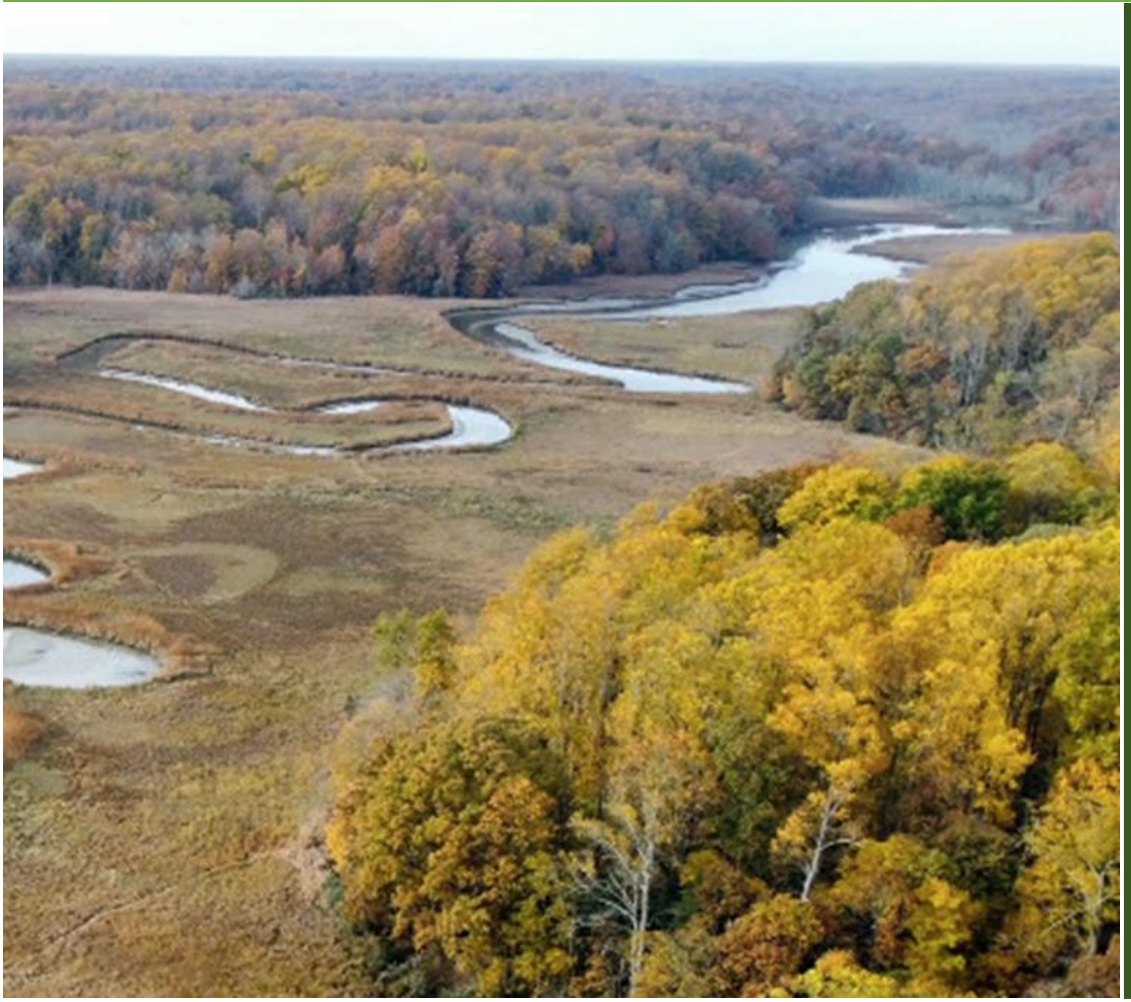
Parkers Creek Watershed Report Card – 2023 Update



INDICATORS

	Score
Overall Health	
Percent Land Preserved	
Impervious Surfaces	
Riparian Buffers	
Water	
Land Use	-
Connecting People to the Land	-
Flora and Fauna	-
Risks to the Watershed	

Key - Excellent - Good - Fair - Stressed - Poor

Natural Places Matter

Natural places make people feel happier and healthier.

But they do so much more than that. They —

- Remove pollution from the air we breathe and the water we drink.
- Support wildlife, including pollinators needed for our food production.
- Reduce flooding and droughts, and their negative effects.
- Reduce climate change by absorbing and storing carbon.

These are called **ecosystem services** and are needed to keep our earth livable.

For all of these reasons, ACLT is committed to preserving natural places here in Calvert County and in Southern Maryland.

Why a Report Card?

ACLT created this report card as a snapshot of the environmental conditions in the Parkers Creek Watershed and to better understand how this watershed compares to other watersheds in Calvert County and in Maryland.

ACLT monitors the land and the water to see how they are affected by changes. Changes can both positively and negatively affect the land and water. Here are just a few:

Changes with negative impacts:

- Climate change, invasive species, new developments built on steep slopes, loss of protective laws and regulations.

Changes with positive impacts:

- Beneficial farming practices, forest buffers grown around feeder streams, native plantings, reduction of stormwater runoff, increases in protected natural lands.

Monitoring the Parkers Creek Watershed allows ACLT to pinpoint trouble spots and identify practices that benefit our natural places…and we hope this report card helps you better understand the land we all cherish and work hard to preserve.

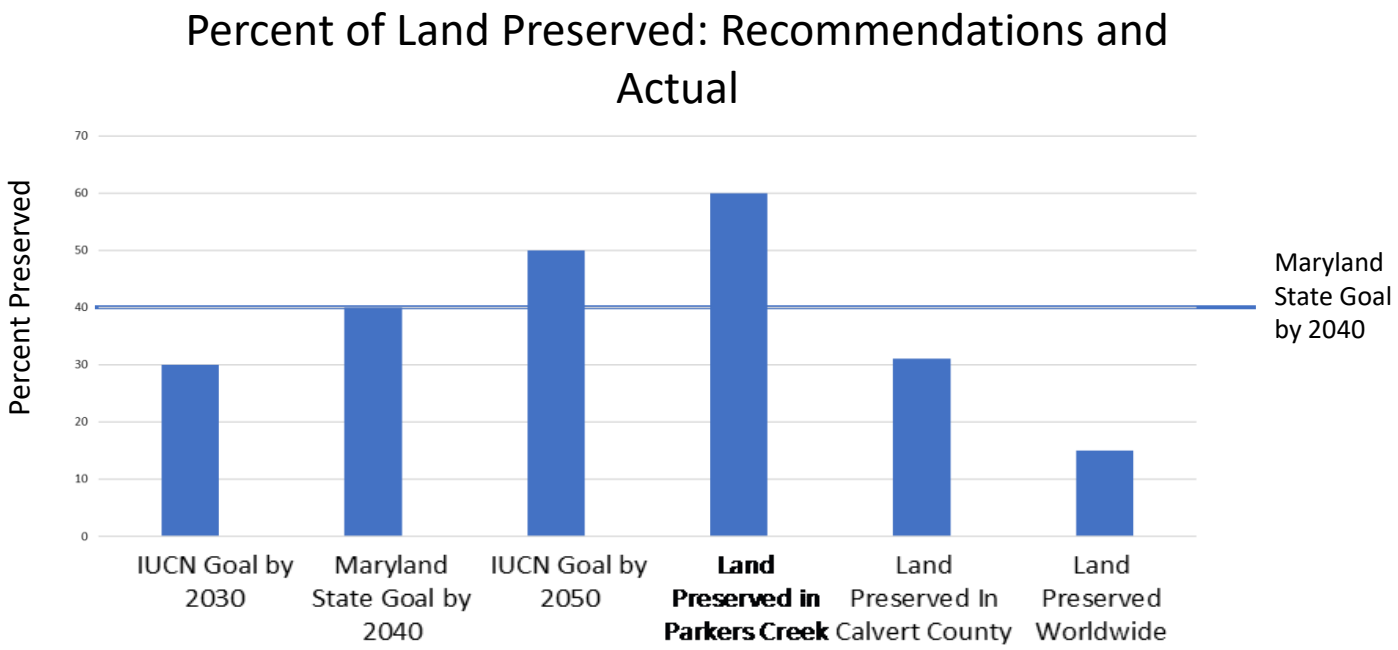
Indicator

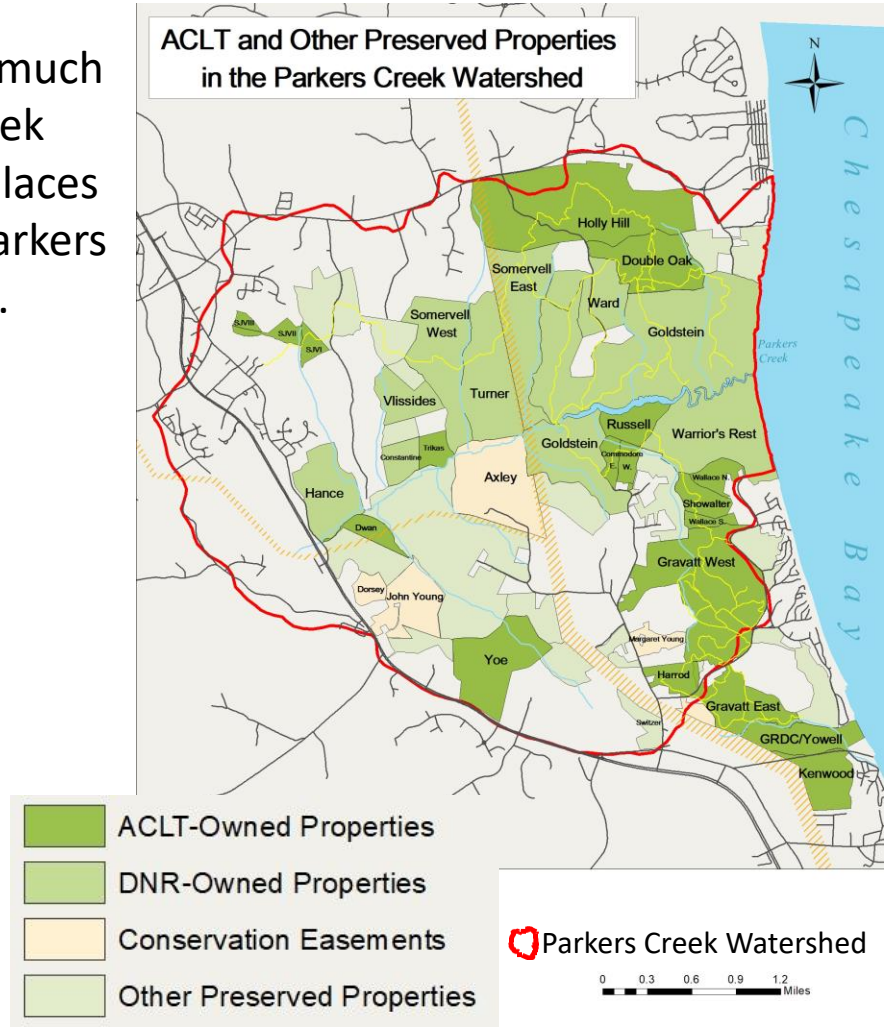
Percent Land Preserved-

Because humans, and in fact all living creatures, depend on **ecosystem services** provided by natural places, the World Conservation Congress of the International Union for Conservation of Nature (IUCN), approved Motion 101, which calls for the protection of 50% of Earth's lands and seas with a minimum of 30% to be protected by 2030 (30x30).

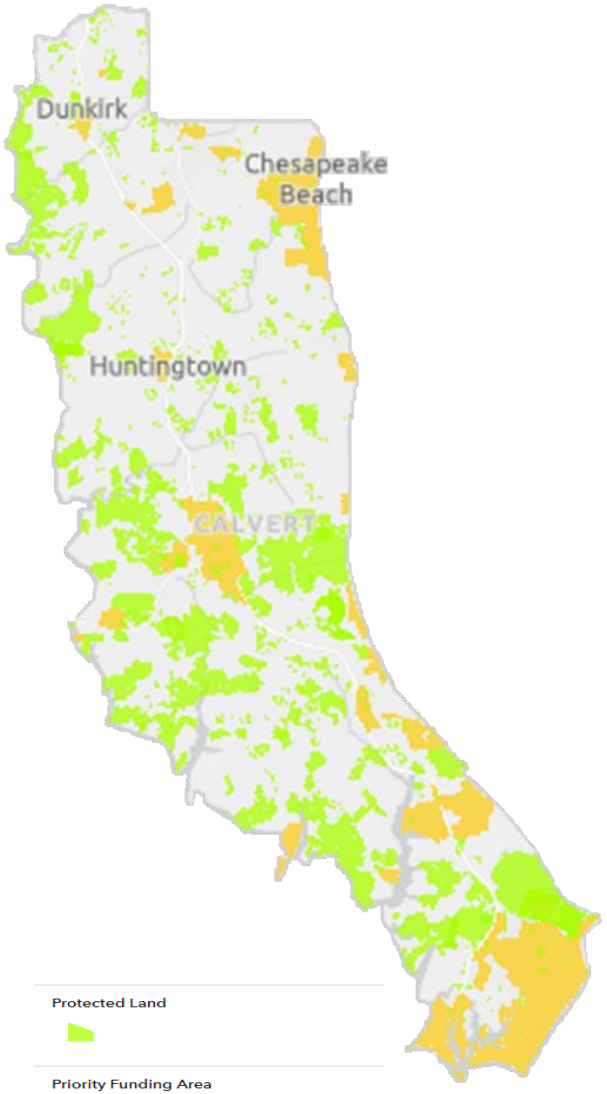
Currently only 15% of the earth's land is protected. A number of nations, including the United States, are joining in the call for at least 30% of all lands and seas to be protected by 2030.

Maryland coastal plains have close to 50% natural lands (forests and wetlands), but much of these are not preserved and could be at risk for development. 60% of Parkers Creek Watershed has been preserved, much of it through the efforts of ACLT. While rural places will need preserve more than their fair share in order to make up for urban areas, Parkers Creek gets an **Excellent** rating because it far exceeds the state's goal of 40% by 2040.





Calvert County



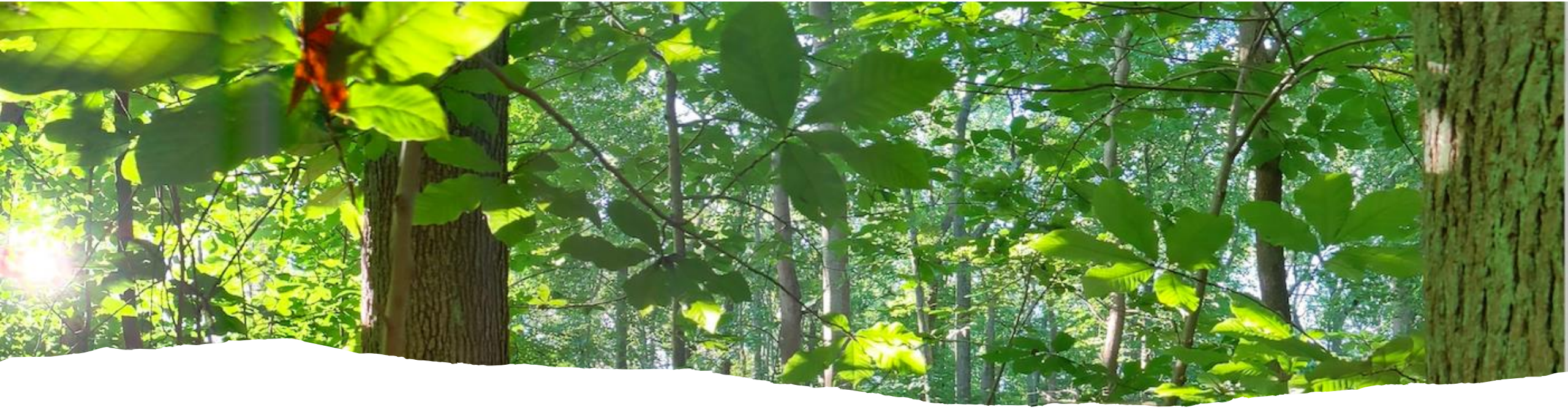
From Maryland DNR: Maryland Protected Lands Dashboard

On May 8th, 2023, the Governor of Maryland approved the Maryland the Beautiful Act, committing Maryland to the goal of preserving 40% of its land by 2040. The percentage of land preserved in the Parkers Creek Watershed has more than achieved this 40% goal. Calvert County has 31% of its land preserved. In order for the county to achieve its 2040 40% “fair share” more land will need to be preserved.

To be effective, land will need to be preserved in various places throughout the county. There is value in preserving natural lands in urban places. These natural places can lower temperatures in the summer, reduce crime, mitigate stormwater run-off, and make urban areas healthier for humans.

But, there is also value in preserving land in large contiguous areas like in the Parkers Creek Watershed. When forests are broken into small fragments many plant and animal communities become threatened by predation. Animals can find it difficult to locate food, mates and breeding grounds. Some animals, including many song-birds, require interior forest habitats, which can only be provided by large forests.

For all of these reasons, it will be beneficial to continue to preserve land in the Parkers Creek Watershed as it becomes available. In addition, because nature is interconnected and needs space to thrive, every natural place in Calvert benefits from land preservation throughout the rest of the county. So, it is beneficial to support the preservation of land throughout Calvert County as it becomes available.



Ecosystem Services

<u>Yearly</u> ecosystem services provided by ACLT forests and wetlands:

- Absorb over 150 tons of pollutants that would otherwise be in the air we breathe or in the Bay.
- Contain an estimated 215,126 tons of stored carbon, and continues to soak up another 1,970 tons per year out of the atmosphere as the forests grow and mature.*
- Replenish over 65 million gallons of water to the aquafers, feeding our wells and rivers.
- Deliver flood prevention and stormwater mitigation.
- Provide habitat for a biodiverse wildlife. ACLT is designated an Important Bird Area, and has several endangered and at-risk species that are of conservation priority.

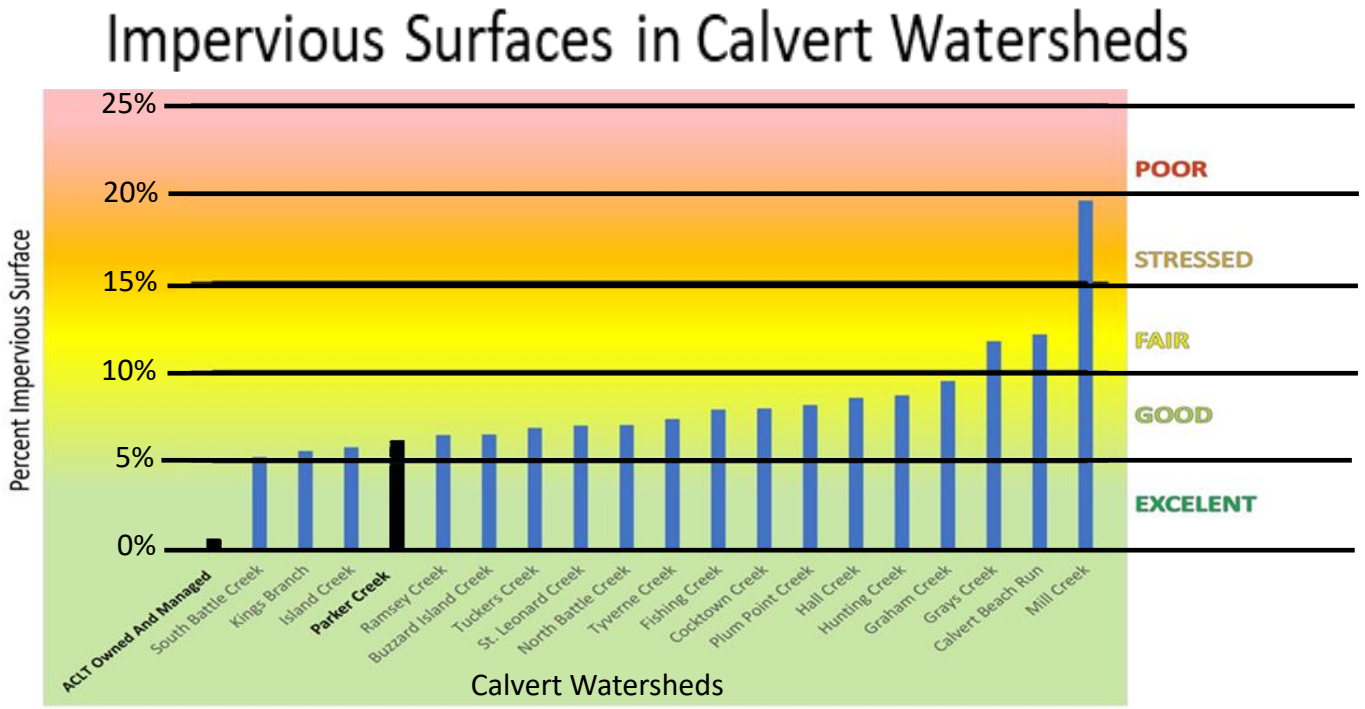
*Please note that previous editions have mistakenly reported incorrect numbers for carbon stored and sequestered. This edition shows carbon stored as calculated using ACLT forest surveys, and yearly carbon being sequestered as reported on the Maryland Greenprint website.

Indicator

Impervious Surfaces - Good

Impervious surfaces are hardened surfaces that don't allow the water to pass into the ground. They include roads, buildings, sidewalks, and parking lots.

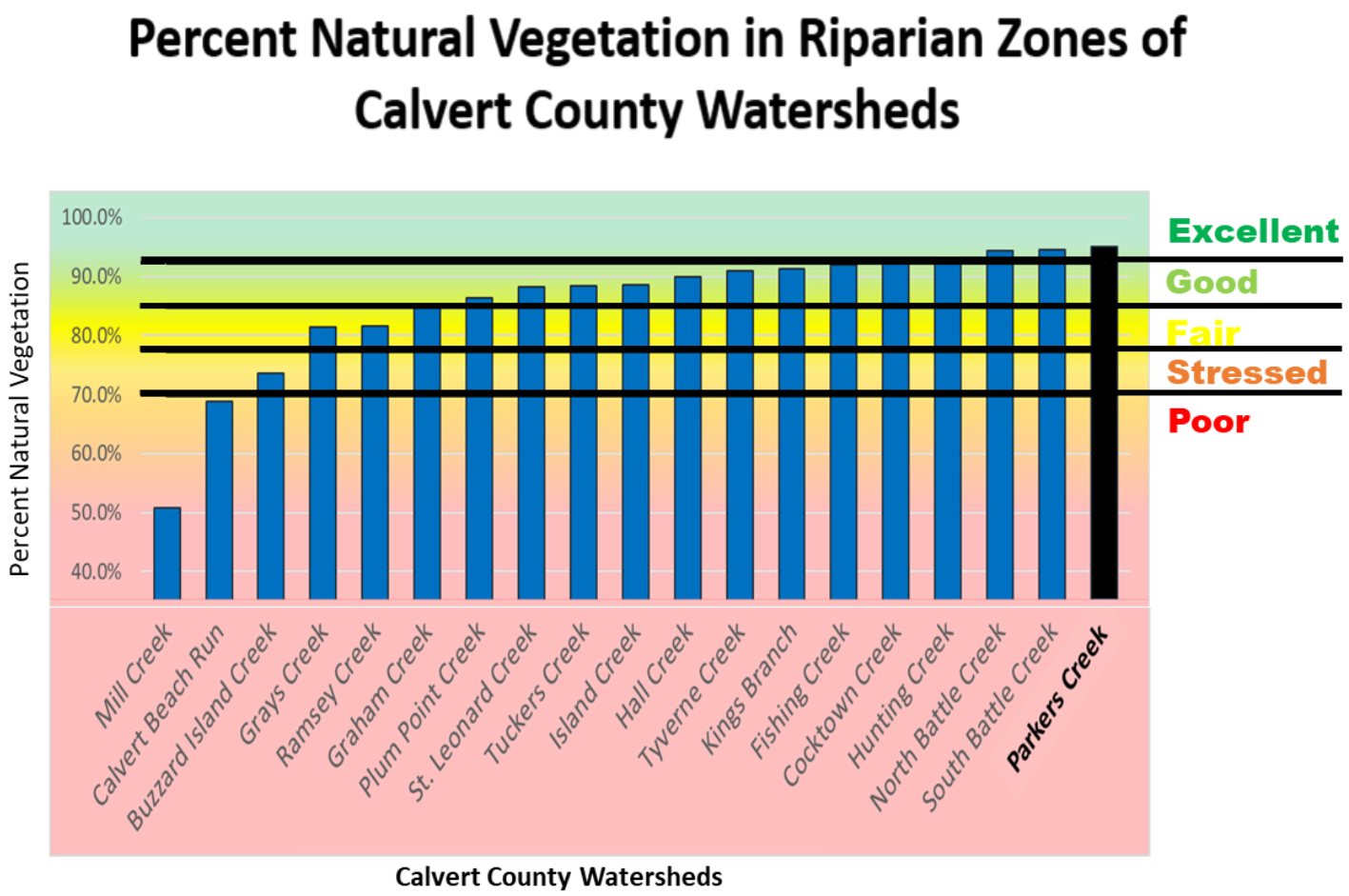
Impervious surfaces lead to erosion, flooding, and accumulation of pollutants in our streams. They increase temperatures in our cities and streams. And they collect the rainwater and rush it off into the nearest stream, so that aquifers don't get fed and wells can go dry. The Parkers Creek Watershed gets a **Good** rating, but excessive growth and inadequate stormwater management in the Prince Frederick Town Center would be damaging.



Indicator

Riparian Buffers - Excellent

Riparian buffers are naturally vegetated lands along a stream that act to protect that stream and other waterways the stream feeds. The Chesapeake Bay Program has set the goal for 70% of all Chesapeake watershed streams to be buffered. However, this is the minimum a watershed should have, as the scientific literature shows that there can be aquatic ecosystem degradation when streams lose any of their natural buffers.



Buffers shade streams, keeping them from getting overheated. They act as filters, removing sediment, nutrients and bacteria as water flows into streams. They also stabilize streambanks, preventing them from eroding. Unbuffered streams, even far upstream, can bring nutrients and sediment that pollute lower streams and the Bay.

With 92% of its streams buffered, the Parkers Creek Watershed gets an **Excellent** rating.

Water

Streams allow the movement of resources through the landscape. Benthic macroinvertebrates and fish can travel up and down streams for food and to reproduce. Mussels can move through streams by hitching a ride on an eel. And nutrients are transported by streams, and eventually to the Bay. These nutrients are important to the growth of plants, but too much of a good thing can be a problem.

By monitoring nitrogen, phosphorus and total suspended solids in our streams, ACLT can become aware of issues upstream that can lead to problems downstream.

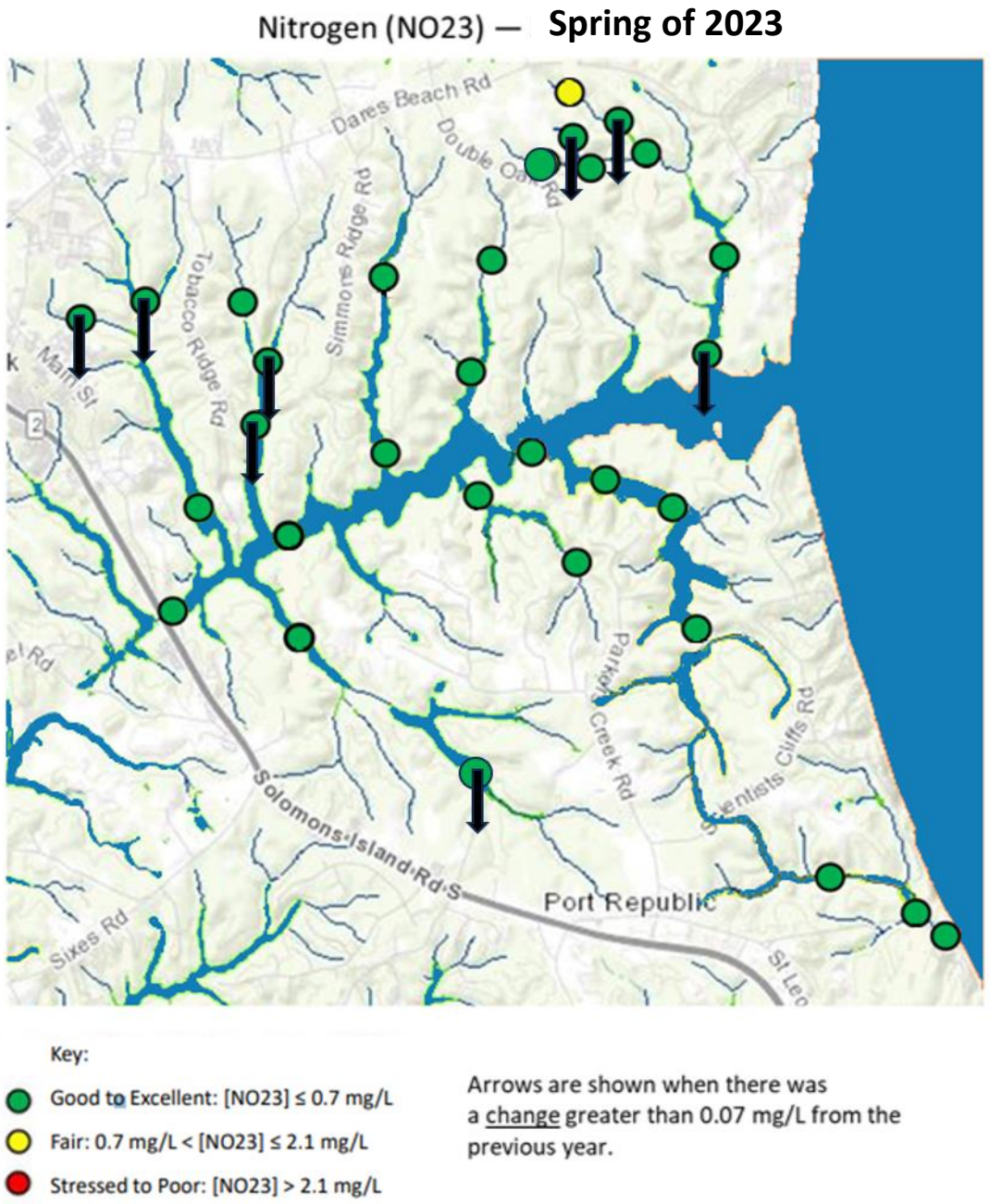
Indicator

Water: Nitrogen - Excellent

Too much nitrogen in our streams, in combination with phosphorus, leads to explosive population growth of algae. This is called an algal bloom. Algal blooms can cause dead zones where the water has little to no oxygen and can be more acidic. Blooms lead to the death of key species such as underwater sea grasses and shellfish.

Historically, nitrogen came mostly from decayed organic matter. However, nitrogen levels in waterways have increased considerably over the years. New sources of nitrogen are:

- sewage treatment plants and septic systems
- animal feedlots and pet waste
- fertilizers
- car exhaust
- power plants and other industrial combustion



Nitrogen levels are **Excellent** in the Parkers Creek Watershed and associated streams, except for one that runs directly off of the Holly Hill farm.

Since purchasing Holly Hill in 2017, ACLT has initiated sustainable practices that should begin to help. The farm now grows cover crops in the winter, and has 45 foot permanent meadow buffers around many of its fields. These changes keep stormwater from running directly off of the farmland and into the streams.

See Phosphorus and Total Suspended Solids here.

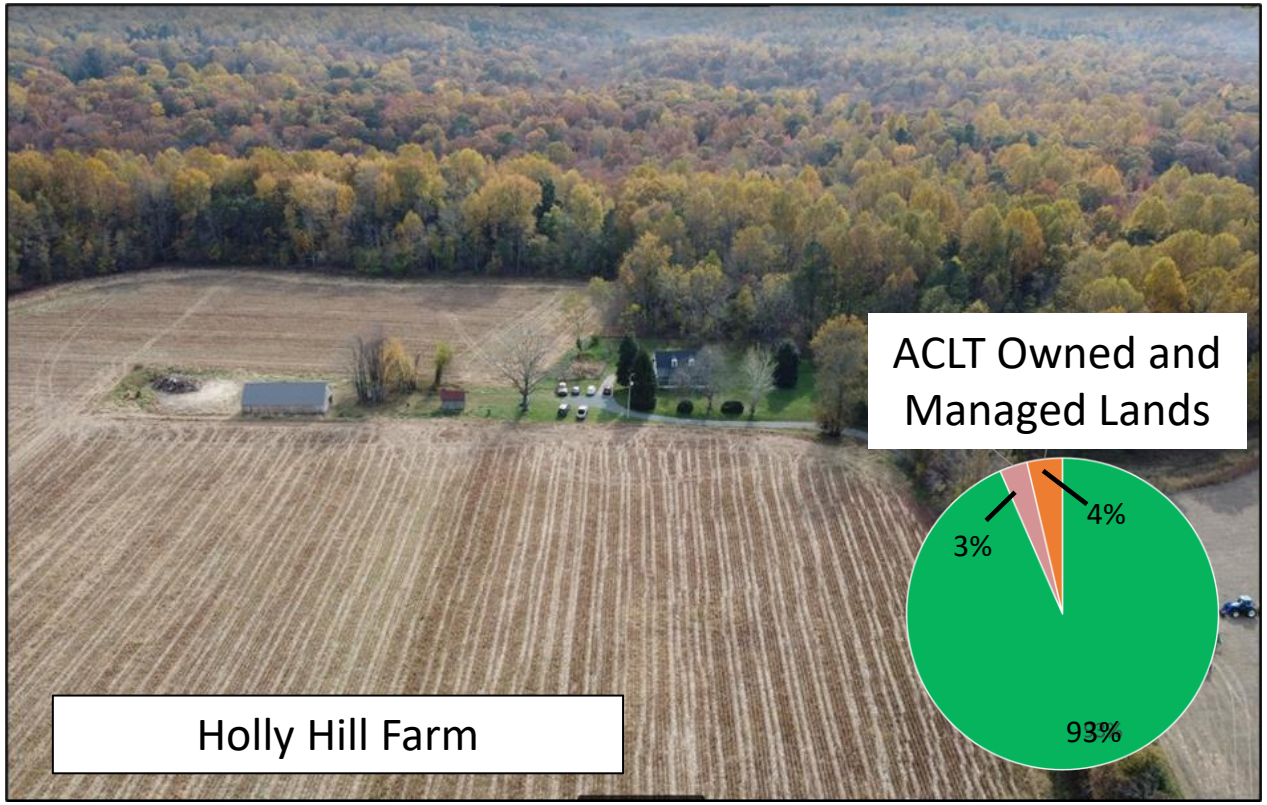
Indicator

Land Use -

We need housing, commercial structures, and farms. But they put pressure on our air and water. Maintaining natural lands can help balance this out.

See figures to the right to see how the Parkers Creek Watershed stacks up in terms of land use. Although the Parkers Creek Watershed contains a major town center, it has a good land use mix, because the negative impacts of the town are mostly offset by its natural lands.

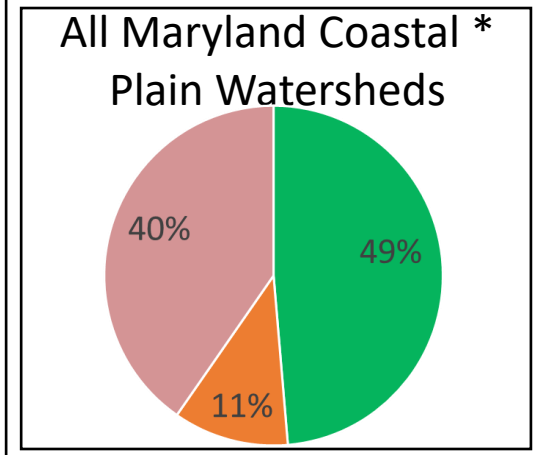
With more natural lands and less developed land, Parkers Creek Watershed maintains most of its ecosystem services, valued at over $7,000,000 per year, according to the Maryland Greenprint website.

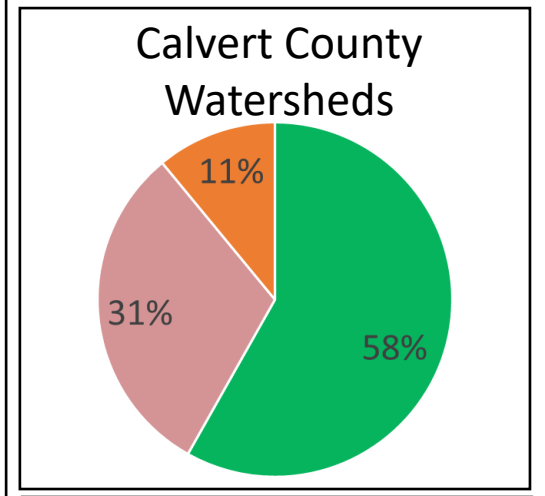


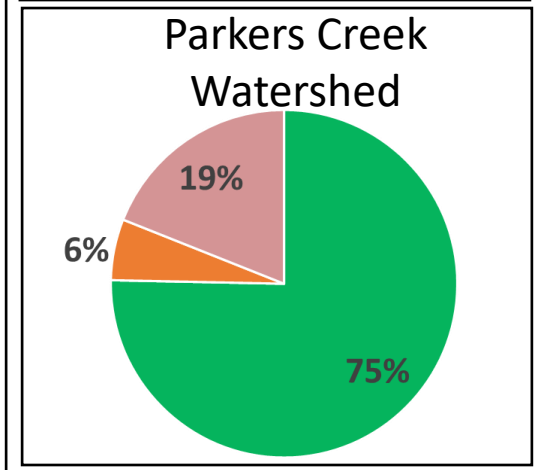
Natural Land
Developed
Agricultural

Note: These graphs have been updated. Previously there was a Mixed Open Category that has now been reevaluated to fit into the three categories above.

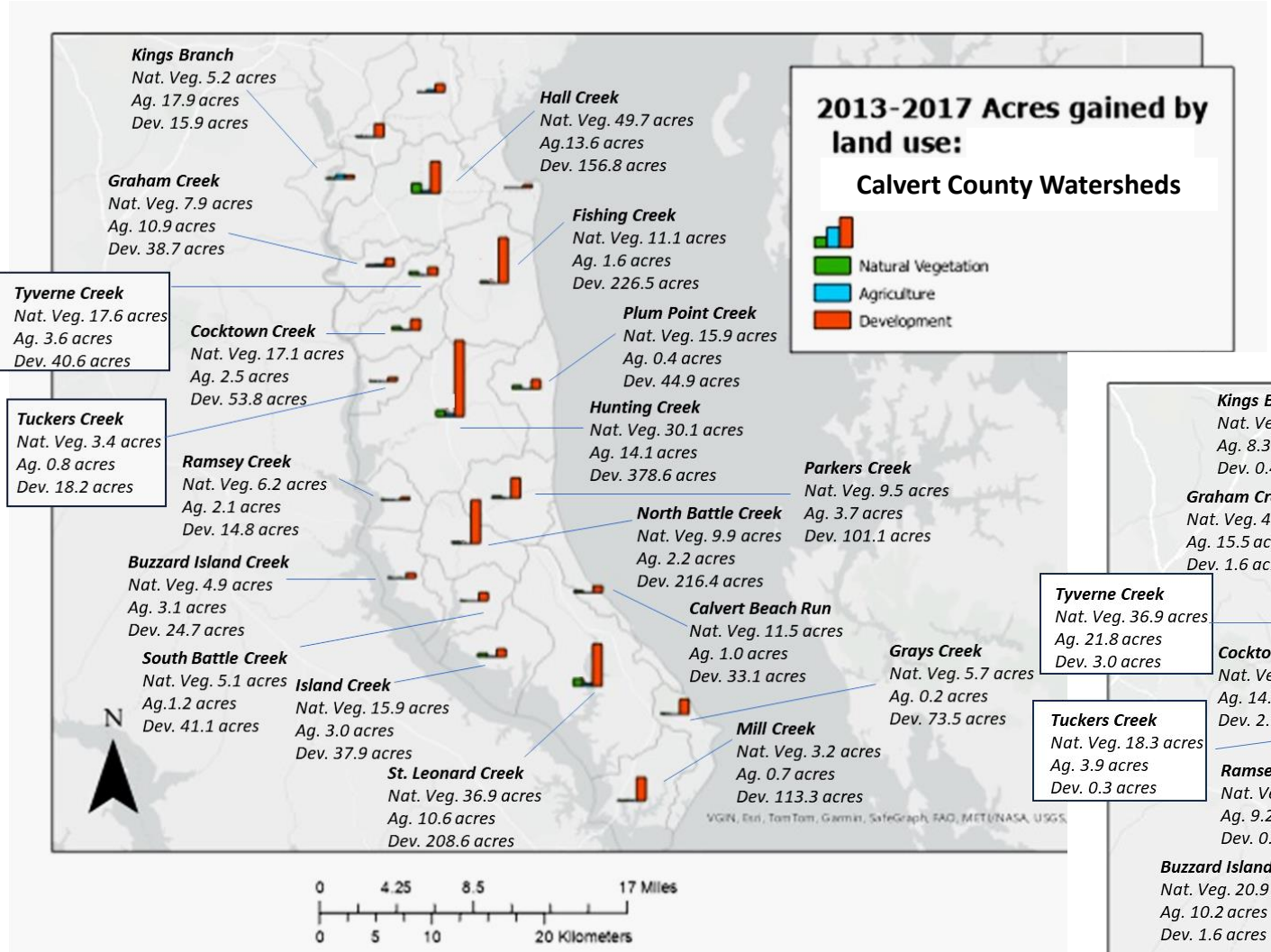
Learn more here.



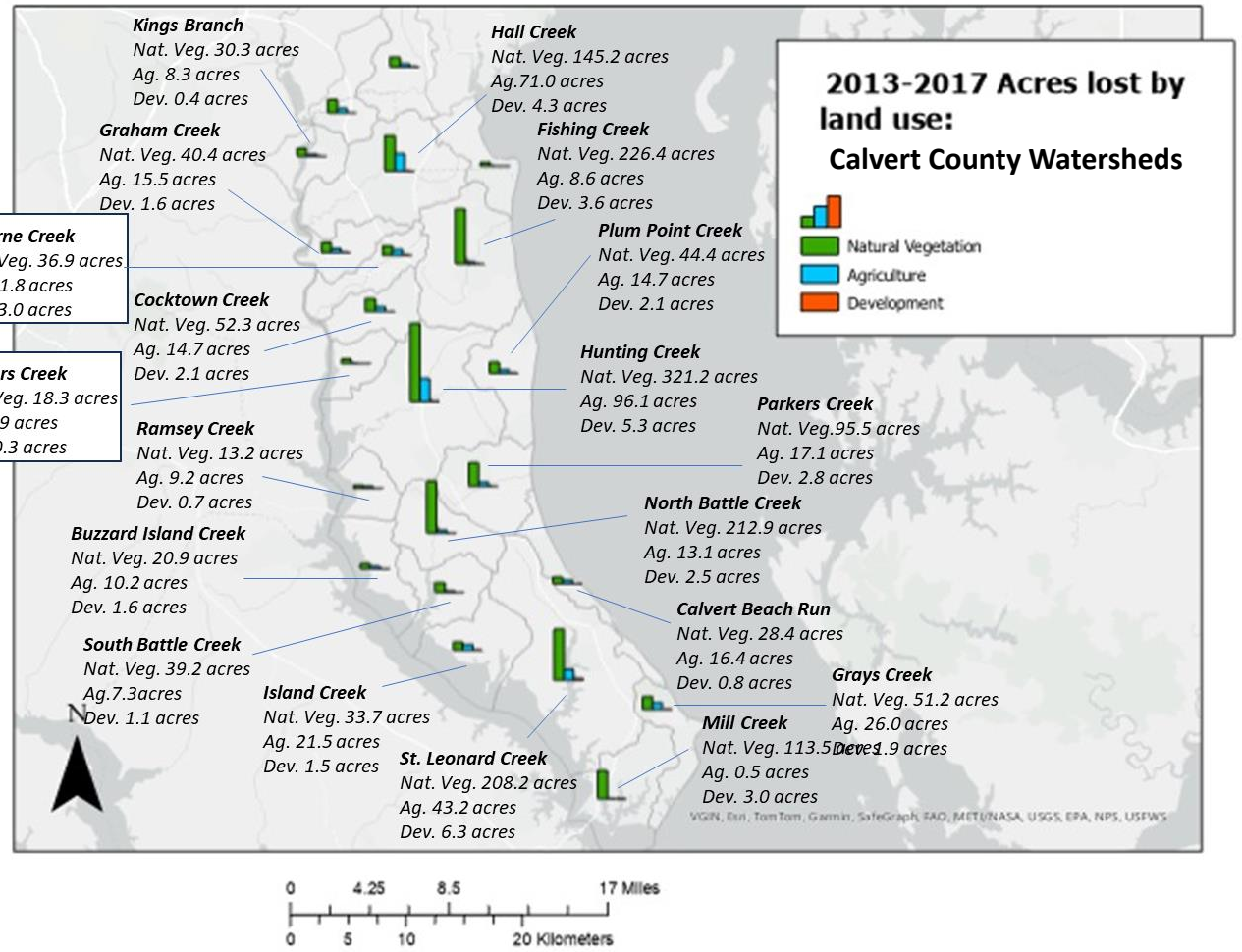




* Does not include watersheds smaller than 10% the size of Parkers Creek watershed



Several watersheds have also lost agricultural land, with Calvert's net loss at 330 acres in 4 years. Hunting Creek had the largest net loss of 82 acres.



While Calvert County has done a pretty good job of preserving natural lands, you can see that between 2013 and 2017 natural land was lost to development in every watershed. Parkers Creek is no exception with a net loss of 86 acres in 4 years. Hunting Creek was hardest hit, with a net loss of 291 acres. Calvert's total net loss was 1465 acres of natural land.

Flora and Fauna

In partnership with local scientists, ACLT volunteers have done surveys of its fish, reptiles, amphibians, birds and forests. Click here to see what was found.

Connecting People to the Land

Studies have shown that being outside reduces stress, anxiety and depression and improves our health. People who spend time outside come to love the outdoors. They become the best advocates and volunteers for conserving and protecting this precious resource. Finally, it's just plain old fun to be outside!

ACLT Connected People to Parkers Creek Watershed in 2023:

- 24 Miles of Trails - 47,442 people using them
- Over 175 Maryland Master Naturalists since 2013
- 672 people attending events
- 190 Volunteers (farming, managing the lands & properties, working events, leading hikes, and doing citizen science)
- 3,603 pounds of food harvested from the Double Oak farm for the St. John Vianney food pantry
- 886 Facebook members for ACLT Hiking Challenge Group
- 345 Participants in the 12 in 23 Hike Challenge (42 completed it)
- 24 Hunters (doesn't include hunters on state land)
- 205 canoers on 12 trips













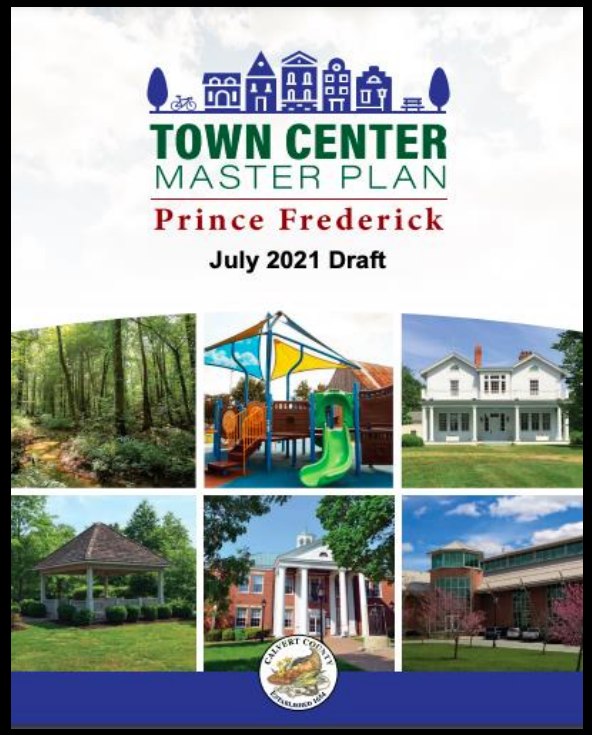

Guide

Indicator

Risks to the Watershed - Stressed

There are many threats to the Parkers Creek Watershed.
Click here to learn more

Invasive Wavyleaf Basketgrass

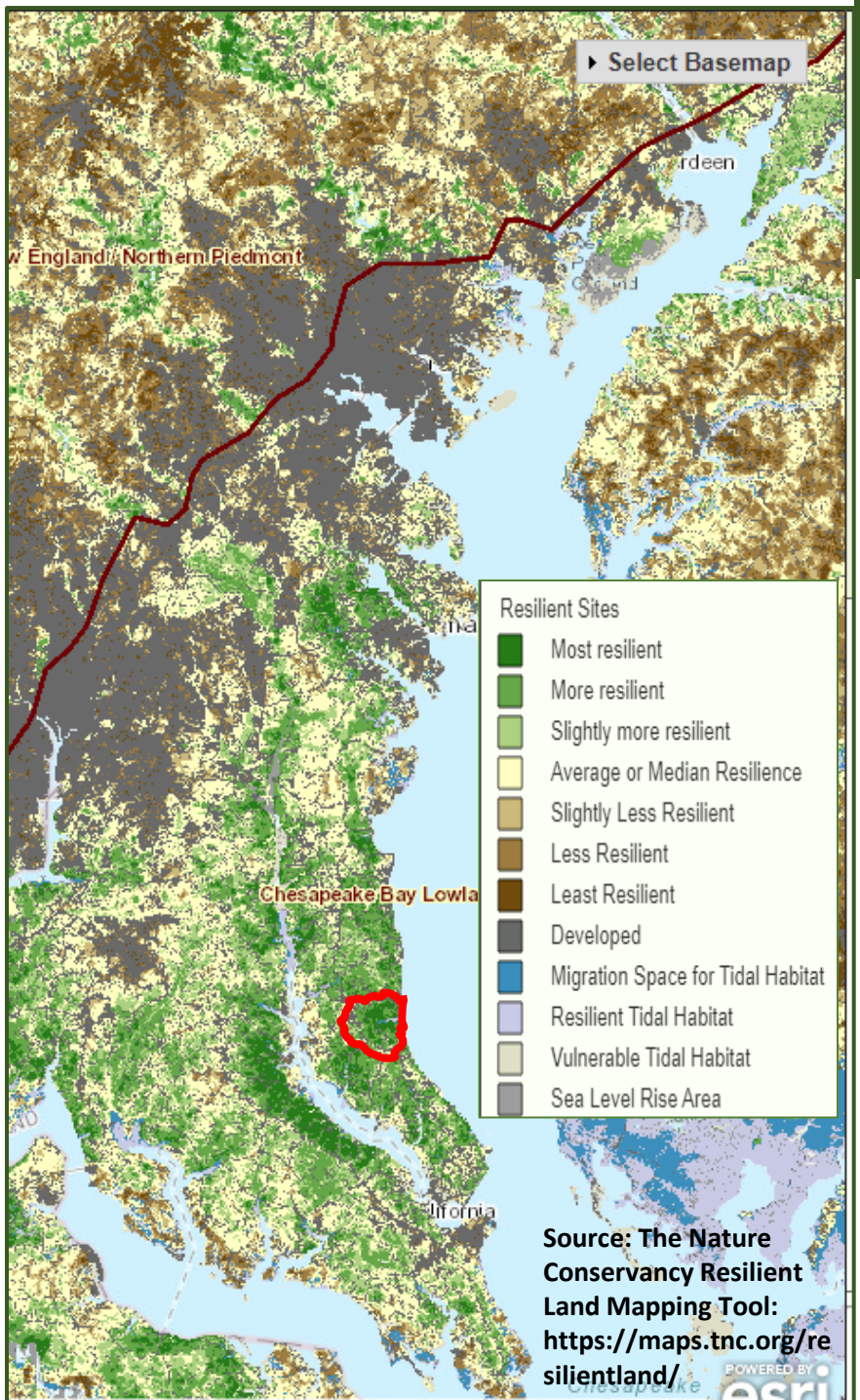


New Developement

Invasive Northern Snakehead

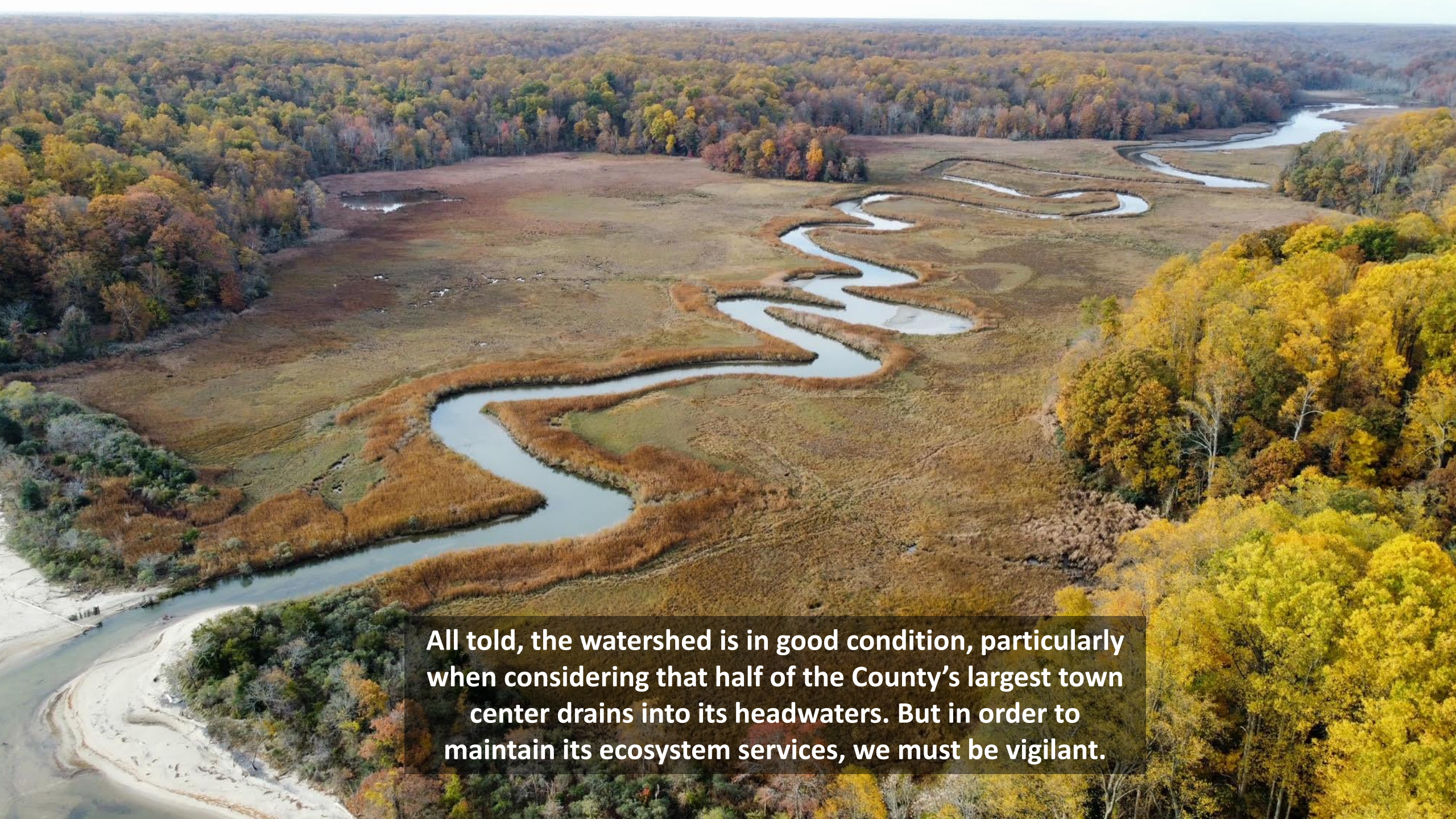
Climate Change

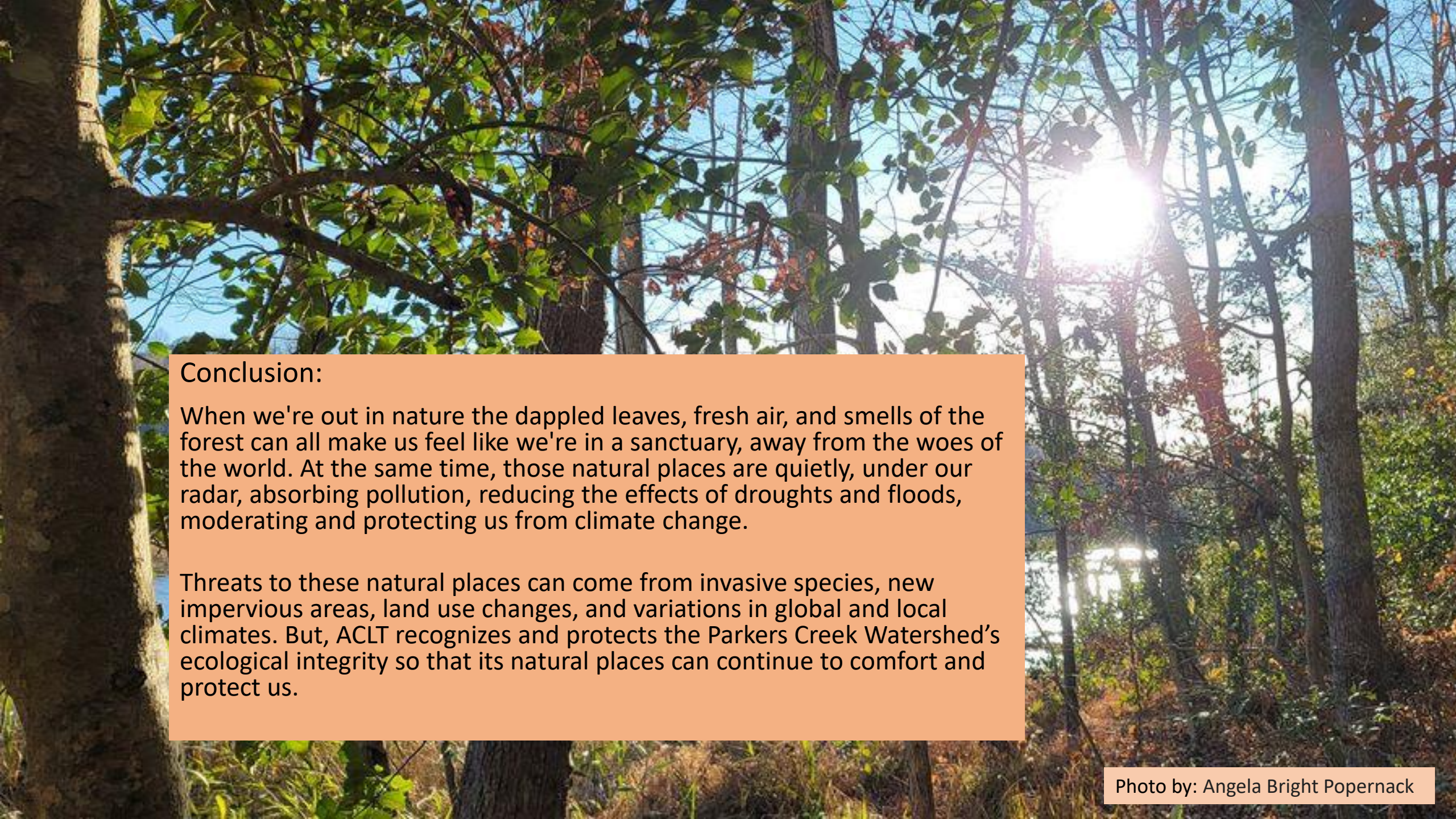
Maryland Department of Natural Resources has called the Parkers Creek Watershed “the Most Pristine Watershed on the Western Shore of Md.”



This statement is as much a testimony to the loss of natural lands all throughout the Western Shore of Maryland as it is to the healthy rate of land preservation in Parkers Creek Watershed over the last 50 years. The map to the left is prepared by The Nature Conservancy. It maps the resiliency of lands, estimating their capacity to maintain species diversity and ecological function as the climate changes.

Shades of green indicate resilient lands with dark green representing the most resilient lands. Most of the Parkers Creek Watershed is shown as dark green, rare along the western shore of the Chesapeake Bay.


All told, the watershed is in good condition, particularly when considering that half of the County's largest town center drains into its headwaters. But in order to maintain its ecosystem services, we must be vigilant.



Conclusion:

When we're out in nature the dappled leaves, fresh air, and smells of the forest can all make us feel like we're in a sanctuary, away from the woes of the world. At the same time, those natural places are quietly, under our radar, absorbing pollution, reducing the effects of droughts and floods, moderating and protecting us from climate change.

Threats to these natural places can come from invasive species, new impervious areas, land use changes, and variations in global and local climates. But, ACLT recognizes and protects the Parkers Creek Watershed's ecological integrity so that its natural places can continue to comfort and protect us.

Photo by: Angela Bright Popernack

Acknowledgements

- The land use and forestry data comes from Chesapeake Conservancy/Chesapeake Bay Program.
- Ecosystem Services data comes from the Maryland Greenprint Website.
- Other data comes from surveys conducted by ACLT's Science Committee.

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