



On January 20, 2010, the Stop GE Trees Campaign issued a letter calling for opposition to ArborGen’s request for a permit to cover flowering of its Freeze Tolerant Eucalyptus. In the call to action, campaign leaders made several inaccurate statements that ArborGen would like to correct. Most notably, ArborGen would like to clarify misinformation about the invasiveness, water consumption, and alleged contamination and fire risks that the trees pose. The following are myths shared by the Stop GE Trees Campaign, and the facts from the scientists who have grown and studied these trees for many decades.

- **ArborGen’s Freeze Tolerant Eucalyptus trees are going through comprehensive testing in cooperation with USDA/APHIS. This research develops technologies that provide solutions to issues such as climate change and global hunger.**

Myth: APHIS failed to conduct and prepare an Environmental Impact Statement (EIS) to comprehensively address all relevant issues related to the proposed GE Eucalyptus field trials.

Fact: APHIS conducted an Environmental Assessment and concluded a “finding of no significant impact,” which has been the acceptable standard for more than 20 years of developing biotech crops. USDA/APHIS will continue to use scientific rigor and to comply with federal laws and regulations concerning requests for field trial permits for the planting of biotech trees.

Environmental groups continue to push for the far more expensive and time consuming environmental impact statements as a means of delaying approval and thwarting technological innovations to which they are ideologically opposed.

Myth: The GE Eucalyptus field trials should be ended and the trees destroyed before it is too late.

Fact: As the human population grows, the need for renewable sources of wood, fiber and energy becomes important to meet the needs of society. Planting trees that can address these needs are one of the solutions that also helps enable the conservation of our natural resources.

Failure to conduct this research will hamper a technology that could provide solutions to climate change and global hunger. The arguments of groups like Stop GE Trees have been categorized by Dr. Nina Fedoroff, chief science advisor to Secretary of State Hillary Clinton as “tragically bad.” “In 30 years of laboratory tests and 15 years' commercial production ‘nobody has documented so much as a headache’. How many more decades of testing do you want?” asked Dr. Fedoroff.

Highly productive trees, such as the Eucalyptus hybrid that is the subject of the EA, can produce more wood on a smaller footprint, lessening the need to harvest from wild stands of trees. ArborGen’s field trial must be allowed to grow to continue the valuable research



on the freeze tolerance and commercialization of this economically valuable tree. Biotechnology is a critical component in understanding our trees and plants and finding ways to help increase their productivity to meet society's needs, survive attacks by devastating pests and diseases, and cope with new emerging stresses created by global warming.

➤ **ArborGen's Freeze Tolerant Eucalyptus Trees do not present risks of expanding the range of this GE hybrid or colonizing native systems.**

Myth: Eucalyptus species are introduced organisms in the U.S. and grow well in certain warm climates such as in parts of California and Florida. The cold tolerance trait, if it is expressed as ArborGen intends, will vastly expand the range of this GE Eucalyptus hybrid.

Fact: The cold tolerant trait expressed in ArborGen Freeze Tolerant Eucalyptus does expand the range of freeze tolerance but this is still quite limited. Significant damage occurs to these trees at or below 17 degrees Fahrenheit. Because of this limiting factor, Freeze Tolerant Eucalyptus will only be suitable for planting regions close to the gulf coast. The field trials that are the subject of the Environmental Assessment are planted only in seven states in the Southeastern U.S.

Myth: Escape of GE cold tolerant Eucalyptus hybrids through seeds and vegetative plant material are quite likely due to severe wind and rain events which APHIS failed to assess in the EA.

Fact: ArborGen Freeze Tolerant Eucalyptus is highly unlikely to escape through seeds and vegetative material. The hybrid Eucalyptus which is the subject of this environmental assessment produces low amounts of seed and does not naturally propagate vegetatively. It is well understood in the scientific literature that Eucalyptus, in general, does NOT spread via vegetative plant material.

Even in the event that seed could be produced they are unlikely to survive for the following reasons:

- The seed from any Eucalyptus tree has a very tough time competing with other plants, which is why most Eucalyptus is grown from rooted plants.
- Even when using rooted plants, weed control is recommended for several months after planting to give the delicate young trees a chance to get established.
- The seed is tiny and must be in full contact with a bare mineral soil in full sunlight with suitable soil moisture in order to germinate.
- Conditions have to be just about perfect and that rarely occurs, so natural germination is exceptionally low.
- Finally, any seed produced would likely be self-pollinated seed, known to be of very poor vigor and therefore even less likely to compete or survive.



Myth: In other countries where Eucalyptus have been introduced, they are well known for escaping and colonizing native ecosystems.

Fact: Eucalyptus species are among the most widely planted forest trees worldwide with approximately eight million acres planted in Brazil alone. The fact that Eucalyptus, which is not native to Brazil, is not considered invasive in Brazil indicates that such volunteers are either so insignificant, or so easily managed as to be no concern whatsoever.

Eucalyptus has been planted on thousands of acres in southern Florida for decades and not been seen to be invasive there. Given the experience in both Florida and Brazil, there is no compelling evidence that Eucalyptus is, or is likely to become invasive in the southeastern United States.

Myth: Global warming and climate change will allow more extensive southern and southeast regions of the U.S. to have weather patterns conducive to the introduction and propagation of escaped GE Eucalyptus hybrids. These concerns were not adequately addressed in the EA.

Fact: The EA clearly stated that the government concluded that there was no significant impact from the ArborGen Freeze Tolerant Eucalyptus after considering environmental impacts associated with flowering, seed production and vegetative reproduction. As mentioned above, the Eucalyptus hybrid that is the subject of the EA reproduces relatively poorly via seed and does not naturally vegetatively propagate.

Myth: With recent federal court decisions on genetically engineered perennial organisms like the GE bentgrass and GE alfalfa, for example, there is a growing legal foundation around the potential escape of perennial GE organisms even in field trials.

Fact: Decisions out of the U.S. 9th District Court have been precautionary in nature and do not support the United States leadership position in biotechnology. Cases that have been overturned at the 9th District Court were based not on any safety concerns, but on the presumption of harm to other markets, notably those who are producing organic crops. With more than two billion acres of biotech crops planted around the world in the past 12 years (ISAAA, 2008), there hasn't been a single documented, science-based negative health or environmental impact. The ideological arguments posed by these organic groups will be debated at the Supreme Court later this year.

Myth: The fatal fungal pathogen, *Cryptococcus gattii* has been found in the U.S. It can cause fatal fungal meningitis among people and animals that inhale its spores. One of the Eucalyptus species used in the GE Eucalyptus hybrids (*E. grandis*) is a known host for *Cryptococcus gattii*. Creating extensive habitat for this fatal fungal pathogen is dangerous and foolhardy. These concerns were not adequately addressed in the EA.

Fact: *C. gattii* is already present in North America. Its presence and documented human infections have not been associated with Eucalyptus but with native tree species. It is also unlikely that the Eucalyptus hybrid that is the subject of the

proposed field releases can be a source that might introduce the pathogen into the U.S. All the trees planted originated from sterile tissue culture lines that have been grown in the laboratory for many years free from any fungal contamination, and are not known to be a source of the *C. gattii* spores. Once again, the Environmental Assessment considered this information and issued a finding of no significant impact.

- **ArborGen’s Freeze Tolerant Eucalyptus Trees do not create a significant negative impact on the land around them.**

Myth: The U.S. Forest Service has stated that eucalyptus plantations lower water tables, and affect groundwater recharge and local stream flows, in some cases eliminating seasonal streams. Since the approval of 330 acres of field trials appears poised to facilitate deregulation of these Eucalyptus hybrids, much more extensive study of groundwater impacts is essential, especially in light of existing drought conditions in parts of the South.

Fact: The U.S. government’s EA indicates that no significant negative impact is expected from the proposed 330 acres of Eucalyptus research trials. Eucalyptus has been planted widely around the world – some 35 million acres estimated worldwide¹ – but only under certain circumstances have hydrology problems been reported. In these instances where hydrology impacts are an issue, Eucalyptus is allowed to be grown under conditions that mitigate any negative impact on hydrology.

Myth: Additionally, Eucalyptus trees, with deep tap roots, use very large quantities of water. They have been documented to severely deplete ground water and cause or exacerbate drought situations. These concerns were not adequately addressed in the EA.

Fact: The environmental assessment ruled – based on science – that there were no significant findings of negative impact from ArborGen Freeze Tolerant Eucalyptus. The Stop GE Trees Campaign call for an environmental impact study is a tactic designed to delay the development of technology on an ideological basis.

- **ArborGen’s Freeze Tolerant Eucalyptus Trees do not pose a greater risk for fire than other trees and will be subjected to fire control methods and forest management as other species.**

Myth: In regions where droughts occur, Eucalyptus is known to be at high risk of catching fire. Wildfires in Eucalyptus groves in Australia this year, which were worsened by a drought, killed 173 people. Some regions of the Southern U.S. are currently in the midst of such a drought.

¹ FAO 2007. State of the World’s Forests. This report estimated 180 million hectares of planted forests in 2005, with Eucalyptus representing approximately eight percent of this, equivalent to 14.4 million hectares or approximately 35 million acres.



Fact: In forested regions where drought occurs and the understory is not properly managed, there is a high risk of wildfire for all species of trees. Wildfire has been just as much of a problem with native trees in the U.S. as in Australia. With the existing forests, the key fire control is to incorporate methods of managing our forest lands to prevent spread of fire during periods of drought. These same methods of reducing the risk of fires would be applied to Eucalyptus plantings.