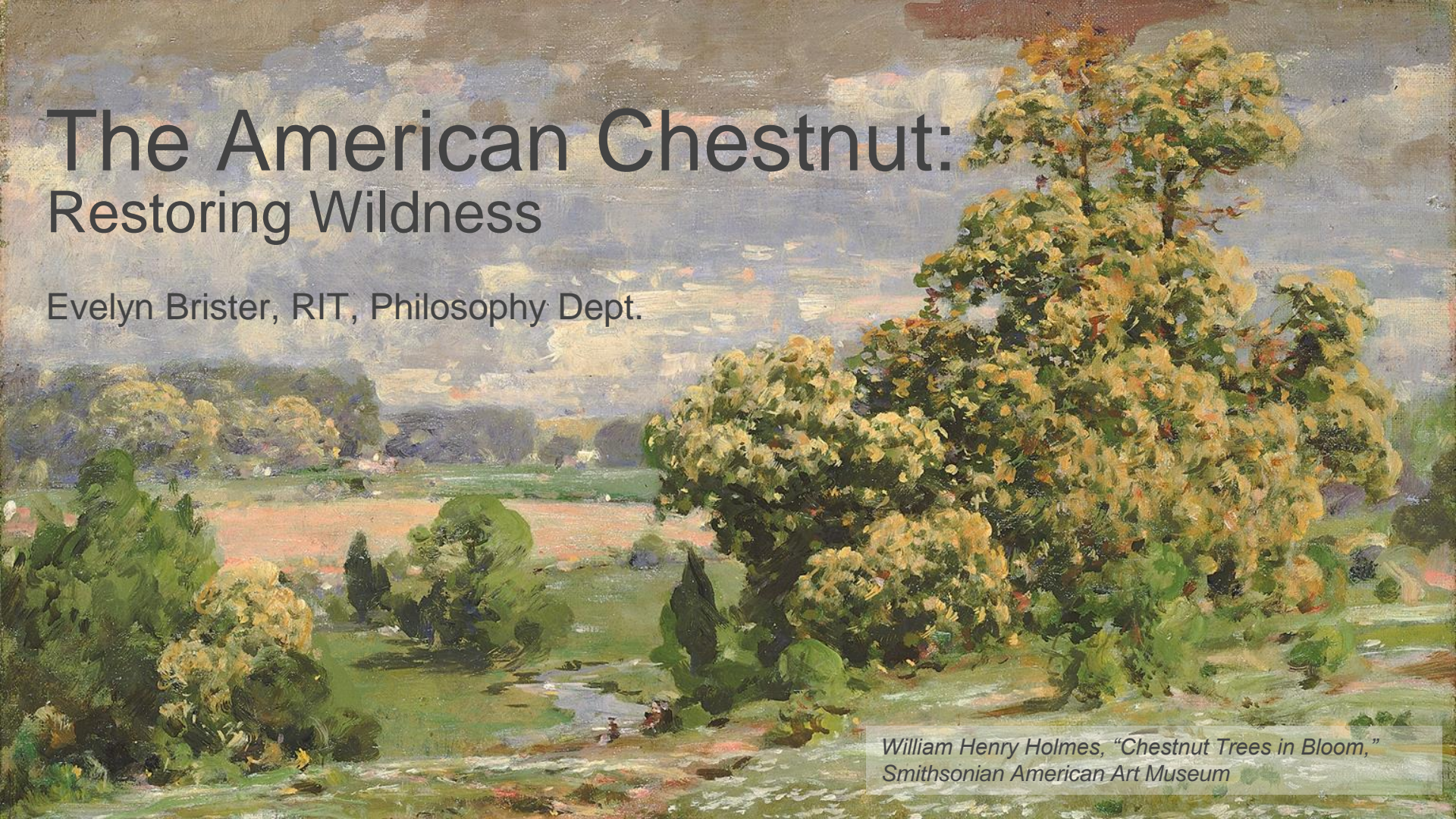


The American Chestnut: Restoring Wildness

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*William Henry Holmes, "Chestnut Trees in Bloom,"
Smithsonian American Art Museum*

Why restore the American chestnut?

- Causes of loss
- Options for restoration
- Wildness as a goal
- Moral repair as an expectation



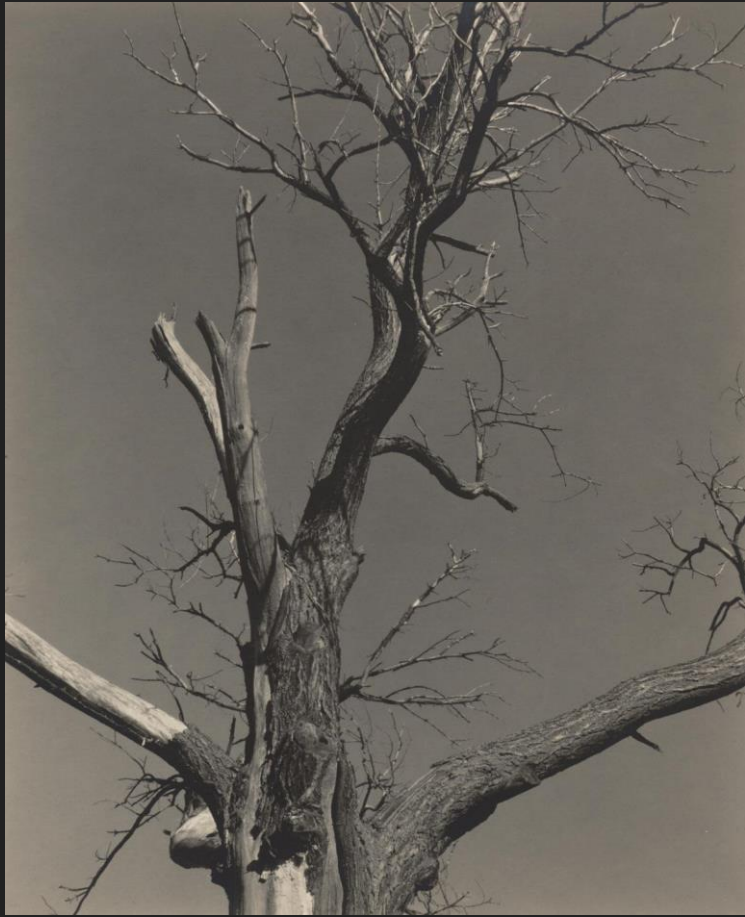
The nature of the threat

- “Ink disease” (*Phytophthora*) weakened the chestnut population in the 1800’s
- Chestnut blight (*Cryphonectria parasitica*) imported from Asia before 1904
- ~3.5 billion trees infected and killed (1904-1940)
- Crossbreeding attempted (1980-present)
- Darling 58 GM variety created (2020)

Surviving trees are protected, bred, and pollinated by conservation efforts



1924, Georgia O'Keefe, "The Chestnut Tree - Red",
Kemper Museum of Contemporary Art



Alfred Stieglitz, "Dead Chestnut Tree," 1927,
National Gallery of Art

Options for restoration

- Traditional conservation techniques focus on conserving genetic material from legacy trees, attempting to identify natural resistance, and interbreeding within populations
- Traditional techniques may prevent extinction but are insufficient to restore chestnuts to the forest.
- The genetically modified Darling 58 chestnut variety allows trees to better defend themselves against blight damage.

What are the moral concerns and motivations?

- Would releasing a bioengineered tree variety make the forest less **natural**? Less **wild**?
- Are scientists and engineers able to manage ecosystem **risks**?
- Does restoration adopt a properly respectful, cooperative, and **humble attitude** toward nature?



SUNY-ESF American Chestnut Research & Restoration Project

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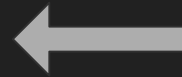


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These are all examples of human impacts on “natural” conditions

With regard to introduced species and pests:

“What people are not seeing is that this is already a genetically modified environment.”

~ Mark Tizard, Australian Centre for Disease Preparedness

Is biotech compatible with wildness?

Several possible conceptions of **wildness** (Palmer 2016):

- organisms that are **independent**: they do not rely on humans for their reproduction or wellbeing
- organisms that are **autonomous**: they are free from human control and manipulation, able to “do their own thing”
- organisms that have **not been altered** by humans
- places that are **historically unaffected** by human actions
- places with a **composition of species** that precedes human influence
- places that are experienced by humans as **feeling** beyond human control or prediction



Restoration and Arrogance

“Are we being arrogant in thinking we can fix nature?”



Arrogance as a belief

“Humans think they’re in control and nothing can go wrong”

- Fears of unintended consequences motivate careful action, but inaction may cause more harm than good
- Response: targeted research
- Response: risk management, such as phased introduction and monitoring

Arrogance as a vice

“Humans aren’t concerned about dominating nature”

- Fear 1: selfish intentions
- Fear 2: creating a culture of rash, uncaring action
- Not assuaged by additional research

Restoration and Arrogance: Good Intentions?

- Framing questions in terms of virtue and vice leads us to discuss intent— projects undertaken for the sake of nature and of future human generations.
- Is the proposed GM tree a benefit from the perspective of humans only or also from the perspective of the trees? What is the full context of what has been tried?
- We should avoid paralysis in order to restore species and reverse the trend of species loss.



Restoration and Arrogance: Hubris and Culture

“Being too arrogant now will create a culture of arrogance.
We'll just keep hurting the planet.”

- Are we already in a culture of arrogance?
- Engaging with this culture may mean working to solve problems at the same time as raising awareness to prevent future problems.
- Taking responsibility includes repairing harms, preventing future harms, and building a community of care.

