

# Scientific Summary No 100 related to IUFRO News 1, 2013



## Nutrient Dynamics of Planted Forests

*Symposium from 27-28 November 2012, Heathman Lodge Hotel, Vancouver, WA, USA*

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Over the past 15 years, many changes have occurred in the area of plant, nursery, and forest nutrition including refinements in fertilizer technology, advances in nursery stock quality, and increasing expectations for juvenile plantation productivity.

Thus, this IUFRO Symposium was timely to help communicate these advances and provide a forum to identify future research needs and priorities in this field. The symposium was organized by Purdue University and USDA Forest Service with support from IUFRO units 1.01.03 (Temperate Forest Re-generation), 1.06.00 (Restoration of Degraded Sites), and 3.02.00 (Stand Establishment and Treatment).

The meeting gathered 65 participants from 12 countries who discussed the principles of nutrition in nursery seedlings and juvenile forest trees. Emphasis was on the development of effective and environmentally sound technologies to optimize seedling quality and promote reforestation and forest restoration operations.

The first day focused on *Nutrition in the Nursery and at Field Establishment* and the second day on *Juvenile Stand Nutrition*. The program was aimed toward an international audience of nursery and forest practitioners, scientists, and educators. Of particular interest was the variability in nutritional requirements and fertilizer responses of forest trees across a range of site limiting factors (e.g., drought, vegetative competition, or animal browse).

Enhanced basic understanding of plant nutritional requirements and mechanisms for growth responses, improved analytical methods of analysis, and advances in fertilizer technologies have promoted forest plantation establishment success and development of young stands. However, knowledge of all of these factors needs to continue to be expanded in order to further enhance productivity of commercial forestry plantations. Restoration plantings represent a very different context where nutrition may be key for survival on harsh sites and use of an increasingly



*Photo by Richard Zabel  
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diverse pool of species necessitates case-specific prescriptions.

Selected papers presented at this symposium are scheduled to be published in a special issue of the international journal, *New Forests*, in 2013. It was agreed that researchers from this discipline should meet more frequently in order to continue to debate and advance the science behind forest nutrient dynamics. Thus, we anticipate that another international symposium on this topic will be held within the next five years.

*Meeting website:* <http://www.westernforestry.org>

IUFRO 1.01.03

<http://www.iufro.org/science/divisions/division-1/10000/10100/10103/>

IUFRO 1.06.00

<http://www.iufro.org/science/divisions/division-1/10000/10600/>

IUFRO 3.02.00

<http://www.iufro.org/science/divisions/division-3/30000/30200/>