

Chestnut Tree

*The Indiana Chapter of
The American Chestnut Foundation*



2013 Chestnut Seedling Order Form

Name: _____

Address: _____

City, State, Zip Code: _____

Phone: _____

Email: _____

Lots will consist of 25 pure American Chestnut

Number of seedling lots requested: _____
x \$50/lot

Total: _____

Contact Jim McKenna to make payment/
pick-up arrangements (see contact info
below)

President's Corner,



As 2012 comes to an end, I write this in a tone that is hopeful for the future of the American chestnut and our state chapter.

The National organization has had many exciting developments in the recent months. As many of you have probably read in the TACF Journal, the National organization passed our first reintroduction plan at the board meeting this fall. National's Restoration 1.0 seed production was also up this year, and any Annual Sponsor level members will now get double the amount of seed for their donation. We are in the part of the curve where seed production goes up exponentially - exciting! I also had the opportunity to tour several orchards this year, it is absolutely amazing the type of growth that chestnut can put out on poor sites.

Contd. on page 2

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President’s Corner, contd. from page 1

Closer to home, we are gaining momentum in our orchards, test plantings and in getting our message out. We had a very successful branch event at our orchard in September, it was great to see so many members, foresters, DNR staff and national TACF staff come together. Despite 2 years of bad weather (read rain/heat issues), we continue to try to get our experimental plots in the Hoosier National Forest off the ground.

If you are looking to become more active in the Indiana chapter, I ask that you pick just one thing that you think you could help with. It could be helping at a branch event, planting trees, mowing an orchard or giving a talk at a local school. Maybe you have the next big idea? Please don’t hesitate in sharing your time or talent!

I look forward to 2013 and continuing my work with the Indiana Chapter of The American Chestnut Foundation.

Regards, Ben Finegan



The executive committee met with Senator Richard Lugar in Indianapolis this summer. We presented him with several books including *Mighty Giant*, and a warm invitation to join TACF in Indiana. The evening was very enjoyable, and we discussed the status of chestnuts, and Indiana’s efforts in restoration at length.

Lugar has always been interested in forestry, and owns property near Indianapolis where he has numerous tree plantings.

Pictured from Left: President Ben Finegan, Walt Beineke, Sally Weeks, Senator Lugar, Bruce Wake-land and Jim MccKenna.

The day was so hot (July 6), that one of the soles of Ben’s dress shoes melted away from the leather top as he walked from his car to the hotel!



Dr. John Shafer, long time Indiana TACF member, and centenarian, is presented a “mud pie”, a cement marker that will denote the location of an American Chestnut tree planted in his honor as part of Logansport’s city park Living Legacy program. Presenting the marker is Logansport Parks Administrator Janet Fawley.

Many of John’s friends and family were present this hot August day, including daughter Rebecca and son-in-law Roger Tuuck, who drove from Michigan. John made a brief speech to the large crowd, and several friends spoke of his long list of life accomplishments. Sally Weeks and Jim McKenna were present to thank John for his dedication to TACF, and to enjoy the festive luncheon along the banks of the Eel River.



AMERICAN CHESTNUT TREES RETURN TO The Hoosier National Forest

American chestnut trees have been planted two consecutive years on the Hoosier in partnership with Purdue University, The American Chestnut Foundation (TACF), and the Northern Research Station.

July 20, 2012

It was not your ordinary tree planting effort. It took several days of site preparation work, the area was fenced, PVC pipes were driven into the ground where each tree was to be planted, and only then were each of two areas planted. But even at that, the work had only begun for these precious trees which Hoosier’s have waited so long to see return to Indiana’s forests.

It has been a long hard road to bring back the chestnut



Indiana Chapter of TACF Winter Meeting January 12, 2013

Wright Center, Martell Forest, W. Lafayette, IN

The meeting was called to order at 12:05pm by President Ben Finegar. Fifteen members plus officers were present. Lunch was catered by KFC with a great deal of help from Mickey Weeks. Ben gave a summary of the past year's activities which included:

1. A booth set up at Earth Day in Indianapolis, which drew considerable interest from attendees.
2. The officers hosted a dinner with Senator Dick Lugar during which we explained our organization and invited him to participate. Since he is out of office now, and has a great interest in forestry and trees, we believe he will prove to be a valuable asset to the organization.
3. Hosted the fall Branch Event at Jackson-Washington State Forest on September 20. Approximately 50 people had the opportunity to visit an older progeny test and visit with Bryan Burhans, president and CEO of Ntl. TACF. An excellent dinner was provided by Sally and Mickey Weeks with a few items by Kay Beineke. A silent auction was held with good results.
4. In October, Bruce Wakeland and Ben attended the national meeting at Asheville, North Carolina. Ben is on the national Education Committee and would like ideas concerning getting the word out about chestnuts. Some suggestions were to get out more displays at meetings and get grant applications started. Due to the huge amount of 1-0 seed available this year (80,000), much of it could be given away.

Bruce is the chair of the national governance committee. More on that to follow.

Jim McKenna, chapter science officer, gave a short history of what we have done as a chapter in the past and pointed out that the F-2 orchard will be inoculated this summer, which is a big step forward. The planting site on Hoosier Ntl. Forest in southern Indiana once again had only 15% survival. This year it was due to the drought while last year it was due to too much water. Sara Fitzsimmons, the Regional Science Coordinator will bring some F-3 seeds for planting when she visits for a week in April to help out with our inoculations, etc.

Jim then gave a very interesting talk on how butternut canker differs from the chestnut blight. While the butternut blight is equally as deadly as the chestnut blight, the chestnut blight is much more virulent and kills much faster. Naturally occurring hybrids with Japanese walnut have allowed butternut to resist the disease to a certain extent. Most pure butternuts are very susceptible, but if they have even a small segment of Japanese genes, they will often survive. Butternut canker has no sexual phase and, therefore, can't spread nearly as fast as the chestnut blight.

Bruce Wakeland then gave the treasurer's report. We have nearly \$22,000, which we are attempting to build up so that at some point, it might allow us to hire a fulltime or half time employee to handle the chestnut work at Purdue and statewide. Our expenses are very low. Last year's expenses were only \$1,214, with \$1000 of that going to HTIRC to help defray some of the expenses of the chestnut work.

Bruce then went on to explain some of the governance issues with national. One thing of great importance is that each chapter presently has their own 501(c)3. It appears that national is

now willing to take over that burden for each chapter.

Also, Bruce explained that the present Board of Directors has 32 members, while most nonprofits have about 16. The 32 members is too large, and they are trying to cut it down. At this point, in addition, the board is taking on the change of strictly a breeding program to the huge job of restoration. The restoration phase (that is reintroducing chestnut into the natural environment) will be extremely expensive and require considerable changes in how national operates. Bruce emphasized that the breeding program portion will continue and expand as well.

Bruce and Bill Mintor are co-chairs for the 2013 Branch Event on September 19. It will be held at the Mary Lea Nature Center near Goshen College, where some of Indiana's chestnuts are planted. Bill is in charge of the Nature Center.

Bruce also reminded us that we may purchase 25 chestnut seedlings for \$50 in the spring (see order form on page 1). Since there seem to be many seeds available, he believes we should sell them to the general public as well as to members.

Bruce made a motion to relinquish the 501(c)3 to national and Jim seconded the motion. It passed unanimously.

Jim took us on a tour of the chestnut plantings on Martell Forest property. We saw interplantings of red oak, cherry and chestnut. In nearly every case, the chestnut was shorter than other species. The problem has been that ambrosia beetles have killed back the chestnut and resprouting has produced multi-stem trees. We found a few possible blight infections, and talked at great length about chestnut soils and sites. It was concluded that it is still not well understood except that chestnut will not survive or thrive on the wetter, poorly-drained sites.

We adjourned the meeting at 4:30pm

Walter Beineke, Secretary



President Ben talking chestnuts to an interested passer-by at Earth Day this past year.



Success Story contd. from page 2:

tree, and the last two years have proven to have been anything but kind to the young seedlings. The fact that any of the young trees have survived are a tribute to the hardiness of the chestnut and the attention given to them by their Hoosier caretakers.

The first area, known as the McKenzie Ridge Site, had been first planted in 2011. All but 16 percent of the trees had died due to the unseasonably wet spring and early summer months of that year. It appears with so much rain in 2011, the seedlings root systems drowned.

American chestnut is a species which grew on ridges and once dominated southern Indiana's forests. At the McKenzie Site, the sparse surviving trees, those who had better drainage in 2011, have a good root system and are growing well. Some are now 12 feet tall growing well. Some are now 12 feet tall in their second year. The chestnut is a tall, fast growing tree.

The Buck Site was planted for the first time with the same assortment of chestnut seedlings as were used in both McKenzie plantings. When the trees were planted at both sites, the weather was hot, and it stayed hot. Temperatures have stayed regularly in the 90s and often over 100 degrees. Since the trees have been planted in early May, the sites never received any rain through early July.

HNF Silviculturist Chris Thornton has worked with Jim McKenna from Forest Service Northern Research Station's Hardwood Tree Improvement and Regeneration Center to arrange for the plantings. Thornton said trees on both sites had been given every opportunity to do

The trees were planted in a fenced enclosure to keep out deer and minimize damage from wildlife. They will have herbicides applied as needed to control undesirable competition. But then this year came with the heat and the drought. "We couldn't just let them wither and die in this heat after losing so many last year, so we had to try to save them," said Thornton.

The trees are planted in the middle of the Forest. "We didn't have hydrants nearby, so we had to come up with a way to get water to the trees," said Thornton. He enlisted the help of Ryan Otto and the Hoosier's fire crews. Otto agreed to use the opportunity as a fire training exercise. With the fire crew's assistance, porta-tanks were set up and filled with water, and hose lays were put out to the trees. Thornton said they tried to buy sprinklers but found with the drought there were few sprinkler to be had in local stores. The few they were able to find, were losing too much water to evaporation, so they went back to just watering the trees with a hose. "In some cases we were too late," said Thornton. He said at the Buck site, the mortality may be 40 percent from the heat and the drought. McKenzie seemed to be doing better. They put 4-5 gallons of water per tree every other week. He hopes to get the seedlings through the drought to put them on a solid footing. Thornton explained the planting areas were developed as part of a stewardship contract. The McKenzie site had been a timber sale so was heavily covered with tops (tree) which were bucked up into smaller pieces so planters could move through the site and plant them on a predetermined grid pattern. The Buck site was easier to plant since most of the logging debris had been removed.

McKenna designed the plantings and secured the seedlings to test the resistance of the blight resistant American chestnut seedlings in a forest environment in their native range. Some of the seedlings came from Virginia so they are also looking at how well adapted these seedlings are to southern Indiana.

The plantings consisted of:

- blight resistant American chestnut trees (genetically 15/16th American chestnut and 1/16 Chinese chestnut)
- pure American chestnut trees
- Chinese chestnut trees
- Native oaks around the edges

The Chinese chestnut varieties served as "controls" to compare performance with the blight resistant American chestnut. The pure American chestnut will also provide performance comparison. The oak planting will provide species competition data. According to Thornton the Chinese chestnuts will be removed before flowering to prevent crosspollination with the blight resistant seedling or local seed sources. Article by Teena Ligman—Forest Service



CEO of TACF Bryan Burhans speaks to the crowd of members at the Branch Event in southern Indiana September 20th. There was a full house, a large silent auction with many items brought by Bryan from National, and lots of food.

It was a very enjoyable afternoon with wonderful weather in beautiful southern Indiana.



Indiana TACF Breeding Report for 2012

By Jim McKenna

We established a second BC3F3 15/16 American chestnut test planting on the Hoosier National Forest this year with resistant material (Restoration Chestnuts 1.0) from TACF at Meadowview. This year's site was selected to be drier and better drained than last years McKenzie site which suffered 85% tree mortality from flooded and cool temperatures in the spring of 2011.

To make up for the losses from 2011, we replanted more than 300 trees there this spring, taking BC3F3's from the new 2012 Buck site. Not only did we choose a drier site for 2012, we also planted one-month later to avoid too much rain and cool temperatures after planting. Despite these good intentions, drought and record high temperatures created another difficult year to establish a chestnut planting. Both sites are clear cuts surrounded by larger timber trees and only with the help of the fire crews on the Hoosier National Forest and the dedication of their foresters were we able to save these sites by irrigating them twice. These two plantings will prove whether or not the resistance and adaptability of TACF 15/16 American chestnut is adequate at this point to grow long-term in southern Indiana's forests. We now have the following inventories for each site:

Breeding Report contd. next page



The May 2012 planting of BC3F3's on a drier site than last year in the Hoosier National Forest. Unfortunately, last year's drought impacted the planting as much as the prior year's wet weather. We have about 15% survival of the planting.

**McKENZIE – IN-1 – HOOSIER NATIONAL FOREST RE-PLANTS - 2012**

| <u>Species or back-cross generation</u> | <u># of Families</u> | <u># of Sdls</u> | <u>% of Planting</u> |
|---|-----------------------------|-------------------------|-----------------------------|
| Pure American (<i>Castanea dentata</i>) | 9 | 106 | 21% |
| Pure Chinese (<i>C. mollisima</i>) | 8 | 58 | 11% |
| BC3F2 (from Indiana's 1 st BC3 orchards) | 10 | 96 | 19% |
| BC3F3 (from TACF BC3F2 orchards) | 23 | 142 | 28% |

Surviving at the McKENZIE Site from 2011

| | | | <i>% Survival 2011</i> |
|---|----|----|------------------------|
| Pure American (<i>Castanea dentata</i>) | 2 | 10 | 15% |
| Pure Chinese (<i>C. mollisima</i>) | 5 | 34 | 72% |
| BC3F2 (from Indiana's BC3F1 orchards) | 1 | 13 | 15% |
| BC3F3 (from TACF BC3F2 orchards) | 13 | 22 | 8% |

BUCK SITE – IN-2 – HOOSIER NATIONAL FOREST - 2012

| <u>Species or back-cross generation</u> | <u># of Families</u> | <u># of Sdls</u> | <u>% of Planting</u> |
|--|-----------------------------|-------------------------|-----------------------------|
| Pure American (<i>Castanea dentata</i>) | 9 | 106 | 21% |
| Pure Chinese (<i>C. mollisima</i>) | 8 | 58 | 11% |
| BC3F2 (from Indiana's BC3F1 orchards) | 10 | 96 | 19% |
| BC3F3 (from TACF BC3F2 orchards) | 23 | 142 | 28% |

The McKenzie site is now 35% stocked which is enough to provide some indication of how well adapted and how resistant the BC3F3 TACF seedlings are. Survival at the Buck site this year was only 15%. The Fire Crew on the Hoosier National Forest, along with a variety of their staff, worked very hard to get out and irrigate both of these sites twice as the drought became protracted. Without these efforts, we wouldn't have anything left. At both sites, with either cold and wet or hot and dry spring weather, the pure Chinese chestnut survived over 70% while pure American and the BC3 survived from 8 to 15% on the whole. Sara Fitzsimmons, our Northern Breeding Coordinator, is going to provide us with sprouted seed of additional BC3F3 families to add into the Buck site in early April. We will put out a call for volunteers as we get closer.

Our breeding efforts were reduced in 2012. We lost extra funding that had supported a part-time position and reduced extra chestnut work. We are very grateful to Wakeland Forestry, Banks Hardwoods, and Whipperman Farms for their generous financial contributions to support the breeding work. Our focus in 2012 was on keeping up the existing BC3 orchards and making additional BC3F2 crosses. Besides getting the Hoosier National Forest plots planted and re-planted, we added more trees into our two BC3F2 orchards and got the BC3 orchards cleaned up. [Breeding Report contd. next page]



At the Jackson-Washington orchard, we removed wire deer cages and stakes that had become entangled with other woody weeds and some of the chestnuts. The crew at the Vallonia nursery helped with this along with Bruce Wakeland and staff from the HTIRC at Purdue. Ambrosia beetles were not much of a problem in 2012, largely due to the drought. We reduced the number of sprays at Purdue to five for the whole year.

We added one additional replication (120 trees) of our 2nd BC3F2 line at the SIPAC BC3F2 orchard. Ron Rathfon and local volunteers planted the trees. Ron also tanked in water in late June as the young trees started to suffer from drought. We planted two more replications this spring of this 2nd line and the first replication of our 3rd line at Potawatomi Park, our northern BC3F2 orchard. Folks from Purdue helped Bruce Wakeland auger holes and hand plant these trees in May. Bruce went back to water the new trees twice in July and early August as the drought worsened in the north. We have two replications of the 2nd line for both orchards this spring and two replications of the 3rd line for Potawatomi and one rep of the 3rd line for SIPAC for 2013.

Unfortunately, the BC3 tree at Merry Lea that is the mother tree of our 2nd line died last spring. The tree had suffered trunk damage from a tractor strike and this along with continuing blight attacks weakened and ultimately killed the tree. The father of this cross at Purdue will be used as a seed tree in 2013, with a new father tree selected from the same cross at Merry Lea, to try and produce the final 240 seedlings to complete this 2nd line (our goal for each of the 10 BC3F2 lines is 1,200 seedlings in total per line – 600 at each orchard).

For our 3rd line, 3 trees from the Burk X AB185 BC3 family grown at our Jackson-Washington State Forest, Shippley Tract, have been selected and are being crossed with pollen from a BC3 tree at the Purdue orchard, RL3 x GR 97 FNR [R17-T4]. Flowering down south was good this year and seed set was decent. Flowering occurred earlier than usual and to help cross this year, Michael Loesch-Fries of Purdue's Forestry & Natural Resources Department along with our IN-TACF President, Ben Finegan, traveled there on the first Sunday in June to bag all of the flowering branches. We cross pollinated 3-weeks later and harvested 395 BC3F2 seed which have been sown at the Vallonia nursery. These seeds will produce the seedlings that we will add into our BC3F2 orchards in 2014.

For this upcoming year, we need to inoculate many BC3 trees. We have not inoculated since 2008 and there are several hundred trees that need to be screened for resistance. Chestnut blight is now moving through the Purdue BC3 block severely and we may actually be able to select trees for a 4th line to begin crossing in 2013 by selecting trees resisting natural blight infection. We will be asking for volunteers to come out and help inoculate from June 10 – July 10, 2013, at Purdue, Merry Lea, and the Jackson-Washington State Forest BC3 orchards. We will also begin inoculating the next generation of BC3F2's at SIPAC and Potawatomi. Please contact Jim McKenna if you are interested in helping out this summer.



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**Indiana Chapter
The American Chestnut Foundation**

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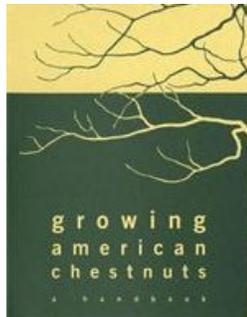
The Indiana Chestnut Tree Newsletter



Have you seen this book that is available from National's website?

Growing American Chestnuts is available for \$2.99 at www.acf.org online Store

Many other interesting items are available on their website!



Chapter Calendar: 2013

Feb 1 - IN-TACF Newsletter Distribution

Mar 1st- Seedling Orders Due!

June 10-July 10—Tree inoculation at Purdue University (call Jim @ 765-426-6003 for exact date/time)

September 19 - **Branch Event**, Mary Lea Nature Center near Goshen

Jan 2014-IN-TACF Winter Meeting - (no firm date)

Check out our website! Although it is in its infancy, we will post work days, meeting dates, and any other pertinent information there. FIND A COLOR COPY OF THIS NEWSLETTER THERE!

<http://www.agriculture.purdue.edu/fnr/intacf/>

