

## Responsible Use: Forest Biotechnology Principles

*An initiative of the Institute of Forest Biotechnology to protect the future of our forests*

The Responsible Use initiative will help protect the future of our forests. The Institute of Forest Biotechnology\* (IFB) will manage the development of principles for biotech trees by working with outside stakeholders, Initiative Sponsors, and Forest Biotechnology Partners.

Biotechnology is a powerful tool being used to grow trees with special characteristics. When used responsibly, society and the environment can benefit from these technologies, such as genetic modification, to improve forest health and grow more fiber on less land. Currently, there are no internationally applicable principles that can ensure the long-term stewardship of biotech trees. Sustainable forest management schemes, government regulatory mechanisms, and voluntary programs all need these principles to protect the future of our forests.

Three genetically modified tree species; papaya, plum, and poplar, have legally been planted in the U.S. and China. An unprecedented amount of resources are going into biotech tree research to meet demands for cellulosic fuel production and protecting against invasive threats. The next five years will begin a revolution in forestry. Biotech trees will be planted extensively throughout the world to meet targeted social and environmental demands. However, there are currently no long-term principles guiding the stewardship of these trees. Society needs a mechanism to determine which uses of biotech trees will bring benefit, and which might cause harm. We must enhance the benefits of these trees while minimizing risks to protect the future of our forests.

### **Biotech Trees:**

The IFB defines biotech trees as those developed using asexual propagation (commonly known as cloning), or genetic engineering (also called genetic modification).

### **Science, Dialogue, and Stewardship:**

We need sustainably grown and harvested trees for communication, packaging, housing, food, and renewable energy. Yet the world does not have enough sustainably managed forests to fill all these needs. Instead, we have illegal logging, land being converted from forests to sprawling housing developments, and an onslaught of invasive threats damaging the health of our forests. Forest biotechnology is a powerful tool against these threats.

Everyone in the value chain, from biotech tree researchers, to the forest products industry, to consumers bear high risks if there is no set of Responsible Use Principles – whether they favor the use of biotech trees or not. For example, there is no doubt that these trees can economically produce large quantities of fiber. However, costs in the supply chain can be significant if consumers demand that biotech tree products be treated differently.

It is not a forgone conclusion that the use of biotech trees is sustainable - nor should it be today. Society has correctly identified forests as critically important to the well being of global ecosystems. The proliferation of sustainable forestry certification schemes shows that the public places a high value on the responsible management of natural resources. The Forest Stewardship Council (FSC) currently bans the use of genetically modified trees. This ban has serious consequences for organizations wishing to maintain FSC certification, and interested in growing more fiber on less land, or combating invasive threats with biotech trees. Outright bans should be expected if there continues to be no principles that guide long-term stewardship of biotech trees. Through science, dialogue, and stewardship the IFB will lead the development of these principles from a broad range of stakeholders.

**Initiative Scope:** These principles will complement regulations and help determine what are responsible versus irresponsible uses of biotech trees, based on stakeholder defined benefits and risks. The Responsible Use initiative:

- Is multi-stakeholder driven and based on science, dialogue, and stewardship.
- Will be developed in an international and highly transparent process\*.
- Spans the entire value chain of biotech trees with verifiable principles; from idea conception to product disposal.
- Will establish what uses of biotech trees are, and are not responsible.
- Can compliment sustainable forestry certification schemes, but is not a certification scheme itself and cannot be used in place of sustainable forestry practices.
- Is designed to evolve with the science of forest biotechnology, societal demands on trees, and sustainable resource management techniques.
- Will apply globally while initially addressing the first regions to use biotech trees.

Experts from academia, environmental organizations, the forest products industry, and government agencies will participate in creating the principles. They will be robust and structured so organizations can verify their adherence to the guidelines, but no certification mechanism is planned in this scope.

**Process and Management:** This initiative will be managed and produced by the Institute of Forest Biotechnology. An Implementation Committee will assimilate information from stakeholders and the general public in a strong bottom-up driven process. Experts for this committee will be drawn from every continent in the fields of; academia, tree growers and users, public interest, environmental, and government. Initiative Sponsors and Forest Biotechnology Partners\* will also play a significant roles in the course of this initiative. These initiative managers will guide the process through strategic planning, guideline development,

We are soliciting Implementation Committee members to play a central role in the development of the Responsible Use initiative. Please visit the Responsible Use website or contact the IFB for additional information on how to apply.

and real-world testing. The final set of principles will be launched in as little as two years accompanying a management framework for the ongoing improvement of the initiative.

**Contact:**

Please contact us for additional information, ways to sponsor this initiative, stakeholder engagement opportunities, or if you have ideas on ways to strengthen the guidelines.

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\* *Additional resources available online:*

Institute of Forest Biotechnology website:  
Responsible Use website:  
Forest Biotechnology Partnership:

[www.forestbiotech.org](http://www.forestbiotech.org)  
[www.responsibleuse.org](http://www.responsibleuse.org)  
[www.partners.forestbiotech.org](http://www.partners.forestbiotech.org)

## Stewardship Based on Science - Driven by Dialogue

The Institute supports the responsible use of biotechnology in forest trees. We advance the societal, environmental, and economic benefits biotechnology can bring to forests around the world. The Institute of Forest Biotechnology (IFB) is the only non-profit organization to address the sustainability of forest biotechnology on a global scale.

Our forests are under pressure from global trade, population growth, invasive threats, and increased demands on natural resources. When used responsibly, biotechnology can be a powerful tool to combat the damaging effects invasive pests and a changing climate has on our forests. The technology can also be used to balance the demands people place on forests. The IFB is focused on accelerating the benefits to society and the environment, while addressing the risks in this burgeoning field.

### How can the responsible use of forest biotechnology benefit society?

- **Improve biofuels:** Forest fuels are some of the most renewable biofuels on earth. Biotechnology can increase the efficiency of producing forest fuels.
  - **Fight a changing climate:** Advanced trees can withstand weather extremes and sequester more carbon to reduce atmospheric greenhouse gas concentrations.
  - **Protect species:** Diseases have destroyed the America Chestnut, the Elm, and many other trees. Biotechnology can bring trees back to forest ecosystems.
  - **Conserve land:** From growing more wood on less land, to rehabilitating degraded soils, forest biotechnology is a powerful tool to conserve land.
  - **Grow more wood:** Trees provide sustainable products for society. The responsible use of biotechnology can more than double wood production, and improve wood quality.
  - **Make forests healthier:** Biodiversity is an important measure of an ecosystem's health. Biotechnologies can maintain diverse populations in a changing landscape.
  - **Clean up after us:** Human development has put hazardous material in the environment. Trees can be engineered to absorb toxic substances for safe disposal.
- The IFB dialogue to make sure positive aspects of forest biotechnology can be realized and any detrimental aspects are addressed. Our process is transparent and includes a wide range of stakeholders from academia, environmental organizations, public interest groups, industry, and government agencies.

The IFB has five Initiatives based on the platforms of science, dialogue, and stewardship:

- **Responsible Use™:** Forest Biotechnology Guidelines
- **Forest Fuels™:** Maximum, sustainable, potential of liquid fuels from trees
- **Pine Genome:** Decoding pines for vital forests
- **Heritage Trees™:** Species Protection through biotechnology
- **Addressing Forest Biotechnology Concerns:** Dialogue on ecological and social issues

Our success is a result of our Partners, Sponsors, and Board of Directors. The IFB is expanding globally where forestry plays a critical role in society and the environment. Together, we will bring science, dialogue, and stewardship to forest biotechnology. Please visit our website, [www.forestbiotech.org](http://www.forestbiotech.org) or contact us for additional information.

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### Initiative Sponsors:

**Randy Johnson, PhD**

National Program Leader Genetics Research: USDA  
Forest Service and Co-chair: Pine Genome Initiative

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### Forest Biotechnology Partners:

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ArborGen LLC: USA

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