

The International Union of Forest Research Organizations (IUFRO) is a non-profit, non-governmental international network of forest scientists, which promotes global cooperation in forest-related research and enhances the understanding of the ecological, economic and social aspects of forests and trees. IUFRO's 125th Anniversary Congress was held in Freiburg, Germany, 18-22 September 2017.

IUFRO is "the" global network for forest science cooperation. It unites more than 15,000 scientists in almost 700 Member Organizations in over 120 countries, and is a member of the International Council for Science (ICSU). Scientists cooperate in IUFRO on a voluntary basis.

IUFRO's field of scientific activity is spread over nine Divisions covering key forest research fields: Silviculture; Physiology and Genetics; Forest Operations, Engineering and Management; Forest Assessment, Modelling and Management; Forest Products; Social Aspects of Forests and Forestry; Forest Health; and Forest Policy and Economics.

Each of those Divisions is broken into units that focus on specific aspects that fall under the divisional umbrella.

**Five of the nine Divisions held all-division meetings in conjunction with the IUFRO 125th Anniversary Congress. At the all-Division meetings, researchers were brought up to date, through a number of presentations, on issues and findings pertinent to them.**

*Division 7 – Forest Health includes research on: physiological and genetic interactions between trees and harmful biotic impacts, including resistance mechanisms; biological and applied aspects of tree diseases; environment/pathogen interactions in forest decline; the biology and control of forest tree insects; and impacts of air pollution on forest trees and forest ecosystems, including diagnosis, monitoring, biology, genetics and treatment of polluted forests and other wooded lands.*

*The units within Division 7 look into the impacts of air pollution and climate change on forest ecosystems; pathology; and entomology.*

**Dr Ekehard Brockerhoff of Scion (New Zealand Forest Research Institute) and Coordinator of Division 7, elaborated on his Division's work:**



Photo by Annette Brockerhoff

"Division 7 deals with topics that are all concerned with forest and tree health, and the causes of interactions between air pollution and climate change, tree pathogens, and tree-feeding insects," Dr. Brockerhoff said.

"While this may seem to be a relatively narrow topic, these agents are all affected by environmental conditions, forest structure, silviculture, climate change, international trade and social considerations, etc. And there are connections with virtually all topics addressed by IUFRO," he said.

To underline those connections, he pointed out that "at the IUFRO 125th Anniversary Congress, Division 7 organized 25 sessions with almost 300 oral and poster presentations.

"Division 7 is important to forests and forestry because invasive tree pathogens and insects increasingly threaten tree health and the functioning of forest ecosystems.

"This is compounded by impacts of air pollution and climate change. More and more tree species in forests and urban areas are severely affected and their ability to provide vital ecosystem services is greatly diminished," Dr. Brockerhoff added.

"Biological invasions and invasive species have been occupying much of this Division's time," he said. "The impacts of invasions are so pervasive and fundamental, and there are no simple solutions. They are an unwanted consequence of international trade and the movement of people from country to country.



“Over the last few decades there have been many ‘surprises’ of new invasive species that behaved unexpectedly. They attacked trees that were not known to be host plants and, moreover, caused substantial damage or even tree mortality. At the same time, in their native range they were entirely harmless or so insignificant that they may not even have been known to science.

“We have come to expect new cases of such ‘unknowns’ but there are more and more of these that threaten trees and forest ecosystems,” Dr. Brockerhoff said. **“At this Congress we’ve learned about the progress in our understanding of what makes these invasive species so aggressive and how we can better predict the types of species that behave in this way.”**

One challenge for the Division that was discussed during and after the business meetings at the Congress was the facilitation of interactions and collaborations across disciplines within the Division – especially, he said, between the air pollution and climate change research group and the two other research groups.

“Although there are some interactions and collaborations, most activities happen within just one of the Research Groups. We’re considering some options to increase such interactions – one suggestion was to hold more all-Division meetings where we have mixed sessions,” he said.

He expects research on tree pests and pathogens (both native and non-native) and their interactions with the many abiotic and biotic factors that influence them will continue to be primary issues for Division 7.

Likewise, he added, **“air pollution and climate change impacts on tree and forest health will continue to be important. We anticipate that the role of climate change in these processes will receive more attention. Furthermore, the role of biodiversity in forest resistance and resilience is expected to be addressed more.”**

In terms of addressing those issues, Dr. Brockerhoff said: “One method of studying climate change impacts on forest health is to use latitudinal and elevational gradients in experimental designs to quasi-mimic climate change that occurs over time. And, by exploring tree mixtures of different genetic, species and functional richness, effects of biodiversity can be examined experimentally.”

He concluded by saying that climate change impacts and interactions with susceptibility to pathogens and tree-feeding insects are not addressed as much as they should be, or at least not as visibly, but Division 7 is looking into bringing these issues more to the forefront.



Photos IUFRO and Pixabay, 2nd from the top on page 2: FVA/Klaus Polkowski

Visit the IUFRO Anniversary Congress website for an overview of the program and for photos. Videos of the live-streamed sessions are available on: <http://iufro2017.com/livestream/>

