**Restoration and Ecology**

**1. What should TACF’s definition of “restoration” be?**

 Restoration will be achieved when the American chestnut has reached a self-sustaining population that reproduces without human involvement. This population must fulfill the original ecological niche in the plant and animal communities where planted. TACF must conserve the existing genetic resources and biodiversity with in the historic population.

Other notes: Extract or breed Phytophthora resistance (to Clapper)

 Determine the level of self-sustainable trees (a hundred year old population)

 How many trees do we need for this population?

**2. What are the major steps that TACF needs to hit to achieve restoration?**

 **a. List and define these steps**

 Define the end game (which includes Phytophthora resistance.)

 Continue doing what we are doing. Follow the Hebard Plan. This includes the identification

 of survivors for the gene pool and the continued us of test plots.

 Define a local seed orchard, where and how a seed orchard should be planted. (Create a seed

 orchard protocol.)

 Establish seed orchards based on locations and/or opportunity of land and care.

 Pick areas to plant on National Forest and Private lands

 Use small plantings, 25 trees every half-mile to create a population that will disperse

naturally.

 We will no longer need the GPA after the restoration plots.

 An increase in public awareness is needed.

**3. What are the major challenges we will face that we must overcome?**

 Public perception- we need to tell the public who we are and what we do. There might be general public and special interest skepticism and/or apathy about our breeding project(Ex. we are not using pure Americans). We will need to educate future generation to prevent a social ‘loss of interest’. There is concern we will lose institutional knowledge with success or failure.

 TACF will need enough high quality seed to meet genetic diversity and Phytophthora resistance to meet demand. The seed demand will need a defined distribution or mode of delivery for seeds and seedling that includes fairness in the distribution.

 The challenges of other pathogens, especially Phytophthora.

The on going challenges of critters (deer, voles…).

 An emphasis on implementation of restoration is needed, do not over-plan and/or over

 manage plantings.

Changes in future land use will threaten plantings.

We need find the manpower and the land, meaning we should plant with people who provide

 the land and the money to have a successful planting.

We need to conserve genetic resources.

Data management of the planting will need to be addressed.

**4. A TACF committee created an American Chestnut Restoration Plan, which is serving as a draft.**

**a. What did you like about the plan?**

 **b. What did you not like about the plan?**

There is general support of the plan on paper, however it is not practical nor site specific from a chapter standpoint. The plan was pre-mature in that there needs to be more seed testing before we go out full scale and more genetic questions need to be asked. The plan did not include the planting stock that we have right now. The plan did not consider unpractical sites within the areas of planting. There is too much monitoring in the plan. The plan should include a small distribution plan and large site plantings.

**5. In previous meeting everyone agreed we need to plant within the historic range before we plant outside the range. Do you agree with this?**

 No the natural range is not static; the chestnut like other species is a dynamic population.

Little’s range map is only a snapshot in time of an ever-changing population.

 We should be planting outside the range, for example the Indiana Chapter has a great

 program going and chestnut trees grow great in that state.

Question was proposed, “Will the chestnut be invasive outside its natural historical range?”

**6. Should we plant Restoration Chestnuts were there are current or known American chestnuts in the past?**

 The general consensus is yes, but there are caveats. We may need to reestablish the tree were it is lost completely and define an original perimeter. We should be cautious about planting everywhere, and should keep a reservoir of genetic stock, like the Great Smokies. This will be a control to test our success.

**7. Should TACF focus on reforestation or afforestation or both?**

Plant both. Planting should be placed where the opportunity presents itself.

**8. What ownership or management concerns should TACF be addressing for a restoration planting?**

 With public land there is an issue of agreements and long-term use. Could the land use change, were will we put seed orchards and who is doing the monitoring?

 With private there are issues with agreement like the GPA, the continued use of the land and long term monitoring issues.

Seed orchards should be TACF owned.

 Private member growers with conservation easements are preferred.

 Partnerships with public landowners.

**Business**

**1. What are the tools the chapters will need to accomplish our goal for their state?**

* 1. **What will be the rolls of membership and volunteers?**
	2. **How many members will we need?**
	3. **Will each chapter need a staff person?**

 TACF needs a ten-fold increase in membership.

 The chapters need motivation to help set its goals.

 Money is needed for each state chapter or seed orchard.

 TACF needs to develop a means of communication (a 30sec message).

 Define the chapters’ role in breeding and restoration by creating a plan/road map.

 Ex. Regions vs. state vs. local/site specific/This will drive staffing needs.

TACF needs more professional communication staff. Get the PR and media folks working together to target PBS for a series and Sesame St.

Develop educational tools and a curriculum with schools (ex. Learning Box)

**2. What can TACF National do for the state chapters?**

 Develop an e-newsletter.

 Re-vamp the website.

 Create an image library (ppt, jpg).

 House the chapters website on the National website (the future is cloud technology).

**3. What type of partners will TACF need to accomplish our goal?**

* 1. **What will these partners do to help TACF?**

 Educational institutes- Middle and High Schools; Colleges and Universities

 NRCS and RC&D

State and local national resource agencies

 State forestry agencies, State Fish and Wildlife

 Federal national resource agencies

 Social Networks

 Corporate Partners

 Ex. Forest industry, landholders

 Question: Should we partner with energy companies?

It is an ethical question as to whether or not to accept partnerships from environmental polluters and negative impacters.

 However good companies are not hard to find.

 Define a clear definition of ‘partnership’ and ’partner’ roles –ex. ‘sponsor’

**4. How should we communicate our message to the public?**

* 1. **Will there be resistance to planting a species that is not pure?**
	2. **How will we educate the public about our mission?**

TACF needs an elevator speech, a 30 sec speech to delivery our message. Develop this message to capture their thoughts and emotions.

Ex. “Change the coarse of history” message vs. “change history” or “Bring back lady Giants”

 Develop a good mobile display.

 What are we communicating?

 -‘Bring back the chestnut tree’ or ‘Bring back forest’ (ex. Bring back oak resources)

How to we engage public in what we do here and the multiple rolls people can have in the organization.

**5. How should TACF provide funding to pay for our goal of restoring the chestnut?**

* 1. **How are we going to pay for the production to reestablish chestnuts today?**
	2. **How are we going to pay for new science?**

 Currently:

 10% membership }

 85% donors }funds “science”

 5% grants }

 Increase in social networking will increase funds and political exposure.

 Raising dues is tough on the membership.

 TACF should charge for seeds and membership benefits. Sell “seed kits.”

 TACF should charge partners.

**Breeding**

**1. How will the chapters breeding programs work into the restoration plan?**

 The chapters will conserve native genes in the population.

 The southern states should keep Clapper for the germplasm.

 Fill the ecological niche and restore it to its niche before extirpation.

 Phytophthora F2 nuts from Joe James farm should be exported to the chapters for breeding.

 Regional stock

**2. Are there concerns about the material we are planting?**

 **a. Will it stand up to blight on its own or will we need hypervirulence?**

 The chapters are concerned they are relegated to B4s.

 Meadowview material is appropriate for testing not for restoration the chapter seed will be

 the trees restoring the American chestnut.

 Chapters will start from scratch with the breeding sources to include Phytophthora resistance.

**3. What are our options to breeding Phytophthora resistance?**

 Joe wants to test Meadowview B3F3 so chapters can breed regional adapted trees.

 Start from scratch.

**4. What is the roll bioengineering will play in restoration?**

Breeding and classical strategies are complementary and should work well together (there

 will be a marriage).

 The biotech will help lead the classical breeding with genetic engineered trees.

 Genetic markers will make screening similar.

**5. How can we integrate all the strategies to make TACF successful?**

 Regional seed orchards may not be divided by state but by ecologically adapted regions .

 Ex. Use haplotypes to segregate seed orchards by regions

 Scott Merkle will give trees to Joe to test for *Phytophthora*.

 TN may have more genetic diversity than rest of the range we should be breeding all these

 different haplotypes in separate lines.

 We will need more regional science coordinators and more growers.