

SUMMARY OF FACILITATED WORKSHOP ON RESTORATION OF CHESTNUT TO NATIONAL PARK SYSTEM LANDS

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Part of the goal of this conference was to develop a common understanding among participants of directions for American chestnut restoration programs on lands managed by the National Park Service (NPS), the principal sponsor of the conference. To achieve that goal, the third day was devoted to a facilitated workshop on this topic. Specifically, participants performed a guided SWOT (strengths, weaknesses, opportunities, and threats) analysis of the merits of NPS participation in the restoration of American chestnut given available technologies (including genetic technologies), existing knowledge of the ecological context of chestnut restoration, and likely regulatory and social dimensions of pursuing restoration using technologies available now or in the foreseeable future.

Strengths and weaknesses are internal issues, in this case the advantages or disadvantages that NPS would have as a participant or player in chestnut restoration. For these two discussion points, the focus was the organization itself relative to its role in reintroducing the chestnut. Opportunities and threats were defined as existing or potential conditions, external to the NPS, that might influence decisions to participate in restoration of chestnut. Opportunities and threats could include economic, ecological, and social influences, including the current state of knowledge and technology regarding chestnut restoration. Depending upon context, the same item can be regarded as either an opportunity or a threat.

Each participant was assigned to one of four groups for preliminary discussion of issues. Forty-two persons participated in this exercise (Table 1). Each group met in turn to consider the strengths, weaknesses, opportunities, and threats of NPS participation in the restoration of the American chestnut, and all participants reassembled after each session to report group lists. Following this, the lists were simplified by combining similar items, and each participant was asked to cast three votes for the most important item(s) in each of the four SWOT categories (a participant could place one vote on three items or use two or all three votes for a single item). The results of the voting are shown in Tables 2 through 5 for items that received two or more votes.

NPS strengths related to the restoration of American chestnut (Table 2) are predominantly associated with the size and history of the agency and its archival resources, reputation and appeal to the general public, land ownership and tenure, and effectiveness at educating the public. The preservationist mission of the NPS is also seen as an advantage in this context, and the federal “red tape” surrounding the implementation of NEPA (National Environmental Policy Act) regulations is seen as a safeguard against mistakes. The diversity of parks and their missions, and the relative autonomy of individual parks, were highlighted repeatedly as unusual for a large federal agency and regarded as potential strengths.

But many of the strengths of NPS were also cited as weaknesses when viewed in another light or by different participants (Table 3). In fact, the last-cited strength – park autonomy and diversity of missions – received the most votes as a weakness because autonomy can lead to poor coordination and inconsistency in policy, practice, and priority. Not surprisingly, insufficient or inconsistent funding (both intramural and extramural) received a large number of votes as a weakness (when is this not true?). Most of the remaining votes went to the existence of policies and cultural attitudes that stand in the way of applying new (or old) technologies to chestnut restoration. There was a lot of support for the idea that the

lack of a long-term NPS plan or policy is an impediment to pursuing initiatives like chestnut restoration. Of course, the principal reason for the workshop was to help formulate plans and policy.

Chestnut restoration seemed to be viewed as a good thing by most participants (Table 4). The potential emergence of new technologies and blight-resistant varieties was seen as an opportunity that the NPS, given its unique and significant role as a major land steward within the American chestnut native range, should pursue. Chestnut restoration was seen as probably ecologically beneficial to the forests managed by NPS, but participation in restoration was also seen as beneficial to the agency itself through the engenderment of public support, the furtherance of useful partnerships outside the agency, the enhancement of educational programs, and (more obliquely) the opportunity to sharpen NPS policy by focusing on a model species.

Most threats emphasized by participants (Table 5) seemed to arise from what could be called “the prudent exercise of extreme caution” rather than from actual knowledge of risks. Participants focused on unknown ecosystem effects arising directly from chestnut restoration (whether using transformed or hybrid material), the possibility of failure due to breakdown of resistance or the emergence of new diseases, and the unknown consequences of the changes that have occurred in the forest over the past 70 years and may occur over the next century. Also cited was the possibility that NEPA and other legal and regulatory issues could lead to a quagmire before restoration could even begin.

Workshop participants appeared to believe that NPS should at least articulate policy and at best actively participate in the restoration of chestnut in view of the NPS mission and its ownership of significant tracts within the original chestnut habitat, and also the fact that technologies may soon be available to actually achieve this long-sought goal. Clear policy or at least policy guidelines would alleviate the principal NPS weakness identified by participants – an inconsistency in policies and priorities among parks. Surprisingly, a significant number of participants (influential in the vote tally) seemed less interested in the potential ecological benefits of restoring this keystone species than in the unknown risks associated with non-native genetic material and possible perturbation to forest ecosystems that are, if not stable, at least reasonably robust after recovering from the loss of chestnut. This outcome seems to reflect a “desire to understand everything before doing anything” as identified in Table 3. The consensus appeared to be that chestnut restoration is a “high-gain” pursuit. Whether it is a “low-risk, high-gain” or a “high-risk, high-gain” pursuit remains unresolved by this workshop. The other papers in these proceedings may help answer that question.

Table 1. Participants in the facilitated workshop (**M** indicates the designated moderator).

Group 1	Group 2	Group 3	Group 4
Kim Steiner, M	John Carlson, M	Paul Sisco, M	Tim Phelps, M
Bill Lellis	Jim Sherald	Ray Albright	John Karish
Jenny Beeler	Brian Carlstrom	Jennifer Lee	Kristen Allen
Larry Hilaire	John Perez	Jennifer Hewitt	Michele Webber
Becky Loncosky	James Voigt	Chris McNeilly	Tom Blount
Mark DePoy	Greg Eckert	Mary Willeford Bair	Kent Schwarzkopf
Paul Berrang	Joe James	Ries Collier	Matt Diskin
Tom Kubisiak	Fred Hebard	Scott Schlarbaum	Sharon Friedman
Phil Pritchard	Albert Meier	Songlin Fei	Benji Cornett
Bill Powell	Peter Gould	John Bellemore	Sara Fitzsimmons
Dave Loftis	Will McWilliams		

Table 2. “Strength” items relating to NPS involvement in chestnut restoration that received multiple votes from participants.

Votes	Description
14	The NPS has a great deal of ecological data and information regarding the natural resources of national parks.
13	The NPS has a great deal of appeal and goodwill within the American public.
9	The NPS manages a large number of parks throughout the natural range of American chestnut.
9	NPS land ownership is long-term.
7	The NPS does well at outreach and public education.
7	Much of what remains of the natural genetic diversity of American chestnut is represented within national park lands.
7	NEPA implementation in the NPS provides a deliberative mechanism for environmental decision-making.
5	The diversity of parks and their missions within the NPS offers a variety of venues by which restoration can be approached.
5	Restoration and control of exotic species (like chestnut blight) have broad public appeal.
4	NPS lands are refugia against commercial exploitation.
4	The relative autonomy of individual units creates opportunities for many approaches and experimentation.

Table 3. “Weakness” items relating to NPS involvement in chestnut restoration that received multiple votes from participants.

Votes	Description
20	Individual units tend to operate rather independently, with resulting inconsistency, poor coordination, and variation in policy and priorities.
13	Funding is inconsistent and budgets and staffs tend to be small.
8	Competitive funding is uncertain and tends to support only projects in the 1-3 year range.
8	The NPS has no clear long-term plan that addresses issues like chestnut restoration.
7	Existing policies may stand in the way.
6	Private, proprietary rights to blight-resistant chestnut material could be an issue with the NPS.
5	The NPS can have a preservationist mindset that slows action, especially the desire to understand everything before doing anything.
4	Deer control is usually inadequate within national parks, and this could be an impediment to planting trees.
4	There is a perception within the NPS that manipulation is against regulations or at least discouraged.
3	Our inability to define "natural" stands in the way of defining management goals.
3	The NPS has had a history of poor cooperation with the USFS.
2	Staff and expertise are lacking for large-scale, landscape restoration.
2	NPS planning tends to be lengthy and cumbersome.

Table 4. “Opportunity” items relating to NPS involvement in chestnut restoration that received multiple votes from participants.

Votes	Description
18	New technologies and blight-resistant chestnut seed to enable restoration may be available soon.
16	As a large landowner, NPS can be a major participant in large-scale restoration.
8	Public (e.g., USFS) and private (e.g., landowners) cooperators are available for this work and offer opportunities not only for leveraging resources but also extending partnerships.
7	Chestnut restoration can enhance ecological integrity and stability of parks.
7	Now is a good time and chestnut is a good species for developing a policy model for species restoration.
7	Participation in chestnut restoration would play on public enthusiasm and engender support for the NPS.
6	Chestnut was a keystone species, and its restoration would have secondary benefits.
4	The chestnut story is a good vehicle for education about natural resources, exotics, and many other issues.
3	There is plenty of time to act on this issue so we can do so with all due deliberation.
3	Chestnut could be a replacement for other declining species.
2	Chestnut has characteristics duplicated by no other tree species, and it may be more adaptive to possible future changes in the environment such as climate change and air pollution.
2	Chestnut restoration has a social as well as a biological dimension.
2	Chestnut restoration could be the environmental success story of the 21st century.

Table 5. “Threat” items relating to NPS involvement in chestnut restoration that received multiple votes from participants.

Votes	Description
21	Restoration could have unknown negative ecosystem effects such as the inadvertent spread of pests, displacement of species, and even displacement of native chestnut.
14	Some may object to the use of GMOs or backcross hybrid trees to restore a native species.
11	Resistance could break down in time as the fungal pathogen evolves.
10	NEPA and other legal and regulatory issues could lead to a quagmire.
7	Other diseases and pests could ruin our efforts to restore chestnut, and other exotic pests could prove to be as ecologically devastating as chestnut blight.
6	There is a possibility of failure following expensive and widely publicized efforts.
5	Environmental changes since the 1930's (sudden oak death, air pollution, climate change, etc.) may mean that the forests are not the same as what chestnut disappeared from.
4	NPS has no control over adjacent lands.
3	It is difficult to plan for a moving target (state of the forest ecosystem) 100 years from now.
3	Institutional fatigue can be disastrous to long-term projects.
2	Our scientific knowledge of this subject is incomplete.