

Watershed Observer



NEWSLETTER OF THE AMERICAN CHESTNUT LAND TRUST - VOLUME 27 NO. 2, SPRING 2013

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COMING UP ON THE CALENDAR

MAY 2013

- 11 GUIDED CANOE TRIP (3:00 P.M. – 6:00 P.M.) (SUNDAY RAIN DATE)
- 19 VINE VINDICATOR WORK DAY (9:00 A.M. – 12:00 P.M.)

JUNE 2013

- 8 GUIDED CANOE TRIP (2:00 P.M. – 5:00 P.M.)
- 22 GUIDED CANOE TRIP (12:30 P.M. – 3:30 P.M.) (SUNDAY RAIN DATE)

SEE MORE OF THE 2013 CALENDAR ON PAGE 3 OR ON THE WEB.

Visit Us Online at
<http://acltweb.org/nl>

Your Help is Needed to Preserve the Harrod Property

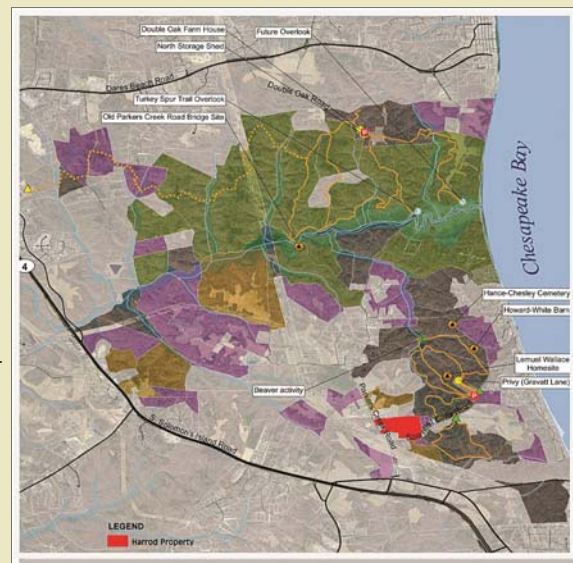
ACLT has an opportunity to purchase the Harrod property. Please see the brochure enclosed with your newsletter. This 36-acre forested property has 700 feet of frontage on Scientists Cliffs Road and 550 feet of frontage on Parkers Creek Road. It is ACLT's intention that the Harrod property be retained forever in its natural, scenic, and forested condition. Scenic views of this property by members of the public traveling along Parkers Creek Road and Scientists Cliffs Road will be preserved.

The headwaters of two tributary streams that join to become the Jett Stream begin here on the Harrod property. This sensitive headwaters area would be protected from development by ACLT purchase. To date, no other such headwaters area in the Parkers Creek watershed has been preserved. From the Harrod property, the Jett Stream continues into the Gravatt West property where ACLT's South Side trail system is located and then northward into Parkers Creek.

In addition to preserving scenic views and protecting water quality, the Harrod tract gets high marks under ACLT's project selection criteria because it abuts two other preserved properties (Jewell Glass owned by the Scientists Cliffs Association and Gravatt West owned by ACLT), thereby adding to the contiguous preserved forested area. The tract is underlain by fluvial "upland deposits" which represent a distinct substrate that is underrepresented in other parts of the Parkers Creek Preserve. The tract also offers 70 feet of relief, from dry hilltops to narrow stream-bottom wetlands, with steep slopes at different angles creating diverse habitats.

The property will need some active land management once it is acquired. Many of the larger trees were selectively harvested a few years ago. This has opened the forest canopy in certain areas to invasive species. ACLT plans to replant these areas with hardwoods. With proper management, the property can be restored to a mature hardwood forest.

Total project costs are estimated at \$360,000 to cover the cost of buying the property as well as the long-term stewardship costs of the property. The ACLT board has agreed to designate approximately \$150,000 in funds set aside for land acquisition for the Harrod project, but **ACLT needs \$150,000 in pledges over a five-year period from its members** in order to qualify for financing. The remaining balance is expected to come from the proceeds of the sale of transferable development rights or an easement. Please help by sending in your pledge today. Pledge forms are enclosed with the brochure. Thank you!



Karen H. Edgecombe
Executive Director



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Around ACLT

Annual Meeting of the Membership

ACLT's 26th Annual Meeting of the Membership was held on March 9, 2013. We were honored to have **Rand Wentworth**, President of the Land Trust Alliance (LTA), as our keynote speaker. Rand has been active in land conservation since 1990. He founded the Atlanta office of the Trust for Public Land (TPL). While at TPL, Rand launched a 160-mile greenway along the Chattahoochee River, completed a \$143 million capital campaign, and tripled the size of the national park honoring Dr. Martin Luther King, Jr. Under his leadership, LTA has built strong bi-partisan relationships with members of Congress and dramatically expanded federal tax incentives for conservation. Mr. Wentworth has also led the Alliance in establishing a national accreditation program for land trusts backed by a strong 16-course curriculum of resource materials available on line. Rand is an avid hiker who enjoys spending time on land trust properties throughout the country. As a resident of Maryland, he has visited ACLT properties on several occasions and was very complimentary of ACLT and its work.

The meeting got down to business quickly with the re-nomination of several returning board members – Marcy Damon, Pat Griffin, Gary Loew and Randi Vogt, and the nomination of three new candidates – Elizabeth L. (BL) Johnston, Wilson Parran, and Guy Tomassoni. **BL Johnston's** parents were founding members of the ACLT. With her own retirement in 2011 from the Government Accountability Office, BL has enjoyed being a working shareholder at ACLT's Double Oak Farm CSA for the past two years. **Wilson Parran** is a native of Calvert County and served on the Board of County Commissioners from 2002-2010 and as President of the Board from 2006-2010. Wilson has over 25 years of experience in Information Technology and Telecommunications and he currently serves as Assistant Secretary of Mission Support for the Maryland Department of Natural Resources. **Guy Tomassoni**, an environmental scientist with the US Environmental Protection Agency, has lived in Southern Maryland since 2009 and has already been serving ACLT as a canoe guide and water quality monitor. Guy is one of this year's students in the ACLT-hosted Maryland Master Naturalist Certification Program.

While we welcomed these three outstanding new board members, we will miss the unique perspectives of retiring board members Steve Stadelman, Ted Graham, and Caroline Van Mason. **Steve Stadelman** contributed many years of forestry expertise to ACLT prior to serving on the board. **Ted Graham** served on the ACLT board for over 11 years, as President from 2005-2010, and his influence was wide-ranging. Last, but certainly not least, we recognized **Caroline VanMason** for her continuous 26 years of service as a member of the ACLT board. She received a standing ovation from the audience for her dedication to the land trust.

Those who donated over 100 volunteer hours during 2012 were also recognized for their service including **Paul Berry, Bob Douglass, Jeff Klapper, Ed Kobrinski, Ginny Murphy** and **Ken Romney**. In all, 5,743 volunteer hours were contributed to ACLT in 2012 by a total of 304 volunteers.



Past President Ted Graham accepting his thank you gift from Karen Edgecombe and Pat Griffin. Photo by Carl Fleischhauer.

ACLT's treasurer Paul Berry reported that ACLT received a \$500,000 bequest from **Ralph Dwan** in 2012. As a founding member and past president of ACLT, Ralph had spearheaded two capital campaigns that brought ACLT's Land Management Endowment to over \$1,700,000 by mid-2012. The board designated \$350,000 of Ralph's bequest to the endowment, bringing it over the land trust's long-time goal of \$2 million. The remainder of Ralph's bequest will provide matching funds for the purchase of additional property and for improvements to the ACLT office building.

Other highlights in 2012 included cancellation of the MAPP project that would have converted a bucolic farm and forest scene at the headwaters of one of the tributaries to Parkers Creek into a massive complex including two seven-story buildings and a large outdoor electrical substation; the construction of a beautiful timber frame barn at Double Oak Farm that will serve to support the CSA and also replace the old white shed as the new North Side Trailhead Information Center; and the beginning of construction of the new trail from Prince Frederick to the Bay Overlook.

Karen H. Edgecombe
Executive Director

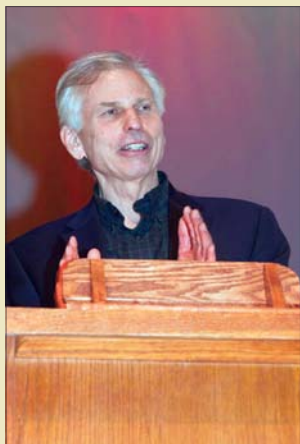
Clockwise from left:

Karen Edgecombe presenting Caroline VanMason with a dozen pink roses in appreciation for her 26 years of service on the ACLT Board of Directors.

Keynote Speaker Rand Wentworth, President of the Land Trust Alliance.

Ken Romney, Jeff Klapper, and Paul Berry accepting their volunteer awards from Kady Everson.

Photos by Carl Fleischhauer.



American Chestnut Land Trust 2013 Calendar of Events

May

- 11 Guided Canoe Trip (3:00 p.m. – 6:00 p.m.)
(Sunday Rain Date)
- 19 Vine Vindicator Work Day (9:00 a.m. – 12:00 p.m.)

June

- 8 Guided Canoe trip (2:00 p.m. – 5:00 p.m.)
- 22 Guided Canoe Trip (12:30 p.m. – 3:30 p.m.)
(Sunday Rain Date)

July

- 20 Guided Canoe Trip (11:00 a.m. – 2:00 p.m.)
(Sunday Rain Date)

August

- 3 Guided Canoe Trip (11:30 – 2:30 p.m.) *(Sunday Rain Date)*
- 24 Walk Along the Bay Membership Event.

September

- 7 Holly Arboretum Work Day at Warrior's Rest (9:00 a.m. – 12:00 p.m.)
- 7 Guided Canoe Trip (3:30 p.m. – 6:30 p.m.)
(Sunday Rain Date)
- 20 Volunteer Appreciation Dinner
- 21 Guided Canoe Trip (3:30 p.m. – 6:30 p.m.)
(Sunday Rain Date)
- 28 Vine Vindicator Work Day/Training (9:00 a.m. – 2:00 p.m.)

October

- 5-6 Patuxent River Appreciation Days (10:00 a.m. – 5:00 p.m.)
- 5 Guided Canoe Trip (2:00 p.m. – 5:00 p.m.)
(Sunday Rain Date)
- 19 Guided Canoe Trip (2:00 p.m. – 5:00 p.m.)
(Sunday Rain Date)
- 26 Vine Vindicator Work Day (9:00 a.m. – 12:00 p.m.)
- 27 Fall Foliage Hike at Double Oak (1:00 p.m. – 3:00 p.m.)

November

- 2 **Silent Auction & Dinner**

December

- 1 Arboretum Work Day at Warrior's Rest (1:00 p.m. – 4:00 p.m.)
- 6 Greens Sale Prep & Wreath-making Workshop (10:00 a.m. – 3:00 p.m.)
- 7 **Greens Sale & Beach Hayride** (11:00 a.m. – 2:00 p.m.)

Volunteer Spotlight: Ron, Ray, and Ian McClain

This spring we'd like to acknowledge not one, but three outstanding volunteers who have been making big things happen at ACLT. Since December 2012, Ron, Ray, and Ian McClain have spent most of their weekends building bridges along ACLT's newest trail, Prince Frederick to the Bay Overlook (PF2Bay). All told, the McClains—with engineering guidance from Ken Romney and assistance from boy scout Troops 903 and 430—built a total of five bridges, just in time for our spring opening of the PF2Bay trail.

Ian, a member of Boy Scout Troop 903, took on the bridge project to earn the William T. Hornaday Conservation Merit Award, a designation given to Scouts who have led major conservation projects within their community. Given the hilly topography of the PF2Bay trail, elevated bridges such as the one shown in the picture to the right prevent soil erosion caused by foot traffic from entering Parkers Creek, and subsequently, the Bay.

Ian's Hornaday project was in addition to his Eagle Scout community service project, which involved a redesign of ACLT's canoe storage racks at Warrior's Rest. For those of us who have attended a guided canoe trip, and for our dedicated team of canoe guides, words can't express how thankful we are for the new and improved design. Our arms and backs are forever grateful!

This passion for engineering and architectural design also carries over to another one of Ian's hobbies, theatrical set construction. Sets that Ian has worked on include Huntingtown High School's *The Phantom of the Opera*, *Aida*, and *In The Heights*.

When Ian's not knee deep in scouting and designing theater sets, he enjoys scuba diving, skiing, volunteering with his church, and running a small DJ business. Ian also dabbled in politics at a young age, and has this to share with the membership: "I had a short lived career in politics, as I was a 'lobbyist' and spokesperson against smoking in restaurants when I was 10 years old. I did this for a couple years until finally the bill was passed, and in my political career I spoke at a couple of rallies, went to some luncheons, sat in on a few important meetings, and realized I could not understand why anyone would want to go into politics. Life lessons from a 10 year old."

Ray, Ian's older brother, has also spent a con-

siderable amount of time volunteering with ACLT. In addition to helping with bridge construction, Ray has led cleanups along Warrior's Rest Beach, served as a canoe trip guide, participated in our Water Quality Monitoring program, and is taking part in ACLT's Master Naturalist training program.

Currently, Ray is working as a Chesapeake Conservation Corps Volunteer with the Chesapeake Bay Foundation (CBF). He refers to it as the "ultimate internship", with duties ranging from

building reef balls for oyster restoration to helping manage a native tree nursery at a sustainable agriculture farm. "This ultimate internship, coupled with my constant interaction with other ACLT volunteers is helping me add experience to my environmental background," says Ray. Prior to working at CBF, Ray had the rare opportunity to travel to the Galapagos Islands to study the vast number of endemic plant and animal species the Islands are famous for.

In his free time, Ray enjoys brewing his own beer and woodworking in his garage. He's also recently taken an interest in growing various types of native trees from seed. Once the seeds have established, he hopes to donate the saplings to others who share his passion for healthy, native ecosystems.

Last, but certainly not least, is Ron—Ian and Ray's dad—who is responsible for introducing the boys to ACLT. After retiring from the Marine Corps in 2002, Ron accepted a job as an environmental attorney for the U.S. Department of Agriculture and relocated the family from Florida to Maryland. Prior to the move, the McClains spent a good deal of time paddling the waters of Florida and were interested in continuing the tradition in Maryland. Ron quickly jumped on the opportunity to join ACLT's crew of canoe guides and has been leading trips up Parkers Creek for the past seven plus years. Says Ron, "We love the outdoors and the ACLT offers a terrific outdoor experience right here in our own backyard, so we wanted to be a part of making it more widely enjoyed by all the new folks that have moved into the area in the last decade."

Ron has certainly been an outspoken advocate for ACLT, first involving his sons, and subsequently introducing Ray and Ian's Boy Scout Troops into the mix. Ron also likes to introduce friends to ACLT by bringing them along on guided canoe trips. What better way to capture hearts and minds than a paddle along the scenic winding waters of Parkers Creek?

Outside of work, Ron enjoys fishing and working with his sons on their various volunteer projects. Interestingly, when Ron was



McClain's Bridge Project: (From left to right) Ian, Ron, and Ray McClain pause for a photo on one of their newly constructed bridges. Photo by Ken Romney.

active in the Marine Corps, his travels took him to “every clime and place,” with the exception of Antarctica (the penguins are hopeful that one day Ron, Ray, and Ian will drop in for a visit).

In the meantime, ACLT is extremely grateful for the indelible mark the McClains have left with us, from shiny new bridges to ergonomically designed canoe racks. Ray sums it up best by saying, “As some other volunteers for ACLT know, there is never just one McClain volunteering their time. My dad, Ron, and younger brother, Ian, are also avid ACLT volunteers and our different approaches to solving problems allow us to work well as a team when volunteering.”

Kady Everson
Community Relations Coordinator

Volunteer Report

Kady Everson, Community Relations Coordinator

Water Quality Monitoring Training

This year’s Water Quality Monitoring training day turned out an unprecedented number of volunteers—17 in total! The exceptional attendance was in large part thanks to the efforts of Guy Tomassoni, a longtime ACLT volunteer and newly minted Board member. Guy used his powers of persuasion to recruit over half of the participants, promising an inside look into watershed ecology, as well as a hands on experience for volunteers to collect water samples along Parkers Creek.

The sampling group was also fortunate to have Dr. Lora Harris of the Chesapeake Biological Lab along for the ride as she explained the importance behind the Parkers Creek WQM program. Due to the heavily forested and largely undeveloped land that surrounds the watershed, Parkers Creek is an ecological wonder, and the least disturbed estuary along the western shore of the Chesapeake Bay. Analyzing nutrient and sediment loads provides a barometer of overall watershed health and enables ACLT to effectively manage and protect the natural resources of Parkers Creek. Guy sums it up best, as always: “It was a great event all around! Truly my privilege to lead a fantastic group of eager Parkers Creek water monitors!”

Hiking Trail Maintenance Day

On Saturday, March 23rd, crews of volunteers worked throughout the morning on various projects including clearing downed trees and vines, repairing damaged foot bridges, pruning and weeding in the Native Plant Garden, and marking a path along the new PF2Bay trail.

Lunch was our traditional backyard BBQ, with Curt Drumm manning the grill, and Barbie and Helena Hudson assisting with setup and cleanup. One of these days I will convince the Hudson ladies to go into event planning, as they consistently make my life a breeze during hectic events.

A very sincere Thank You to all of our volunteers for accomplishing so much in such a short amount of time! Our trails - all 18 miles of them - are ready to rock and roll for the 2013 hiking season!



Volunteers at Work

Left:
Water Quality Monitoring Crew: The WQM Crew collecting samples from our PC2 site on Parkers Creek Loop. Photo by Kady Everson.

Above:
Hiking Trail Maintenance: (From left to right) Jeff Klapper, Rick Wilburn, and JJ Jelks repairing board walks along Parkers Creek Loop. Photo by Steven Gaines.

Grand Opening: Prince Frederick to the Bay Overlook Trail

As most of you know, ACLT usually hosts a roadside litter clean-up and other projects designed to improve ACLT's preserve properties and trails to celebrate Earth Day. This year ACLT took a different approach for our annual celebration. For 2013, ACLT had the grand opening of our newly constructed Prince Frederick to the Bay Overlook Trail. All in all, 108 folks came out to celebrate our trails including 53 Cub Scouts, 15 Girl Scouts, and 40 adults. There were four separate guided hikes: three groups left from St. John Vianney Church in downtown Prince Frederick in 30 minute intervals and met at Double Oak Farm to enjoy a barbecue lunch catered by Adams Ribs. The fourth hike was undertaken by the Cub Scouts who set off to enjoy the views from ACLT's Overlook of the Bay after lunch. The hikes were led by Steven Gaines, Matthew Taylor, Liz Stoffel, Ed Haack, Ron and Ian McClain. The weather cooperated beautifully, providing clear skies and a nice spring breeze.

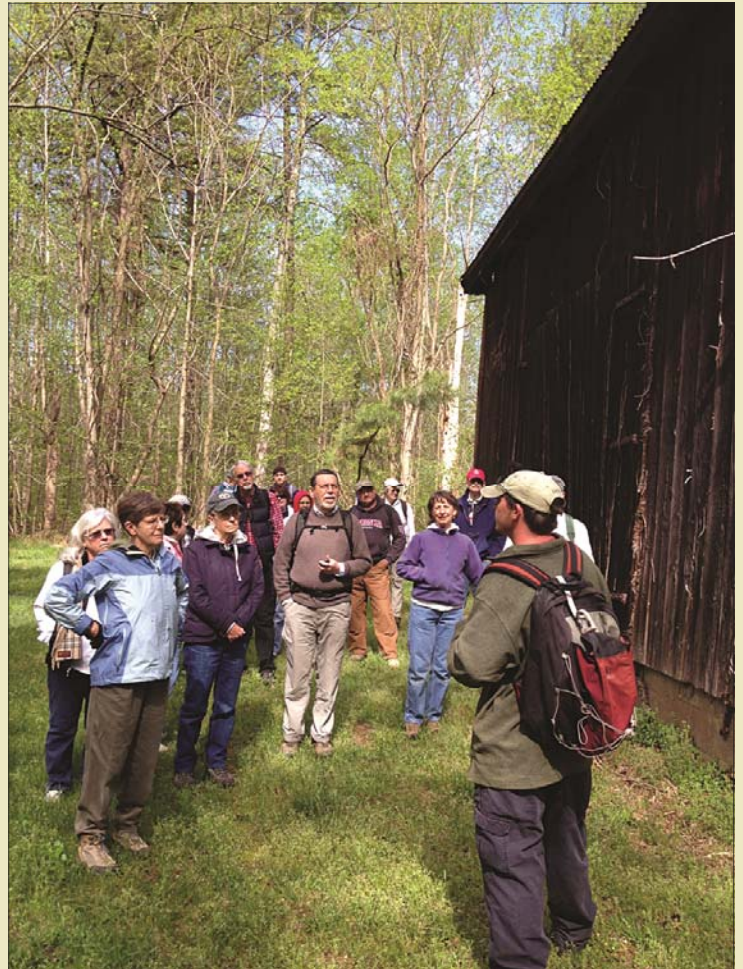
Steven Gaines
Land Manager

Left: Steven Gaines, ACLT Land Manager, guided one of three groups of hikers near the barn on No Name Road.

Below left to right: Bill Barnes displaying his talent at catching frogs for Kadence Brooks.

Elise Shryver (pink shirt) and other visitors admiring one of the new bridges on the Prince Frederick to the Bay Overlook trail on opening day (Earth Day, 2013).

Photos by Karen Edgecombe.



How to Find the New Trail

We are calling it a “soft” opening of the new trail from Prince Frederick to the Bay Overlook because you might have a little trouble finding the trail right now. There are no signs and there is no printed trail map. Once you are on the trail, however, you should have no problem following the blue blazes. Marker posts, trail maps and a trailhead kiosk will be completed this summer. If you would like to explore the new trail before that, here are the basics you need to know:

- The distance from St. John Vianney to Double Oak Farm is approximately 4.5 miles.
- The distance from Double Oak Farm to the Bay Overlook Platform and back is 3.2 miles.
- If you don't wish to walk back to St. John Vianney (SJV), it is advisable to park one car at Double Oak Farm (ACLT's North Side Trailhead) and one car at SJV!

Proceed to the parking lot of the Family Life Center at St. John Vianney Catholic Church on Main Street. The church has graciously agreed to allow parking here. To your right as you are facing the Family Life Center building you will see a storm water management pond and a gravel area. This is where the trailhead kiosk will be located. Proceed around the back side of the storm water management pond in a generally eastward direction. On your right you should see the beginning of the blue blazes where you should you enter the woods. Follow the blue blazes! The trail will take you behind the Family Life Center and down a hill where you should soon find Bridge #5.

Cross the bridge and continue to follow the blue blazes to your left and up the hill. You will emerge onto Tobacco Ridge Road. Follow the road north (left) until you see a barn on the right hand side of the road. Look for the blue blazes on your right where you will re-enter the woods. Continue to follow the blue blazes and you will cross Bridge #4 and Bridge #3. Your next landmark will be another barn and a road we call “No Name” Road. Turn slightly north (left) here, cross the road, and continue eastward (right) into the woods. You will cross Bridge #2 and your next landmark will be the BG&E power lines.

You will follow the power line road north (left). Your trek on the power line begins at one large transmission tower. At the next tower, look for the blue blazes that direct you back into the woods, continuing eastwards. You will walk on a rutted road (great habitat for frogs and salamanders!), turn south at the hunter sign in box, then east again to Bridge #1. You are almost back to the relative civilization of the existing ACLT trail system. The “new” trail section ends at the Parkers Creek Road trail. Look for marker 7 and follow this path to marker 8, turn right onto Double Oak Lane and head to the barn to pick up a North Side trail guide for the remainder of your journey!

Land Manager's Corner

Southern Pine Bark Beetle

Something is always happening. Whether we are aware of our surroundings or not, something is always happening—the spring season is a full blown cornucopia of activity. As most of our ACLT supporters know all too well, there is always some threat to the forests we all enjoy. Our last newsletter talked about invasive plant species, one of the more serious threats on the menu. For this spring's newsletter, I thought it might be interesting to focus on one of our native insect pests that cause immense tree mortality in timber stands in many regions of the south-east, and will become active as the dogwoods begin to bloom.

The Southern Pine Bark Beetle (SPBB) (*Dendroctonus frontalis*) is in the Order Coleoptera, Family Curculionidae, and Subfamily Scolytinae. With an outstanding reputation of being the most destructive forest pest of pine forests in the south, this insect does not disappoint—with an average annual revenue loss of \$60 million dollars in timber income. The most recent epidemic occurred between the years 1999–2003 causing an estimated \$1.5 billion in lost timber revenue across eight southern states (Southern Research Station, 2011). The most recent SPBB outbreak in Southern Maryland occurred in 1994 (impacting Wicomico, Dorchester, Worcester, and Somerset Counties), with high infestation rates projected for the coming years (Maryland Dept. of Natural Resources, 2013).

Before we get into the complexity of the host relationships there should be a brief summary of the biology of the insect. The SPBB has a complete metamorphosis, meaning that the beetle has four distinct life stages: egg, larvae, pupa, and adult. The time lapse between egg to adult ranges from 26 to 54 days, depending upon the season. The beetle may have as few as three generations per year in the northern part of its range and as many as seven to nine generations per year in the southern parts of its range (Thatcher, 1980). Adult beetles will begin their flights in spring, with the female being responsible for host selection. Once a suitable host has been selected, an interesting pheromonal courtship is initiated—which will be touched on in the following paragraphs. Following mating, eggs are deposited in widened tunnels under the tree bark. Eggs will hatch into larvae anywhere from 2-9 days. Once hatched, the larvae chew their way through the phloem-cambium cell layer of the tree, enlarging their galleries as they grow. Larvae galleries will take on a characteristic S-shape, which is useful when identifying the pest. When mature, the larvae will move towards the outer bark where they will create a cell and pupate. Adults

(CONTINUED ON PAGE 8)

will burrow out of their pupal casing and emerge from the host trees, leaving an open hole. As far as the mortality of the tree is concerned, it is largely the boring effect of adults and the feeding galleries of the larvae that will ultimately girdle and kill the tree.

The North American range of this insect extends north to New Jersey and Pennsylvania, west to central Arizona, and south to Florida and Eastern Texas. Hosts include all species of pine that grow in this geographic range, preference tends to lean towards loblolly, short-leaf, Virginia pine, and pitch pines. Resistant pine species include Eastern white, slash, and long-leaf pines. Although any pine is susceptible to attack by these beetles, successful attacks tend to occur on individual trees that have been previously stressed. Both biotic and abiotic factors come into play when dealing with conditions that lead to outbreaks; including drought, storm damage, previous insect or fungal infection, and nutrient deficiencies. Beetle infestations appear to be cyclical in nature, occurring every 6-12 years with a residency of 2-3 years. In southern states, the time lapses between outbreaks have decreased with an increase in intensity since 1960 (Belanger et al., 1993). Relatively speaking, the SPBB is an effective and well adapted pest, and current management regimes of pine forest systems in the south perpetuate the appetite. Nonetheless, beetle activity levels in the south remained low in 2011 and 2012, and the SPBB remains one of the most studied insect pests of pine forests. Curiosity stems not only from the millions of dollars lost annually in timber revenue, but from the interesting relationships associated with the insect, host tree, and fungal agents.

Now let's discuss the unique relationship between the beetles and their unsuspecting hosts. As mentioned earlier, the females initiate host selection and are responsible for the initial attack on individual pine trees. There are two different hypotheses as to how a female will select a suitable host. Theory one, is that the female is drawn to a host by a released pheromone produced by a tree that is in distress. Theory two suggests that since the female can visualize vertical objects she will randomly land on a reasonable host and simply take a bite to sample. Regardless, the showdown begins at bite one—where a female will take a sample chew on a host to see if it will be a good fit. The first attack is usually in the lower canopy or mid-trunk on the host. At this point, the odds are 50:50—the tree will either be healthy enough to dissuade the intruder by initiating a defense behavior in which a pitch flow will expel the female, or the female will be successful and initiate boring—continuing to penetrate into the tree towards the inner bark. As the female beetle advances, she will let out a pheromone (called Frontalin) for the express purpose of attracting more beetles to the same tree. This phase is referred to as “aggregation” and is extremely important in the

infestation process. As new females arrive at the tree they will also initiate boring and release their pheromones. About this time, the males will show up and start investigating boring holes in search of females. While under the initial attack, the unfortunate victim will emit a distress pheromone (most plants emit some sort of pheromone when stressed—ever enjoy that nice smell of freshly cut grass, that's it!). This stress pheromone signals the invading beetles to emit yet another pheromone—which combined with that of the tree creates a super pheromone. This would be the equivalent of a huge neon sign reading “Come on in—the party is here”.

This chemical trickery works to attract many beetles in a short period of time onto a single tree with the objective to overwhelm its defenses. In small numbers, most relatively healthy pines will be able to create enough pitch flow to effectively eject the invaders. This is why pioneering females will target trees that are already stressed due to drought, lightning strikes, or other biotic or abiotic stressors. But in increased numbers, the tree stands little chance of survival if the initial attack is successful. This phase of the infestation is referred to as “colonization”, and by this point the attacks have spread to the lower and upper regions of the tree stem. The males will scour the bark looking for an entrance hole for available females. As males discover willing females, the male will release yet another pheromone (called verbenone), in an effort to balance out the sex-ratio. In effect, as the balancing pheromones flow the new neon sign might read ‘No vacancy, but try the party next door’. As more and more beetles are deterred from the original host tree, attention “switches” to an adjacent tree, and the process starts all over again. Believe it or not, this is a rapid process with groups of infested trees expanding at rates up to 50 feet per day during a serious outbreak (Billings, 1979). Untreated infestations may grow to thousands of acres in size and lead to subsequent erosion, increased risk of wild fire, invasion by other unwanted vegetation, not to mention displacement of critters that utilize pine stands as primary habitat. A whole network of secondary insects and fungal agents will soon set in to join the frenzy after the tree is stressed to the point of no return. Among these are Ips and Engraver beetles and assorted root and heart rot fungi.

Another interesting nugget of information that plays a major role in this relationship is that of a crucial, yet often overlooked fungus. Blue-stain fungus is a common disease of pine trees and has a mutual symbiotic relationship with the SPBB. The spores are carried by the beetle in specialized structures called mycangium, and are given access to the tree's vascular system while the adults bore galleries. In exchange for the ride, the fungus penetrates and kills live tissues (primarily in the xylem) further weakening the tree and clogging up the internal water

piping (Thatcher and Conner, 1985). As the tree weakens, the beetles get easier access. The blue-stain fungus is often apparent on lumber as bluish gray discoloration along the sapwood. From an economic point of view, the wood is structurally compromised. Acting alone, the bark beetles in numbers are still able to kill the trees, but with the aid of the blue-stain, infested trees stand almost no chance of survival.

So what can we do to mitigate effects of this pest and save our pines? There are several management actions that can be taken. Consistent monitoring of forests is crucial in identifying infestations and mitigating impacts. The first evidence of infestation will be the



Figure 1: Aerial view of pine trees infested with SPBB. Photo courtesy of Dr. Wayne Nixon, University of Florida, Dept. of Agriculture.

noticeable discoloration of tree crowns—foliage colors will turn from green to yellow, before turning reddish brown (see Figure 1). Also, adults will leave exit holes in vacated trees and leave saw dust at the base of freshly infested trees. Popcorn-sized pitch tubes will also be visible

on newly infested trees from the trees' attempts to spit out the invaders. Peeling off a layer of bark on the trunks of questionable trees can also call attention to the presence of the beetles.

Characteristic S-shaped galleries (see Figure 2) made by adults and larvae will be obvious if the tree is under attack.



Figure 2: Boring galleries of the SPBB on an infested pine tree trunk. Photo courtesy of Lee Townsend, University of Kentucky.

Perhaps the best defense is the oldest trick in the book—encourage diversity. One of the main reasons that these beetles have become so successful is that many of our forest systems are managed as monocultures. Huge acreages of pine trees are planted at one time and in neat rows on already disturbed sites in much of the south, creating a bulls-eye for pioneering beetles. Therefore it makes sense to plant many different species of trees in an area and encourage multiple age classes. Of course, expansive pine stands are common in nature—so frequent monitoring is often employed. It may also be wise management to keep trees

growing vigorously by mulching, fertilizing, watering, and thinning stands regularly to reduce competition and stress. Pines that are visually stressed or damaged should be removed, harvested, or taken off site to be chipped or burned to prevent threat of invasion. Other precautions include minimizing construction and logging damage and the reducing soil compaction around sites occupied by pine stands. There are also a series of insecticides that can be sprayed on tree boles as a preventative measure; however, this practice gets expensive—especially when considering large acreages.

As is the case with all management decisions, action should be based on careful consideration of options. The best thing that we can do as stewards is to keep a watchful eye on the forests that we all enjoy and to remain teachable. Research on this insect remains a hot topic and is well funded by many universities. However, the question remains – what will 2013 bring for the Southern Pine Bark Beetle in the Southeast?

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Steven Gaines
Land Manager

Do You eBird?

by Leslie Starr

As with most other aspects of life in the 21st century, birding (formerly known as birdwatching) has undergone a revolution. While optical equipment such as binoculars and telescopes remain basically unchanged, most birders will also have electronic devices on hand to aid with bird identification and in some cases to keep their lists. I bought my first iPod in 2006 for the sole purpose of having bird calls in my pocket, which is much more convenient than carrying a boom box. While playing recordings to attract birds is controversial and is especially frowned upon during nesting season, it can be very helpful in identifying heard-only birds. (This can and should be done at very low volume). The next step was being able to purchase field guides as apps for these electronic devices. I have iBird Explorer Plus and the Sibley eGuide to the Birds of North America on my iPad and iPhone. These programs include recordings of bird sounds along with all the materials available in a book field guide and often have links to other resources, such as bird photos on Flickr.



The internet has drastically changed how we receive information about where the birds are. Telephone hotlines, once the state-of-the-art method for learning about specialty species, have been replaced by internet list serves and cell phone text alert systems. One can access any of over one hundred state and regional birding list serves at <http://birding.aba.org> to find out what is being seen in a given area, both ordinary local observations and rarities. Maryland's list serve is <https://groups.google.com/forum/#!forum/mdbirding>, and while one must join the group to post, it's possible to access this site directly or via the aba (American Birding Association) link above.

Far and away the most valuable site for modern birders, in my opinion, is eBird.org, the citizen data collection program begun in the U.S. in 2002 by the Cornell Lab of Ornithology and the National Audubon Society. Participants submit sightings, and eBird generates both personal lists for the observer and data for researchers. To quote from the site itself:

eBird's goal is to maximize the utility and accessibility of the vast numbers of bird observations made each year by recreational and professional bird watchers. It is amassing one of the largest and fastest growing biodiversity data resources in existence. For example, in March 2012, participants reported more than 3.1 million bird observations across North America!

The observations of each participant join those of others in an international network of eBird users. eBird then shares these observations with a global community of educators, land managers, ornithologists, and conservation biologists. In time these data will become the foundation for a better understanding of bird distribution across the western hemisphere and beyond.

I was a slow convert to eBird, not having previously been rigorous at keeping lists. I submitted sixteen feeder birds when I set up my account but then ignored it for several years until a teenage birding buddy told me that lists could be shared. At that point I asked birding companions to share lists of walks we had taken together and my eBird "life list" jumped from 16 to 116. Then my buddy told me I was eBirder #87 in Maryland and my competitive instincts kicked in. eBird promotes a Top 100 category, and one can find one's ranking at county, state, and national levels. It's a clever incentive to encourage birders to submit checklists. (Brag alert: look at the US Top 100 for 2012.) Setting up an eBird account is simple and free, but one need not have an account to access data. From the home page, clicking on Explore Data provides options including generating range maps for a given species, bar charts for a chosen location, and arrival and departure dates (first and most recent sightings for the year). There is even a map showing eBird list submissions in real-time via yellow lights being illuminated all over the globe. Once someone has an eBird account, he or she can set up Needs Alerts to receive notice when a species missing from his or her list has been reported, which can be particularly helpful when traveling.

The wealth of information available on eBird.org may be easily experienced by generating bar charts. For example, choose the Explore Data tab, click on Bar Charts, select Maryland, click "Counties" on the right as a subregion, scroll down to Continue, and choose Calvert. Having again clicked Continue, you will receive a bar chart showing seasonal occurrence and relative abundance of the 315 species reported to eBird in Calvert County. If you scroll down the

list, which is in taxonomic order, you'll see the word "Map" to the right of the bird names. If you click this, you will be shown a map of where all the reported sightings occurred. Blue dots are sightings over a month old and red dots are within the month. Dot with flames indicate an eBird Hotspot, a place visited by enough birders that it merits recognition.

ACLT has both North and South side Hotspot designations.

Further clicking on the dots will show who reported the species when and give you the option of looking at the entire checklist. I retroactively identified several species I saw in Suzhou, China in late 2009 by looking at checklists from the area to see what other birds were there and comparing them to my notes.

I can't recommend eBird highly enough, whether you use it for your personal lists, as I do, or just want to explore data. It is very user-friendly, and it's a fun way to participate in and contribute to science. But watch out: it can be addictive!



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Thank you for your support ...

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ACLT would like to welcome the following new members since the Winter 2013 newsletter:
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 Mr. & Mrs. Tom Barbee
 Mr. Jon Butcher
 Mrs. Maelee Byram
 Calvert County Forestry Board
 Ms. Laura Clinkinbeard & Mr. Jacob Brynjelsen
 Mr. & Mrs. Smith Greig
 Mr. & Mrs. Michael Johnson
 Ms. Mary McHugh
 Ms. Jeanie Rupard
 Mr. & Mrs. David Williamson
 Ms. Elizabeth M. Woolsey

Memorial Contributions

Thank you to the following members who made a memorial contribution since our last newsletter:
 In memory of **Mrs. Elaine Cochran Dunkle**, who was a Charter Member and longtime supporter:
 Mr. & Mrs. Art Cochran

In memory of **Mr. Howard Hammack** who was the father of Mrs. Karen Edgecombe and a longtime supporter of the ACLT:
 Mr. & Mrs. Patrick Griffin

Gift Memberships

Thank you to the following members who gave a gift membership since the last newsletter:
 Mr. & Mrs. Paul Berry

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