

# **You can help ensure a proper plan for managing our tree seed resources under climate change:**

***Just take a few minutes to complete our survey!***

## **About climate change and tree seed resources ...**

Climate change presents many challenges to sustainable forest management: The long life of tree species and long rotation cycles mean that the effects of today's decisions can persist for a century or more. In addition, many of our tree species have large ranges, and the adaptive variation among populations compounds the complexity of making reforestation decisions based on an uncertain future climate.

Climate change is expected to cause more weather extremes and weather-related emergencies, such as drought, flood, and forest fires. Other impacts could include seed crop interruptions, forest health issues, and local climate changes, all of which add to current natural and artificial regeneration challenges.

## **How this conference will help ...**

On November 14-15, 2007, in Sault Ste. Marie, the Ontario Ministry of Natural Resources Climate Change Initiative and Forest Genetics Ontario are hosting a conference on ***Adapting to Climate Change: Managing Tree Seed in an Uncertain Climate*** (To register, go to [www.fgo.ca](http://www.fgo.ca)).

This conference will focus on seed movement and regulation tools (guidelines/zones), the science behind identifying and predicting patterns of adaptive variation response to climate change, the need to revise seed movement decision-making, and reforestation aspects of management planning under climate change. Conference goals are:

1. To build awareness about climate change and its potential impacts on the deployment of forest genetic resources, for example, seed transfer guidelines, seed source bulking, seed banking, and tree improvement strategies
2. To open a debate among those concerned about impacts of climate change on forest genetic resources
3. To develop a roadmap for future actions promoting adaptation of forests to future climate

## **By completing our survey, YOU can help the conference and our future plans succeed:**

**You can help ensure the success of this conference by giving organizers and speakers more insight into how people think about and are acting on seed management and climate change.** Preliminary survey findings will be presented at the conference along with presentations by Canadian and American experts in climate change and genetic resource management.

**This survey is simple and should take at most 20 minutes to complete. You can complete it one of two ways:**

**1. Online at [www.fgo.ca](http://www.fgo.ca)**

**2. By fax or mail – print and complete form below and mail to:**

Forest Genetics Ontario – 705-942-9140 (fax)  
510 Queen, Suite 24  
Sault Ste Marie, ON  
P6A 2A1

**If you have any questions about this survey, please contact:**

Kathleen Brosemer, FGO, 705-942-4907

### **What will happen after the conference?**

Forest Genetics Ontario and its provincial technical forum will continue to discuss, develop and promote ways of handling these questions among their members and partners including OMNR, forest industry and forest conservation groups.

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# Tree Seed and Climate Change Survey

Ontario Ministry of Natural Resources Climate Change Initiative/Forest Genetics Ontario  
September 2007

**Whom do you work for?** (Please place an X before the most appropriate answer.)

- Provincial government
- Federal government
- Municipal government
- Forest industry–harvesting
- Forest industry–renewal
- Forest industry–management planning (SFL)
- Forest conservation NGO
- Forest consultant/contractor
- Other: [describe]

**What province or state are you from?**

**What is your background?** (Please place an X before the most appropriate answer.)

- Forestry
- Biology
- Planning
- Other: [ ]

**How many different tree species do you now work with?** [ ]

**What are your main three tree species of interest?**

1. [ ]
2. [ ]
3. [ ]

**What is your job focus?** (Please place an X before the most appropriate answer.)

- Research
- Program Management
- Forest Management Planning
- Forest Operations
- Other [ ]

**What is your education?** (Please place an X before the most appropriate answer.)

- College diploma
- Bachelor of science
- Post-graduate
- Other [ ]

**What is your age?** (Please place an X before the most appropriate answer.)

- 20-29
- 30-39
- 40-49
- 50-59
- 60+

**Please share your general perceptions about climate change**

| Statement                                            | Your ranking (circle response) |   |   |   |   |   |                   |
|------------------------------------------------------|--------------------------------|---|---|---|---|---|-------------------|
|                                                      | Strongly agree                 |   |   |   |   |   | Strongly disagree |
| 1. I do not understand the impacts of climate change | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 2. All climate change impacts are negative           | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 3. There is ample time to adapt to climate change    | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |

**Please share your perceptions of climate and forest management**

| Statement                                                                                                                                                                          | Your ranking (circle response) |   |   |   |   |   |                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---|---|---|---|---|-------------------|
|                                                                                                                                                                                    | Strongly agree                 |   |   |   |   |   | Strongly disagree |
| 4. Current local climate information is factored into my decisions/operations.                                                                                                     | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 4b. If you agree, please give examples (e.g. forest access; harvest season; species choice; natural regeneration planning; seed zones; seed crop forecasts; seed collection, etc.) |                                |   |   |   |   |   |                   |
| 5. I have noticed changes in local climate over the last 10 years                                                                                                                  | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 5b. If you agree, please give examples (temperatures, precipitation, soil moisture, storms, snow pack, other)                                                                      |                                |   |   |   |   |   |                   |
| 6. I am aware of some changes in climate projected for my region                                                                                                                   | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 7. Climate change is now having a significant impact on forest ecosystems                                                                                                          | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 8. Within the next 50 years climate change will significantly affect forest ecosystems                                                                                             | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 9. Effects of climate change on forest ecosystems are understood by forest managers                                                                                                | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 10. I have good access to climate experts and information                                                                                                                          | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 10 b. If you agree, please give examples                                                                                                                                           |                                |   |   |   |   |   |                   |
| 11. Forest managers have the ability to control climate change impacts on forest ecosystems                                                                                        | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 11b. If you agree, please give examples                                                                                                                                            |                                |   |   |   |   |   |                   |
| 11c. If you disagree, what are the barriers? (knowledge, expertise, tools, money, time, policy, regulations, other)                                                                |                                |   |   |   |   |   |                   |

|                                                                                                              |   |   |   |   |   |   |   |
|--------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|
| 12. Climate change effects on forest ecosystems are predictable                                              | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 13. The effects of climate change on forest ecosystems in my region will be noticeable in the next ten years | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

**Please share your perceptions of climate and managing tree seed supplies**

| Statement                                                                                                                    | Your ranking (circle response) |   |   |   |   |   |                   |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---|---|---|---|---|-------------------|
|                                                                                                                              | Strongly agree                 |   |   |   |   |   | Strongly disagree |
| 14. Seed availability is now a concern for me                                                                                | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 14b. If you agree, please give examples                                                                                      |                                |   |   |   |   |   |                   |
| 15. Seed quality is now a concern for me                                                                                     | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 15b. If you agree, please give examples                                                                                      |                                |   |   |   |   |   |                   |
| 16. I adhere to Ontario's Tree Seed Zones or its equivalent in my region                                                     | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 16b. If you disagree, please describe what seed transfer guidelines you follow                                               |                                |   |   |   |   |   |                   |
| 17. I have access to a seed bank that represents a minimum of five years of source-identified seed                           | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 18. I have considered moving southern seed sources further north                                                             | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 19. I have already moved southern seed sources further north                                                                 | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 20. I have good documentation of the seed sources now used so that long-term plantation responses to climate can be assessed | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 21. I have access to good science support for seed transfer decisions                                                        | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 22. My seed needs are fully met by a tree improvement program                                                                | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 23. Current seed transfer policy in my area takes climate change into account                                                | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |
| 24. The tree improvement program in my area adequately takes climate change effects into account                             | 7                              | 6 | 5 | 4 | 3 | 2 | 1                 |

**Thank you for completing this survey!**

Your input will help ensure that our conference, *Adapting to Climate Change: Managing Tree Seed in an Uncertain Climate* is a success, and that future efforts to address managing tree seed under climate change reflect a wide range of views.

**Remember, please return this survey by October 19, 2007, via one of these two methods:**

1. Complete online at [www.fgo.ca](http://www.fgo.ca)
2. Complete form above and fax/mail to:

Forest Genetics Ontario (705)942-9140 (fax)  
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