

## **MA/RI-TACF Winter Quarterly Meeting**

**MacLeish Field Station, 78 Poplar Hill Rd, South Deerfield, MA 01373**

**Sunday, 01/26/2020 10:00 am - 3:00 pm**

**Board Members Present:** Jaime Donalds, Yvonne Federowicz, KathyDesjardin, Paul Wetzel, Brian Clark, Karen Jones, Mike Novack, Brad Smith, Rufin Van Bossuyt, Gray Curtis, Josh Soojian

**Members and Guests Present:** Mark Meehl, Dave Lent, Jim Pelletier, Eric Harris, Kendra present via phone @ 11:00 am - noon

### **Chapter Science Plan discussion - 10:10 am**

Referring to MA/RI Chapter Specific Science Plan -- 2020 and beyond

- 1.) Increase stringency of selection in BC3/BC4 orchards
- 2.) Reassess selected BC trees  
What percent of canopy is alive? Criteria is that some of the main stem is alive.  
Brian wants to check the trees before leaves emerge.
- 3.) Incorporate New Blight and PRR resistance
- 4.) Need to evaluate backcross "selections" - Trees at all breeding orchards will be evaluated by field selections and genomic rating. Brian suggests that one person conduct the evaluations for consistency.

Jamie: There is a small number of trees at each orchard but a lot of travelling involved to evaluate all the orchards.

Assessing the cankers - We can do a first pass using rules for size and white balance sheet for photos so one person doesn't have to visit all the orchards. Can the secondary assessments be done by more than one person?

We can eliminate the "worst" from the seed orchards potentially, but we don't want to totally kill all from those lines since they contain unique pure American genes (from our "Mother Trees"). We can conserve trees in orchards by keeping roots alive.

Mike Novak: Test down to a few trees in seed orchards, but keep a number of lesser resistant ones for small stem assays. Eliminate trees that testing & our selections show are inferior.

We may start inoculating Nankings this year. Should we change the name from "seed" to "intercross" orchards?

We want to decide on a "population size" -- how many from each line in the seed orchard. individual trees will likely have different subsets of the Chinese resistance genes from the respective Chinese line?

We can do a generation in 6 years, 20-30 years

A few Meadowview-pollen-source-lines have virtually 0 % Chinese

Nanking Chinese may look a little better in terms of uniformly strong resistant children.

Going through the Objectives will improve many of our tree lines over time.

Priority: What do we need for this year?

**Actionable issues:** We want to support the objectives We can support GCO's.  
We are not fully endorsing this MA/RI Chapter Specific Science Plan as written at this time..  
We have a broad range of opinions on transgenics.  
Our Science Plan is still on review?  
Motion?

**Questions for Kendra:**

Can we have secondary assessments done by more than one person?

(Objective 1 Part 2)

Weekly versus EP155: we would prefer to use Weekly due to EP's high virulence. We have spread the EP many places

Which are our "junk lines" from "bad" Meadowview BC2 pollen lines?

Status of testing -- PRR and genetic testing (more back in February?)

Do we need to accept or reject the MA/RI CSSP 2020+ ?

**Notes from Kendra's answers:**

Chapter Specific Science Plan (CSSP) is topic of these answers

CSSP is to be reviewed yearly. The same document is used across all chapters. There is not an expectation that all chapters participate in all parts. It's basically to put in writing what we are doing already.

Jamie: We are not able to evaluate the entire document before the summer. We need to focus on what is the most actionable this summer.

What Inoculations do we need to do?

Secondary Assessments -- Can these be done by more than one person? Kendra says the goal is consistent evaluations of phenotypic assessments, done mostly by TACF Science Coordinators. Kendra is willing to train some people if necessary.

**Jamie:** Getting secondary assessments done, and other issues, greatly affects our plantings this year.

**Kendra:** Maybe there is a subset of planting we could hold off on. We don't have to do it all this year.

Next round of Chapter Genotyping will possibly be done in February.

**Us:** If there are some Clapper lines to "drop" we need to know which ones

**Kendra:** If already in the ground in a seed orchard, let's keep doing phenotypic selection on those. We can use this to help confirm (YF suggests - refine?) our genotypic results.

MA/RI has some samples not in analysis yet, so results for those will come out later than February's batch.

**Us:** For reselection: "junk lines" from Meadowview -- do we have that info at BC2 (pollen) level?

**Kendra:** We don't have all the trees at Meadowview that Fred sent us pollen from.

Kendra thinks all our ways of deciding on what is a "junk line" still need more work.

**Us:** Can we switch to the Weekly blight strain from the EP strain? (EP is very virulent and kills crowns of many "selections" over time, sometimes when we are still needing them)

**Kendra:** Currently Meadowview is using Weekly in the field, EP in SSAs (Small Stem Assays)

Kendra says she has less experience with the Weekly - strain, moderately strong blight, in terms of rating trees than w/EP (moderate strain) (and SG, the weakest strain). Fred decided upon SG and EP quite a while ago. On good trees SGs are about the same as many other trees but EPs will be smaller (allowing differentiation of better trees in many cases).

Breeding orchards inoculations - Kendra thinks likely blight strains could be:

EP: Princeton, Nankings, Foster, Dartmouth, Gloucester (if any)

Weekly: Westerly

She will ask about Weekly with Nanking; she would like to get more experience rating with Weekly before advising us.

**Us:** We are not deciding this yet for Nanking; Kendra to investigate Weekly

**Us:** will the CSSP be made public?

We explained our issue with the CSSP section on GCOs and its inclusion of the “transgenic” work. Kendra will remove that wording and make the section more general so it can apply to various types of future work.

**Kendra:** Everything with a “?” in the current MA/RI CSSP is something she’d like us to decide upon or answer.

**Kendra:** We can use our large F1’s as resistance sources - get leaves for genotyping.

**Us:** Is “seed orchard” still a valid name for those orchards? Will there be any trees in there with enough resistance to outplant from?

**Kendra:** The currently planned (and in-development) tweaks to our seed orchard setups are to try to keep them still “seed orchards”.

**Michael:** Seed orchards likely will have a few highly resistant F2s. Decided to stay with “seed” orchard”, since there is a probability that a couple of trees will pick up enough alleles with significant resistance. The plan will be tweaked to hopefully still produce seed.

**Kendra:** There are a lot of questions about BC resistance; how much do we really need in the wild? Suggests that we work on this w/expectation of seed orchards getting more resistance alleles in with these tweaks - “spiking the punch”. Genotyping improvements will help; in a few more years we will know a lot more. So we still plan that seed orchards will produce seed!

**Jamie:** Paul Sisco’s suggestions for us included male-sterile F1s to add to seed orchards We currently have none to plant. Which Chinese to use? Brian has some 2/good timber form John Mirick has good Chinese trees.

**Kendra:** Criteria for new resistance sources are in the CSSP doc.

F1s or BC1s from sources we are not using yet

We will need to screen BC1s esp for PRR resistance

F1s from Mahogany not an option

Japanese F1s are possible; Jared has Kendra assessing Japanese as well as Chinese lines; CT Ag Station has many different hybrids.

However we don’t yet have a good genome model for Japanese chestnut

We’d need Japanese F1s, not pure Japanese.

Jamestown, RI and Block Island, RI both have Japanese trees.

**Kendra:** Training us in grafting could help; she would like Hill Craddock to come up in May and do a workshop for us. Possibly at the Urban Forestry Center in NH, since it is a central location for the New England states. Lots of us expressed interest in attending a grafting workshop!

Eric Harris joined us, he is an Environmental Science major at Westfield State and has been started volunteering in the Westboro orchard.

Lunch Break

### **Afternoon Session:**

**Secretary's Report:** Kathy Desjardin

During the last quarter we gained 32 new members, had 76 renewals and 27 expired memberships. As of the end of December our membership is 300. Chapter shares for the last quarter totaled \$3,355. This represents \$1620 from memberships & \$1,735 in additional donations.

The new membership brochures from national are at the printer and should be mailed next week. Each chapter will receive a maximum of 200. We will have access to two downloadable versions - color & B&W that can be printed from a home or office print. A pdf will be available for professional printing.

Publicity: Jules Smith, Media & Communications Manager has sent guidelines and deadlines for submission of articles for the Chestnut Magazine, which is published 3 times per year. The deadline for the Spring/Summer issue is 3/06/20. Bill Davis will be submitting an article. This issue will also focus on New England for the Regional Science Coordinator and the Volunteer Spotlight section.

The e-sprout newsletter has 15K subscribers so it is a great way to get info out. The copy deadline is the 8th of each month, only 150 words and 2-3 photos.

Social Media is another great way to encourage participation and membership. We have a Facebook Page and a Twitter. Send news & pictures to Kathy for posting on Facebook. Send Tweets to Brad.

National: Two new NPR podcasts exist . Article in Washington Post

**Signage:** At the Summer Quarterly Meeting we authorized up to a total of \$1000 for two 3-panel signs. Bill Davis and Lisa Collins were authorized to come up with the site specific wording for each sign. Bill has completed the wording for Westboro; Lisa is still working on Norfolk's. We are in the process of getting permission for use of a photo taken by Bill Byrnes of an Eastern Towhee on an American chestnut. Kathy will follow up on this and order the Westboro sign.

**Education and Activities Report:** Reminder that Kathy is requesting quarterly updates on any educational outreach, presentations & orchard activity. Thanks to those who have already reported!

**Education and Outreach:** Matt Villamaino - Regional Interpretive Coordinator -Central Region of DCR would like us to have a program at Moore State Park near the orchard on a Saturday morning in August from 10 - 11 am. Kathy will commit, Karen & Josh volunteered to help. Will contact Mike Grames to see if he can assist.

**Library Presentations:** *Medway* 3/10/20 - Brad, *Holliston* 2/26/20 Brad, *Westhampton* 2/27/20 Paul, *Leverett* - date ? Paul, *Longmeadow* 5/26/20 John Meiklejohn, *West Newbury* April (date to be determined) - Jamie, The following libraries need to be contacted to determine a date - *Hardwick* - Josh,, *Leverett* - Paul, *Lunenburg* - Jaime, *Southbridge* ?, *Wayland* - Mark & Brad, *West Boylston* - Brad & Josh,  
There is a Powerpoint from National coming out with several slides about TACF's general work.

There is a problem with our chapter website. The calendar of events is missing, Jules is looking in to this.

Micah Jasny, Botanical Coordinator with Native Plant Trust has invited our chapter to participate in the Plant Conservation Volunteer (PCV) Program. Deadline to apply is 2/14/20. Curt Laffin may have been involved with a chestnut demo planting there (Garden in the Woods) - Framingham, MA . Jim Pelletier will be discussing Appalachian Trail chestnut monitoring with Micah this week. Jim volunteered to follow up on how we might collaborate with the program.

Note that Michael Novak's title is VP of Scientific Planning

**MOTION:** Move to approve Summer & Fall Qtrly Mtgs &, Annual Mtg Minutes.  
Unanimously approved all sets

**Jaime:** National's process for Public Comment period regarding deregulation of transgenic tree Do board members want to participate in the phone planning session relative to the USDA APHIS regulatory agency. What is desired are personal stories re. chestnut, including scientific approaches. Brad offered to participate on the call and will report back to us. The board does not have an opinion, however MA/RI-TACF members are encouraged to give their positions.

**Treasurer's Report:** Michael Novack, Paul Wetzel

Year-end report: year not ended badly! Net income  
Annual meeting expenses e.g. printing will be sent by Kathy to Paul  
Brad will donate the amount we paid for rental of the Westborough Senior Center.

We covered Paul Sisco's expenses and honorarium.

Gasoline for mowers in Westboro, Pittsfield is part of orchard expenses

**MOTION** to accept the Treasurer's report  
Passed unanimously

Bank Account Change required that MA Secretary of State list of our Directors and Officers be updated. Kathy updated all reports online. The next annual report will be due by 11/01/2021. Signature Card at Bank of America updated - Jaime, Paul, Mike & Kathy are now the new signers on both savings & checking account. All previous signature cards are no longer valid. Kathy will be logging in at least quarterly to verify balances. Paul will also bring copies of bank statements to quarterly meetings. Bank of America may be leaving the retail banking business. Paul may evaluate other banks.

**Orchard Report:** Brian Clark

Manton grant budget:

Brian itemized items by orchard including new potential orchard like Sandisfield  
Unclear what status is - Kathy and Yvonne to send Douglas Miner information about orchards and link to Tantasqua.

*Collecting samples from trees planted since 2017:*

We need the new protocol for getting leaves to National for genomic testing.

We are aware that the young, red, shiny leaves are needed for this.

**GCO discussion:** Mark Meehl

Lunenburg GCO planted in July 2019 - 77 seedlings, all pure american MA trees which were documented by Kendra. Owner Carl Stone 12 acres on a hillside/ bamboo poles & netting, 5 rows - 10 feet apart in every direction. Carl is documenting the trees, labeling, using spreadsheets. Plans to come to future meetings.

Brian McLaine will be planting 100 trees in Harvard. TreeSnap is being utilized.

Lincoln, MA has offered some land with a well. Suitability is unclear since the site was a former trellised vineyard which was abandoned. Many vines would have to be removed, not easily accessible.

Mike LaBossiere, Watuppa Reservation is interested in a planting.

Mark has 850 wild nuts harvested from 33 different trees last fall. Mark and Dave have 134 wild trees entered in TreeSnap.

**Scientific Planning Report:** Michael Novack

With 9 genes or locations, it would take many more trees to get to “full resistance” using our current methods. Millions, to get good diversity too.

We would make F1s, then cross with ... ?

Other ways of breeding: 3-4 generations of breeding in traditional breeding approach

Half of remainder

The less resistant Chinese trees are still

What size population do we want to work with? 400 or so

8 trees per line of our current lines

We put all our best in one orchard?

10 nuts from each tree

Higher percentage of the alleles

SSA assumed; more controlled

Not testing in orchard with environmental differences

We've lost alleles at every backcross in our current approach

We probably lost at least one allele at each generation

Seed orchards have about 9?

With 9 genes/loci, very unlikely that we have all

Chances of one tree getting everything, with our methods, chances are 1 in 250K

Population missing many alleles esp. With Clapper, which started as a single B1 for us, so we need to put other resistance-source trees in with those

Easier for us to ID more resistant ones

We want the tail on the high end to become fatter

Michael discussed potential mathematics approaches to this issue; the number of genes is actually unknown still

His method could get a reasonable % resistant by the 3rd generation

Foster, RI could have some good F1s -- Jim Garland's orchard

How much more resistance that F1 do we need in the wild?

No one knows yet

Better trees in our orchards will be about F1s?

**Communications Report :Yvonne**

QR sticker: circular weatherproof sticker

Yvonne provided draft “proofs” created online at [Onlinelabels.com](http://Onlinelabels.com). There are many size options; ones displayed to Board included sizings that fit 6/regular letter-sized page, 2/page, and 1/page. The pricing is by page, approx. \$15/page for 1 page with lower per-label costs as copy numbers increase.

**MOTION:** We allocate up to \$100 toward the QR stickers for MA/RI with TACF logo  
Passed unanimously

Yvonne, Brad & Karen will work on these.

**Re. website and our missing Calendar** Kathy and Yvonne to follow up

Jaime mentioned Chestnut meetups for a tour and light work. Questions whether liability is an issue. Can we develop a waiver?

Our 2019 Volunteer of the Year, Tim, is down in FL for the winter but may be back this summer

**Gray Curtis presented:**

Eustis Museum near Blue Hills Reservation possible demo planting or GCO?

Kendra’s intern sent coordinates of chestnuts located near the museum on New England Base Camp property.; Gray met Kevin White from BSA who is aware of lots of chestnuts at Camp Sayre.. “Big Jon” made a map of stump sprouts on the Boy Scout property. Possible Eagle Scout project, labor in planting and maintaining orchard on Museum property?

Coordination between Boy Scouts and Museum and MA/RI-TACF?

Kathy: Camp Sayre is the site of New England Base Camp, same site as home school program that Curt and Kathy went to

Gray indicated these scouts have been on hold for a while, can we arrange a meeting with Kendra? Gray, Yvonne, Jamie, Brad to work on this. What are the possibilities? GCO, Demo? Brad knows several people in Boy Scouts, Yvonne suggested Gray talk to National since TACF if involved with Boy Scout Jamboree.

**Josh:** Maggie Brown in Blue Hills; going to do a walk re. Chestnuts, will check on the date.

**Spring Meeting Date:** April 26 -- Audubon -- Venue either Wachusett Meadow in Princeton or Broad Meadow Brook in Worcester.

Summer meeting: Block Island? :-)

Meeting closed 3:09pm