

**Strategic Plan of MA Chapter of TACF --- 1/2002, Revised March 18th**

**Introduction:**

**The Strategic Plan for the Massachusetts Chapter of The American Chestnut Foundation is an extension and complement to both the national strategic plan of TACF and the statement of Mission in the Massachusetts Charter.**

Every member of The American Chestnut Foundation is committed to the mission of our organization: to restore the tree to its native forests through breeding and research. The purpose of the Strategic Plan is to translate the general goals of TACF into a specific action plan and to establish a time line for completion by creating a detailed list of the tasks needed to achieve all the goals.

**Our mission with regard to American chestnut restoration can be described in terms of several primary program goals:**

- A. Protect, conserve, preserve, and propagate trees from diverse remaining native Massachusetts American chestnut populations in the state.
- B. Make blight-resistant American chestnuts derived from Massachusetts genetic stocks available to the people of Massachusetts.
- C. Establish self-propagating blight-resistant forest clusters or groves of Massachusetts derived American chestnuts within selected forest study sites in cooperation with Massachusetts private and public forest landholders.
- D. Restore American chestnuts to a place of ecological and economic importance and self-sustainability throughout the forests in Massachusetts.
- E. Build an organizational structure to support a long-range vision and commitment to sustained effort over 30 years.

In order to accomplish these primary goals, we need to focus our work toward these tasks:

1. Find and catalog remaining populations of native American chestnuts in Massachusetts, with an emphasis on locating blooming trees and trees that can be released for bloom.
2. Preserve, conserve, and propagate genetic material from widely diverse populations in the state.
3. Harvest and distribute native viable chestnut seeds.
4. Breed genetically diverse, blight-resistant native Massachusetts American chestnuts, based on the remaining populations of native Massachusetts trees (incorporating blight resistance from Asian chestnut genes).
5. Establish a tree nursery system in the Massachusetts to allow for American chestnut propagation.
6. Reintroduce blight-resistant American chestnut trees into the forest in an ecologically acceptable manner.
7. Develop affiliations with important “end-users” of blight resistant chestnuts stocks, both in the forestry industry and in the state conservation community, and share information and resources with other organizations with common goals.
8. Diversify and strengthen our board and the leadership it provides, including expanding academic and plant breeding representation on our board.
9. Educate members and the public about the American chestnut tree and about the place of the American chestnut in forest ecology, and increase public awareness of TACF-MA programs and projects.
10. Keep current members and secure new ones, and increase active participation of members.
11. Develop funds and acquire assets from a variety of sources.
12. Disseminate scientific knowledge by promoting research, and fostering science-based learning, including at the elementary and secondary level.

**IMPLEMENTATION STEPS:**

**1: Find and catalog remaining populations of native American chestnuts in Massachusetts. Maintain and improve database management and mapping of current chestnut populations in Massachusetts.** Reports of American chestnuts continue to come to our organization from many sources. Our goal is to continue to investigate all new reports, ascertain the species and likely origin and importance to our program goals, and put all pertinent information into a central computer database. For our preservation and breeding work, Priorities 1, 2, 3 in the table below have the greatest importance.

**TREE CATEGORIES with properties**

CHARACTERISTICS	1	2	3	4	5	E	F	G
Productive enough for breeding, MA natives (Priority 1: blooming, accessible)	X							
Productive enough for breeding, MA natives (Priority 2: blooming, naccessible)		X						
Beginning production, MA natives (Priority 3: released)			X					
Important ecologically, MA natives, not blooming (Priority 4)				X				
MA seedlings, registered and distributed to public (Priority 5)					X			
dentata, but not certainly MA native (imported American chestnuts)						X		
Non-dentata Castanea							X	
TACF experimental plantings: BC2F2s (Conway, Roberts Orchards)								X

**ACTION ITEMS for each Tree Category**

ACTION ITEMS, AND PRIORITIES	1	2	3	4	5	E	F	G
Use Tree identification form to define basic information	X	X	X	some				
Obtain accurate GPS data on trees for GIS mapping	X	X	X	some				
Survey form transcribed to database	X	X	X	some				
Seed collection from open pollination sites		X						
Regional Diversity Breeding program	X				X			
Yearly site visit to gather data and follow trees over time	All	some	some	some	some			X

**Goal 1: Inventory Tasks**

	Time Frame				Progress
	2001	2002	2003	2004	
1. Develop and maintain a team of tree visitors to investigate reports of blooming trees.	X	X	X	X	10%
2. Develop tree ID guidelines and protocol to ensure positive identification of all leads.	2001				Completed
3. Designate chapter tree ID experts to administer the ID protocols.	2001				Completed
4. Fill out missing information, including GIS data, on <u>Tree ID form</u> for <i>previously cataloged</i> trees, and transfer to database.	2001	X			20%
5. Fill out a <u>Tree ID form</u> for all <i>new</i> leads likely to be category 1, and submit with leaf-twig sample to chapter tree ID experts for positive ID	X	X	X	X	
6. Submit a grant for an intern to assist in items 4 & 5 and 9k below: Urban Forestry	X				Completed
7. Expand tree database to include more trees in Western MA region		X	X	X	10%
8. Publicize search for blooming American chestnuts with annual press releases with a picture in late June and September each year (at time of blooming and at time of bur ripening), using newspaper listing for Massachusetts.		X	X	X	
9. Establish cooperative outreach with established field personnel to locate trees: <ul style="list-style-type: none"> <li>a. Mass Society of Conservation Biologists</li> <li>b. Mass Audubon</li> <li>c. Trustees of Reservations Personnel</li> <li>d. State Foresters</li> <li>e. MDC foresters</li> <li>f. Fisheries and Wildlife Personnel</li> <li>g. Utilities foresters: Mass Electric, and Western MA Electric</li> <li>h. Massachusetts Forestry Association</li> <li>i. Town Tree Wardens</li> <li>j. NEWFS Volunteers Corps and Staff</li> <li>k. Town Conservation Agents</li> <li>l. Nature Conservancy Personnel</li> <li>m. Harvard Forest Personnel</li> </ul>	WS FH  X AMM RVB RVB SC	FU FU AMM Intern FU WS RVB FU Intern AMM Intern			

**Goal 2 – Germplasm Preservation: Preserve, conserve, and propagate genetic material from all Priority 1, 2, 3, 4 populations throughout the state.**

	2002	2003	2004	2004
1. Conserve existing stands of native Massachusetts chestnuts with landowner education, agreement, and incentive.	X	X		
2. Implement Bio-Control Program using strategy of efficient use of mud-painting treatment & mud spraying to preserve blooming trees in conjunction with Dr. Tattar at U Mass. a. Establish production strategy for production and packaging of “Magic Mud” using <i>B. megaterium</i>	CZ			
3. Collect and propagate material from 1, 2 locations in the state, by the following methods: a. Collect seeds from <i>naturally pollinating</i> priority 1 and 2 populations	X			
b. Pollinate some Priority 2 <i>inaccessible</i> populations with catkins from other <i>nearby</i> MA natives to create an “expanded, naturally- pollinating” population, approximately 5 such sites per year..	Fall			
	Intern	July	July	July

**Goal 3 – Harvest viable native pure American Massachusetts chestnut seeds.**

1. Uses	Number
a. Distribution to members and public (as membership benefit): 200 per year.	200
b. Special public plantings and publicity: Arbor Day --- 100 per year	100
c. Controls within Advanced Breeding Regional Diversity Orchards: --- 100 per year	100
d. Eating --- 100 to 2000 per year	
Total numbers per year --- Goal for 2002	400

USES FOR Pure American SEEDS HARVESTED	2002		2003		2004	
	Pots	Nuts	Pots	Nuts	Pots	Nuts
Membership Incentive (2 seedlings per \$40 Membership, Case Estates Sale)	38	100				
Special, publicity		40				
Controls in Back Cross Orchards (6-8 per orchard)		40				
Totals	38	220				

**Goal 4 –A. Breed genetically diverse, blight-resistant American chestnuts based on the remaining populations of native Massachusetts trees, incorporating blight resistance from Chinese chestnut genes.** The core of our chapter support for TACF advanced breeding lies in our program to incorporate wider genetic diversity into the chestnut restoration program.

<b>Tasks: Pollinations &amp; Selections</b>	<b>Time Line</b>	<b>Target (with Actuals in Parentheses)</b>					
<b>BC3s Generation</b>		<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
1. Create at least 24 BC-3 lines based on Clapper source of blight resistance, by pollinating MA mother trees (one population for each “line”) with BC2 pollen from Meadowview. Harvest at least 80 viable seed from each line.	2001-2004	7 lines (Planted 002)	13 lines	8 lines	2 lines		
2. Create at least 20 BC-3 lines based on Graves source of resistance. As in A above.	2001-05	1 lines	2 lines	7 lines	6 lines		
3. Challenge BC-3 trees with blight and select for the next breeding generation.	2006-09						Lines 2001

<b>Tasks: Pollinations &amp; Selections</b>	<b>Time Line</b>	<b>Target</b>					
		<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
1. Challenge BC-3 trees with blight and select for the next breeding generation.	2006-09	Lines 2002	Lines 2003	Lines 2004			
2. Create second intercross generation of BC3F1 x BC3F1: BC3F2 generation	2007-11	Lines 2001	Lines 2002	Lines 2003	Lines 2004		
3. Challenge BC3F2s with blight and select for blight.	2009-13			Lines 2001	Lines 2002	Lines 2003	Lines 2004
4. Create third inter-cross generation: BC3F2 x BC3F2	2010-on				X	X	X

<b>Tasks: Pollinations &amp; Selections</b>	<b>Time Line (with Actuals in Parentheses)</b>						
<b>Controls: F1 Hybrids, and Chinese</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
1. Generate 100 – 200 Chinese X American and reciprocal cross per year		X					
2. Harvest 100 Chinese Controls per year		X					

**Goal 5: Establish a tree nurseries system in the Massachusetts to allow for American chestnut propagation.** Note: Orchards need to be manageable after planting by a single orchard manager, preferably with ongoing mowing assistance. The desirable site is therefore limited to 1 to 2 acres, depending on resources.

Tasks: Orchards	Time Line	Target (with Actuals in Parentheses)					
		2001	2002	2003	2004	2005	2006
1. Plant at least 24 Clapper-pollen lines in ABL plantations, with 2-4 lines per orchard, 8 orchards.	2002-2005	1 orchard	4 (4)	4 (1)	4		
2. Plant at least 20 Graves-pollen lines in ABL plantations, 2-4 lines per 1 acre, ~6 orchards total	2002-2005		1 (1)	3	4	2	
3. Inoculate for blight resistance and select	2006-10						X

Tasks: Regional Seed Orchard	Time Line	Targets					
		2007	2008	2009	2010	2011	2012
4. Create second intercross generation of BC3F1 x BC3F1: BC3F2 generation	2007-11	X	X	X	X		
5. In conjunction with TACF, establish NE regional seed orchard with professional management in order to: a. Grow out BC3F2 generation b. Challenge BC3F2s with blight and select for blight c. Create third inter-cross generation: BC3F2 x BC3F2	2006  Long Term Long Term						

Summary Orchard General Tasks:	
1. Establish one-acre to two sites for BC3 nuts from 24 Clapper lines and for 20 Graves lines, with 2-4 lines per orchard	~12 orchards by 2005
a. Planting Strategy developed for efficient use of personnel and materials	Fall 2001
b. Planting Manual developed and approved by Board.	Winter 2002
c. Maintenance: Orchard manager and crew established for each site.	ongoing
2. Establish Orchard Database Management Program	MN 2002
3. Develop Future Orchards using Cooperative Land Arrangements	ongoing
a. Coordination with land-trust and state land programs to develop future orchards: TTOR, SVT, Town Land Trusts, DEM, State Institutions	ongoing
b. Approach MA Independent School Association about ecological project with orchard plantings	ongoing

**Goal 6-- Introduce blight-resistant American chestnuts into Massachusetts forests in an ecologically acceptable manner.**

Reforestation Tasks	Long Term
1. Discuss plantation and reforestation scenarios with national TACF and cooperating natural resources groups in MA: <ul style="list-style-type: none"> <li>a. State Forest System</li> <li>b. MDC</li> <li>c. Private and Town Land Trusts</li> <li>d. NEWFS</li> <li>e. TTOR</li> <li>f. The Nature Conservancy</li> </ul>	
2. Research ecological impact of re-introduction of the American chestnut into Massachusetts forests through: <ul style="list-style-type: none"> <li>a. Adopting methods from the ongoing research on reforestation strategy with National TACF.</li> </ul>	
3. Develop cooperative arrangements with University or College ecology departments, forest products industries, and environmental organizations within Massachusetts, and develop grant support for out-planting phase. Develop list of such organizations in 2002 and begin contacts.	

**Goal 7: Develop affiliations with important “end-users” of blight resistant chestnuts stocks, both in the forestry industry and in the state conservation community, and share information and resources with other organizations with common goals.** It is important to recognize that the program of reforestation requires active participation of public and private foundations, beyond individual landowner participation, and these organizations need involvement by the seed orchard phase.

	Time Line
1. Work closely with national TACF to release 6 <sup>th</sup> generation of ABL program into public domain	Ongoing
2. Establish seed orchard professional managers.	2006

**Goal 8: Diversify and strengthen our board and the leadership it provides, including expanding academic and plant breeding representation on our board.** This goal requires that we continue to define specific functional roles and develop additional volunteer resources for Board-defined tasks.

Role and Staffing	Target			Resource Need
	2002	2003	2004	
1. Recruit expertise in Plant Breeding for board or in advisory capacity.	Harvard Forest			
2. Develop list of MA Chapter functional roles and staff roles	2002			
a. Field Operations Coordinator (Coordinator for Pollinations & ABL Orchards)		X	X	Cell Phone, Truck
b. Recruit Regional or County Coordinators				
c. Orchard Database Manager	MN			Computer
d. Tree Identification	AMM	AMM	AMM	Microscope
e. Tree Inventory Database Manager	AMM	AMM	AMM	Computer
f. Web site administrator	AMM	FH		Computer
g. Newsletter Publisher Newsletter Editors (Spring Issue), Fall Issue	SC			
h. Orchard Managers: Current: BS, JE, JG, AMM/TD, MN, SC/GC, CZ	BS, JE, JG, TD MN, GC, CZ	Need 4-6		
i. Pollination Coordinator (with Meadowview)	AMM	Needed		
j. Tree Pollinators for BC3s (Bucket Truck, Climbers) Needed: 12-15 person each year, one for each 1-2 trees 2001:RVB, AMM, SC, JE 2002:RVB, AMM, SC, JE, GS, DH, JG, BT, CZ	2002: need 12-15 total	Need 15	Need 15	Bucket Trucks Ladders
k. Grant writer	GJ			
l. Accountant-Bookkeeper-Purchasing Agent	AMM	AMM	?	
m. Public Relations: prepares press releases on regular schedule	SC			
n. Calendar Manager: Establishes yearly calendar of events & presentations at for each year, and staff each one with volunteers	X			
o. Membership Database Manager: maintains Stats and mailing list	GC			
p. Membership & Contribution Manager (FU & Thanks)	SG			
4. Professional development for Board Members	CZ			
a. Attend TACF annual meeting	Board Members			
b. Attend conferences, workshops, and symposia related to chestnuts, blight, ecological restoration, etc.	Board Members			

**Goal 9: Educate members and the public about the American chestnut tree and increase awareness of and visibility for our organization.**

Education Activities	Time Line			
	2001	2002	2003	2004
1. Establish & Publish Newsletter in April and September each year.	Completed	Ongoing		
2. Sponsor annual lecture on chestnut research at Annual Meeting (2000: Dr. Anagnostakis)	Dr. Tattar	Dr. Paillet		
3. Establish Speakers Program, and solicit presentation slots		X		
4. Establish two TACF 2x3 tripods signs per year	Tower Hill	WDC, Moore St. Park		
5. Make scheduled press releases				
a. Publicize pollination successes with reporters to site		X		
b. Publicize orchard locations and planting opportunities		X		

**Goal 10-- Keep current members and secure new ones.**

	2002	2003	Target
1. Share mail list other local organizations with similar goals: Wild Turkey Federation, Ruffed Grouse Society, Sports Clubs		X	
2. Update a National Membership letter with MA specific information			
3. Develop membership growth goals for regular members: net positive x% per year in category of Regular or >.			
a. Maintain information brochures at all TACF signs sites.			
b. Develop membership incentive & recruitment program: 2 MA American chestnuts or container of Magic Mud for each membership at regular level or above	Mass Horticultural Fair, July Case Estates Sale, September		10 members 20 members
c. Improve recruitment via website, with revision of membership form	PA-TACF contacted.		10 members
4. Continue to analyze and collect information about retention of members.	GC, SG.		
a. Improve retention from ~20% loss to 10% loss.			

**Goal 11 -- Develop funds and acquire assets from a variety of sources.**

1. Adopt Strategic Plan.	April 2002
2. Staff TACFMA Fundraising Committee	Spring 2002
3. Develop funding strategy with specific grant goals for each year	Spring 2002
4. Identify target funding sources:	Winter 2002
a. Mass Urban Forestry Committee: Internship	Received Spring 2002
b. Sudbury Foundation: Tree funding and Orchard support, Education Support	Yearly
c. New England Forestry Foundation: Regional Field Coordinator Grant	2002
d. The Mount Grace Land Conservation Trust Arboretum	Written to: 2002
5. Develop annual schedule of source solicitation: Sportsmen's Clubs.	2002
6. Improve Website and post to search engines	Done: Spring 2002

**Goal 12: Disseminate scientific knowledge by promoting research, and fostering science-based learning, including at the elementary and secondary level.**

Task	2002	2003	2004
1. Develop partnerships with University and College graduate programs			
a. Produce and Utilize mud-painting product with Bacillus Megaterium per Dr. Tattar's protocol and collect results.	2002		
2. Sponsor undergraduate and post-graduate research internships	Done 2002	X	
3. Disseminate research results from TACF sources	ongoing		