural resources for thousands of years. The area has supported a steady and colorful parade of human communities sustained by a cornucopia of wild and cultivated food, timber, salt, and majestic scenery. Through the ages a rich connection has developed between the Eastern Shore's inhabitants and the surrounding environment. The tradition continues today with farming, fishing, and tourism as the cornerstones of Northampton County's economy.

In the 1989 Comprehensive Plan, Northampton County formally recognized the community's vital alliance with the area's unique natural resources. The Comprehensive Plan states "Northampton County has one of the great ecological and biological phenomenon of the entire east coast of the United States. A peculiarity of geography has caused semi-annual pile-ups of some millions of birds (passerines) in the lower section of the County . . . Suitable land use planning and management can preserve this valuable and unique natural asset . . ." Because of the County's demonstrated concern for the area's natural resources, in 1992 the Virginia Coastal

Through the ages, a rich connection has developed between the Eastern Shore's inhabitants and the surrounding environment.

Not only are agriculture and seafood NorthamptonCounty's most important industries, they have long influenced the local way of life.

Photos by:
Tim Hayes, (top); Barry Truitt, (bottom).



Protecting the birds and their habitat is not only a significant contribution to a global conservation effort, it is a local investment in the rapidly growing ecotourism industry.

Resources Management Program presented Northampton with an opportunity to develop and implement a local Special Area Management Plan (SAMP). In collaboration with Northampton County, state, federal and private partners, the Virginia Coastal Program initiated the SAMP program of inter-related activities with the dual purpose of protecting the county's coastal resources and improving the local economy. Under the SAMP, a citizens' task force works with the County officials and experts from the private and public sector to develop new policies to protect coastal habitats and water quality, and foster sustainable, environmentally-sensitive development. Migratory birds and their habitats were among several coastal resources specifically identified by the SAMP as both ecologically and economically important. Protecting the birds and their habitat is not only a significant contribution to a global conservation effort, it is a local investment in the rapidly growing eco-tourism industry.

The Comprehensive Plan and the SAMP reflect the local community's values and priorities. But our community is not without diversity of opinion and our community is not cut-off from the rest of the world. Change is coming to Northampton County. Through volunteer programs and enforceable policies, we are steering the direction of our future. We reap the benefits of living in a rich and beautiful ecosystem passed on to us by generations of judicious farmers and watermen. As we grow in new directions, we must accept the challenge of protecting and capitalizing on our natural heritage. Northampton County covers an area of more than 209 square miles - upland forests and farms, villages and towns, tidal marshes, wetland forests, and barrier islands. The majority, over 90%, of this land is privately owned. As a landowner, you have both special advantages and special responsibilities. Decisions you make about your property have effects on the community and the ecosystem beyond.

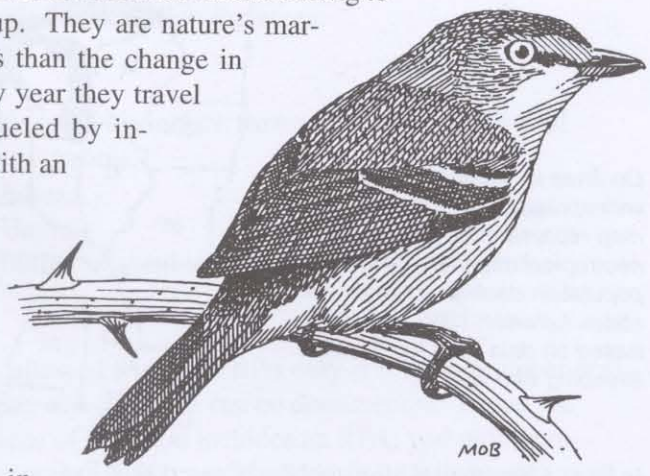
Landbird Migrants

What Is a Neotropical Migratory Bird?

As they travel in fall and spring, migratory birds concentrate in special places like Hawk Mountain, Pennsylvania; Cape May, New Jersey; and Northampton County, Virginia.

Neotropical migratory birds can manage a summer home in quiet rural Virginia and a winter home in a Caribbean paradise and a dozen glorious retreats in between. Of course, Neotropical migrants are not restricted to Virginia and the Caribbean. They are our most colorful and diverse group of birds including Indigo Buntings, Ruby-throated Hummingbirds, Hooded Warblers, Northern Orioles, Purple Martins, and Eastern Kingbirds. They can be found every summer throughout North America from the scrub lands of Texas to the spruce forests of Canada. Every winter they flood Mexican coffee plantations, fill the Panamanian rainforest, and reach deep into the Amazon. And as they travel in fall and spring, they concentrate in special places like Hawk Mountain, Pennsylvania; Cape May, New Jersey; and Northampton County, Virginia.

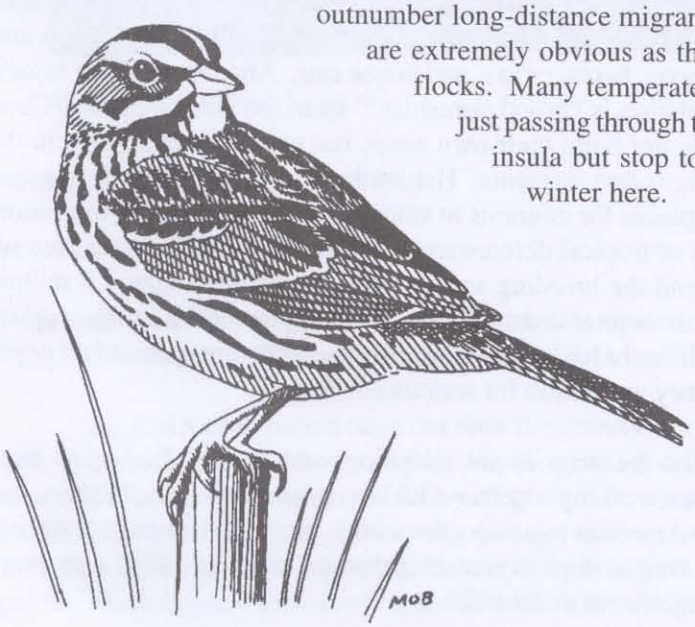
There are nearly 200 species of Neotropical migrants. About 70% of all birds breeding in North American forests belong to this extraordinary group. They are nature's marvels. Most weigh less than the change in your pocket. Yet every year they travel thousands of miles, fueled by insects, fruit and seeds with an efficiency estimated to be the economy car equivalent of more than 500,000 miles to the gallon! With astounding precision, these birds terminate their trip by finding the very same territories in field or forest year after year after year. The Phoebes and Barn Swallows nesting under the roof of your shed probably consider it their life-long home. All of this jet-setting is not the extravagant lifestyle it might seem. These birds lead risky lives with no room for waste. They depend on the continued safety of their breeding and winter habitats, and suitable resting and refueling sites in between.



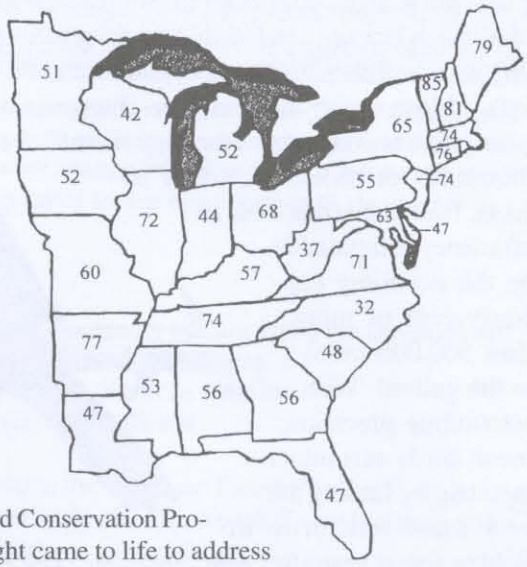
A Blackpoll Warbler can fly from New England to Venezuela in 60-80 hours. Most migrants, however, take a leisurely 4-8 weeks for their southbound trip.

What Is a Temperate Migratory Bird?

In addition to the many Neotropical migrants, there are numerous species of birds that migrate on a more limited scale, never leaving North America. Called temperate or short-distance migrants, these birds winter across the middle and lower United States. Some familiar temperate migrants include American Robins, American Goldfinches, Blue Jays, nuthatches, kinglets, and several species of sparrows. Temperate migrants are less diverse than Neotropical migrants. However, in sheer abundance, on the Shore they outnumber long-distance migrants two to one and are extremely obvious as they travel in large flocks. Many temperate migrants are not just passing through the Delmarva Peninsula but stop to spend the entire winter here.



Most migratory songbirds fly under cover of darkness and can travel hundreds of miles in one night.



Declines in neotropical birds are widespread. The numbers on the map represent the percentages of neotropical migratory bird species population declines in individual states between 1980 and 1989, based on data from the National Breeding Bird Survey.

In 1990, a Neotropical Migratory Bird Conservation Program now known as Partners in Flight came to life to address the alarming decline in many migratory bird populations. It is a decentralized, cooperative group linking government agencies, private organizations, businesses, citizens, and scientists across North, South, and Central America. Partners in Flight helps to coordinate research and monitoring efforts as well as publish and distribute information on migratory bird management and conservation. For more information on how you can become involved at the state level contact: Dept. of Game and Inland Fisheries, Nongame and Endangered Wildlife Program, P.O. Box 11104, Richmond, VA 23230, (804) 367-1000.

Why Should We Be Worried About Migratory Birds?

In recent years, scientists have recorded some disturbing trends in the populations of many migratory species.

In recent years, scientists have recorded some disturbing trends in the populations of many migratory species. These birds have been showing consistent population declines since the early 1970's. Scientists are investigating several possible causes. Among them are: (1) habitat fragmentation and loss in North America; and (2) tropical deforestation. When breeding habitats, especially forests, are fragmented, birds face a greater risk of predation from animals such as raccoons, foxes, crows, and house cats. Another problem associated with fragmentation is "brood parasitism" from the Brown-headed Cowbird. Cowbirds do not build their own nests, but rather lay their eggs in the nests of other birds - often migrants. Habitat loss, especially in coastal areas, also means fewer places for migrants to stop over and refuel during migration. The consequences of tropical deforestation are clear. The majority of Neotropical migrants spend the breeding season spread over more than 1.5 million square miles and the winter crammed into an area just over 2 million square miles. Alone, each factor has a damaging effect on different species and populations; together they are reason for serious concern.

Fortunately, the story is not all gloom and doom. Biologists from Canada to Brazil are working together with lawmakers, foresters, farmers, and citizens across the Americas to protect these birds and their habitats. Your help is needed! A few simple steps to protect important habitat on your own property can make a significant difference.

Why Are Migratory Songbirds Important To Us?

In fulfilling their own needs, migratory birds are an integral part of a healthy ecosystem. Through the simple act of eating, they help maintain the dynamic balance of nature. They are among our best sources of natural pest control and our most efficient seed dispersers. A pair of warblers will consume thousands of insects as they raise a brood of young birds. On a diet of insects and fruit, a migratory songbird may eat several times its own weight when storing fat to fuel migration. The seeds of the fruit will be carried to new places and deposited. There they will sprout and grow, adding to an existing forest or creating a new one. The thousands of insects they eat would, if not otherwise controlled, defoliate and damage valuable timber, crops, and forest habitat.

Given their important ecological roles, knowing about the health and growth (or decline) of migrant populations provides us with important information about the health of our environment. Every different songbird migrant has particular habitat needs. On the most basic level, this means that some need forests; others, open fields, and still others, marshes. All of these habitats together define the landscape. If the landscape changes slowly, the birds are able to modify their distribution to match the new distribution of habitats. If change is too dramatic or abrupt, the birds may not be able to adjust.

Millions of Americans enjoy bird watching as a hobby. For some, an hour of quiet observation might bring them a story of intrigue rivaling the classics of literature or beauty and harmony matching that of any great painting. For others, the passionate pursuit and identification of species is much like a sport. Whatever, the individual attraction, bird watching is an activity free to everyone. The legions of bird enthusiasts are growing. They contribute billions of dollars to the U.S. economy every year as they travel and buy bird seed, feeders, cameras, binoculars, and books. Every year in Cape May, New Jersey bird watchers spend over $5,000,000 and visitors to Chincoteague National Wildlife Refuge spend more than $6,000,000. Here in Northampton County, where birding interest is just developing, revenues are increasing annually as more bird watchers discover this important area during fall migration.

Gray catbirds are abundant as they travel through Northampton County. During their stay here they reside in dense coastal scrub and gorge on poke berries and other fleshy fruits.

Annual Eastern Shore Birding Festival

The First Annual Eastern Shore Birding Festival was held in early October, 1993. Visitors came from near and far to watch birds, join guided nature hikes, canoe seaside marshes, experience songbirds and hawks up-close at Kiptopeke, and enjoy the Eastern Shore and each other's company. During that one weekend, birdwatchers filled Northampton's hotels and restaurants to capacity. Every year the crowds grow with the Festival's reputation. In 1995, Birding Festival participants spent over $100,000 on the Shore. The Birding Festival has also had a spill-over effect; bird watchers are coming back for more all year-round. Watch for festival information in August or contact the Eastern Shore of Virginia Chamber of Commerce.

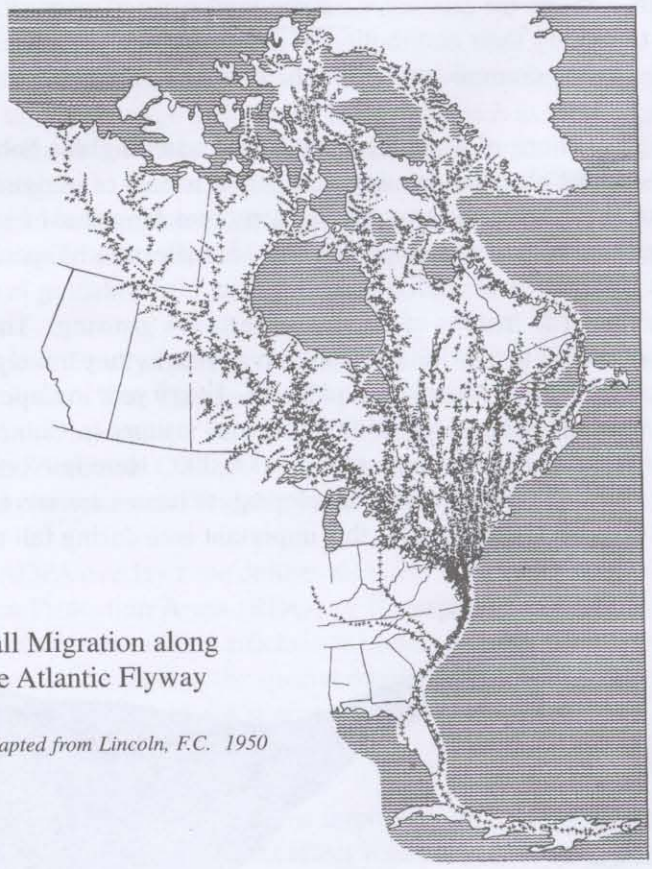
The Birding Festival needs volunteers! If you are interested in helping keep the Eastern Shore Birding Festival a success, contact the Eastern Shore of Virginia Chamber of Commerce
P.O. Drawer R
Melfa, VA 23410.
(757) 787-2758.

Why Is Northampton County a Critical Stopover Site?

Northampton County is most important to migratory birds in the fall months as they travel from their breeding grounds in the north to wintering grounds in the south. During this time of year, migrating songbirds may be seen virtually anywhere in the continental United States. However, the density of birds is not uniform across the continent, but instead tends to be higher along traditional migration routes. One of these routes lies along the Atlantic Coast. Birds that breed across the northeastern United States and Canada move south and east with favorable weather until reaching the Atlantic Ocean. From there they move southward along the coast to reach the Caribbean or eventually shifting westward towards the Gulf of Mexico.

Along the Atlantic Coast, significant barriers such as large bodies of water act as migration bottlnecks funneling large numbers of birds on relatively small land masses. For southbound songbird migrants, the Chesapeake

Northampton County supports one of the largest concentrations of landbirds along the Atlantic Coast and is an important link in a much longer chain of habitats stretching from Canada to South America.



Fall Migration along the Atlantic Flyway

Adapted from Lincoln, F.C. 1950

Bay is one of the largest physical barriers along the East Coast. Migrants that reach the mouth of the Bay in the hours just before dawn land near the tip of the Delmarva Peninsula. Many of these birds depend on habitats found within lower Northampton County for rest and refueling before leaving on the next leg of their journey. Because of its unique geographic position, Northampton County contains some of the most critical habitats for birds migrating along the Atlantic Coast.

When Do Fall Migrants Move Through Northampton County?

Although much less dramatic than the larger waves of birds seen later in the fall, groups of songbird migrants actually begin to arrive in Northampton County as early as late July. These early visitors include Black-and-white Warblers, Northern Orioles, and Northern Waterthrushes. The majority of these early birds are headed for the tropics and stay for relatively long periods of time before moving farther south. By early September, the frequency of cold fronts increases sharply bringing larger numbers of both species and individuals. Neotropical migratory birds peak in both diversity and numbers between mid-September and mid-October. By the time the long-distance travelers begin to move on, temperate migrants such as Yellow-rumped Warblers, Blue Jays, and Golden-crowned Kinglets are present in large numbers. These species reach their highest numbers in early November and continue to move through the County until early December. Many temperate migratory birds remain for the winter. In all, forested habitats of Northampton County support between 6-7 million migrating songbirds during the course of a single fall season.

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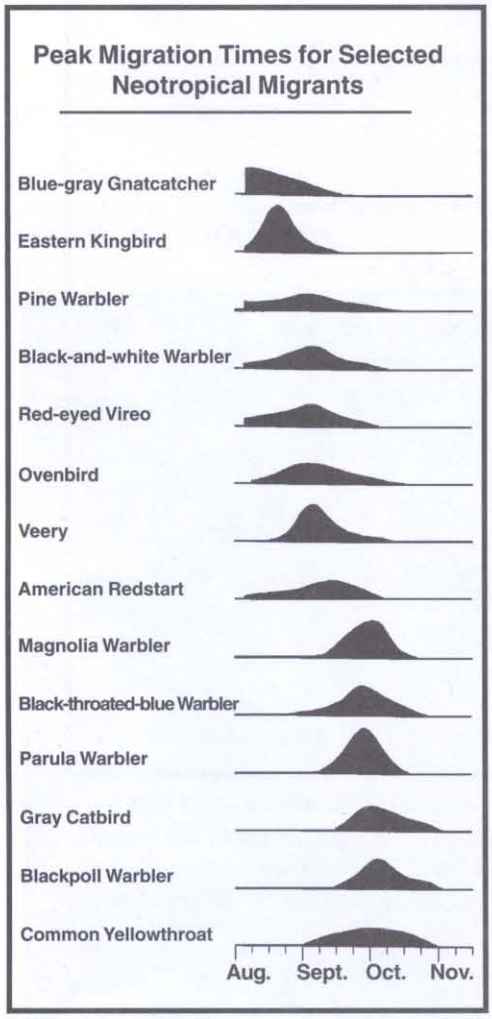
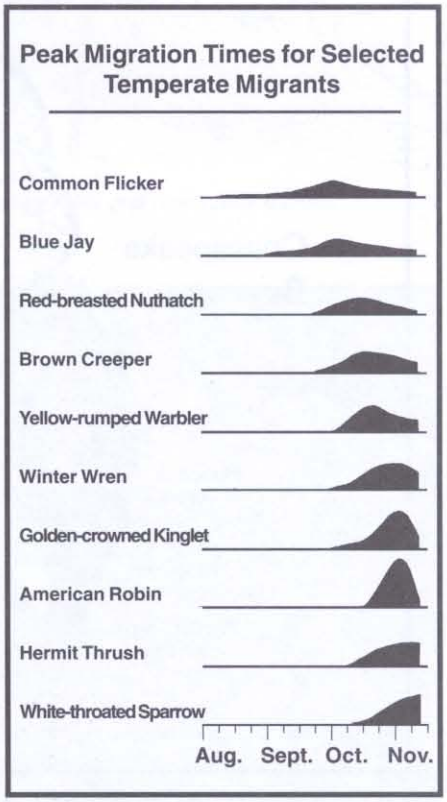


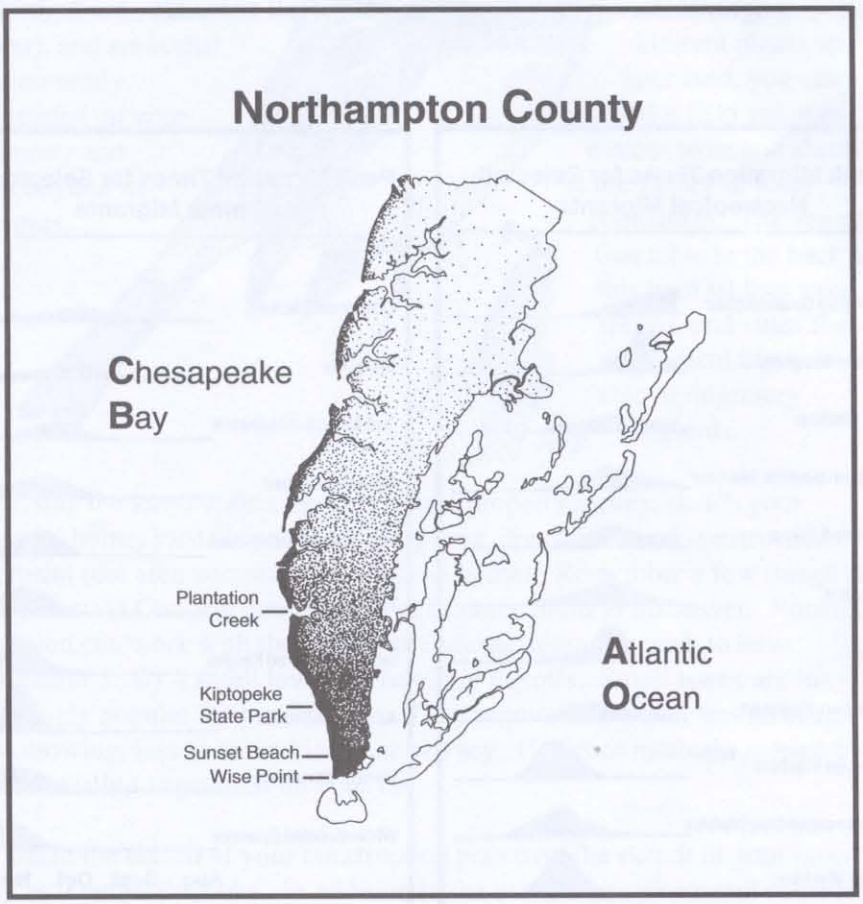


From early August through late November, the scene changes daily as a colorful parade of migratory birds pass through Northampton County. Data compiled from Watts and Mabey, 1992-1993.

Where Can Fall Migrants Be Found in Northampton County?

As it is throughout North America, birds are not distributed evenly across the Delmarva Peninsula. Due to its geographic location, north-south orientation, and linear shape, birds migrating through Northampton County tend to concentrate within the lower 6 miles and within approximately 200 yards of the Bay shoreline. Migrating birds land in large numbers near the tip of the peninsula as they reach the water barrier of the Chesapeake Bay. During the early morning hours birds disperse from the tip and fly to the north in search of food and cover. In doing so, many of these birds follow the Bay shoreline and become concentrated within the forested corridor between Wise Point and Plantation Creek. This northward movement along the Bay may be readily observed at places like Sunset Beach and Kiptopeke State Park in the early morning hours following strong cold fronts.

Migrant birds tend to concentrate within the lower 6 miles of the peninsula and within approximately 200 yards of the Bay shoreline.



On the mainland, the funneling effect of migration was documented in a two-year study as part of the Special Area Management Plan funded by the Virginia Coastal Program. Migratory birds were found to be most concentrated along the edge of the Bay and the southernmost tip of the County. Illustration by Marian Urbi Watts.

What Do Fall Migrants Use for Food and Cover?

More than any other factor, the amount and type of vegetation determines the diversity and number of birds that a parcel of land can support. A study conducted in the early 1990's illustrates this close relationship. A 50% increase in the density of understory, those plants found in the lower levels of a forest, results in a corresponding 50% increase in the number of migrants supported over the course of a single fall season. In other words, the thicker the forest or scrub, the more migratory songbirds will use it. Migrants depend on vegetation as both a source of food and protection from daytime predators.

A 50% increase in the density of understory vegetation results in a 50% increase in the number of migrants supported.

All songbird migrants depend on wild fruit, insects or both to provide the energy needed to successfully complete migration. Vegetation is the engine that drives the food chain and produces both fruit and insects in abundance. On the Eastern Shore, understory plants are of particular importance because they produce the greatest diversity and volume of fall fruits. Maintaining a wide range of fruit-producing plants such as sassafras, cherries, and myrtle is important - different birds prefer different fruits and many plant species do not produce fruits every year. Because insect abundance is related to the amount of available foliage, dense patches of fruiting plants provide ample food for both fruit and insect eating birds.

All songbird migrants depend on wild fruit, insects, or both to provide the energy needed to successfully complete migration.

Cover is an essential component of any habitat. Following long flights, migratory birds need areas to rest and forage where they are relatively safe from potential predators. Most songbirds will not venture far from vegetative cover, even when they are hungry. Parcels of land that provide dense stands of vegetation are essential to their survival.

Many migratory songbirds prefer forests with dense understories for food and cover. Maintaining or enhancing the understory vegetation will substantially increase the ecological value of your property. Illustration by Marian Urbi Watts.

Planning for the Future with Conservation Easements

Conservation easements are a sensible way of protecting the ecological value of your property long into the future. Establishing a conservation easement can also protect you economic interests as well. For more information about conservation easements contact:

American Farmland Trust
Dir. of Land Protection
1920 N St., NW,
Suite 400
Washington, DC 20036
(202) 659-5170

The Nature Conservancy
Virginia Coast Reserve
P.O. Box 518
Nassawadox, VA 23413
(757) 442-3049

The Trust for Public Land
Chesapeake Lands Project
666 Pennsylvania Ave.
Washington, DC 20003
(202) 543-7552

Chesapeake Bay Found.
164 Plume Center, #701
Norfolk, VA 23510
(757) 622-1964

Virginia Outdoors Found.
203 Governor St.
Suite 302
Richmond, VA 23219
(804) 786-5539

VA Dept. of Conservation and Recreation,
Div. of Natural Heritage
1500 E. Main Street
Suite 312
Richmond, VA 23219
(804) 786-7951

SHARING YOUR LAND WITH MIGRATORY BIRDS

It is a special combination of weather, geography, and the bird's natural orientation that brings the migratory songbirds to the lower Delmarva. Once here, they must rest and refuel. So, sight unseen, it is safe to say that your Northampton County property contains important migratory songbird stopover habitat. Even the smallest lots, given that they have a tree or two or an overgrown field, provide food and shelter for a few migrants.

The single greatest contribution that you, as an Eastern Shore land owner, can make to migrant songbirds is to conserve or enhance native plants on your property, particularly understory shrubs. If you don't have much existing vegetation on your property or would like to provide even more habitat for the birds, planting more native trees and shrubs will have a great effect. With careful and creative planning, these general recommendations will not only be simple to accomplish, but might save you time and money, (see sidebars on following pages) as well as increase the value of your property.

As you plan a new development or improvements on your land, consider integrating the specific suggestions outlined in the following sections.

General Managment Guidelines

- ***Set aside undisturbed areas as wildlife habitat when planning any significant changes on your property.***

Considering wildlife habitat during the planning phase of a construction or development project is the most effective means of maintaining habitat in a natural condition. Try to maintain at least 60% of the native vegetation on your lot.

- ***Use native plants for landscaping, especially those with high value to migratory birds.***

Native plants typically provide the best habitat and food for migrant birds and other wildlife. These plants are also best adapted to the local climate and easier to maintain. At the end of this booklet you can find a list of plants that are suited to the Eastern Shore and have exceptional value for migrants.

- ***Connect habitats on your property with those on surrounding lands.***

How habitats are connected has an influence on how animals move and how many may be supported within a local area. You can maximize your land's usefulness for birds by creating vegetated "corridors" between existing vegetation patches. Consider the distribution of habitats on surrounding lands when planning significant changes on your property. Plan your lot so that "set asides" or landscape features adjoin those of your neighbor. This provides more cover for songbirds so that they can escape from predators.

Specific Recommendations by Land Type

Forested Lands

- ***Prior to construction, conserve native plants.***

Plan your homesite to protect at least 60% of the existing vegetation on your property. When removing trees and shrubs from the construction area transplant the most valuable native plants (see native plant list in back) to undisturbed areas of the same habitat type to enhance the value of "set aside" areas for migrating birds.

- ***Leave dead trees standing, if safety considerations permit.***

Dead trees area a component of healthy forest habitats. They are a unique source of food and shelter for many migrant birds such as Common Flickers.

- ***Design viewing areas and access paths in ways that preserve understory vegetation.***

Well designed views are compatible with the management of wildlife habitat and enhance enjoyment and privacy. Rather than clearing your entire waterfront, consider clearing only a part, and only understory vegetation or canopy trees, but not both.

- ***Construct brush piles to provide protective cover for migratory songbirds.***

Brush piles are a simple means of providing protective cover in areas where the density of understory vegetation is naturally low. Stumps, logs, and branches of trees and shrubs can be used to create a brush pile. Many species of birds such as Hermit Thrushes and Ovenbirds will hide there.

- ***Replace removed trees and shrubs with native plants valuable to migratory birds.***

Replacing lost or removed vegetation maintains habitat value while increasing property value.

- ***Clump plantings to create tree/shrub islands.***

Islands of dense vegetation will provide more cover than evenly spaced, isolated trees and shrubs.

Economic Benefits of Protecting Native Trees and Shrubs

Saves money normally used on fertilizers and pesticide. Native plants are best adapted and don't require them.

Saves maintenance time. Less lawn = less mowing

Reduces the risk of flooding.

Increases protection from wind and storm damage.

Increases energy efficiency by moderating the climate around buildings.

Enhances property values.

Reduces development costs of storm water retention, site preparation, and landscaping.

Promotes clean air.

Water Quality Benefits of Protecting Native Trees and Shrubs

Prevents erosion and adds stability to shorelines. Root systems hold shoreline in place.

Prevents sedimentation of creeks and marshes. Root systems trap sediments in run-off from heavy rains.

Protects groundwater quality and helps maintain high water levels. Root systems take up nitrogen and phosphorous.

Saves water (up to one-third) used to maintain landscapes.

Open Lands

- ***Maintain some fallow land as wildlife habitat.***

Many migrant species depend on open habitats with seed-producing plants. Fallow lands may be maintained in an early successional, "grassy state" or as a wildflower meadow by mowing once each year in early spring.

- ***Plant winter cover crops beneficial to wildlife.***

Many cover crops provide both cover and food to migratory birds and improve soil conditions.

- ***Use integrated pest management programs (IPM) that reduce chemical inputs (and costs!) when possible.***

Not all insects are pests; many are actually beneficial to both crops and wildlife. Integrated pest management programs protect crops but do not destroy insect populations needed by migrating birds. Contact your local agricultural extension officer (listed on p.23) for advice on IPM planning.

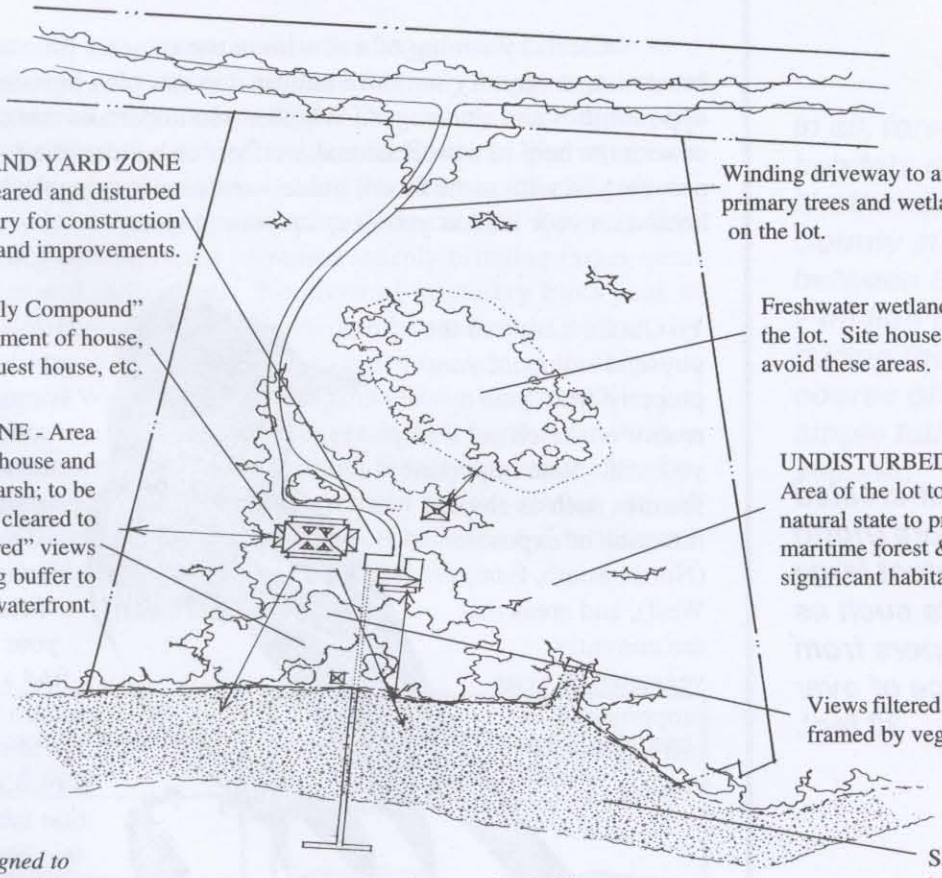
How can I control pest species such as ticks and poison ivy if I don't clear the understory of the forest surrounding my home?

The species that we consider pests are integral elements in a working ecosystem. Parasites like ticks help keep deer and mice populations in check. Poison ivy berries provide an important food resource for birds. Nonetheless, not many people are willing to live with the risk and irritation of poison ivy or ticks. However, there is little you can do to eradicate ticks and poison ivy. And, contrary to popular belief, clearing the forest understory will not solve the problem. Some tick species even prefer lawns! Both species can be controlled in small areas such as trails and yards by keeping vegetation low and sparse. If you must control poison ivy on the entire property, consider using a low toxicity, specific herbicide applied by hand to each plant. Ticks can be controlled by domestic birds or by spraying the edges of the yard and trails with insecticidal soap (most are non-toxic to humans, pets, and wildlife). The best method for dealing with ticks however, will be to dress properly and check yourself and your pets carefully after spending time outdoors.

- ***Maintain or establish hedgerows.***

For birds, hedgerows serve as important travel corridors and cover when foraging. Hedgerows also provide wind protection for soil, homes, and other buildings. The ideal hedgerow is no smaller than 10 feet wide and combines deciduous and evergreen trees and shrubs, particularly those that produce fruit.

Sample Residential Development Plan



Site Plans can be designed to take advantage of existing native vegetation for setting aside and connecting habitat.
Illustration by Paradigm Design

WILDLIFE IN YOUR GARDEN

Learn more about the hows and whys of landscaping for wildlife; contact:

Alliance for the Chesapeake Bay, Inc.
P.O. Box 1981
Richmond, VA 23216
1-800-662-CRIS for their *Bayscapes* brochure

National Wildlife Federation
Dept. CL
1400 Sixteenth Street, NW
Washington, DC 20036-2266
1-800-432-6564 for information on their *Back Yard Wildlife Habitat Program* and starter kit

VA Dept. of Game and Inland Fisheries
(804) 367-9369 for information on planting for wildlife.

VA Dept. of Conservation and Recreation
Division of Natural Heritage
(804) 786-7951 for native plants brochures.

Virginia Nurseryman's Association, Inc.
383 Coal Hollow Road
Christiansburg, VA 24073-6721
(540) 382-0943

Virginia Native Plant Society
P.O. Box 844
Annandale, VA 22003
(540) 568-8679

Aesthetic Benefits of Protecting Trees and Shrubs

Increases privacy

Creates a noise buffer

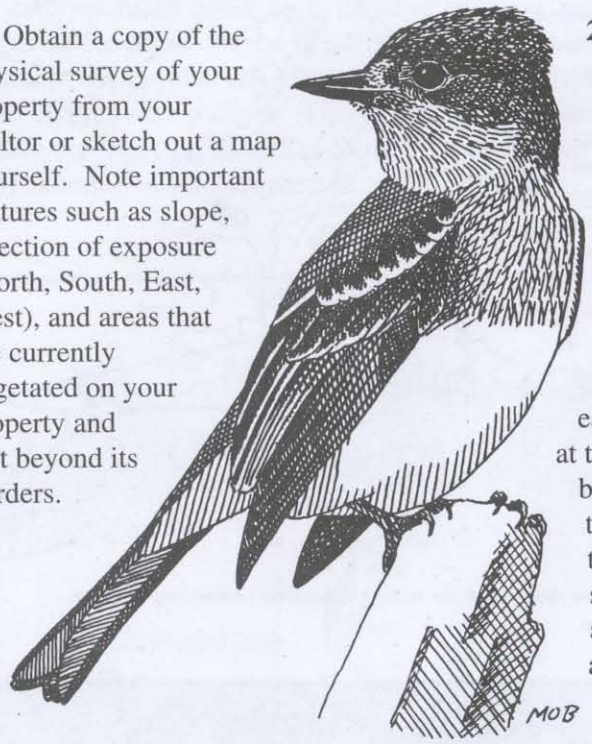
Enhances the visual, scenic character of Northampton County

INCORPORATING SONGBIRD HABITAT MANAGEMENT INTO THE PLANNING PHASE OF A NEW HOMESITE

Careful planning of a new homesite requires time and forethought. Integrating migratory songbird habitat into this plan introduces some special opportunities and challenges. Whether you undertake this endeavor yourself or with the help of a professional architect or builder, the following steps provide you with some model guidelines for managing the valuable songbird habitat on your land as you develop your property.

Great-crested Flycatchers (right) can detect large insects such as grasshoppers from a distance of over 30 feet.

1) Obtain a copy of the physical survey of your property from your realtor or sketch out a map yourself. Note important features such as slope, direction of exposure (North, South, East, West), and areas that are currently vegetated on your property and just beyond its borders.



2) Walk the property and count the tall (canopy) trees, the shorter understory trees, and shrubs. A rough count will do. If you are interested in identifying the different plants on your land, you can find a field guide to eastern trees and shrubs at the library or local bookstores. The vegetation table in the back of this booklet lists trees, shrubs, and vines that are particularly valuable to migratory songbirds.

3) Using the same scale as your physical property survey, sketch your planned home, yard, driveway/parking area, drain field, and construction footprint (the area necessary to build the home). Remember a few things at this point: A) Construction equipment requires room to maneuver. Nonetheless, you can work with the builder to indicate areas you wish to have undisturbed. B) A small lawn can have big payoffs. Small lawns are increasingly popular for good reason. They require less water, less fertilizer, less mowing, less time, and increase privacy. C) Try to maintain at least 60% of the existing vegetation on your lot.

4) Place the sketch of your construction plan over the sketch of your property as it currently looks. In addition to the usual home placement considerations of slopes, exposures, and views, experiment with placing your construction so that you preserve the value of existing vegetation to the greatest extent possible. Work with "setback" and buffer requirements. These areas will be around the edges of your property and, since they should not be disturbed, are good places to leave vegetation intact, further increasing your privacy and the connections between songbird habitats.

5) Note how many trees and shrubs must be removed for construction.

6) Identify trees and shrubs that are worth "rescuing" from the construction footprint. Rescuing is most successful with healthy, young trees and shrubs. The earlier you make these decisions, the more time you will have to prepare the plants for transplanting. Mark those plants and plan on transplanting them beyond the construction footprint or into your yard at the appropriate time of year. This varies from species to species. Contact your local nursery or the Virginia Native Plant Society for specific information (see box, p. 15).

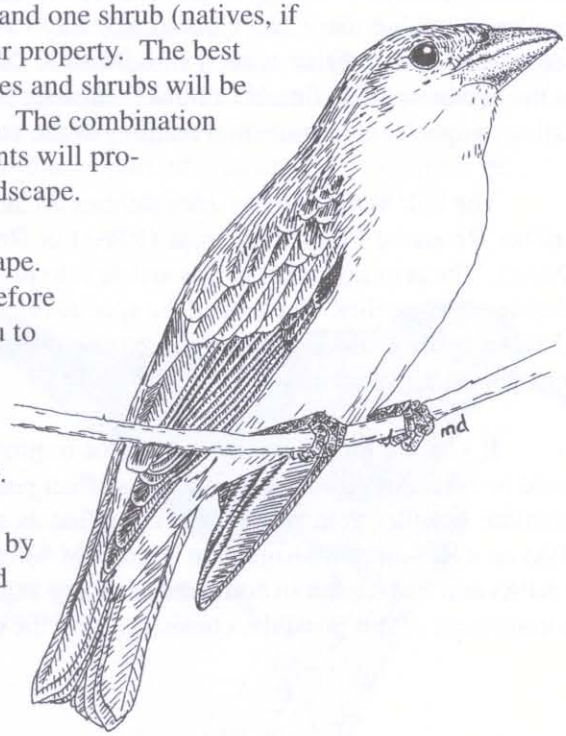
7) Design your views to minimize the amount of vegetation you will have to remove. Consider leaving understory shrubs for second story views or leaving canopy trees for views from first floor windows. Match your view with your windows — it may not be necessary to clear large areas for the best views. Mature trees, shrubs, and ground cover enhance the beauty and value of your views by adding color, interest, and perspective.

8) Calculate the area beyond the construction footprint and the view. Within that "undisturbed" area, aim for a minimum vegetation density of 20 canopy trees, 30 understory trees, and 30 shrubs per acre. For example, if you have 1/4 acre of undisturbed land, you would have 5 canopy trees, 8 understory trees, and 8 shrubs. If you add trees and shrubs, you can stretch your landscaping budget by using some of the plants rescued from the construction area. If you use nursery stock, try to get plants that are native to Northampton County and valuable to migratory songbirds (see vegetation table, p. 24).

Mature trees, shrubs, and ground cover enhance the beauty and value of your views by adding color, interest, and perspective.

9) Identify trees that need to be removed because they are sick or might threaten your new home. For each tree you remove, add two more trees or one tree and one shrub (natives, if possible) elsewhere on your property. The best places to add these new trees and shrubs will be next to existing vegetation. The combination of established and new plants will produce a healthy, diverse landscape.

10) Plan your yard landscape. Planning your landscape before construction will allow you to keep at least a few large shade trees that would take decades (or hundreds of dollars) to replace. It will also give you the opportunity to save money by using your stock of rescued trees and shrubs!



Within areas surrounding a construction site, aim for a minimum of 20 canopy trees, 30 understory trees, and 30 shrubs per acre.

COMPLYING WITH LOCAL REGULATIONS

Eastern Kingbirds, like many other migrants, are important seed dispersers. On the Eastern Shore, Kingbirds favor sassafras fruits.

The recommendations discussed on the preceding pages deal with voluntary actions you may take on your property. However, as a citizen of Northampton County, your land and its accompanying vegetation are protected by certain minimum regulations. These regulations were primarily designed to protect water quality and other community standards. However, protection of vegetation for the benefit of water quality also helps maintain important migratory bird habitat. Upland vegetation is considered under two key ordinances: The Northampton County, Virginia Zoning Ordinance and the Northampton County Erosion and Sediment Control Ordinance. Property in the towns of Cape Charles, Cheriton, Eastville, Exmore, and Nassawadox is governed under separate town ordinances. Copies of these ordinances are available from the county or town planning office. Your rights and responsibilities - as they relate to upland habitat alteration - under these two County ordinances are described in the following sections.

Ideal Standards for Home Lots in Northamton County

* **Preserve 60% of existing vegetation.**

* **Establish or maintain vegetation density of 20 canopy trees, 30 understory trees, and 30 shrubs per acre.**

* **Design only a single view shed measuring no more than half of the length of the longest side of the house.**

* **Plant two native trees or shrubs adjacent to remaining vegetation for every one tree or shrub removed to create view shed or to protect structural integrity of the house.**

* **Replace every diseased or dead tree with a brush pile at least 4 feet long and 2 feet high.**

Northampton County Zoning Ordinance

A zoning ordinance is a tool employed by most communities throughout the United States to help manage local physical features such as the location of schools or the density of houses in accordance with the community's priorities and vision. It is designed to protect citizens, businesses, local traditions, and the environment. As in Northampton County, a zoning ordinance is often directly related to the community's Comprehensive Plan and is always developed through the public process.

Northampton County is divided into several different zones that govern allowable land use. The Chesapeake Bay / Atlantic Ocean Preservation Area (CB/AOPA) overlay zone, a subsection of the general zoning ordinance, and the Erosion and Sediment Control Ordinance interact to govern land use in relation to special environmental features of the county.

The CB/AOPA overlay zone defines all lands in Northampton County as either Resource Protection Areas (RPAs) or Resource Management Areas (RMAs). The primary intent of this article is to protect Northampton County's valuable water quality. Because of the special relationship between vegetation and water quality, this portion of the zoning ordinance addresses the issue of altering existing vegetation.

If you are building a new house or improving an existing home, you should be aware of how these regulations affect your plans. Your first step is to determine whether your property is classified as a Resource Protection Area (RPA) or a Resource Management Area (RMA). Special requirements apply for RPAs and RMAs, but in both areas existing vegetation is to be preserved to the maximum extent possible, consistent with the development project.

Resource Protection Areas

An RPA designation applies to the following areas:

- tidal wetlands.
- non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary streams.
- shorelines and tidal shores.
- coastal primary sand dunes.
- a 100 foot vegetated buffer adjacent to and landward of the features listed above.

Development is allowed within an RPA only if it is water dependent, constitutes redevelopment, or a hardship can be documented. If you are planning to develop a piece of land that includes an RPA, you will be required to establish or maintain a 100 ft. vegetated buffer area adjacent to all RPA's. In the case of streams, buffers must be established on both banks. This buffer is also designated an RPA. All development or redevelopment within an RPA will probably require a water quality impact statement.

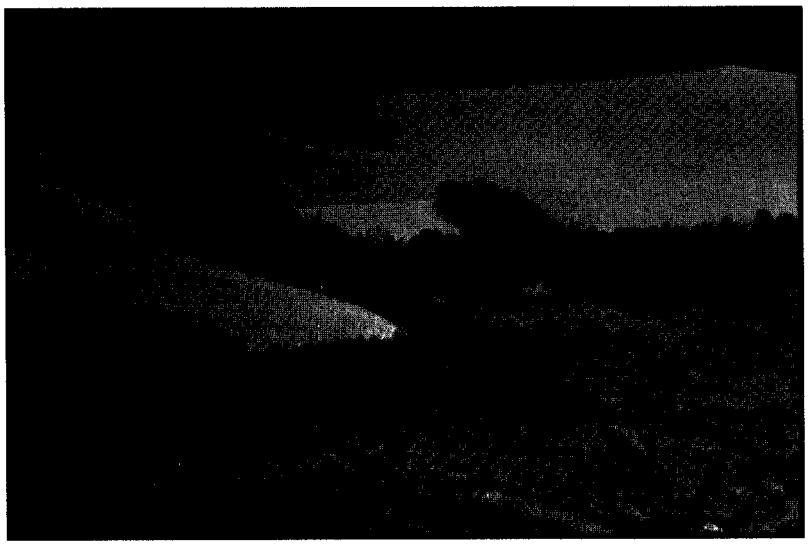


Photo by Bryan Watts.

Migratory song-birds avoid flying across open areas. Hedgerows and buffer strips (left) provide important cover from predators.

Resource Management Areas

An RMA designation encompasses:

- all lands necessary to protect the quality of state waters (in Northampton County, all land not considered an RPA).

An RMA designation does not alter the density or type of development allowed in the underlying zoning classification. It does, however, affect the procedures that must be followed prior to development. The key modification instituted by this designation is that all development that causes more than 2,500 sq. ft. of land disturbing activity is subject to the Erosion and Sediment Control Ordinance (page 20) and will require a land-disturbing permit.

Current Local Performance Standards for All Development Activities Affecting an Area Greater than 2,500 square feet as of November 1995

The following performance standards are listed in Northampton County Erosion and Sediment Control Ordinance and apply to all Resource Management and Resource Protection Areas. These standards may change from time to time. Be sure to check with the County Planning and Zoning Office for the most up-to-date standards.

General Standards

Land Disturbance is Limited to the Area Necessary to Completing the Development Project and Must Occur Within the Construction Footprint.

- Construction footprint must be less than 60% of the entire site.
- One access route to the construction site is allowed.

Existing Vegetation Must be Preserved to the Maximum Extent Possible.

- All trees with a diameter at breast height (dbh) greater than 6" outside of the construction footprint must be preserved.
- Landowners are requested to clear the site only as necessary to their development project and to provide reasonable views and access.
- Trees that are left standing within the construction footprint must be protected from damage with barriers.

Minimize the Amount of Impervious Surface Created by the Development Project (this includes paved parking areas, driveways and building area).

Developments Must be Designed Such that Post-development Non-point Source Run-off Does Not Exceed or, in Some Cases, is Less Than, Pre-development Conditions.

Within Buffers of Resource Protection Areas

Maintain Functional Value of Buffer and Remove Native Vegetation Only According to the Following Guidance:

- As necessary to create a sight line; replace removed trees with vegetation effective in controlling erosion and non-point source pollution.
- As necessary to create access paths; construct and surface paths to control erosion.
- As necessary to maintain forest health; dead, diseased or dying trees may be removed but all other trees can only be removed for the purpose of silvicultural thinning and with technical guidance.
- As necessary to control severe shoreline erosion; consult the county Erosion and Sediment Control officer for guidance as permits may be required for such action.

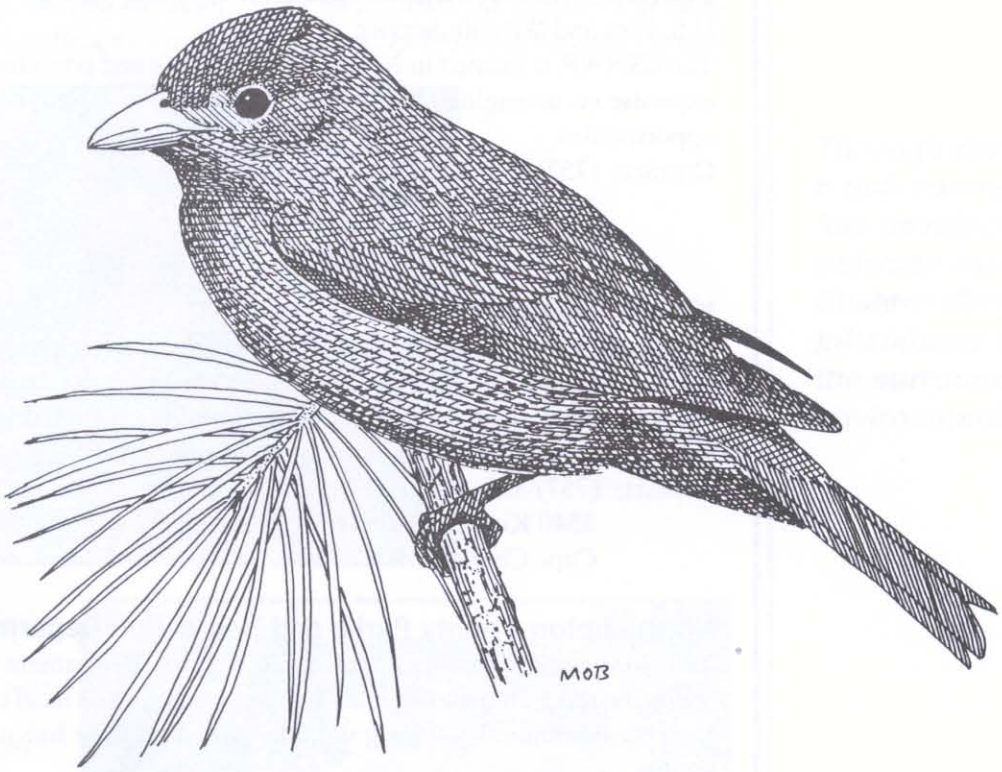
Within Resource Protection Areas

All Proposed Development Will Require a Water Quality Impact Assessment (WQIA). There are Two Types of WQIA's:

- Development that affects up to 5,000 sq. ft. and the landward 50 ft of an RPA buffer requires a minor WQIA.
- Development that affects more than 5,000 sq. ft. and the landward 50 ft. of an RPA buffer or any disturbance of the seaward 50 ft. of an RPA buffer or any other part of an RPA requires a major WQIA. A major WQIA will likely specify mitigation including replacement of trees and shrubs and a demonstration that indigenous plants will be used to the greatest extent possible.

IN SUMMARY

The spectacular annual event of fall migration is just one of Northampton County's many unique natural assets -- one that is accessible to all, simple to care for, and attractive to visitors from near and far. Appropriate management of understory vegetation is the key to the successful conservation of fall migrants on the Eastern Shore. Extend a little Virginia hospitality to our avian visitors by "setting aside" natural areas, using native plants for landscaping, and connecting habitats on your property. In doing so, you will be making an important contribution to the ecological and economic well-being of Northampton County - now and for the future.



LOCAL REGULATORY AND INFORMATION CONTACTS

Accomack-Northampton Planning District Commission

The PDC assists and helps coordinate local governments in regional planning efforts to promote the orderly and efficient development of the physical, social, and economic elements of Accomack and Northampton Counties as well as 19 incorporated towns within the district. Additionally, the PDC provides information to the public.

Contact: (757) 787-2936
23372 Front Street,
Accomac, VA 23301

Eastern Shore Soil and Water Conservation District (Area VI)

The ES SWCD provides technical and educational assistance, promotes cooperative programs, and helps develop leadership for local natural resource conservation.

Contact: Chairman, or Administrative Secretary, (757) 787-1251
Accomac, VA 23301

Eastern Shore of Virginia National Wildlife Refuge

U.S. Fish and Wildlife Service

The ESNWR is located in Northampton County and provides information and expertise on managing land for wildlife as well as educational and recreation opportunities.

Contact: (757) 331-2760
RFD 1, Box 122B
Cape Charles, VA 23310

Kiptopeke State Park

VA Department of Conservation and Recreation, Division of State Parks

Kiptopeke State Park serves the community through educational and recreation opportunities for people of all ages and hosts annual fall migration bird banding and hawk count activities.

Contact: (757) 331-1040
3540 Kiptopeke Drive
Cape Charles, VA 23310

Northampton County Parks and Recreation Department

The Northampton County Parks and Recreation Department serves as a source or recreation and educational programs for the local community. Staff are currently developing wildlife gardens at their Indian Town Park facility.

Contact: (757) 678-0468
Indian Town Park
Eastville, VA 23347

Northampton County Planning Department
The Planning Department works with the Northampton County Planning Commission, the A-N PDC, the Board of Supervisors, and citizens to ensure the orderly development of Northampton County. Staff from the Planning Department are available to advise citizens on County land use and development regulations, issue permits, and inspect projects in progress.
Contact: (757) 678-0453
Eastville, VA 23347

Northampton County Branch, VA Cooperative Extension Service
The Extension Office provides advice on best management practices for agricultural lands and other resources.
Contact: (757) 678-0453
P.O. Box 457
Eastville, VA 23347

STATE REGULATORY AND INFORMATION CONTACTS

Chesapeake Bay Local Assistance Department
Contact: Chief of Planning Assistance (804) 371-7500
805 E. Broad Street,
Richmond, VA 23219 1-800-243-7229

Virginia Department of Conservation and Recreation
Division of Natural Heritage
Contact: (804) 786-7951
217 Governor Street, 3rd Floor
Richmond, Va 23219

Department of Environmental Quality - Virginia Coastal Program
Contact: Program Manager (804) 698-4323
629 E. Main St.
Richmond, VA 23219

Virginia Department of Game and Inland Fisheries
Contact: Publications / Educational Information (804) 367-9369
4010 W. Broad St.
Richmond, VA 23230

Native Plants of High Value to Migratory Birds

Plant Species	Plant Type	Foliage	Soil	Light	Growth Rate	Size	
						Height	Width
Virginia Pine (*Pinus virginiana*)	Canopy Tree	Evergreen	Dry/Moist	Sun	Slow	40 ft.	20 ft.
Hickories (*Carya spp.*)	Canopy Tree	Deciduous	Dry/Moist	Sun/Shade	Slow	80 ft.	50 ft.
White Oak (*Quercus alba*)	Canopy Tree	Deciduous	Dry/Moist	Sun	Moderate	90 ft.	60 ft.
Southern Red Oak (*Quercus falcata*)	Canopy Tree	Deciduous	Dry	Sun	Moderate	90 ft.	60 ft.
Black Oak (*Quercus velutina*)	Canopy Tree	Deciduous	Dry/Moist	Sun	Moderate	70 ft.	60 ft.
Willow Oak (*Quercus phellos*)	Canopy Tree	Deciduous	Moist/Wet	Sun	Rapid	70 ft.	60 ft.
Hackberry (*Celtis occidentalis*)	Canopy Tree	Deciduous	Dry/Moist	Sun	Moderate	60 ft.	45 ft.
Sweet Gum (*Liquidambar styraciflua*)	Canopy Tree	Deciduous	Dry - Wet	Sun	Moderate	80 ft.	40 ft.
Black Cherry (*Prunus serotina*)	Canopy Tree	Deciduous	Moist	Sun	Rapid	75 ft.	45 ft.
Red Maple (*Acer rubrum*)	Canopy Tree	Deciduous	Dry - Wet	Sun/Shade	Rapid	60 ft.	45 ft.
Sassafras (*Sassafras albidum*)	Canopy/Understory	Deciduous	Dry/Moist	Sun	Moderate	40 ft.	25 ft.
American Holly (*Ilex opaca*)	Canopy/Understory	Evergreen	Dry/Moist	Sun/Shade	Slow	40 ft.	20 ft.
Black Gum (*Nyssa sylvatica*)	Canopy/Understory	Deciduous	Dry - Wet	Sun/Shade	Moderate	60 ft.	40 ft.
Black Willow (*Salix nigra*)	Canopy/Understory	Deciduous	Moist/Wet	Sun	Rapid	40 ft.	25 ft.
Red Swamp Bay (*Persea palustris*)	Canopy/Understory	Deciduous	Moist/Wet	Sun/Shade	Moderate	60 ft.	20 ft.
Wax myrtle (*Myrica cerifera*)	Understory Shrub	Evergreen	Moist/Wet	Sun/Shade	Rapid	15 ft.	10 ft.
Bayberry (*Myrica pensylvanica*)	Understory Shrub	Deciduous	Dry/Moist	Sun/Shade	Moderate	30 ft.	15 ft.
Shining Sumac (*Rhus copallina*)	Understory Shrub	Deciduous	Dry/Moist	Sun	Moderate	10 ft.	6 ft.
Flowering Dogwood (*Cornus florida*)	Understory Tree	Deciduous	Moist	Sun/Shade	Moderate	30 ft.	25 ft.
Yaupon Holly (*Ilex vomitoria*)	Understory Tree	Evergreen	Dry/Moist	Sun/Shade	Slow	25 ft.	15 ft.
Common winterberry (*Ilex verticillata*)	Understory Shrub	Deciduous	Dry/Moist	Sun/Shade	Moderate	25 ft.	10 ft.
Inkberry (*Ilex glabra*)	Understory Shrub	Evergreen	Moist/Wet	Sun/Shade	Slow	8 ft.	10 ft.
Eastern Red Cedar (*Juniperus virginiana*)	Understory Tree	Evergreen	Dry/Moist	Sun	Moderate	45 ft.	15 ft.
Huckleberries (*Gaylussacia spp.*)	Understory Shrub	Deciduous	Moist/Wet	Sun/Shade	Slow	10 ft.	8 ft.
Devil's Walking Stick (*Aralia spinosa*)	Understory Shrub	Deciduous	Dry/Moist	Shade	Rapid	25 ft.	6 ft.
Sweet Pepperbush (*Clethra alnifolia*)	Understory Shrub	Deciduous	Moist/Wet	Shade	Moderate	30 ft.	25 ft.
Blueberries (*Vaccinium spp.*)	Understory Shrub	Deciduous	Moist/Wet	Sun/Shade	Slow	12 ft.	12 ft.
Beauty Berry (*Callicarpa americana*)	Understory Shrub	Deciduous	Moist	Shade	Moderate	10 ft.	8 ft.
Trumpet Creeper (*Campsis radicans*)	Vine	Deciduous	Dry/Moist	Sun	Rapid	--	--
Muscadine Grape (*Vitis rotundifolia*)	Vine	Deciduous	Dry/Moist	Shade	Moderate	--	--
Fox Grape (*Vitis labrusca*)	Vine	Deciduous	Dry/Moist	Shade	Moderate	--	--
Virginia Creeper (*Parthenocissus quinquefolia*)	Vine	Deciduous	Dry/Moist	Sun/Shade	Rapid	--	--
Greenbrier (*Smilax spp.*)	Vine	Deciduous	Dry/Moist	Shade	Moderate	--	--
Poison Ivy (*Toxicodendron radicans*)	Vine	Deciduous	Dry - Wet	Shade	Rapid	--	--