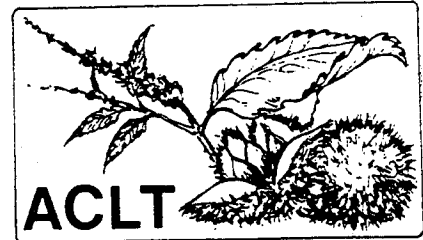


American Chestnut Land Trust, Inc.

Post Office Box 204
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NEWSLETTER

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Message from the President

Did you know that ACLT, only three years old this December, was the first private land trust to be established in the State of Maryland? Since then the number has reached eleven and is still growing. According to the Land Trust Exchange (the national organization of land trusts) land trusts have become the fastest growing, grassroots conservation movement in the country.

Nationwide, on average, there is a new group formed every seven days with more than 640,000 members now enrolled in the more than 750 individual trusts. We are especially proud that ACLT's Articles of Incorporation and Bylaws are to be included in the soon to be published *Handbook* of the Land Trust Exchange.

We hope all of our members will want to continue to be identified with this astonishingly successful conservation movement through membership in ACLT. To be active members, families or individuals are asked to renew their memberships once during each calendar year. We will be working toward a fiscal balance of a membership large enough at the basic membership level (\$25.00) to support our administrative costs, program activities and insurance. Contributions above the dues level can then be earmarked for the acquisition of land and those related costs, i.e., appraisals, legal services, title searches, recording fees, etc. Eventually, as our forestry management program develops, the cost of maintaining our trails, fire roads and walkways and improving our timber stands through culling and planting will be offset by our anticipated forestry revenues. As of now, these costs are supported by our general funds. Although Charter and Sustaining (life-time) members are under no obligation to pay annual dues, we are pleased to report that a number send in a yearly contribution. We appreciate this continuing voluntary support. If you will check the date in the upper right hand corner of your newsletter label, it will indicate the last date on which a contribution was recorded in your name. If it is before to October 28, 1988, your membership will have expired by our Annual Meeting. If it is past time to renew, please send us a check along with your Annual Meeting registration. If we have made an error, please advise. As you know, all ACLT dues and contributions are tax deductible.

Annual Membership Meeting

The third Annual Meeting of the American Chestnut Land Trust will be held on October 28, 1989, in the Christ Church Parish Hall on Broomes Island Road, Port Republic, MD. So we may know well in advance how many plan to attend the lunch, please return the enclosed registration form *before October 15* so we can order the lunches. Our schedule:

9:45 a.m.	Sign in
10:00 a.m.	Business meeting
11:00 a.m.	Program
12 noon	Lunch
1:00 p.m.	Guided tours of the ACLT property

Although this year we have no celebration as momentous as the tearing up of a mortgage four years ahead of schedule, we do want to share with you our aspirations and goals for our conservation efforts into

the future. We are delighted that Grant Dehart, Executive Director of the Maryland Environmental Trust, will be our principal speaker. In the past two years we have been blessed with glorious weather for our after-lunch walks. Just in case of rain, however, our "naturalist" and "culturalist" tour guides plan to stay on in the Parish Hall with small groups of members for a "talk through" rather than "walk through" the woods. To enable us to widen the dialogue with our members, we invite you to advise us on your registration form of topics that you would like to have addressed. We should have quite a bit of time for lively discussion during the meeting. We look forward to seeing you on the 28th of October.

—Aileen Hughes

ACLT Board Elections

At the October Annual meeting, this year's Nominating Committee will place before the membership the following individuals to serve three year terms on the Board of Directors. Those selected have demonstrated their willingness to serve on projects in addition to regular Board meetings, their appreciation of natural resources, skill in performing Board oversight responsibilities and an understanding of the communities impacting on ACLT:

Ralph Dwan (former President and now Secretary of ACLT)
Don Dahmann (current Board member)
Oliver Flint (current Board member)
Sue Hamilton (current Chairperson, Wildlife and Trails Committee)
Dan Priest (current Board member and Recording Secretary)

This year's Nominating Committee was composed of Ed Hacskaylo, Chairman, Caroline Van Mason and Mark Switzer. (At the Annual Meeting other nominations will be accepted from the floor with the understanding that the nominees will have indicated a willingness to serve and can be expected to meet the same criteria as those on the proposed slate.)

—Ed Hacskaylo

[President's Note: ACLT will miss the wise counsel of Ed Hacskaylo, one of the founders of our organization. Ed, who has served us faithfully through our earliest planning stages and on the Board for the past three years, is retiring. He and Peg, although not leaving this area permanently, will be spending much of their time in the sunny reaches of Tuscon. We are sorry that Ed will not be with us on the 28th to witness the standing ovation he so well has earned. Thank you, Ed.]

Board Meetings

The new Board of Directors will meet immediately following the Annual Meeting to elect its new officers and at-large Executive Committee member. The next regularly scheduled meeting will be held at the Battle Creek Nature Center at 9:30 A.M., Saturday, November 18, 1989. The ACLT Board meets every other month and our members are always welcome.

Chiggers "Bugging" You?

Board member Mark Switzer suggests repelling chiggers with a light dusting of garden sulfur inside your waist band and the cuffs of your socks. Caution: Wash hands thoroughly. Sulfur is very irritating to the eyes.

What Happened to the Sycamores?

A number of you have mentioned to me that the sycamores (*Platanus occidentalis*) did not leaf out as usual this year. Sycamores were easily spotted this spring by their bare branches long after the other trees had a full canopy of leaves. This was caused by a fungal disease known as sycamore anthracnose. The disease is associated with all sycamores as well as introduced plane trees (planetree, *Platanus orientalis*) throughout North America. Most of these trees are probably infected with the fungus, but the severity of the infection can vary from year to year. Large trees that repeatedly sustain severe damage by anthracnose are weakened, as evidenced by loss of vigor, dieback of large branches, and apparent increased susceptibility to borers.

Spores of the fungus are carried by wind or insects. Initial infection of the tree by the fungus occurs

through the leaves. Leaf infection is most likely during the first weeks of leaf expansion in the spring. Older leaves are generally more resistant. Young buds may also be infected in the early spring. During the summer the fungus grows from the leaf into the young twigs where it remains quiescent during the summer causing little damage to the twigs.

As the sycamore becomes dormant in the late fall the fungus reestablishes its pathogenicity. As long as the temperatures remain mild during the fall, winter and spring the fungus remains active and will kill buds and twigs. Cankers are also formed during this time. Cankers are deformations of the bark due to active fungal growth. These cankers may completely encircle twigs, causing death of parts of the tree beyond the canker. Cankers are rarely found on the main stems of the tree.

In the spring when the sycamore begins its new growth, twigs and buds that were killed during the winter will obviously not expand. However, the fungus can also actively invade new twigs and buds in the spring causing additional stress to the tree. Cold spring weather increases the fungal destruction of twigs and buds. The end result of the winter and spring activity of the fungus is to severely reduce the number of leaves produced and, as we saw this spring, many trees produced almost no leaves. The sycamore will then later send out a new set of twigs and leaves which most likely will not be killed by the fungus.

The twig dieback, if repeated over several years, alters the form of the sycamore in two characteristic ways. First, when the last twig on a branch is killed, a lateral shoot takes over as the new leader. The branch axis thus changes direction repeatedly and crooked branches result. The second alteration is the development of a cluster of twigs around a common point on a branch because of the repeated killing of the terminal twigs.

Spread of the fungus beyond the twigs is rare. The dead twigs and cankers on the twigs will produce abundant spores which will infect new twigs and branches during the spring, but other parts of the tree are not infected.

In summary, the fungus is most active during the fall, winter and spring while the sycamore is dormant. Twigs and buds are killed during this time. Mild temperatures stimulate fungal activity. Twigs and buds not killed during the winter may be attacked and killed as they emerge during the spring, especially if the spring is cool. If heavy twig and bud destruction occurs for two to three years in succession, the tree may die. This past year provided the fungus with ideal growing conditions—a mild winter followed by a somewhat prolonged cool spring. This led to bare sycamores we saw this spring. When you look closely at the sycamores you can see from the branching pattern that most of them have been harboring this fungus for a number of years.

—David Farr

Getting to the Bottom of the ACLT—Plants, Geology, and the Shape of the Land

When we think of the Land Trust, or any other piece of natural landscape, we think of flora and fauna carpeting some part of the earth's surface. The present ACLT covers 436 acres of gently rolling uplands (highest point 167 feet above the sea) dissected by steep-sided gullies and stream valleys (the lowest elevation is 25 feet). Unlike our manmade carpets, the living outdoor carpet is able to respond to the topography it covers (for example, plants adapted to dry habitats cap hilltops and moisture-loving plants fill valleys). The green carpet draws sustenance from the underlying earth. Some of this sustenance is humus—the carpet's way of recycling itself. But mixed among the organic residues of the soil, and everywhere underlying this thin skin, are the inorganic materials—clay, silt, sand, gravel and maybe even fossil shells—the stuff of geology and, as every gardener knows, a powerful influence on the floral assemblage at any particular place.

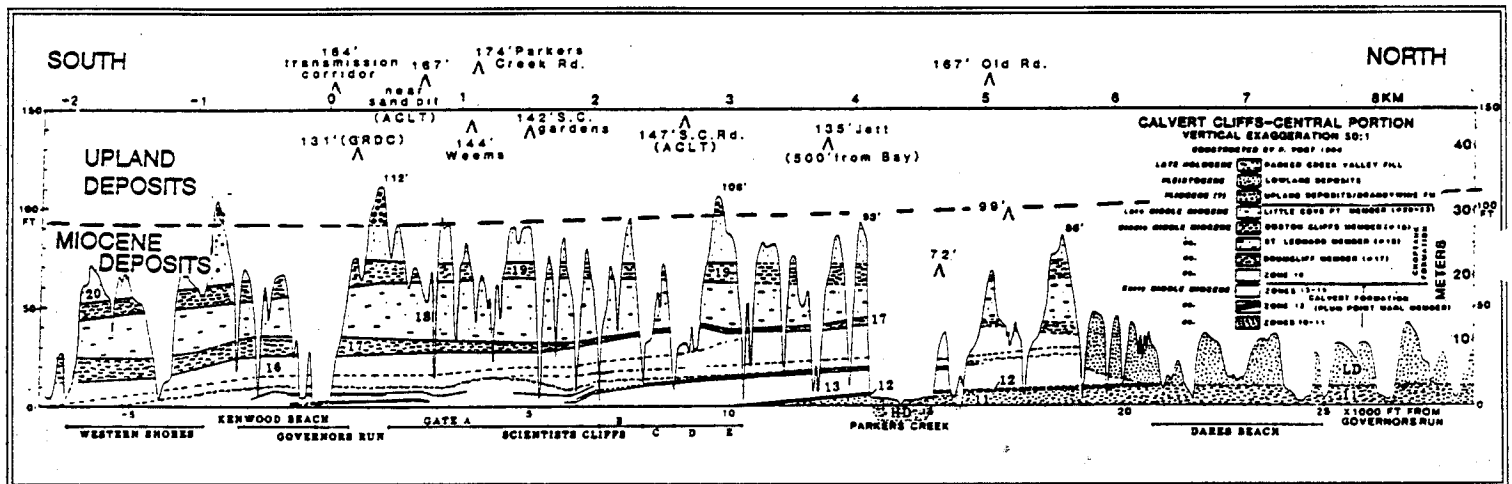
The Land Trust area is a place to discover some of the relations between present life and the earth in which this life is rooted. But whereas the oldest tree may have sprouted two or three centuries ago, our landscape had its beginnings several million years back. And the Miocene sediments underlying the lower elevations of the ACLT were laid down on a shallow seafloor 12 to 14 million years ago. The quartz pebbles widespread in the Land Trust uplands and in the stream beds were first carried here from the Piedmont and Appalachians between about 10 and 2.5 million years ago. But the pebbles themselves are much older, the erosional residues of rock formations ranging from 300 million to a billion years old. Quartz sand and gravel are to mountains what teeth are to the sharks—the most durable remains.

Much of the Atlantic Coastal Plain is just that—a plain with little topographic texture, and older sediments invariably hidden below younger ones. The ACLT is fortunately located in eastern Calvert County which, by coastal Plain standards, has considerable relief and, as a consequence, exposures of younger and

older sediments in the same area.

The relief is of two sorts—the valleys and gullies cut by running water and the more spectacular line of sea cliffs cut by Chesapeake waves. Were it not for the valleys and cliffs, our knowledge of the world below the ground would have to depend on boreholes, on the scratchings of plows and the gashes cut by bulldozers. Creating a geological exposure equal to the Calvert Cliffs would require excavating a trench 100 feet deep along the length of Calvert County—some 25 miles. What would be impracticably expensive and probably never even contemplated, nature has provided free of charge. The Chesapeake's waves lick away the debris forever accumulating at the base of the cliffs and hiding the geology. This is the natural windshield wiper which cleans our window into Maryland's past—the window which lets us see the geology below the Land Trust just a short distance inland.

The geology seen in the cliffs is very nearly the geology below the Land trust because geology in these parts consists of nearly flat-lying, fairly continuous sediment strata (actually the layers are tilted slightly, a few feet per mile, downwards towards the southeast). The sediments in the ACLT area can be broadly divided into the non-marine "Upland Deposits" above about 100 feet elevation and, below the dashed line in the diagram, the marine and variably fossiliferous deposits of Miocene age below the dashed line. The Upland Deposits tend to contain sand and gravel, which may slide down the hillsides to levels below 100 feet, hiding the Miocene beds underneath. Much of the sand and gravel finds its way into stream beds and thence into the bay, where it nourishes the beach.



The marine deposits above sea level in the ACLT area can be further subdivided into the Choptank formation from 100 down to 20 feet in elevation and the Calvert Formation from 25 feet to well below sea level. The Calvert Formation is richer in clay and therefore less permeable to ground water. The Choptank Formation in turn is less permeable than the Upland Deposits. Thus, groundwater will tend to seep from the ground wherever hillsides and gullies intersect the 100 foot and 20 foot contours. A lot of our more permanent streams start at around the 100 foot elevation and few will ever go dry below 20 feet. Thus geology influences the groundwater hydrology, which in turn affects the plant communities.

The marine deposits belong to the middle of the Miocene epoch of geological time. Translating this into years, we estimate that the age of the sediments in our area ranges from about 14 million years at sea level up to about 12 million years at 100 feet, where the younger Upland Deposits take over. A geologist named George Shattuck numbered the more prominent sediment beds in the Calvert Cliffs, and his scheme has survived for over 80 years. Beds number 12 to 20 are exposed in the cliffs just east of the ACLT. Particularly interesting are the mollusk strata 17 and 19, located at 25-35 feet and 65-70 feet above sea level. An 1830's geologist recommended these beds to Calvert tobacco farmers as a source of lime. I don't know whether any farmers took advantage of this natural lime, but we now know that a number of the ACLT's more unusual plant species (for example, Golden Saxifrage, Spring Cress, Yellow Corydalis, Winged Moneyflower and the locally common Pawpaw tree) prefer basic or circumneutral soils such as those in parts of the Appalachians. The Coastal Plain has acid soils—even without the effect of acid rain. It is fairly certain that the Miocene mollusk beds are providing the lime which has enriched our floral diversity. Of course, you will

rarely glimpse a fossil shell on the Land Trust (a good place to look would be in the tailings of a ground hog burrow at the elevations where zones 17 or 19 are expected). The shells' carbonate is easily dissolved in the acid groundwater, and any shell remnants are likely to be obscured below vegetation and soil.

The age of the Upland Deposits is not so well determined, owing to a scarcity of fossils. They were certainly laid down after the Miocene sea withdrew from the Southern Maryland area around 10 million years ago. For some millions of years thereafter, the land was close to sea level and streams meandering across a flat or gently rolling plain, spreading sand and gravel from the Piedmont and perhaps Appalachians. The Potomac River itself may once have flowed through the Land Trust, before it shifted its course southward from the area of Washington, DC. I would guess that the Upland Deposits are no younger than 2.5 million years. This was the first time the northern continents were glaciated in a big way; sea levels must have dropped, forcing streams to start cutting down and deepening their valleys.

That's probably when our present landscape on the ACLT began to take shape. Remnants of the older landscape, sometimes called the "Sunderland Terrace," survive along the spine of Calvert County and form the flat to gently rolling uplands in the Land Trust area. The ball fields and Mrs. Somervell's big field in Port Republic are particularly fine examples of our most ancient surviving landscape. Despite the passage of several million years, relatively little material has been eroded off the tops of the upland plains. Instead, most of the erosion occurs as the incised streams widen their valleys, as tributary gullies eat their way headwards (upstream) into the upland terraces. When the English colonists cleared away the old forest to make cropland, they speeded up this process. Locally, on the Land Trust for example, a return to forest cover has slowed erosion, and modern farmers know how to minimize it. Meanwhile, in many other parts of Calvert County, mankind is hard at work with earth moving equipment, obliterating the original landscape because it doesn't fit into his plans for roads, shopping centers, etc.

Even if the materials below the ACLT were perfectly uniform, there would still be differences in habitat. Valley floors would invariably be wetter than hilltops, and north-facing slopes cooler and moister than south-facing ones. Of the dozen or so species of ferns found on the ACLT, most prefer the moist valley floors and north-facing slopes. Wild geranium, bloodroot, and the only known specimen of Great laurel from Maryland's Coastal Plain also like the north-facing slopes. Since the higher areas are underlain by the Upland Deposits, it may be hard to separate the effects of topography from the effects of composition. We do know that soils developed on the Upland Deposits tend to be sandy, acid, and—as a result of past farming practices—poor in nutrients. While this situation is not conducive to maximum crop or tree growth, there is a rich variety of living creatures attuned to exactly this kind of environment. Thinly scattered among the pines, oaks, and mountain laurel which prefer the Upland Deposits are some of our finest wildflowers, among them pink lady-slipper, rattlesnake plantain orchid, crane-fly orchid, wild azalea, pipsissewa, and spotted wintergreen. The Upland Deposits also host a few acid-loving species which, like their circumneutral equivalents in the lowlands, are tuned to a more northern climate. The two species that come to mind are dittany and trailing arbutus—not surprisingly, both were found growing on north-facing slopes. Of course, the Land Trust also hosts plants more common to the south—examples are bald cypress and loblolly pine.

Many more examples could be found to illustrate the relation between geology and life. I will close with the one of greatest practical significance to the ACLT: Getting the land into an Agriculture Preservation District was crucial to paying off our mortgage, and to qualify for APD status on the basis of tree-growing potential we had to have a "Site Index" of at least 80 for at least half of the land. Site indexes are computed from the height, diameter, and age of trees, so a big tree with a straight, defect-free bole is not sufficient if it took too long to reach that state. Our best site indexes, some over 100, were measured on yellow poplar stands at elevations below 100 feet, in other words areas where the Upland Deposits had been stripped off through eons of erosion. Timber-quality trees thrive on the Miocene soils, probably because they retain moisture better than the Upland soils, and perhaps for other reasons as well. At any rate the forest can be said to have helped save itself from being replaced by a housing development. Of course the forest had a little help from us—and from geology.

—Peter Vogt

Trails and Wildlife

Some of you may have noticed that two sections of our trail system have been blazed, one with red blazes, the other with yellow. Mac Fried has undertaken this task for us. In time, he hopes to have all the major trails clearly marked.

During the summer, heat and chiggers slowed down work and discouraged visitors. Soon the worst of the chigger season will be past and volunteer work will resume. If you would like to join a work party, or "adopt" a trail section, the local contact person is Sue Hamilton (586-1494). Adopting a trail section involves keeping it clear, reporting fallen trees to Mark Switzer (586-0386), and keeping notes on special plants or wildlife activity found in the area. Please plan to visit your trail regularly, all year-round.

The crisp days of autumn are wonderful for long walks in the ACLT. Why not carry a small daypack with a canteen of water and an apple or some cookies, and tuck in a garbage bag to carry out any trash you come across?

Orange bittersweet berries and red sumac leaves lend color to the bushes and trees by the path through the tobacco fields, while purple wild grapes hang from vines, ready to be picked for jelly-making. In the trees and bushes by the path, tiny kinglets may be seen foraging. These little birds usually let a curious observer come within a few feet. On the dirt path there will be tracks of deer and perhaps a fox. Don't forget to watch over the fields for hawks—Red-tailed, Red-shouldered and Broad-winged.

If you follow the red-blazed trail, it will take you by a hill where you are on eye-level with the tops of trees where Rose-breasted Grosbeaks could be feeding. These colorful birds only pass through here during migration. Where the trail leads down into the bottomland by the stream, you may still catch the cloying smell of the pawpaws which began to ripen at the end of September. If the weather has been damp, brightly colored mushrooms may dot the trail. And, even if you don't catch a glimpse of wild turkeys, you may find one of their large gray and white striped feathers.

When you finish your hike, please do leave a note about the wildlife and plants you saw on the clipboard in the box at the parking lot.

—Sue Hamilton

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