



# Overview of the Forest Genetic Resources Working Group

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Natural Resources Canada

- Mission and operating strategy
- Current activities
- Achievements
- Future directions

26<sup>th</sup> Session of the  
North American Forest Commission  
May 7-11, 2012  
Quebec City, Canada

# Forest Genetic Resources Working Group



**Mission:** Generate, share and disseminate knowledge that is crucial for the conservation and the sustainable use of North American forest genetic resources to the benefit of present and future generations

## Objectives:

1. To promote the **collection, exchange, and dissemination of information** about forest genetic resources so that in situ and ex situ programs of conservation and sustainable use are based on sound scientific knowledge
2. To promote cooperation and coordinate **research, conservation, training, and knowledge exchange** among member countries on genetic resource conservation problems
3. To facilitate the international **exchange of forest genetic resources**
4. To encourage and **promote genetic improvement programs** for important commercial forest species as a component of forest conservation and as a contribution to the economic welfare of North Americans

# Forest Genetic Resources Working Group



## Membership



Ancient Bristlecone Pine Forest,  
Inyo NF, California, 2001



Douglas-fir stand at  
Ixtepeji, Oaxaca, 2009



Sierra de Manantlán Biosphere  
Reserve, Jalisco, 2006

Sally Aitken  
Tannis Beardmore  
Jean Beaulieu



Kurt Johnsen  
Brad St.Clair



Javier López Upton  
Cuauhtémoc Sáenz Romero  
Jesús Vargas Hernández



# Forest Genetic Resources Working Group



## Operating Strategy

- Meetings every 12-18 months
- Identify tasks relevant to our objectives and assign a task force
- National reports to summarize forest genetic activities in each nation
- Occasionally make recommendations to BOA and agencies



The group has participated in efforts to conserve a unique variety of Monterey pine on Guadalupe Island, Mexico

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## Current activities

- 11 active tasks (see FGRWG web site)
  - Publish a series of lecture notes on forest conservation genetics in Spanish and English
  - Create a bibliography of Mexican dissertations on genetics, ecology, and biogeography
  - Coordinate a comprehensive study to clarify the evolutionary history, taxonomic relationships, genetic structure, and population ecology of the Mexican piñon pines
  - Study the genetics of the southernmost natural populations of Coulter pine

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## Current activities

- Study altitudinal and geographic variation in *Pinus patula* as an aid to defining seed zones and conservation of genetic resources in the state of Oaxaca
- Aid in the conservation of spruce taxa endangered in Mexico and the south-western United States by making recommendations for the sustainable management of spruce ecosystems
- Review the literature to rate vulnerability of forest genetic resources to climate change
- Develop guidelines for assisted colonization of forest species and populations in response to climatic change

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## Major achievements

### Training and promoting scientific exchange

- Training opportunities for Mexican scientists and students at research facilities in the United States and Canada
- Training course for managers on “Seed Management and Forest Plant Production for Conservation and Genetic Improvement”, Guzmán, Jalisco, 2006
- From 1999 to 2008, lecture series on Conservation Genetics at the Colegio de Postgraduados and Universidad Autónoma Chapingo
- In 2008, sabbatical year of Dr. Cuauhtémoc Sáenz Romero at the Canadian Forest Service Research Centre in Quebec City, Canada

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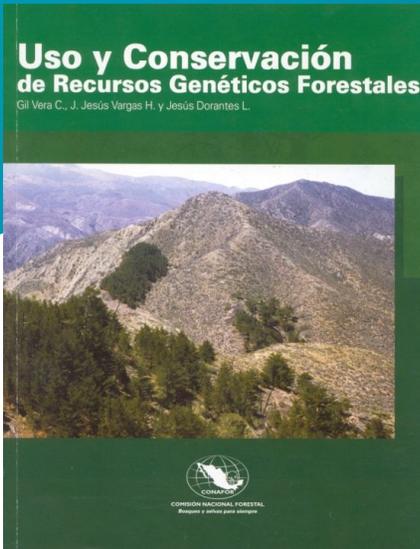
## Major achievements

### Information exchange

- Since 1965, promoted exchange of information among members and observers through 33 meetings
- Organized several scientific meetings including
  - North American Forest Biology Workshop, Mérida, Yucatán, 1975
  - Symposium in memory of Dr. Basilio Bermejo Vázquez “Conservation of Forest Genetic Resources”, Jalisco, 1985
  - Satellite symposium on “Silviculture and the Conservation of Forest Genetic Resources for Sustainable Forest Management”, 17th Congress, Quebec City, Quebec, 2003
  - Symposium on “Potential Effects of Global Warming on Forest Genetic Resources”, Morelia, Michoacán, 2004
  - Symposium on “Climate change: Adaptation through management and conservation of forest genetic resources”, Oaxaca, Oaxaca, 2009



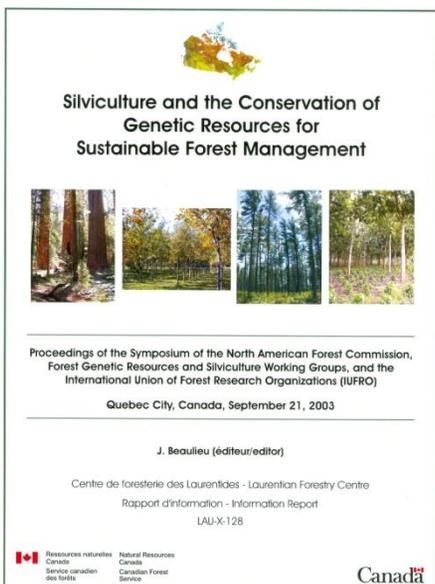
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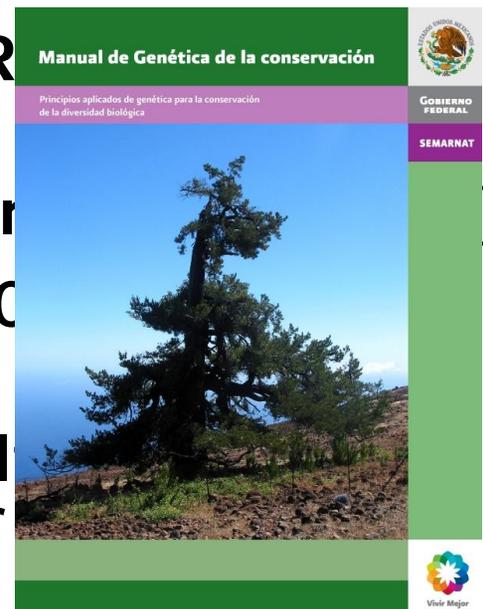
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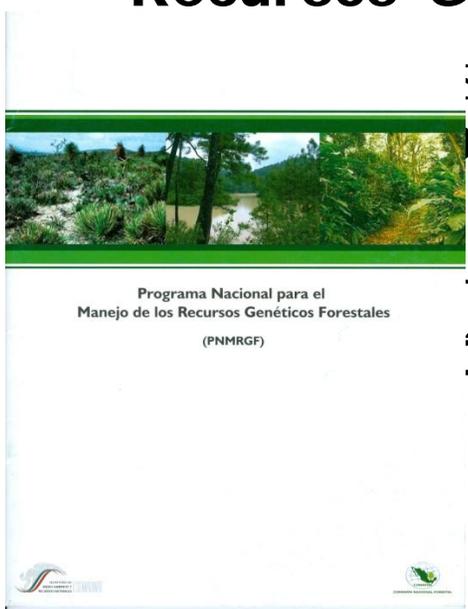
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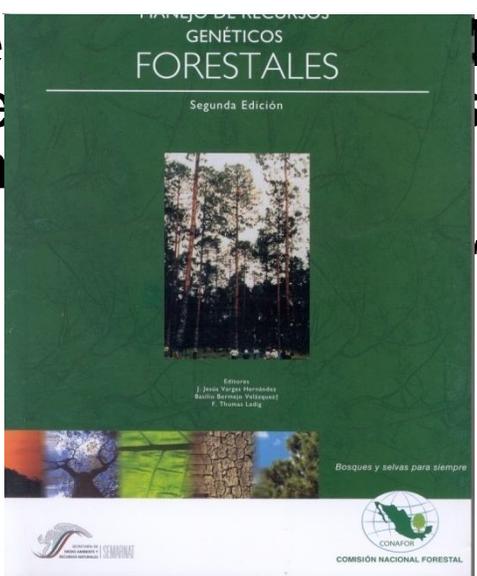


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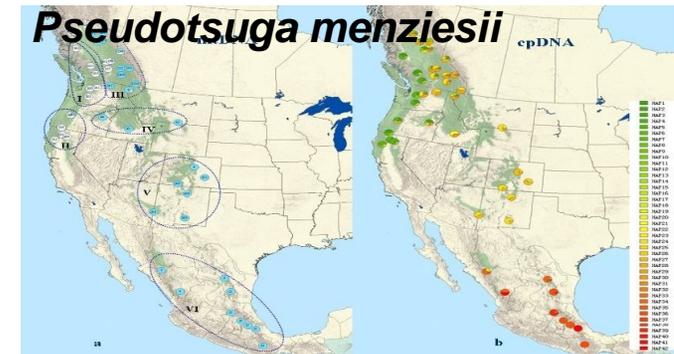
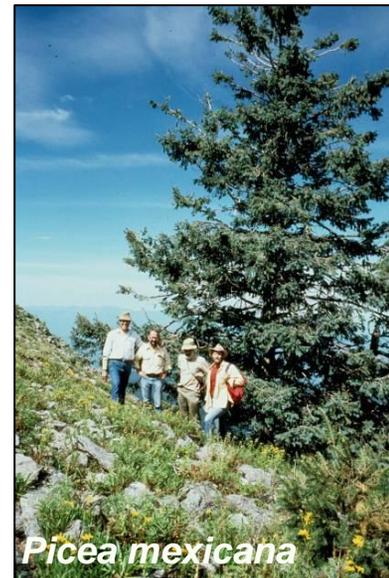
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## Major achievements

### Research

- Conducted genetic surveys of several conifers including *Picea*, *Pseudotsuga menziesii*, *Pinus ayacahuite*, *Pinus strobiformis*, *Pinus maximartinesii*, *Pinus pinceana*, *Pinus radiata*, *Pinus hartwegii*, etc.
- Results of collaborative research projects published in scientific journals



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## Future directions

Activity	Timeline
<i>• Integrate recommendations for conservation of the Mexican Piceas</i>	2012
<i>• Country Reports for the State of the World's (SoW) Forest Genetic Resources: provide an NA perspective</i>	2012-2013
<i>• Carry on the active tasks of the Working Group</i>	2012-2013
<i>• Increase emphasis on issue related to adaptation to climate change</i>	2012-
<i>• Hold the XXXV<sup>th</sup> meeting</i>	2013



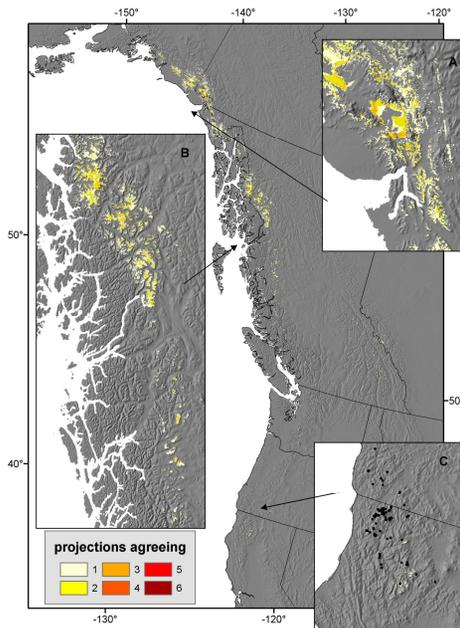
### Seed Banks



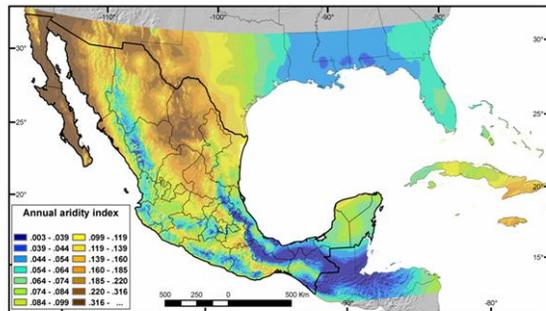
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## Adaptation to climate change



*Pinus hartwegii* tested in present (13 oC) and future (17 oC) climate scenarios, Centre de Foresterie des Laurentides, Quebec, Canada



Current and future climates (2090) for evaluating assisted migration in Mexico

