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## Conservation of Forest Genetic Resources in Siberia

Report by Konstantin V. Krutovsky, Coordinator of IUFRO 2.02.00 - Conifer breeding and genetic resources

The 4th International Conference on Conservation of Forest Genetic Resources in Siberia (<http://conf.ict.nsc.ru/cfgrs2015>) was held on August 24-29, 2015 at the forest tree improvement facilities of the Altai Region in Barnaul, Russia. The meeting continued the good tradition established by the previous conferences held in Barnaul in 2007, in Novosibirsk in 2009 and in Krasnoyarsk in 2011.

The conference mainly aimed at developing an efficient scientific strategy for the protection and sustainable use of forest genetic resources in Siberia, the Ural Mountains and the Far East. 76 participants from 11 countries representing 65 research organizations attended; 68 oral presentations were made and 110 abstracts were published in Russian and English.

Discussions focused primarily on the following themes:

- Theoretical and methodical problems of research, protection and sustainable use of forest genetic resources.
- Structure and dynamics of population gene pools, "relic" populations in the refugium area.
- Strategy of forest genetic conservation under global climate changes and anthropogenic effects.
- Selection objects and gene pool conservation: current state, genetic passportization system, selection of "elite", regionalization of seed sources (seed zoning).
- Genetics of resistance, tolerance, decorative and other traits; methods of breeding; breeding for wood productivity, tolerance etc.; introduction of new forest species.
- Conceptualization of national program on protection and sustainable use of forest genetic resources in Russia.

The conference was timely and important due to the huge biospheric role that Siberian boreal forest plays in global climate regulation and biogeochemical cycles. Despite this significant role there is still insufficient knowledge about the population genetic structure of the Siberian boreal forest and how it is affected by wildfires, anthropogenic effects (pollution, logging, etc.) and global climate change.

Significant research studies and results were presented in the plenary and session talks and by means of posters. These findings are very important for the conservation of forest genetic resources in Siberia in particular, and of boreal forests in general. Large-scale national and international population genetic studies of the main Siberian forest conifer species using DNA markers were presented.

Whole de novo genome sequencing of Siberian stone pine and Siberian larch – the most important Siberian boreal fo-



Trip to the regional Altai Forest Seed Breeding Center "AltaiLes"  
(Photo provided by K. Krutovsky)



Trip to Ozerski Forest Management Enterprise  
(Photo provided by K. Krutovsky)

rest conifer species - has begun at the Siberian Federal University (Krasnoyarsk, Russia) together with the N.I. Vavilov Institute of General Genetics (Moscow, Russia) and University of Göttingen (Göttingen, Germany).

It was concluded that new approaches based on the synthesis of traditional and modern molecular genetics and genomics methods are needed to develop efficient conservation and sustainable management programs, to protect and monitor the forest genetic potential and at the same time to increase forest productivity and resilience, including plantation forests.

Conference proceedings and selected papers will be published in a special issue of the Siberian Journal of Forest Science (<http://sibjforsci.com/>). The next meeting will be held in two years tentatively in Gomel, Belarus.

Find further information at:  
<http://www.iufro.org/science/divisions/division-2/20000/20200/activities/>