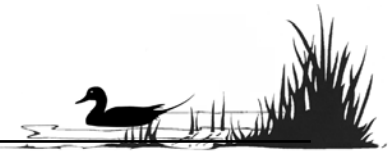


# Watershed Observer



Newsletter of the American Chestnut Land Trust

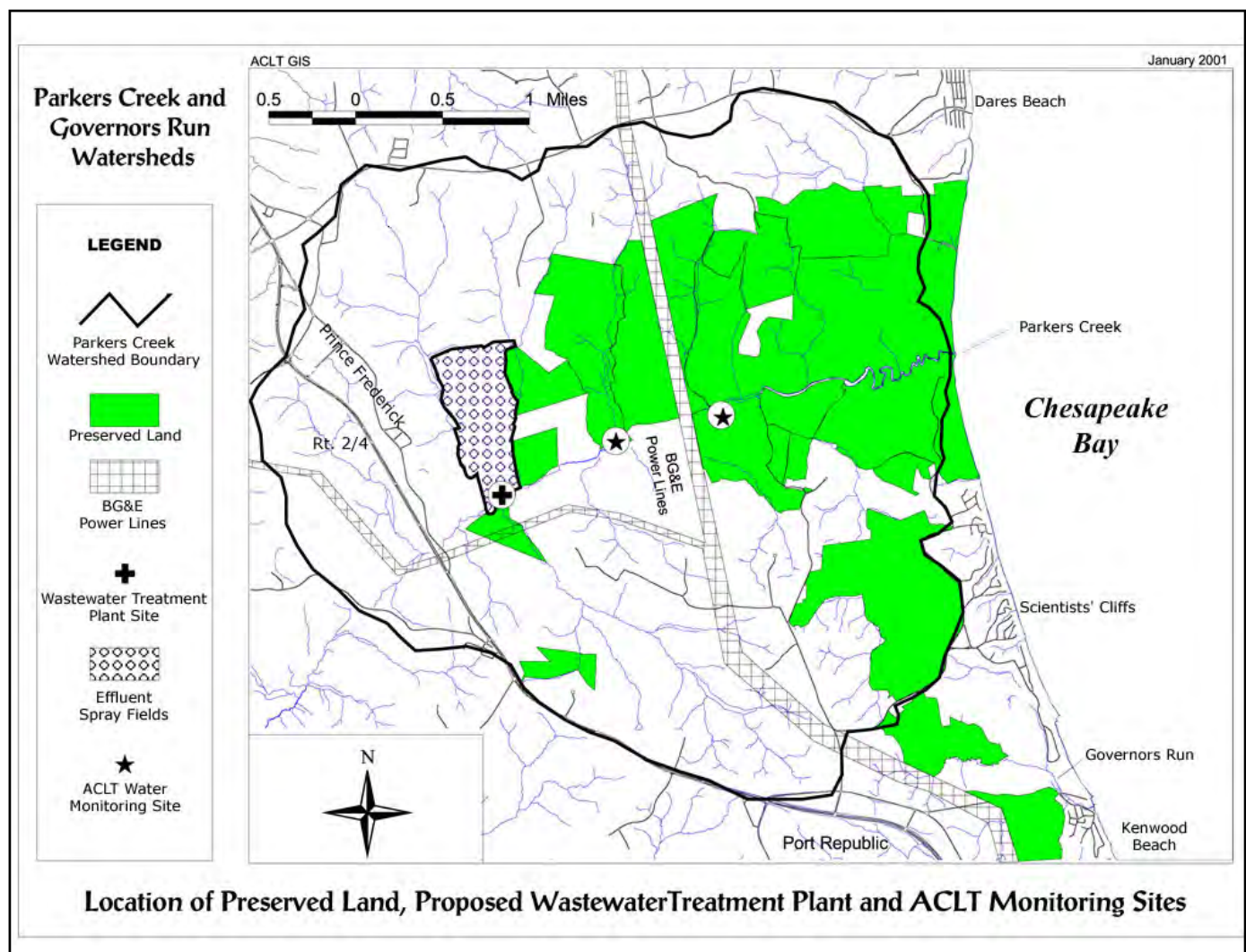
Special Edition — Proposed Wastewater Treatment Plant

January 2001

## Introduction

This special edition of the ACLT newsletter is intended to inform our readers about Calvert County's plan to locate a wastewater treatment plant and associated spray fields on an approximately 200-acre parcel of land adjacent to Parkers Creek.

Approximately four square miles of land (2,948 acres) in the Parkers Creek watershed is now permanently preserved through the efforts of the ACLT, The Nature Conservancy, the State of Maryland, and private landowners. ACLT's vision has grown exponentially since we first purchased land for preservation in 1987. Last year the State of Maryland's purchase of the Goldstein Bay Front Farm (over 800 acres) put an environmentally essential piece of the Parkers Creek protection puzzle into place. At last, significant stretches of both sides of Parkers Creek





**American Chestnut  
Land Trust, Inc.**

Post Office Box 204  
Port Republic, MD 20676  
Phone: 410-586-1570  
Fax: 410-586-0468  
aclt@chesapeake.net  
ACLWeb.org

Published quarterly by the American Chestnut Land Trust. The ACLT is dedicated to the preservation of Calvert County, Maryland's Natural and Historical Resources. To date ACLT, which was founded in 1986, has preserved 812 acres and has accepted management of an additional 1700 acres owned by the State of Maryland and The Nature Conservancy.

Editors: Ellen and David Farr

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are protected from development—but not from all threats. An important benefit of preserving these lands is their significant contribution to maintaining high water quality in Parkers Creek and the Chesapeake Bay. Therefore, the ACLT has a significant interest in the impact that the proposed wastewater treatment plant will have on Parkers Creek and the Bay.

Historically, ACLT has had substantial support from Calvert County. The County's agricultural preservation program has been absolutely essential to our successful land preservation. The County's Revolving Loan Fund for Open Space Protection was instrumental in the purchase of Double Oak Farm, our first property on the north side of Parkers Creek. More recently, the County's participation in the State of Maryland's Rural Legacy Program has tapped additional funding, some of which we hope will be used for preservation in the Parkers Creek watershed in the future. We are grateful for the County's longstanding support of the ACLT's land preservation efforts.

By the same token, ACLT staff and members have donated substantial time to various County proposals and programs over the past fifteen years. We support the Comprehensive Plan and the need to provide infrastructure so that our town centers can grow. We have no interest in delaying a project that is clearly needed. We do, however, have an interest in making it a better project. At each stage in the planning for the proposed plant, ACLT has brought serious scientific and technical issues to the attention of the relevant officials in a

timely manner. We will continue to insist that every effort be made to minimize the potentially harmful environmental effects of the proposed plant.

After careful consideration, the

*Approximately four square miles of land in the Parkers Creek watershed is now permanently preserved. ... An important benefit of preserving these lands is their significant contribution to maintaining high water quality in Parkers Creek and the Chesapeake Bay.*

ACLT Board of Directors has decided that we will support the location of a wastewater treatment plant and land application spray fields on Parkers Creek if the County agrees to address ACLT's most pressing concerns about the environmental risks. We hope that you, ACLT's members, will carefully consider your Board's position as set forth in this newsletter and conclude that we are acting in accordance with our mission and the best interests of the public.

Thank you in advance for taking the time to read this special edition of the *Watershed Observer*. We will post updates on our website as they become available at <http://acltweb.org>.

## Position Statement of the American Chestnut Land Trust Regarding the Proposed Parkers Creek Wastewater Treatment Plant

In January 2001, following extensive research and discussion, the ACLT Board adopted a resolution to support the proposed wastewater treatment plant if conditions are met to minimize risks to Parkers Creek and the Chesapeake Bay. The following position statement is intended to set forth the Board's concerns and our conditions for support.

### Background

Calvert County is moving forward with plans to construct a 500,000 gallons per day wastewater treatment plant and associated spray fields to serve the Prince Frederick Town Center. Both the treatment plant and the spray fields are to be located on an approximately 200-acre parcel of land to the east of Prince Frederick adjacent to Parkers Creek.

The Maryland Department of Natural Resources has recognized Parkers Creek as "the largest bio-diverse, relatively undisturbed ecosystem on the western shore of the Chesapeake Bay" and has stated that "[i]t is important to protect the pristine condition and distinctive features of the Parker Creek watershed as an ecosystem that can be biologically viable on its own."

The American Chestnut Land Trust (ACLT) believes that, if Calvert County chooses to locate a wastewater treatment plant in this environmentally important and sensitive watershed, every effort must be made to minimize impacts through appropriate design

and construction. Such efforts would be in keeping with Calvert County's historically progressive policies towards Parkers Creek, in particular, and environmental protection, in general.

The proposed location on Parkers Creek was previously the site of a wastewater treatment plant that discharged treated sewage directly into Parkers Creek from 1973–1991. That plant was replaced with a new wastewater treatment plant and associated land application spray fields located in Barstow in 1991. Anticipated growth in Prince Frederick now requires the construction of a second wastewater treatment plant to more than double the sewage treatment capacity currently available at the Barstow plant.

The County's plans call for replacing the old structures, still standing at the Parkers Creek site, with structures four times as large. The new structures, which will require extensive excavation during construction, are to be located within the footprint of the old plant, which sits within ten feet of the creek. The treated effluent will be pumped up hill and sprayed on the adjoining land.

In August 1999, the County proposed amending the Calvert County Comprehensive Water & Sewerage Plan to include the proposed plant. Initially, ACLT strongly urged the County to consider alternative locations; however, from the outset, the Board of County Commissioners made it clear that discussion of alternative sites was

not an option because the plant was needed immediately for the continued economic development of the Prince Frederick Town Center. In October 1999 the Calvert County Commissioners approved the Plan amendment.

In February 2000, a public hearing was conducted by the Maryland Department of the Environment concerning the County's application to discharge 300,000 gallons per day of treated effluent to the groundwater via a spray irrigation system. ACLT presented detailed comments that resulted in the imposition of more stringent water quality monitoring and discharge conditions than had been proposed. The State issued a final groundwater discharge permit in May 2000.



View Across Parkers Creek to  
Old Wastewater Treatment Plant

In December 2000, ACLT received a copy of the County's application to the Planning Commission for final site plan approval and the full engineering plans for the facility. Until these detailed plans were available, the full magnitude of the risks to the creek and the bay were not clear. ACLT has prepared detailed comments for presentation to the Planning Commission concerning important issues we have identified in the county's plans.

### **American Chestnut Land Trust Statement of Interest and Mission**

ACLT is a nonprofit land conservation organization that owns and protects 625 acres in the Parkers Creek watershed. These lands were acquired at a cost of more than \$2.2 million. In addition, we manage almost 1775 acres that are owned and protected by The Nature Conservancy or the State of Maryland. These lands were acquired at a cost of over \$12.5 million. The Nature Conservancy and the State have preserved land in the Parkers Creek watershed because of the land's environmental uniqueness *and* because ACLT was willing to sign legally binding management agreements that require ACLT to manage the land so as to preserve its ecological integrity. Private landowners have preserved 550 additional acres in the watershed. The permanently protected land now represents approximately 40% of the 7,321 acres in the Parkers Creek watershed. The ACLT owned and ACLT managed lands are held in trust for the benefit of the public.

The land trust has approxi-

mately 775 members, a number that has been growing by about 10 percent a year. The majority of ACLT's members are Calvert County residents. Since its founding in 1986, the ACLT's mission has been:

"to promote the preservation and improvement of natural and cultural resources in Calvert County, Maryland, starting with the watersheds of Parkers Creek, Governor's Run and Battle Creek and the adjacent cliffs and beaches. To use all properties held or managed by the trust and the net earnings thereof for the benefit of the public good and for charitable, educational, recreational, conservation, scientific and historical purposes..."

ACLT has a presence as a significant landowner and steward of approximately 2,400 acres of land within the Parkers Creek watershed, all of which are located downstream from the proposed wastewater treatment plant. Moreover, ACLT's mission includes both the preservation of land and the enhancement of the natural resources within the watershed. Therefore, ACLT and its members have a major interest in the proposed wastewater treatment plant's construction within this important and vulnerable area.

### **ACLT Position and Recommendations**

ACLT has worked closely and cooperatively with Calvert County on many projects of mutual interest. This partnership has resulted in many long-term successes that will benefit generations of County residents for many years to come. ACLT

also understands the County's need to provide for timely and expanded wastewater treatment capacity. However, the current proposal for a wastewater treatment plant in the Parkers Creek watershed presents unacceptable and unnecessary risks to water quality and the living resources of Parkers Creek and the Chesapeake Bay. ACLT therefore urges that the following steps be taken to minimize these risks:

#### **1. Relocate the Plant Structures to Higher, Drier Ground**

It was necessary for the old Parkers Creek plant to be located on the banks of the creek because the effluent was discharged directly into the creek. The new plant will not discharge to Parkers Creek and, therefore, there is no need for the plant to be sited in such an environmentally sensitive location. The present proposal calls for the new plant to be built in an area containing alluvial soils, indicating past or present flooding.

Even if the plant is technically determined not to be in the 100-year flood plain due to the fact that past filling has changed the natural elevations, flooding frequently occurs right up to the fence surrounding the old plant. Hydrological studies have also found that the groundwater table is very close to the surface at the proposed plant location. In fact, current plans call for a number of the proposed structures to be built below grade and the County's consultants have concluded that, "extensive dewatering will be required at the site."

Finally, the County's own regulations require that a minimum 50-

foot natural, undisturbed buffer be maintained along the shorelines of all blue line streams. The proposed plant will be located just inside the existing fence that is less than 10 feet from Parkers Creek. In the event of spillage of raw sewage, such as occurred recently in Chesapeake Beach, Solomons Island and St. Mary's County, there would be no buffer between the site of the overflow and the creek.

It is ACLT's position that any new structures should be located outside of flood plains, wetlands, areas with high ground water tables, and beyond the buffers to blue line streams.

## 2. Relocate Spray Fields to Areas of 12 Percent Slope or Less

There is also a significant risk from plans to spray effluent from the proposed treatment plant onto severely erodible (SrE) soils that are located on moderately steep slopes and extend to the edges of extremely steep slopes (25 percent or greater). This will lead to significant soil erosion, resulting in sediment and other pollutants entering Parkers Creek by means of runoff, and further threaten the health of Parkers Creek and the Chesapeake Bay. The County's own Comprehensive Water & Sewerage Plan recommends that spray irrigation fields be located on soils with no more than a 12 percent slope. Limiting the spray fields to more level areas will significantly reduce the loss of stabilizing top soils and subsoils and will promote better permeability.

It is ACLT's position that the spray fields for the proposed treatment plant should be limited to

areas where the slope of the land is 12 percent or less to minimize the risk of soil erosion into Parkers Creek and its tributaries.

## 3. Share Results of Water Quality Monitoring Program

As a condition of receiving its discharge permit for the proposed plant, the Maryland Department of the Environment (MDE) requires Calvert County to perform periodic surface and groundwater quality monitoring. The results of this monitoring must be reported to MDE. ACLT has proposed that the County's water quality monitoring results be shared with ACLT and the public at the same time that they are provided to the State. The County has informally agreed to provide ACLT with these results, but this agreement should be formalized through a written agreement so that the results of the water quality tests are made available without delay to the public.

## 4. Develop a Public Advisory and Review Committee Role

To foster cooperation and public confidence, the County should establish an oversight committee. The Planning Commission unanimously recommended an oversight committee, as previously suggested by ACLT. As the Planning Commission stated, "the land trust's willingness to serve is another good opportunity for the County to utilize the involvement and expertise of its citizens." Further, the development of a successful wastewater treatment plant within an important area such as the Parkers Creek watershed presents many unique challenges. The reso-

lution of any public concerns in the future will be enhanced by the existence of an advisory and review body from the public that can address issues and make well-informed recommendations.

## 5. Provide Adequate Time for the Public to Comment on Changes to the Proposed Plans for the Treatment Plant

The above recommendations will require changes in the current plans for the wastewater treatment plant. Once these changes are made, adequate time should be provided to the public to review and comment on the revisions. In addition, the County should renew its efforts to reach out to landowners in the immediate area of the proposed treatment plant as well as other County residents who may wish to express views on the proposed project.

... if Calvert County chooses to locate a wastewater treatment plant in this environmentally important and sensitive watershed, every effort must be made to minimize impacts through appropriate design and construction.

## **ACLT'S Water Quality Monitoring Program**

The ACLT monitoring program began in April of 1998 with the support of the Chesapeake Bay Program's Citizen Monitoring Program. The goal of the program is to maintain a continuous record of water quality in Parkers Creek. By sampling twice a month, we hope to be able to detect changes in water quality that may indicate a change in the "health" of the stream.

ACLT Board member, Ted Graham, set up the ACLT program through the Alliance for the Chesapeake Bay, which is funded by the Chesapeake Bay Program to provide technical and financial support for Citizen Monitoring. Twice a month, volunteers visit sites along Parkers Creek by foot or by kayak to collect samples.

Here is how the sampling works: On the designated sampling day (generally every other Sunday), volunteers pick up sampling bottles and other equipment at Double Oak or Warriors Rest. A typical sampling trip consists of a 45-minute walk through the woods, or in the case of PC2, there is the option of an hour's kayak or canoe trip up the Creek to the sampling site. Water samples are collected, water temperature, salinity, and water clarity are measured, notes on the weather, time of day, and height of the creek are recorded, along with any other notes of interest (such as bald eagle sightings), and the volunteer returns to Double Oak or Warriors Rest to process the samples. Processing takes about 20- 30 minutes. Not a bad way to spend a morning!

The parameters that we are

interested in are dissolved nutrients, total suspended solids (TSS), phytoplankton abundance (measured by chlorophyll a concentration), temperature, water clarity, and salinity. Nutrient samples are analyzed for nitrate, nitrite, ammonium, and total dissolved phosphate.

Nutrient levels may fluctuate, depending on the type of soil that the creek flows through and on the nutrient levels in the soils of the watershed. Rain events can also dramatically increase nutrient levels, especially if human practices result in high nutrient concentrations entering groundwater and surface water. Likewise, rain may wash sediment into the creek, and thereby increase the concentration of suspended solids. High nutrient levels can increase the growth of phytoplankton, which are the microscopic single-celled plants that reside in the water column.

High phytoplankton concentrations and high suspended sediment loads can reduce the amount of light that reaches the submerged aquatic vegetation (SAV). SAV is made up of plants such as eel grass, wild celery, and widgeon grass that grow on the bottom and provide a nursery ground and hiding place for many juvenile fish and other animals. Just as in your vegetable garden, low light means low growth! Harmful phytoplankton may "bloom" because of increased nutrients entering the creek – just as weeds grow well when you fertilize your garden. As phytoplankton ultimately die and decay, oxygen in the water can be used up, and then may not be available for fish and other animals.

Although we expect to see an increase in nutrients and TSS after a rain, exceptionally high suspended sediment and nutrient concentrations suggest that our land use practices are not working well enough to prevent fertilizers, wastewater, and sediment from streets, parking lots, yards, building sites, septic tanks, and farming activities from entering the stream.

We originally sampled three sites twice a month, but because of a reduction in funds to the Citizen Monitoring Program, we have since reduced our efforts to two stations. When the program was started, our three stations were: (1) at the mouth of the Parkers Creek (PC1); (2) at the site of the old Parkers Creek bridge (PC2); and (3) at the site of the old Prince Frederick Wastewater Treatment plant, which is the site proposed for the new plant (PC3).

Although our original sites included the Wastewater Treatment Plant, as plans got underway for the new plant, we found access increasingly harder to obtain. We now sample at two sites: PC2 and a new site near the wastewater treatment plant that we can access from ACLT-managed land (PC3a).

It is important to note that the ACLT sampling program is fundamentally different from any program required to monitor conditions at an industrial site such as the proposed wastewater treatment plant. The program required for that site by the State of Maryland includes several types of monitoring.

First, the county is required to monitor the treated effluent before it is discharged via spray irriga-

tion to the land. The effluent is monitored for BOD (biological oxygen demand), suspended solids, pH, fecal coliform and flow volume.

Second, the county is required to install 10 monitoring wells in locations around the perimeter of the property to monitor groundwater. For a year prior to operating the treatment plant, the county is required to monitor the background quality of the groundwater. After startup, the county is required to continue this groundwater monitoring throughout the operation of the plant. Samples are required to be analyzed for nitrates, pH, total phosphates, total dissolved solids, chlorides, fecal coliforms and total Kjeldahl nitrogen (which is the total nitrogen in form of ammonia and in organic material).

Third, the county is required to conduct its own surface water quality monitoring (similar to the kind of monitoring ACLT is performing) at three stations in Parkers Creek. Sampling frequency and parameters for surface water quality monitoring are the same as is required for the groundwater quality monitoring. After the public hearing on the State discharge permit, a condition was added to impose a more stringent limit on the total nitrogen concentration as determined by sampling the groundwater monitoring wells and to require more frequent sampling at two of the wells. In order to meet this more stringent requirement, substantial modifications were required to the design of the plant.

Other monitoring efforts have recently been conducted on Parkers Creek. As an intern for the Calvert County Department of Planning and



ACLT Water Monitoring Project

Zoning, Ryan Showalter conducted a macroinvertebrate survey several years ago. The Maryland Department of Natural Resources periodically surveys Parkers Creek, along with the other streams that enter Chesapeake Bay.

Sarah Brownlee, a middle school student in the Calvert County School system and daughter of ACLT monitoring volunteer David Brownlee, conducted her 1999 Science Fair project in conjunction with ACLT's monitoring program. She won highest acclaim and traveled to the Regional Science Fair to present her results. There, she captured first place in Environmental Science.

You can see the location of ACLT's sampling sites and data from April 1998–May 2000 on our web site <http://acltweb.org>. If you look at the dates of high rainfall,

you will see concurrent peaks in nutrients and TSS. Another very interesting time was when a sandbar dammed up the mouth of the creek during the drought of summer 1999. During this time period, TSS was low, but chlorophyll *a* and nutrient levels were high because there was no tidal action to flush out the mouth of the creek.

We always have room for new volunteer monitors. If you're interested in helping out with sampling, please come to the ACLT Committee Day on February 17. Call the ACLT office at 410-586-1570 for more information.

**Links to other web sites:**

Chesapeake Bay Program:

<http://www.chesapeakebay.net>

Alliance for Chesapeake Bay:

<http://www.acb-online.org>

ACLT's Web site (<http://acltweb.org>) will post the text of this special edition of the *Watershed Observer* and will be updated as new information becomes available. On the Web page you will be able to sign up to receive an e-mail notification when articles and news items are added to our informational site on the proposed Calvert County Waste Treatment facility.

## Volunteers Wanted at ACLT Committee Day — Be A Part of The Fun!

Help with trail blazing, science and cultural projects, water monitoring, canoe trips on Parkers Creek, Earth Day events, fundraisers, family programs, education projects and much more. Sign up at ACLT Committee Day, Saturday February 17, 2001 at Double Oak Farm. For more information, call the ACLT office at 410-586-1570 or send an email to our volunteer coordinator, Dawn Rosenlund, at [franaclt@chesapeake.net](mailto:franaclt@chesapeake.net).

### ACLT Calendar of Events:

February 17 **Committee Day** - 9 a.m. - 12 p.m. Double Oak Farm, Prince Frederick.

April 21 **Earth Day** - Volunteer work crews will be cleaning up four community properties on this day. End the day with a picnic and relax among friends!

May 26 **Parkers Creek Celebration** - a celebration of the "grand opening" of ACLT's newest trails on the Goldstein property - look for further details. **Junior Land Stewards Canoe Trip** - Special celebration weekend canoe trip for youth 12 years and older. (Registration and parental permission required)

September 22 **Chili Cook-off and Auction** - Enter your favorite recipe in the chili cook-off, make your bids at the silent auction, and enjoy the sounds of a live band. You won't want to miss this one!

October 6 & 7 **Patuxent River Appreciation Days** - Calvert Marine Museum, Solomons Island. Great family event!

October 20 **ACLT Annual Membership Meeting** followed by a canoe trip and hike.

October 27 **Tales of a Haunted Trail** - A safe trick-or-treating celebration held in Annmarie Gardens.

December 16 **ACLT Greens Sale and Hayride** - Greens for the holidays, hot cider, and a hayride to the beach!

### ACLT sponsored Canoe Trips:

April 7, May 6, July 22, August 25, September 16, and November 3.

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