

Watershed Observer



NEWSLETTER OF THE AMERICAN CHESTNUT LAND TRUST - VOLUME 30 NO. 3 SUMMER 2016

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COMING UP ON THE CALENDAR

JUNE

- 25 SUNSET GUIDED CANOE TRIP (6P.M.
– 9 P.M.)

JULY

- 2 GUIDED CANOE TRIP (12 P.M. – 3 P.M.)
(SUNDAY RAIN DATE)

- 10 2ND SUNDAY FARMERS MARKET (1
P.M. – 4 P.M.)

AUGUST

- 6 SUNSET CANOE TRIP (5 P.M. – 8 P.M.)
(SUNDAY RAIN DATE)

- 14 2ND SUNDAY FARMERS MARKET (1
P.M. – 4 P.M.)

SEE MORE OF THE 2016 CALENDAR ON
PAGE 11 OR ONLINE.

You Must Imagine It First!

What will our watersheds be like in 30 years?

Recently, Autumn Phillips mentioned that the Master Naturalist class had ventured out of the classroom to the field near Double Oak Farm and along Turkey Trail to learn about birds. Autumn reported that they had seen numerous Neotropical migrants, including Scarlet Tanagers, Rose-breasted Grosbeaks, Baltimore and Orchard Orioles, Yellow Warblers, and Indigo Buntings. I am not a birdwatcher, but the variety sounded amazing to me. The Audubon Society ranks Parkers Creek as an “Important Bird Area” and notes that “the Parkers Creek watershed is the largest and most diverse relatively undisturbed multi-ecosystem left on the western shore of the Chesapeake Bay”.



With all the news of climate change and declines in animal and plant populations worldwide, it would seem absurd to think that our watersheds will be pristine in 30 years. However, we have the ability to cast aside doubt in our own backyard. ACLT has helped to preserve over 3,000 acres of the Parkers Creek watershed and we manage over 2,800 acres of it. Volunteers spend thousands of hours each year managing and protecting it. There are many risks and challenges to our watersheds, but there is also hope. The reason for hope comes from imagination and responsible action.

“For humans to have a responsible relationship to the world, they must imagine their places in it. To have a place, to live and belong in a place, to live from a place without destroying it, we must imagine it. As imagination enables sympathy, sympathy enables affection. And it is in affection that we find the possibility of a neighborly, kind, and conserving economy.”
Wendell Berry *It All Turns On Affection*.

There is no doubt that 30 years ago at least some members of ACLT imagined the protection of a watershed, or it would not have happened. How do you imagine that our watersheds will be in 30 years? Will the creeks teem with fish? Will the streams that feed the creek run clear even after storms? Will the trails attract a diverse group of visitors of all ages? Will there be American chestnut trees? Will ACLT be thriving?

Included in ACLT’s mission is “We protect the natural and cultural resources of the Parkers Creek and Governors Run watersheds for the benefit of this and future generations”.

In our 5-year Plan (2014-2018) it states that “Our goal is for Calvert County to be a national model for environmental stewardship balanced with a healthy economy. We hope that in 2018 our landscape will be characterized by forests, fields, and farms and well-planned and diverse communities, surrounded by a healthy river and bay. Additionally, we envision a future where citizens are educated and active stewards of the land and their daily living is enhanced by the abundance of natural areas.”

Let us imagine it and make it so.

Greg Bowen, Executive Director

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<http://acltweb.org/nl>



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Published quarterly by the American Chestnut Land Trust. The ACLT is dedicated to the preservation of Calvert County, Maryland's Natural and Historical Resources. Since it was established in 1986, ACLT has preserved over 3,000 acres. We own 958 acres, manage 1,910 acres owned by the State of Maryland, and hold conservation easements on 374 privately-owned acres.

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From the President's Desk

"It is horrifying that we have to fight our own government to save the environment" Ansel Adams

Science has been the foundation of the environmental movement in the US from at least the 19th century. It was an expression of a growing interest in understanding how the environment affected daily life. Some suggest that this heightened concern was initially shaped by the philosophical and moral urgings of folks like Henry Thoreau and John Muir to conserve and cherish our natural landscapes. Nevertheless, science established its own lasting prominence, especially by helping address the adverse health effects of air pollution during the industrial revolution.

Scientific understanding of the environment and citizen activism continued to increase in the US during the 20th century. Scientific-based concerns and dramatic widely visible events such as the Cuyahoga River burning drove Government and activists to take quantum steps in the early 1970's. The inauguration of Earth Day helped crystallize those concerns into the sophisticated environmental movement we have today. At about the same time, government also stepped up to the challenge with the creation of the Environmental Protection Agency and the passing of the Clean Air and Clean Water Acts, both of which remain our key environmental tools.

Despite all the contributions science has made to protecting and promoting the well being of the environment, its role and value remains under siege. Funding for research at all levels of government is often inadequate and what exists is threatened by other spending priorities. Worse than that, the research that is available is often being ignored or aggressively denied as a valid basis for making policy decisions. To add insult to injury, some are manipulating science investigations completely to undermine widely held scientific facts. A recent example is the criminal charges the Attorney General of NY has brought against Exxon Corporation. He found that Exxon was manufacturing its own science for share holders and policy makers to mask the impact that burning fossil fuels was having on the environment.

For many years, ACLT has attempted to be a responsible partner in broadening the scientific knowledge of the Parkers Creek Watershed and the Bay. We have systematically collected pertinent data and coordinated it with relevant local and state research efforts. Unfortunately, there is increasing evidence that this data, generated by us and others is not being used.

Four years ago, the ACLT Board created an ad hoc Science Committee. Its intent was to formalize and make more visible the scientific work we and others were doing in the area. It has been a successful education effort. However, the current Board feels that more will need to be done. Government action alone will not protect our environment. Consequently, the Board felt it should double down on its commitment in this regard.

As a result, the Board decided to form a permanent standing Science Committee. It will be expected to meet regularly and advise the Board on scientific issues affecting the Parkers Creek ecosystem. Additional members will be added to the committee to provide expertise in how to engage the community and government in taking the types of actions that research findings suggest.

The long term success of these efforts is only as good as the quality of participation of you as members. If you have any interest in getting more directly involved with this committee as a member, or if you have some ideas we should consider, please feel free to contact Greg or myself.

Sincerely, Pat Griffin
pgriffin@griffinhome.com

Land Manager's Corner

New Master Naturalists Released into the Wild

ACLT's fourth annual Maryland Master Naturalist class recently came to an end; but not before this year's participants had many memorable learning experiences and initiated some great volunteer projects. The 16 week course covered topics from geology, climate, and paleontology to botany, mammalogy, and saltwater ecology. Students in the class learned from leading experts in each field including professionals from Calvert County Natural Resources, the Maryland Department of Natural Resources, the University of Maryland, the Chesapeake Biological Laboratory, and various other distinguished educational institutions.



Each year, many who complete the program say that the hands-on portions are their favorite. This year, students learned how to identify wildflowers using identification guides, went on a hike in the woods at night to



find frogs and salamanders in vernal pools, located dozens of species of birds on an early morning bird walk, and learned how to differentiate between the many different species of trees that make up our forested ecosystems. To celebrate their completion of the class, the students' final outing was a canoe trip on Parkers Creek to see firsthand the "most pristine watershed on the Western Shore of the Chesapeake Bay".

Hard at Work

In order to successfully graduate from the program, participants also had to complete a volunteer project, and as

with previous classes, their efforts resulted in some amazing additions to ACLT's land management and outreach efforts. One group engaged local Girl Scout groups to help build bee houses that will be placed at various locations at ACLT. The group educated the Scouts about the population decline currently facing many of our native bee species and also helped kids build their own bee houses at ACLT's Family Day.

Another group took on the mighty task of designing Trail-side Nature Boxes. The idea is to place boxes along the South Side Ridge Loop trail that contain props to show young hikers some of the wildlife that is supported in the forests and marshes of the Parkers Creek Preserve. While still in the planning stages, these boxes might include animal furs, tracks and skulls, preserved leaves, and turtle shells.

In my last newsletter article I mentioned yet another project that was initiated by the 2016 ACLT Master Naturalists. Volunteers have built a Natural Play Space which now includes a log balance beam, a "spider web" obstacle, a social circle with seats made from tree stumps, a sandbox formed out of a repurposed boat, and various other interactive features. The play space is located next to the picnic pavilion near the North Side trailhead.

I've also mentioned our efforts to establish a native wildflower and warm season grass meadow in part of the South Side fields. This project, much like the pollinator and milkweed gardens, aim to increase the diversity of our pollinators as well as our birds, insects, and small mammals. But how do we know whether these projects are successfully increasing our biodiversity? A few Master Naturalists in this year's class have designed an observational study to document the wildlife diversity currently in the field, and compare it to the diversity present next spring when we hope to be getting the meadow established. We hope that our habitat improvements are allowing us to support a wider array of wildlife at ACLT.

Never Settling

In many of my past articles, I've described the ways that we have worked to improve the quality of habitat that is provided on the lands managed by ACLT. Whether it is removing invasive species, planting milkweed and pollinator gardens, installing our numerous bird nesting boxes, or creating brush piles, we are always working to maximize the wildlife that can be supported here. In the spirit of never settling with what we've accomplished so far, another project by this year's cohort of Master Naturalists aims to provide homes for yet another type of wildlife.

For his project, Master Naturalist Kevin Donahue wanted to build bat boxes. Bat boxes are basically bird houses redesigned for bats. The most common users of bat boxes in our region are Big Brown Bats (*Eptesicus fus-*

cus) and Little Brown Bats (*Myotis lucifugus*) (Wild Birds Unlimited). Boxes can be installed on poles or sides of buildings but it is not recommended that they are installed on trees because they are easiest for predators of the bats, such as cats, snakes, and raccoons, to climb (Organization for Bat Conservation). While bats can take quite a while to populate bat boxes, the boxes can provide a place for hundreds of females to raise their pups. Bats such as the Big Brown Bat and Little Brown Bat have separate day and night roosts in places such as rock crevices, tree bark, buildings, wood piles, and bat boxes. In the winter, thousands of bats will hibernate together in caves, which are known as their hibernacula (National Wildlife Federation).

Like many species, bat populations are declining. There are various causes for this population decline including habitat loss, pesticide build up, and mining (National Wildlife Federation). Additionally, in many parts of the world bat populations are being impacted by poachers in the "bushmeat" trade and the increase wind turbines to create wind energy has also taken a heavy toll on bats (Bat Conservation International). However one of the most well-known causes, and perhaps currently the biggest factor in bat species decline in the United States, is a relatively new threat.

During the winter of 2006, scientists received reports that thousands of bats were out flying around during the daytime in below freezing temperatures in upstate New York where known bat hibernacula were located. The bats had used up their fat reserves that should have lasted them through winter and had a curious white fungus on their faces. Thus White Nose Syndrome was born (National Park Service; Bat Conservation International). White Nose Syndrome has been shown to be caused by a new fungus *Pseudogymnoascus destructans* (WhiteNoseSyndrome.org). *The fungus causes bats to wake more frequently during hibernation which results in them prematurely burning through their fat stores and starving to death. The fungus can also cause bats to emerge from hibernation too early while temperatures are still freezing and cause them to freeze to death (Bat Conservation International). The fungus can spread rapidly through hibernacula and once infected can cause 90-100% mortality. Seven species of bats have currently had confirmed cases of White Nose Syndrome in the United States including both Little Brown Bats and Big Brown Bats in addition to two endangered species, the Indiana Bat and the Gray Bat (WhiteNoseSyndrome.org).*

Female bats typically raise just one pup per year, so population growth is slow even without the myriad of threats they are trying to overcome. There are over 1,300 known species of bats worldwide that provide invaluable services in the way of pollination of crops and fruit trees, seed dispersal, and pest control (Bat Conservation Inter-

national). Some species, such as the Little Brown Bat must eat half of their body weight in insects each night and new mothers may eat their entire body weight in insects each night (National Wildlife Federation).

Bat boxes will not attract bats to roost in your house and may actually prevent them from roosting in your attic by providing them with a better option. Providing bat boxes near your home can keep bats out of your buildings while still keeping them near enough to enjoy the benefit of their pest control services (Bat Conservation International). Most importantly, they can provide a safe home for a species that could really use a helping hand.

Autumn Phillips
Land Manager

References

Bat Conservation International. <www.batcon.org>
National Wildlife Federation. Little Brown Bats. <<https://www.nwf.org/Wildlife/Wildlife-Library/Mammals/Bats/Little-Brown-Bat.aspx>>
Organization for Bat Conservation. <<https://batconservation.org/help/backyards/troubleshooting/>>
WhiteNoseSyndrome.org. <www.whitenosesyndrome.org>
Wild Birds Unlimited. Bat Habitat Guide. <<http://www.wbu.com/education/brochures/BatHabitat.pdf>>



Captions

Around ACLT

Earth Day Clean Up

Earth Day is a great opportunity to celebrate the dedication and values of the American Chestnut Land Trust. With that in mind, the ACLT staff and board engaged in an active and productive week of projects and events.

On Sunday April 24th, ACLT volunteers met on the South Side to tackle a 40 foot wide mound of trash buried on one of our newest properties. Many things ranging from bicycles to vacuum cleaners were unearthed and collected to be taken to the proper facilities. Significant progress was made by the hard work and sweat of 40 volunteers. They were amazing! We would like to extend our most sincere thanks to everyone who participated in that effort. (Below left: Autumn Phillips, ACLT's Land Manager kicks off Earth Day clean up. Right: A full dumpster of trash was removed.

(Earth Day continues on page 7.)



Spring Field Trips to Double Oak

As you read in ACLT President Pat Griffin's article in our spring "Watershed Observer" and in our recent appeal letter, we are intent on engaging young people here at ACLT. Thanks to the support of our board, donors and especially our volunteers, we've recently made some great progress! Check out the various visits from local schools, universities and teen clubs.

Huntingtown Elementary School

On May 25th, 80 2nd graders, 20 chaperons and 3 teachers from Huntingtown Elementary School spent a very busy and fun day at ACLT. The rain had been persistent and had caused the trip to be postponed earlier in the month. But the morning the students visited was sunny and beautiful with clear blue skies. ACLT's volunteers arrived with enthusiasm, ready to take on the energetic youngsters.

The kids were rotated through 3 stations of activities: the trails, the farm and the fields. At the Farm, students were led through a hands-on discussion of the importance of the soil and the factors that help make plants grow stronger and healthier. Volunteer Birgit Sharp passed around a handful of worms and explained the important role the creatures play in creating healthy soil. From there, the students met RT West, ACLT's volunteer Farm Manager, who discussed how Double Oak Farm is tended and then guided the students as they helped plant a row of beans.

At the field station, the kids had the opportunity to learn about birds then pretend to be one! Sandy Foley, one of ACLT's volun-



Volunteer Birgit Sharp teaches Huntingtown Elementary School students about soil.

teers who monitor the bird boxes, showed pictures of our bluebird families and discussed the work ACLT does to support pollinators and other native insects. Thanks to a loan from volunteer Kathy Foutz, the kids were able to handle and examine two dozen preserved native insects in individual, kid-friendly magnifying cases. From there, the kids moved on to being a bird themselves by playing “The Great Migration Game”. The game gives every student a bird badge that identifies them as a specific kind of bird then takes them on a “roll the dice” adventure. The students weave through the yard from station to station making homes, finding food and water and experiencing challenges like electric wires and habitat loss. Volunteers Penny Moran, Chuck Whittington and Fred Bumgarner, led this and other nature games which helped keep the 7 year old up and busy while learning about the challenges of migration.

Arguably, the highlight of the trip was the hike to the Beaver Dam. For many of the students and some of the parents, this was the first time they had been on a trail and/or in a forest. Our guides had placed a variety of items along the trail, such as turtle shells, birds’ nests, and even “raccoon scat”, along the trail to offer the guests an idea of things to look for while hiking. In addition, they took the time to point out and discuss things to watch out for like poison ivy and ticks. The Beaver Dam was brimming with activity! Frogs and birds were noisy after the weeks of rain. The kids were thrilled to see a few snakes as well. Volunteer guides Bob Field, Mary Hollinger, Ian Messant, and Penny Moran and Land Manager Autumn Phillips gave the group an outstanding introduction to hiking and the natural beauty of ACLT.

Teacher Willanette Thomas-Lohr, said many of her students claimed that their visit to ACLT was their “most favorite field trip ever”. “This trip gave the students the opportunity to see in action many of their science concepts such as: life cycles, conservation, and preservation”, according to Mrs. Thomas-Lohr. “Our students, staff and chaperons had an awesome time!”

Calvert High School Future Farmers of America

With the seniors preparing to graduate, the underclassmen have begun looking to their final years in high school and the projects they will be launching in the fall. For the Future Farmers of America, this means a long term, scientific project that has measureable results. ACLT volunteer and teacher Chuck Gustin, leads this program at Calvert High School. On June 1st, he and his group of 20 students visited ACLT to explore possible projects for the 2016-17 school year.

The group was introduced to ACLT Executive Director, Greg Bowen, Land Manager Autumn Phillips and Volunteer Farm Manager, RT West. Each presenter discussed the science based activities that support the beauty of ACLT. Ideas for possible projects included: testing variations in soil based on natural fertilizers such as leaves, manure, and other organic materials; researching and detailing the fish species in Parkers Creek; comparing bee and wasp diversity between milkweed plot locations; and observational studies of the beaver population in the Horse Swamp Beaver Dam.

Students were given an overview of the wide variety of farm, invasives management, wildlife support and land management activities that ACLT undertakes each day. Once the student projects have been determined, ACLT has offered to assist in any way possible. We hope this visit will inspire research as well as new friendships and partnerships for this age group.

The staff of ACLT would like to thank the amazing ACLT volunteers and financial supporters who made these experiences possible. Your contributions to the spring appeal were critical in allowing us to create this opportunity for these local students to get to know ACLT and the natural lands it protects. There is great interest in expanding these programs to more schools in the county. Together, with your participation and support, we can make that a reality.



ACLT Frog Pond and a garter snake.

Earth Day 5k

2016 was the second time ACLT had organized a 5k Trail Run. Hosted on the North Side along the Parkers Creek Loop, we anticipated a small group of local runners out to enjoy the morning. The result, however, was nearly a hundred people celebrating Earth Day at ACLT and marveling at the beautiful views of Parkers Creek along the course.

Fifty-nine runners took to the course. Most ran simply to enjoy the trail. But several ran competitively. The top time was 18 minutes and 16 seconds achieved by Kyle Phillips. Five runners completed the challenging course in less than 25 minutes then stood along the last leg cheering others on. The course was also dotted with encouragement signs from run sponsor, The Tidewater School. Many runners told us the sign were appreciated and needed as they made the turn to head up the hill on Turkey Trail as they approached the finish line. A large group of walkers also gathered to hit the trail together after the run began.

Many of our guests were first time visitors to ACLT, loved their visit and made a point to encourage us to coordinate another run soon. Based on the favorable responses, ACLT will be looking into hosting another 5k perhaps as early as this fall.



Top: 5k runners on the final stretch.

Bottom: Earth Day 5k crowd at the finish line.

New ACLT Committee Meets to Review Comprehensive Plan

The Sustainable Calvert Network (SCN) has decided to support the preparation of a new Calvert County Comprehensive Plan and zoning ordinance by providing public participation and comments when requested. Each of the member organizations has agreed to review the current comprehensive plan as a first step in being able to provide input in a new one.

ACLT formed its own Comprehensive Plan Committee, consisting of Dawn Balinski, Walter Boynton, Denise Breitburg, Steven Cloak, Carl Fleischhauer, Ron Klauda, Gary Loew, Robyn Truslow, and Randi Vogt. Their preliminary comments are as follows:

- **Comprehensive Plan Goal.** The Committee finds that the goal is a good one and should only be edited.
- **Comprehensive Plan Visions.** The Committee agrees with the Plan visions with modifications.
- **Achieving the Goal and Visions.** The Plan assigns responsibility to implement actions to various county and state departments and agencies, based on their legal or procedural responsibilities. It is also very important to monitor progress, both to ensure the success of implementation and to inform citizens of the community's progress toward the goals and objectives. It is the Committee's understanding that all of these steps have not been followed, which has led to the Plan not being fully implemented.
- **Do the text and actions reflect the Network's and ACLT's missions?** The text and proposed actions generally reflect the missions and goals of the Sustainable Network's organizations and their thousands of active citizen-members. ACLT's committee likes the fact that actions are assigned to appropriate agencies and suggests that timelines should also be included.

ACLT's report will be shared with the other SCN member groups and, if possible, a consensus document will be prepared. To view the current Comprehensive Plan: <http://www.co.cal.md.us/DocumentCenter/View/254>

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(<http://www.facebook.com/pages/American-Chestnut-Land-Trust/250928382473?ref=ts>)

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a blue rectangular background.

Sustainable Calvert: Environmental Resources and Issues

By Dr. Walter Boynton, a professor at the University of Maryland Center for Environmental Science (UMCES) Chesapeake Biological Laboratory. His areas of expertise include: Systems ecology; nutrient cycling in estuarine systems; and food web dynamics.

Introduction and Purpose:

Calvert County is endowed with an amazing abundance and diversity of natural resources. The Chesapeake Bay, often thought of as the queen of North American estuaries, borders the County to the east and the Patuxent River estuary, the largest river-estuary wholly within Maryland, defines the western border of the County. There are approximately 101 miles of shoreline in Calvert County, a resource of very considerable value. Additionally, extensive and productive tidal and non-tidal wetlands and freshwater streams connect the land to the open waters of the estuaries. Productive farmland and forests also cover significant areas of the county.

Calvert County is undertaking a rewrite of its Comprehensive Plan. This report includes the following: 1) facts and trends concerning County natural resources; 2) places where additional and more detailed information can be found; and 3) issues of concern, both positive and negative.

Land Resources:

The total County land area is about 220 square miles; the County is 30 miles in length and about 9 miles wide at its widest point. Calvert, in terms of land area, is the smallest of the 23 Maryland Counties.

Land use has great influence on environmental conditions both on the land and in the adjacent streams, wetlands and estuaries. There is considerable historical information available concerning changes in County land uses. For example, paleoecologists found that prior to European settlement in the early 1600s the land was almost completely forested with a mixture of deciduous hardwood and some evergreen species. This condition changed a great deal during the next several hundred years and by 1850 only 14% of the Patuxent River basin remained forested and it seems likely that the same was true for Calvert County. The remaining 85% of the land was either in active agriculture or fallow following agricultural activities. A great deal of farmland was abandoned following the Civil War and forest re-growth began. By the early 1950s almost 40% of the Patuxent Basin was forested and by the early 1970s that had increased to almost 60%. Since the mid-1980s forest cover has slowly decreased, as has agricultural lands; urban and residential land uses have increased.

Land uses in Calvert County have also changed in more recent times. During the mid-1970s forested, residential and agricultural lands covered 54, 11, and 35% of the County. By 2007



Farm Field on Holly Hill

these uses had shifted with forested, residential and agricultural lands then covering 47, 37, and 13% of the land area, respectively. Agricultural and forested land uses declined markedly and residential/urban/commercial increased.

There are ecological consequences associated with changing land uses. For example, expansion of urban and residential land uses generally increases impervious surfaces that, in turn, lead to increased storm water runoff, soil erosion, stream habitat degradation and increased nutrient and sediment loads to tidal waters of the Bay and Patuxent River. It is a serious challenge to counteract the negative ecological effects of land conversion to urban/residential uses. The challenge and cost of both prevention and remediation should not be underestimated.

On a positive note the County currently has considerable areas of open space, but less than recommended by State of Maryland guidelines (30 acres of open space per 1,000 residents). There are five major County Parks (King's Landing, Dunkirk Park, Hallowing Point, Cove Point Park, the Cypress Swamp and Flag Ponds) and the State-owned Calvert Cliffs Park. In addition there are five land trusts in the county and together they own 2000-3000 acres of land. Calvert County, with five land trusts, is tied with Baltimore County as having the most land trusts of any County in the State. There is an active farm preservation effort on-going in the County where about 29,000 acres of farmland have been preserved with a goal of 40,000 acres (28% of County land area).

Streams of Calvert County:

There are about two dozen large and many more small streams originating in Calvert County with the majority of these larger streams (18) draining into the Patuxent River. Some of the larger Bayside streams include Parkers Creek and Fishing Creek. Well-known Patuxent River streams include Lyons, Hunting, Battle and St. Leonard Creeks. Overall, there are about 12,000 miles of streams in Maryland and about 200 miles of non-tidal creeks in Calvert County. In addition to these named

creeks there are many more smaller, often intermittent, streams in the County. The net result is that all county residents and businesses are intimately connected, via water flows from both large and small streams, to the tidal waters of the Chesapeake Bay and Patuxent River. So what each of us puts on and does to the landscape can eventually end up in the Bay.

These streams, even the smallest, serve important and often overlooked ecological functions in addition to their aesthetic value. They are home to many freshwater fishes and countless species of invertebrates (e.g., insect larvae, crayfish) that anchor the aquatic food web. They serve as spawning places for migratory fish, some of which form important links in the food webs leading to commercially and recreationally important species. Streams provide



Parkers Creek Tributary

many recreational opportunities, a use that appears to be growing rapidly. Importantly, these streams and associated tidal and non-tidal wetlands clean the water by removing excess nutrients, absorbing pollutants, and trapping sediments---functions essential for restoring the Bay and Patuxent River.

So what do we know about the health of Calvert County streams? Maryland is fortunate to have a statewide monitoring program that measures the water and habitat quality and also assesses the biological integrity of non-tidal streams, including streams in Calvert County. Conducted by staff from the Department of Natural Resources (DNR) and the University of Maryland's Appalachian Lab, the Maryland Biological Stream Survey completes a statewide assessment every 4-5 years. The third and most recent stream health assessment was completed in 2009. The fourth statewide survey began in 2014 and will be completed in 2018. About 10 stream sites will be sampled in Calvert County in 2017 and 2018.

Since it began in 1995, the Maryland Biological Stream Survey has sampled and assessed the health of 38 streams in Calvert County. Of these monitored streams, 19% were found to be in good condition (based on the composition of fish and macroinvertebrate assemblages), 25% were in fair condition, and over half (56%) were in poor to very poor condition. Between 2000 and 2012, volunteer citizen scientists trained by DNR staff collected macroinvertebrates from 76 stream sites in the County. Their findings were similar to those of the Maryland Biological Stream Survey: more streams were in poor to very

poor condition than fair or good.

These monitoring results indicate we need to do a better job concerning stream health. For starters, those county streams that are still in good condition (e.g., Lyons Creek, Plum Point Creek, Hall Creek) should be protected from degradation. One of the major threats to stream health is adding more impervious surfaces to the landscape that decreases the infiltration of stormwater and increases runoff and stream channel erosion. For those streams that are already degraded, prudent remediation actions include reducing pollutants at the source and maintaining or enlarging streamside forest buffers. More aggressive and expensive actions include reconnecting streams to their flood plains and adding pools and other water-holding structures to the stream. There is some serious work needed to improve the quality of Calvert County streams.

More information concerning streams and stream monitoring/assessment results in Maryland and Calvert County can be found at <http://dnr2.maryland.gov/streams/Pages/mbss.aspx>

Groundwater Supplies:

In sharp contrast with some other portions of the State and region, residents of Calvert County use groundwater as a source of potable water. There are no drinkable surface water resources in the County.

The United States Geological Survey (USGS) along with the Maryland Geological Survey and the Calvert County Department of Public Works conducts assessments of groundwater supplies for Calvert County using a network of 42 monitoring wells that are influenced by regional and local water withdrawals. In brief, there are several aquifers underlying Calvert County from which most water is withdrawn and these include (in order of depth below the surface) Piney Point-Nanjemoy (limited current use), Aquia (main public water source), Magothy and Upper and Lower Patapsco. Test data from monitoring wells indicate several cones of depression in the vicinity of North and Chesapeake Beach and Solomons, indicating local aquifer water withdrawals in excess of recharge. However, water supply estimates based on test well data indicate adequate water supplies through the mid-21st century. Additional information concerning groundwater resources can be found at www.co.cal.md.us/DocumentCenter/View/8674 and www.mgs.md.gov/wss/.

Air Quality in the County:

The National Air Deposition Network (NADP) maintains a large number of air monitoring sites throughout the United States and data collected can be accessed on the web (www.nadp.sws.uiuc.edu). There are four NADP collection sites within 25-40 miles of Calvert County but

we are not aware of any air monitoring sites in the County. Until the development of the Dominion Cove Point project there has been only limited concern regarding air quality. The major issue was that polluted air coming from coal-fired power plants in the Ohio valley would move eastward on prevailing winds and stall over the Calvert County region because of on-shore Bay breezes during summer and thus create poor local air quality. "However, a new report issued by the Maryland Department of the Environment states that "For the first time in 30 years, Maryland is very close to meeting all federal air quality standards. The Environmental Protection Agency (EPA) has determined that the Baltimore area is meeting the health based federal standard for ground level ozone air pollution that was the focus of current State plans to clean the air in the 2015 to 2018 time frame." Improved air quality is due to tougher EPA standards and effective action by a number of states, including Maryland. <http://www.mde.state.md.us/programs/Air/Documents/GoodNewsReport/CleanAirProgress2016.pdf>

Patuxent River Estuary:

The Patuxent River and estuary is the longest river/estuary ecosystem in Maryland. The river originates in northern Maryland and flows 110 miles to the Chesapeake Bay. Seven counties border the river or estuary, including Calvert County. The portion of the estuary in northern Calvert County is shallow and bordered by extensive tidal marshes. In fact, in terms of surface area, there is about 5 times more tidal marsh than estuarine open waters. South of the MD Route 231 Bridge at Hallowing Point the estuary broadens and deepens and is stratified from spring through early fall (more salty water towards the bottom and fresher water nearer the surface). Such stratification inhibits mixing of such important elements as oxygen from surface to deeper waters, especially during warm periods of the year, leading to oxygen stress and loss of habitat for many species.

Available data indicate the Patuxent estuary during the 1950s and early 1960s was characterized by reasonably clear water, adequate dissolved oxygen in deep waters and abundant and diverse sea grass communities along the shorelines and out to waters in excess of 10 feet deep and deeper in a few areas. However, this changed rapidly during the late 1960s and early 1970s. Sea grasses disappeared throughout the estuary by 1970 (earlier in the upper areas of the estuary), water clarity decreased and low dissolved oxygen areas (dead zones) developed. The deterioration occurred during the same period when development in the upper basin was intense with a great deal of land conversion to urban and suburban uses and use of the river for disposal of water from waste water treatment plants (WWTP). Currently there are 9 major

WWTPs (and many small WWTPs) discharging about 70 million gallons per day of nutrient rich wastewater to the river and estuary. There have been a series of up-grades to the WWTPs and additional up-grades are currently being constructed. However, water and habitat quality remains poor in the Patuxent River and estuary. The latest Report Card for the Patuxent had a grade of D, among the lowest in the entire Bay region (see www.ecoreportcard.org for more detailed information). Obviously, much yet needs to be done to restore this estuary.

Chesapeake Bay:

The Chesapeake Bay constitutes the eastern boundary of Calvert County stretching for about 30 miles from north beach to Solomons Island. This stretch of shoreline also represents the largest exposure of Miocene deposits in the world. The Chesapeake Bay has often been characterized as a huge natural resource-based engine and Calvert County benefits from these activities. Specifically, recreational and commercial fishing, shoreline real estate, recreational boating, and tourism are all directly or indirectly based on attributes of the Bay.



Chesapeake Bay Shore Near the Mouth of Parkers Creek.

Much of this economic engine depends on good water and habitat quality of the Bay, as it does for the Patuxent River estuary. Currently, and for the past 4-5 decades, there have been serious water quality issues in the Bay and the most severe water and habitat problems occur in the mid-portion of the Bay, some of which is adjacent to Calvert County. Major impacts include algal blooms, persistent dead zones (lack of oxygen in the water) and the disappearance of sea grasses along the edges of the Bay shoreline and in tributary creeks as well as more complicated issues of estuarine chemistry. The region is currently dealing with a major program designed to reduce excessive nutrient and sediment inputs to the Bay and rivers (EPA and State Total Maximum Daily Load program; TMDL) and via these efforts to restore adequate water quality. In areas of the Bay and tributaries where nutrient reductions have been realized the ecological responses have been very favorable. Good information about these issues can be found at www.chesapeakebay.net.

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www.sustainablecalvertnetwork.com

Thank you for your support ...

New Members

ACLT would like to welcome the following new members since the Spring 2016 newsletter:

Mr. & Mrs. Vivek Amin
Ms. Laura Berg
Ms. Melanie Biscoe
Ms. Kimberly Chance
Mr. Michael L. Cunningham
Mr. Stephen P. Dean
Mr. Robert Frederick
Mr. Terry Ghee
Mr. Joseph Hance
Ms. Kathi E. Hanna
Ms. Gaileen Holm
Ms. Britt Krauss
Mr. Ian Messent
Mr. Louis Murray
Ms. Debi Olshaw
Ms. Pat Paytas
Ms. Carol Russell
Mr. Todd Sleeman & Family
Mr. Micah Steinmiller
Ms. Lori Walker
Ms. Leigh Warner & Family

Gift Memberships

Thank you to the following members who gave a gift membership since the last newsletter:

Mr. & Mrs. Daniel Head

Sustaining Membership

Congratulations to the following members who have reached the level of Sustaining Membership:

Dr. & Mrs. Mark Kushner

In Honor of Contributions

Thank you to the following members who made an "in Honor of" contribution since our last newsletter:

In honor of **Mr. Carl Fleischhauer**, who is a Charter Member, a former member of ACLT's Board of Directors and dedicated volunteer, on his retirement from the Library of Congress:

Ms. Kate Murray and Carl's colleagues from the Library of Congress

Spring Appeal

The Board of Directors and staff wish to thank the following for their contributions to the 2016 Spring Appeal:

Mr. Louis Amtmann
Mr. & Mrs. Joseph Baldo
Mr. & Mrs. Steve Balinski
Col. Daniel Boesz
Mr. & Mrs. Greg Bowen
Mr. and Mrs. William Bushnell
Mr. and Mrs. Frank R. Caldwell, Jr.
Mr. and Mrs. David Didion
Mr. & Mrs. Curtis Drumm
Ms. Ethel Dutky & Mr. Alvin Wilson
Mrs. Mary Dwan
Dr. and Mrs. Glenn Edgecombe
Mr. & Mrs. Richard Fleming
Mr. Martin Flynn
Mr. and Mrs. D. Duncan Frazer
Mr. Matt Gambrill
Dr. & Mrs. Edward Graham
Mr. Scott Hite
Mr. & Mrs. Steve Howerton
Ms. BL Johnston
and Dr. Robert Keisling
Mr. Ronald Klauda
Mr. Max Lederer
Mr. and Mrs. Walter Lippold
Greg and Linda Locraft
Ms. Angela Long
Ms. Sally Ludwig
Mr. & Mrs. Ron Magnussen
Ms. Anne Warner
and Mr. Michael Makuch
Mr. & Mrs. Michael Manning
Mr. & Mrs. Gilbert Masters
Mr. John McGahey, Jr.
Dr. Kathleen Miller
Ms. Pamela-Jeanne Moran
Dr. and Mrs. Austin Platt
Mr. Norman Prince, Jr.
Mr. Glen Pyles
Mr. and Mrs. Steve Rupard
Mr. Charles Serpan, Jr.
Mr. and Mrs. Peter Stathis
Mr. John Swartz
Mr. James Williams
Mr. and Mrs. Albert Zahniser
Mrs. Anne Zehner
Ms. Roberta Safer & Mr. Klaus Zwilsky

General Contributions and Designated Gifts

Thank you to the following for your generous gifts:

Mr. & Mrs. Steve Balinski
Ms. Denise Breitburg & Mr. Mark Smith
Mr. & Mrs. Michael R. Cunningham
Mr. & Mrs. Daniel M. Head
Mr. Don Mighell
Mr. Noah Stone
Southern Maryland Electric Cooperative

Harrod Property Donations

ACLT would like to thank those who continue to support our purchase of the Harrod property:

Dr. and Mrs. Walter Boynton

American Chestnut Land Trust 2016 Calendar of Events

June

25 SUNSET Guided Canoe Trip
(6p.m. - 9 p.m.)

July

2 Guided Canoe Trip (12 p.m. - 3 p.m.) (Sunday Rain Date)
10 2nd Sunday Farmers Market (1 p.m. - 4 p.m.)

August

6 SUNSET Canoe Trip (5 p.m. - 8 p.m.) (Sunday Rain Date)
14 2nd Sunday Farmers Market (1 p.m. - 4 p.m.)

September

10 Guided Canoe Trip (9 a.m. - 12 p.m.) (Sunday Rain Date)
16 Volunteer Appreciation Dinner
24 Guided Canoe Trip (9 a.m. - 12 p.m.) (Sunday Rain Date)

October

8 Patuxent River Appreciation Days
(10 a.m. - 5 p.m.)
15 Guided Canoe Trip (1 p.m. - 4 p.m.) (Sunday Rain Date)
16 Calvert County Farm Festival/
Member Appreciation Day
22 Fall Hiking Trail Maintenance
Day (9 a.m. - 12 p.m.,
picnic lunch)
30 Fall Guided Hike at Double Oak
(1 p.m. - 4 p.m.)

November

12 21st Annual Auction & Dinner

December

1, 2 Wreath-Making Workshops
3 Holiday Wreath & Greens Sale at
ACLT South Side Barn (11 a.m. -
2:00 p.m.)



American Chestnut Land Trust, Inc.
 Post Office Box 2363
 Prince Frederick, MD 20678

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In order to use your donations as efficiently as possible, we use USPS Bulk Mail and this statement is now required in the address. Thank you for understanding!

Come Join Us!

Detach and Mail to: The American Chestnut Land Trust, Inc., P.O. Box 2363, Prince Frederick, MD 20678

Name _____ e-mail _____

Address _____

Phone _____ I (we) learned about ACLT from _____

Regular Membership

___ Land Saver—\$35.00

___ Habitat Protector—\$500.00

___ Land Protector—\$60.00

___ Trustee of Land—\$1000.00

___ Land Conservator—\$150.00

___ Sustaining—\$2500.00

Corporate Membership

___ Land Saver Corporate—\$150.00

___ Land Protector Corporate—\$250.00

___ Land Conservator Corporate—\$500.00

The American Chestnut Land Trust is a 501 (c) (3) charitable organization. A copy of the current ACLT financial statement is available on request. Requests should be directed to the American Chestnut Land Trust, Inc, P.O. Box 2363, Prince Frederick, MD 20678 or call (410) 414-3400. For the cost of copies and postage, documents and information submitted under the Business Regulation Article of the Annotated Code of Maryland are available from the Secretary of State.