

Phytophthora in Forests and Natural Ecosystems

By Everett Hansen, Coordinator of IUFRO Working Party 7.02.09

In this age of globalization, exotic, invasive pathogens are increasingly destructive to world forests. Many of the most dangerous diseases are caused by water molds in the genus *Phytophthora*. At the same time, we are beginning to understand the diversity of indigenous species of *Phytophthora*, and their ecological roles in forest ecosystems. These two themes, new epidemics including their prevention and management, and indigenous biodiversity, were elaborated in the most recent meeting of IUFRO Working Party 7.02.09.

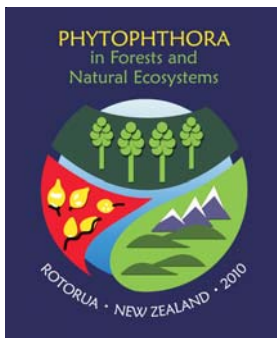
Forest pathogens increasingly threaten forest health and productivity. Particularly destructive have been species of *Phytophthora*, the water molds. The IUFRO Working Party “*Phytophthora* in Forests and Natural Ecosystems” first met in 1999 to bring together forest scientists and managers to share information about these dangerous pathogens. The meetings have moved around the globe, focusing on threats from a particular host-pathogen combination. In Oregon it was *P. lateralis* and *Chamaecyparis*, in Germany it was oak decline and the Alder *Phytophthora*, in Western Australia we were immersed in *P. cinnamomi* and “dieback” of indigenous flora, and in California focus was on Sudden Oak Death.

In 2010 the group met in New Zealand for the 5th time with a week-long program of field observations, formal presentations, and most valuable, open discussion. The local attraction was a “new” and lethal disease of the iconic kauri tree. This indigenous member of the Araucareaceae reaches a huge size and great age. It has been central to Mauri cosmology and life since they first discovered the islands. Now a new *Phytophthora* is killing the trees. As with many *Phytophthoras*, humans seem to be important vectors. We heard of the importance of kauri from Mauri elders and their concerns for its future, and observed vigorous efforts to limit the spread of the disease. The public information campaign was most impressive. Discussion focused on practical methods to limit spread, public participation, and funding priorities. The Auckland Regional Authority solicited ideas from the meeting participants.



Public information signs, created by the Auckland Regional Council, warning of the dangers of Kauri dieback. Photo by Everett Hansen

The scientific program included a “Regional Roundup” summarizing ongoing activity. Australia and Europe have especially active research groups. This offered paper sections focused on Invasion and New Diseases. It was sobering, with dramatic reports of new diseases on radiata pine, and new hosts and behavior for *P. ramorum* and *P. lateralis*. A section on Surveying for *Phytophthora* reflected increasing attention to discovering and understanding indigenous *Phytophthora* species. There is much attention to the diversity of species in forest streams. Disease Management was discussed in several sections with special presentations on use of fungicides, and the large scale, integrated program in Australia to combat dieback. Another special presentation summarized work to date on Disease Physiology, suggesting fruitful approaches for future work.



The **Fifth Meeting of IUFRO Working Party 7.02.09 “Phytophthora in Forests & Natural Ecosystems”** (<http://www.iufro.org/science/divisions/division-7/70000/70200/70209/>) was held in **Auckland and Rotorua, New Zealand, March 7-12, 2010**. Local sponsorship was by scientists and staff from SCION and Landcare Research, with additional support from MAF Biosecurity New Zealand and the New Zealand Plant Protection Society. The field trip to the kauri forests in the Waitakere Ranges was arranged by the Auckland Regional Council. There were 97 registered participants from 18 countries in Europe, Asia, Africa, North and South America, Australia and New Zealand.

Abstracts of presentations are available at <http://www.phyto2010.com/index.html>. The **Proceedings** will be published in a future issue of New Zealand Journal of Forestry Science. The **next meeting** is now scheduled for 2012 in Europe.