

What can we do to protect the natural world?

Biodiversity and Dark Skies

What we hope to share with you....

- What is biodiversity and why is it important to protect it
- Biodiversity protection in Albemarle County
- Light pollution:
 - Growing problem
 - Ecological impacts
 - Human health impacts
 - Simple steps to reduce it

What is biodiversity and why is it important to protect?

- It is the variety of all life on Earth, in all its forms and interactions.
- We depend on biodiversity for the air we breathe, the water we drink, food we eat, and for our health and well being.
- Biodiversity a source of beauty!



Biological Diversity

“The diversity of life in all its forms, and at all levels of organization.”

- Malcolm Hunter (1996)

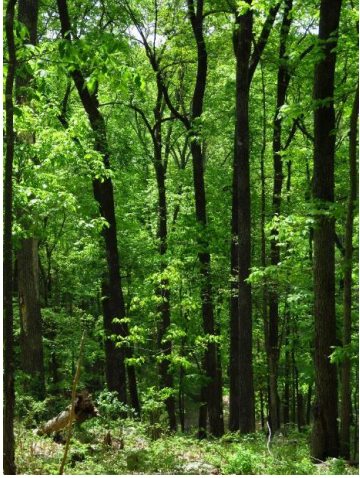
- Genetic
- Species
- Ecosystem



Photo: Univ. Florida, Entomology & Nematology Dept.



Natural Community Types

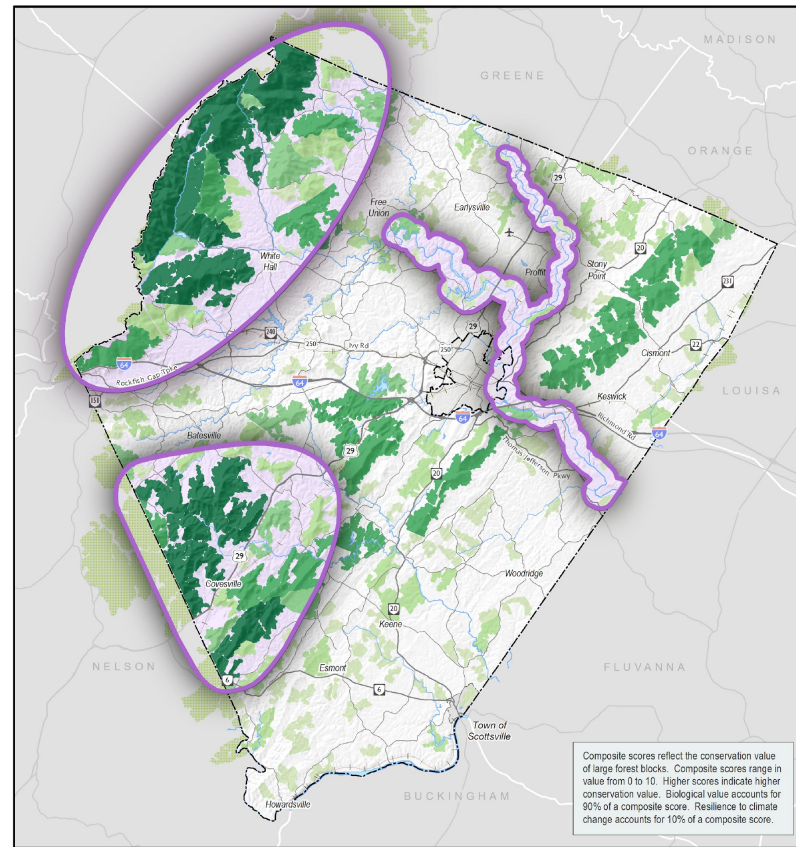


Loss of biodiversity creates ecological instability

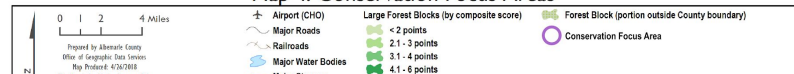




Albemarle County Biodiversity Action Plan June 2018



Map 4: Conservation Focus Areas



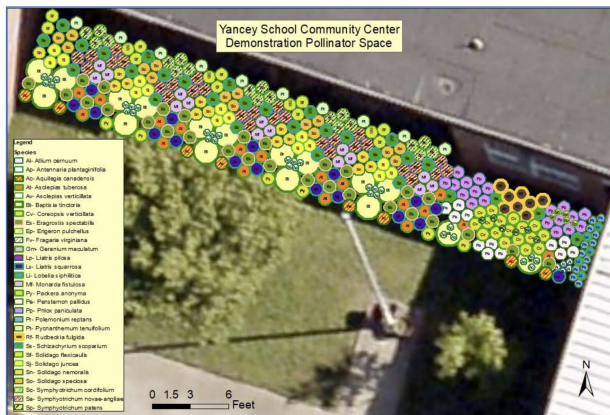
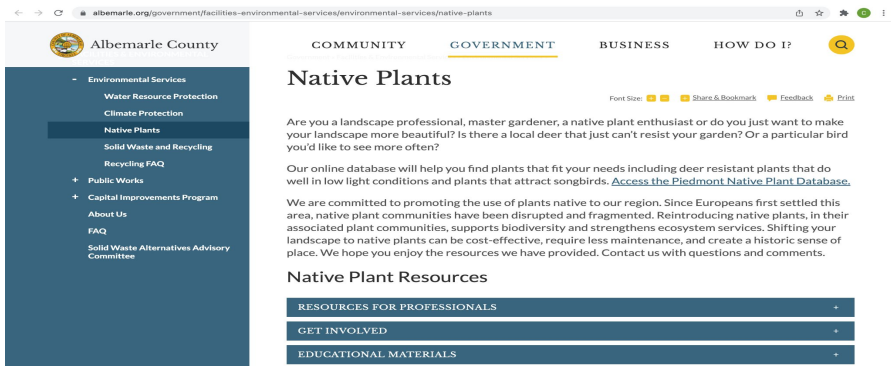
Implementation of the BAP



There are 21 goals and 97 recommendations!



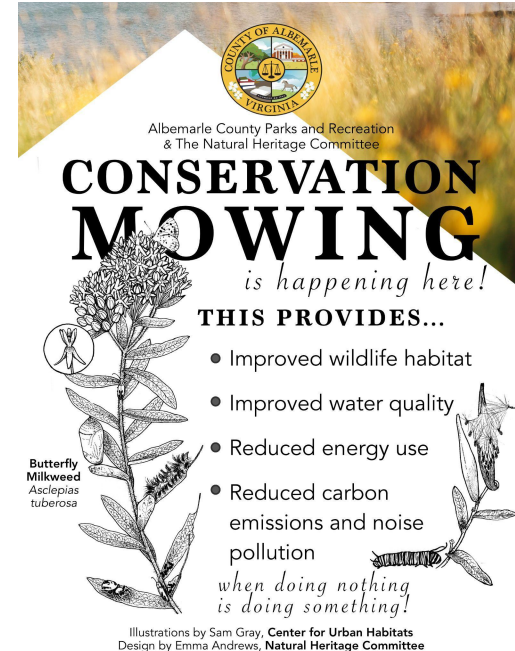
BAP Goals 8 & 19: Promote the use of locally native plants



EDUCATION

BAP GOAL 3: Conduct outreach and educate the public and landowners on the importance of preserving habitat areas and managing land wisely.

BAP GOAL 20: Educate the public on the importance of biodiversity and ways to protect it.





Community » Learn More About »

Environmental Stewardship in Albemarle County

Welcome to the Albemarle County Environmental Stewardship Hub! Here you will find information on the County's environmental programs and can also learn how you can participate in stewarding our natural resources.



BIODIVERSITY



**CLIMATE
ACTION**



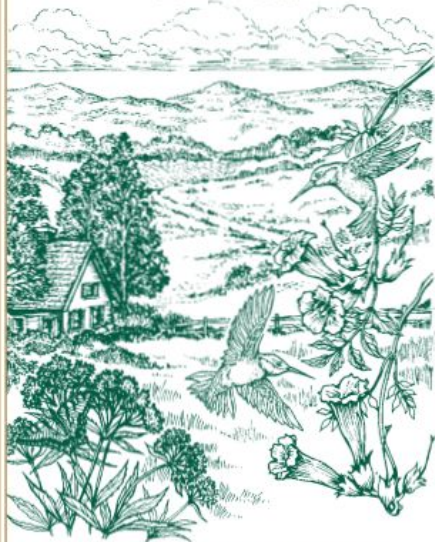
CLEAN WATER



REDUCE WASTE

Ways You Can Make a Difference

"Do I Have to Mow All That?"



Homeowner's Guide

to Preserving our
Natural Landscape

produced by

**The Virginia Native Plant Society
Piedmont Chapter**

with the

**State Arboretum of Virginia
Loudoun Wildlife Conservancy
Land Trust of Virginia
Environmental Studies at Airlie
Audubon Naturalist Society**

Our Changing Landscape

Here in Virginia, our beautiful landscape holds a rich variety of terrain, native plants and wildlife.

But our rural landscape is changing as forests are cleared, habitat is destroyed and farms disappear. We as individual landowners hold the keys to preserving and protecting the natural beauty of Virginia's countryside—for ourselves, our children and future generations.



How can I make a difference?

Changes we make now in our home landscaping can benefit all of us—and wildlife.

- Maintain "wild" areas—the more the better: woodlands, wetlands, and thickets help nature survive.
- Blend homes into the landscape—consider natural contours when building.
- Plant less lawn and more "natural green" areas: a meadow of grasses and flowers, clusters of trees and shrubs, a butterfly garden.
- Make a place for wildlife—plant native trees, shrubs and plants.
- Avoid pesticides and herbicides—keep our water, air, and land poison-free.



Why Choose Native Plants?

Native plants are part of the natural growth here in Virginia; they make our landscape beautiful and provide habitat for wildlife.

Native Plants survive and thrive.

- They're well-adapted to the soil and climate here.
- Hardy and drought-resistant, they need less care.
- They have attractive natural shapes.
- They offer the best food, shelter and nest sites for wildlife.

"Right plant, right place": Our natural countryside has a variety of very different areas—rocky hillsides, shady woodlands, meadows, wetlands: choose the right plant for your site. VNPS offers a list of native plants for habitats.



Save a Place for Wildlife

Do you thrill to the sight of a hawk soaring overhead? Enjoy seeing wild turkeys in a field or a heron standing in a stream? Would you like your children to grow up seeing a cardinal feeding a nest of hungry babies, hummingbirds and butterflies at your doorstep?



Wildlife needs our help to survive:

As forests are destroyed and housing replaces open land, our local wildlife is losing ground—literally. Mowed lawn and a few isolated trees are no substitute for the rich tapestry of native trees and plants that have always sustained wildlife. Their loss is one reason for a rapid decline of our songbirds. Chemical fertilizers and pesticides kill our valuable pollinating insects—butterflies and honeybees.

What can I do?

Make your property more friendly to wildlife. Read inside...



Our home is on open land...

Do I have to mow all that?

No! Consider landscaping alternatives to a lawn that can be attractive and mean less work for you.



The Bad News:

Lawns cost you time, effort and money.

Tired of spending every weekend seeding, feeding, spraying, watering, weeding, mowing, edging, raking? Mowers shatter the quiet and pollute the air, chemicals endanger our environment. Acres of lawn provide no habitat, and wildlife ends up...banished.

The Good News: less IS more.

Less lawn means more time for you—time with your family, to enjoy nature and living in the country.

- Plant less lawn and more “natural green”—a meadow of native grasses and flowers: mow paths for walking.
- Choose native plants and shrubs.
- Keep woodlands and fields natural; save existing trees and shrubs.

Where property lines meet



Join with neighbors—
Plant a cluster of native trees and shrubs for beautiful boundaries that create privacy and save a place for wildlife.

Be a Homeowner for Habitat

Save growth along old fencerows; it often includes flowering trees, berry bushes and wildflowers. Plants along fencerows and roadsides provide a “corridor” of connected habitat for wildlife.

Create a Bird and Butterfly Garden

It's easy to do in your own backyard, and fun for children and adults. Start with native plants—many have attractive flowers and others are “host” plants for caterpillars that become butterflies. Combine flowers with shrubs to create a plant community that is a real habitat. Avoid pesticides or herbicides that poison birds who are the best insect control. They can also harm honeybees and butterflies, our valuable pollinators. Keep a birdbath nearby filled with fresh water.



Plant shrubs and trees. Many favorite birds only nest in leafy branches, never in boxes: robins, cardinals, catbirds, song sparrows, goldfinches, wood thrushes and warblers.



Build a brush pile

Leave a space for a small brush pile in a quiet corner of your yard. Add leaves, branches and yard waste and don't disturb. It will soon become a haven for wildlife.

Plant a Tree

It's the single best thing you can do for the environment—and yourself. Trees are beautiful and they add height, shape, color, and texture to our home landscapes. Trees provide shade, windbreaks and privacy screening; they enhance air quality, provide the oxygen we breathe and cool summer air temperatures.

Choose trees that are regional natives; check the conditions of your site: right plant + right place = success!



Smaller CAN be better!



Small trees (whips) cost less and are often more vigorous and quicker to establish than larger specimens, which can suffer transplant shock.

Protect Our Water

- Avoid using chemicals that can seep into streams and ground water and pollute wells.
- Encourage natural growth along stream banks to control erosion and on pond banks to provide cover for wildlife.
- Save existing wet areas, no matter how small. Wetlands, springs and streams are all important parts of our natural watershed.
- Don't fill in bogs and shallow ponds—these are vital habitat for frogs, toads and turtles.



If our home is in a woodland...

What should we do?

Little or nothing! With a “don't disturb” policy, your woods can be beautiful and a haven for wildlife.

- Let dead trees stand when possible—they are home to owls, woodpeckers and other cavity-nesters.
- Fallen logs and branches provide insects and grubs for birds.
- Never plant grass in a woodland.
- Clear out “invasive alien” plants, like Japanese honeysuckle, that choke out our native plants.
- Leave the leaves! Leaf cover is nature's own mulch—no raking needed. Clear walking trails and leave the forest floor undisturbed.



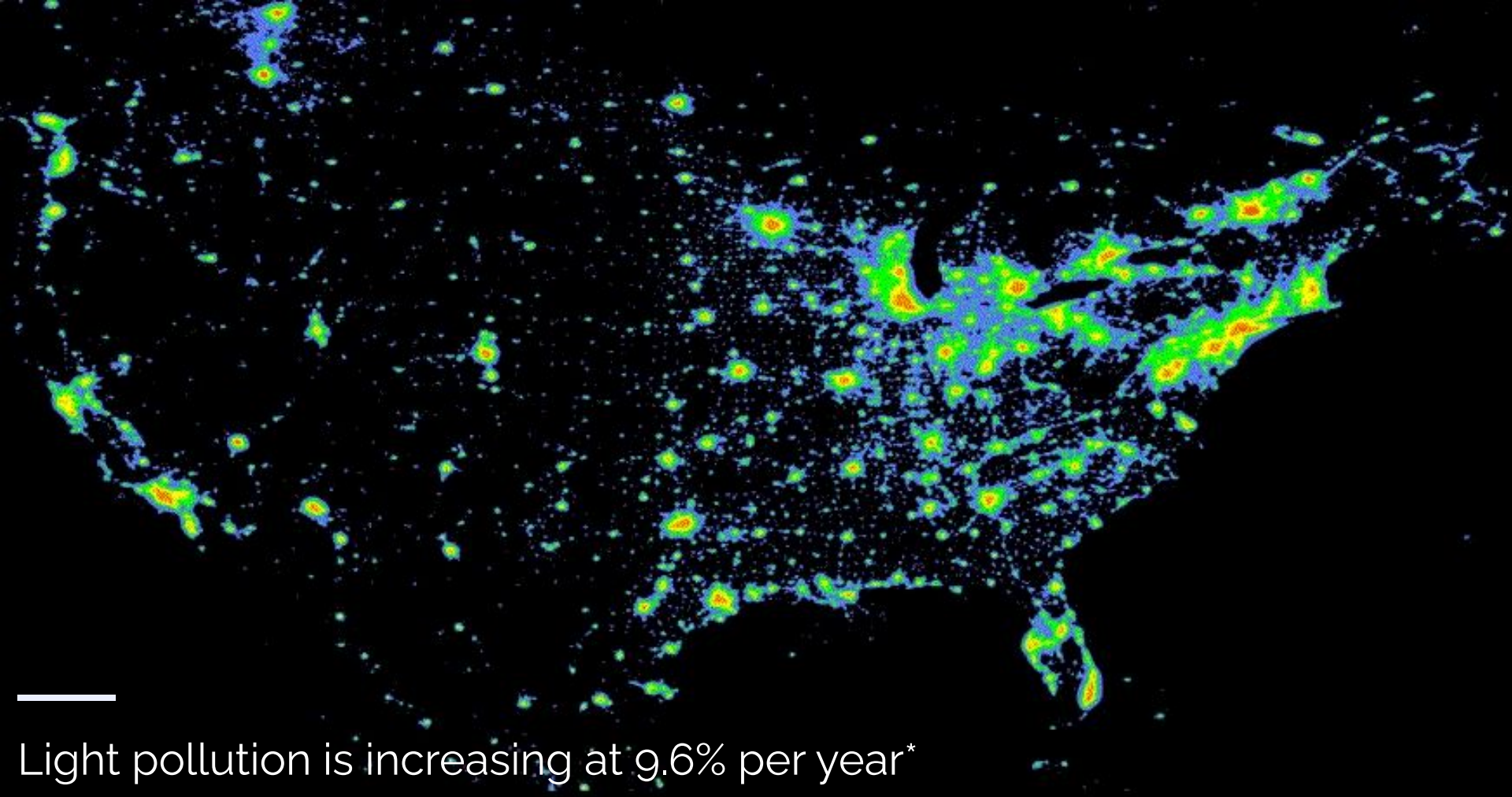
Enjoy native woodland wildflowers in the spring.



Keep the Night Sky Dark

Do you enjoy country evenings and seeing the stars at night, far away from the glare of all-night lights and superhighways? Shield your outdoor bulbs to direct light to the ground. Be courteous to neighbors: don't leave outdoor lights on all night. Bright, artificial lights confuse nocturnal wildlife (like owls) and migrating birds that need the night sky dark. Nature's insect patrol, toads and bats, are hard at work after dark.





Light pollution is increasing at 9.6% per year*

BIRDS

INSECTS

MAMMALS

AMPHIBIANS

REPTILES



**PERCENTAGE
OF ANIMALS
THAT ARE
NOCTURNAL**





TREES

bud earlier and lose
their leaves later
under artificial light







The collapse of insects





Light Impacts Baby Birds

Stress due to reduced sleep results in lower body mass and abnormal blood glucose

#ffffff

#00c

#04d5c1



MOST BIRDS IN NORTH AMERICA ARE MIGRATORY

70%

of terrestrial recurring
birds are migratory.

80%

of those birds migrate
at night.



INTERNATIONAL DARK-SKY ASSOCIATION





#00c3b1



ANIMALS

Nearly 1,000 migrating birds died after crashing into Chicago building

October 9, 2023 · 5:03 PM ET



Clare Marie Schneider



Workers at the Chicago Field Museum inspect the bodies of migrating birds that were killed when they flew into the windows of the McCormick Place Lakeside Center.

On

NIGHT SKY BLOTTED OUT
BY LIGHT POLLUTION

VISIBLE NIGHT SKY



Bad, better, best

Use outdoor lighting responsibly by only using it where it's needed, when it's needed, and in the amount required. Use the lowest light level required, limit blue-violet light, utilize timers or motion sensors, and use shielding.



INTERNATIONAL
DARK SKY WEEK
AUG 15 - 29 2023

Lighting Color Temperature

2200K

3000K

3500K

4100K

5000K

6500K

▲
WARM

Soft White,
Warm White



Neutral White,
Cool White



▲
COOL

Daylight



Reduce Window Light

- Use task lighting when working at night
- Dim the lights
- Pull down the blinds at night



#c6f7f2



MYTH: MORE LIGHTING IS SAFER

REALITY: WELL DESIGNED
LIGHTING IS SAFER





50 BILLION DOLLARS

spent every year on unneeded lighting

21 MILLION TONS OF CO₂

burned by unnecessary lighting



INSPIRATION

DARK NIGHT SKIES HAVE INSPIRED PEOPLE THROUGHOUT
HUMAN HISTORY

Thank you!

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