

Federal Research Center «Krasnoyarsk Scientific Center SB RAS»  
V. N. Sukachev Institute of Forest SB RAS

ISSN 2311-1410

# Siberian Journal of Forest Science

Number 1  
January–February 2019



SB RAS Publishing House  
Novosibirsk

FEDERAL RESEARCH CENTER KRASNOYARSK SCIENTIFIC CENTER  
RUSSIAN ACADEMY OF SCIENCES, SIBERIAN BRANCH  
V. N. SUKACHEV INSTITUTE OF FOREST  
RUSSIAN ACADEMY OF SCIENCES, SIBERIAN BRANCH

## **Siberian Journal of Forest Science**

Number 1 January – February 2019

Peer-reviewed Scientific Journal. Established January 2014

**Founder:** Federal Research Center Krasnoyarsk Scientific Center, Russian Academy of Sciences, Siberian Branch  
Published bimonthly, 6 times per year  
ISSN 2311-1410 (Print), ISSN 2312-2099 (Online)

### **Editor-in-Chief**

Alexander A. Onuchin  
onuchin@ksc.krasn.ru

### **Associate Editors-in-Chief**

Igor M. Danilin, Tamara S. Sedel'nikova  
danilin@ksc.krasn.ru, tss@ksc.krasn.ru

### **Managing Editor**

Larisa N. Skripal'shchikova  
lara@ksc.krasn.ru

### **Associate Editors**

Nobuyuki Abe (Japan), Per Angelstam (Sweden), Galina F. Antonova (RF), Natalia E. Antonova (RF), Stanislav P. Arefyev (RF), Sezgin Ayan (Turkey), Vladimir F. Baginskiy (Belarus), Eugene V. Banaev (RF), Yuri N. Baranchikov (RF), Kirsten Barrett (UK), Sergei A. Bartalev (RF), Sergei M. Bebiya (Abkhazia), Vera E. Benkova (RF), Kapitolina S. Bobkova (RF), Jiquan Chen (USA), Nikolay V. Chesnokov (RF), Tumen N. Chimitdorziev (RF), Chimidnyam Dorjsuren (Mongolia), Chultem Dugarjav (Mongolia), Steve Eubanks (USA), Sergey N. Goroshkevich (RF), Irina D. Grodnitskaya (RF), Andrei N. Gromtsev (RF), Georg Guggenberger (Germany), Alexander P. Isaev (RF), Galina A. Ivanova (RF), Olga V. Kalugina (RF), Vyacheslav I. Kharuk (RF), Alexander V. Kirdeyanov (RF), Grigoriy B. Kofman (RF), Kari T. Korhonen (Finland), Igor Yu. Koropachinskii (RF), Ivan S. Kosenko (Ukraine), Alexander P. Kovalev (RF), Yuri N. Krasnoshchekov (RF), Konstantin V. Krutovsky (RF, Germany), Alexander M. Kryshen (RF), Konstantin N. Kulik (RF), Andrei N. Kupriyanov (RF), Boris N. Kuznetsov (RF), Qinglin Li (Canada), Sune Linder (Sweden), Sergei R. Loskutov (RF), Yuri I. Manko (RF), Tatyana A. Moskalyuk (RF), Elena N. Muratova (RF), Akira Osawa (Japan), Sergei V. Osipov (RF), Larisa N. Pak (RF), Eugene G. Paramonov (RF), Igor N. Pavlov (RF), Heli Peltola (Finland), Boris S. Petropavlovsky (RF), Viliam Pichler (Slovakia), Alexander V. Pimenov (RF), Dmitri V. Politov (RF), Petr P. Popov (RF), Anatoly S. Prokushkin (RF), Valery P. Putenikhin (RF), Dmitriy G. Schepaschenko (RF, Austria), Christiane Schullius (Germany), Olga V. Shergina (RF), Alexander S. Shishikin (RF), Svetlana D. Shlotgauer (RF), Anatoly Z. Shvidenko (RF, Austria), Vladimir A. Sokolov (RF), Vladislav G. Soukhovolsky (RF), Ge Sun (USA), Valery E. Tarabanko (RF), Vyacheslav V. Tarakanov (RF), Alexander N. Tashev (Bulgaria), Elena E. Timoshok (RF), Biymyrza A. Toktoraliyev (Kyrgyzstan), Petr A. Tsvetkov (RF), Josef Urban (Czechia), Vladimir V. Usenya (Belarus), Vladimir A. Usoltshev (RF), Eugene A. Vaganov (RF), Gennadiy S. Varaksin (RF), Estella F. Vedrova (RF), Eugene L. Vorobeichik (RF), Viktor I. Voronin (RF), Chuankuan Wang (China), Adam X. Wei (Canada), Vasily T. Yarmishko (RF)

### **Leading Editor**

Tat'yana M. Pavlina

### **Editors**

Olga P. Vtyurina, Irina I. Kuntsevich

### **Technical Editor**

Tat'yana R. Pantyukhina

### *Address for journal office:*

Russian Federation, 660036, Krasnoyarsk, Akademgorodok, 50/28  
Federal Research Center Krasnoyarsk Scientific Center, Russian Academy of Sciences, Siberian Branch  
V. N. Sukachev Institute of Forest, Russian Academy of Sciences, Siberian Branch  
Editorial office for the Siberian Journal of Forest Science  
Phones: +7 (391) 249-4639; +7 (391) 290-5516; E-mail: lara@ksc.krasn.ru; Web: sibjforsci.com; сибирскийлеснойжурнал.рф  
Russian Academy of Sciences, Siberian Branch Publishing House  
Novosibirsk



### **The main topics of the journal**

Forest science, forestry, forest planning, forest inventory  
Structure, dynamics and functioning of forest ecosystems  
Forest ecosystem functions and their change under global and regional climate processes and anthropogenic impact  
Forest geography, ecology and typology  
Forest landscape ecology  
Forest genetics, selection, breeding and introduction, dendrology  
Forest resource science, ethnobotany  
Silviculture, forest plantations  
Physiology and biochemistry of forest plants  
Biotechnology, wood science, chemical processing of wood and non-wood forest products  
Dendrochronology  
Forest hydrology  
Forest fire research  
Forest entomology, forest zoological complexes  
Forest phytocenology  
Forest soil science  
Forest health, microbiology, mycology and pathogens  
Forest melioration and restoration  
Forest policy, economics, management and legislation  
Remote sensing and GIS methods applicable for evaluation of biosphere functions of forests.

*Sibirskij Lesnoj Zurnal* (Siberian Journal of Forest Science) is a multidisciplinary peer-reviewed periodical scientific journal covering a wide range of forest science, forestry, forest management, forest inventory, genetics and breeding, forest ecology and economy issues, and representing the science of complex patterns of the structure, function and development of forest ecosystems and the use of forest resources by man.

*Sibirskij Lesnoj Zurnal* (Siberian Journal of Forest Science) issues will be published first in Russian (ISSN 2311–1410 (Print), ISSN 2312–2099 (Online)), and then translated to English as Siberian Journal of Forest Science (ISSN 2311–1410).

*Sibirskij Lesnoj Zurnal* (Siberian Journal of Forest Science) is included to Russian national system of scientific citation eLibrary.ru, the list of scientific periodicals of the Higher Certification Commission, Ministry of Education and Science of the Russian Federation, is indexing in international scientific databases: Ulrichsweb (Global Serials Directory), Directory of Open Access Journals (DOAJ), AGRIS, CABI Forest Science Database, is prepared to be included to the international databases of scientific periodicals: Academic Journals Database, Springer, Scopus, Web of Science. Full-text articles posted online on the journal's website: sibjforsci.com (in English); сибирскийлеснойжурнал.рф (in Russian).

*Sibirskij Lesnoj Zurnal* (Siberian Journal of Forest Science) publishes scientific papers under the headings: «Summarizing Articles», «Research Articles», «Reports», «Short Communications», «News, Views & Events», and «Book Reviews», aimed at understanding the laws and regularities of forest nature. It covers a variety of topics related to problems of biological diversity at all levels of its organization – population, species, ecosystem, including – articles on anthropogenic and technogenic transformation of forest ecosystems. The journal is not limited to the problems of Siberian forests; it accepts and publishes high quality scientific papers from different regions of the world, representing general scientific interest.

*Sibirskij Lesnoj Zurnal* (Siberian Journal of Forest Science) is registered by Federal Service for Supervision of Communications, Information Technologies, and Mass Media (Roskomnadzor) of the Russian Federation.

Certificates of registration of the mass media:

Periodical print edition, journal – PI No. FS 77-68699 on 09 February, 2017

Periodical online edition – EL No. FS 77-70737 on 15 August, 2017

Russian Academy of Sciences, Siberian Branch Publishing House  
Morskoi Prospekt, 2, Novosibirsk, 630090 Russian Federation

CONTENTS

RESEARCH ARTICLES

<i>S. N. Sannikov</i> Ecologic and Genetic Classifications of Forest Types Based on Ecologic and Genetic Series of Development of Biogeocenoses .....	3
<i>I. N. Egorova, G. S. Shambueva, O. V. Shergina, N. Shinen</i> On the Ecology of <i>Nostoc commune</i> (Cyanoprokaryota) in Southern Siberia and Mongolia .....	16
<i>M. A. Nikolaeva, L. V. Orlova, A. A. Krest'yanov, D. N. Kamatov</i> Geographical Variability of Larch in the Experimental Forest Crops of the Republic of Bashkortostan .....	30
<i>V. A. Usoltsev, I. S. Tsepordey, V. P. Chasovskikh</i> Tree Biomass of Two-Needled Pines in Eurasia: Additive Models in Climatic Gradients .....	44
<i>T. V. Zheleznicenko, D. S. Muraseva, V. V. Stasova, T. I. Novikova</i> Morphogenesis of <i>Picea pungens</i> Engelm. <i>in vitro</i> under the Influence of Thidiazuron .....	57
<i>C. Vatandaşlar, C. Keleş, L. C. Fosso, U. Karahalil</i> Analyzing the Effects of Different Management Strategies on Forest Biomass Carbon Loss Using Linear Programming .....	65

REVIEW

<i>B. S. Petropavlovskiy</i> Newest and Full Data on History of Forestry in the Far East of Russia. Manko Yu. I. History of Forestry in the Far East of Russia. 1859-1922. Vladivostok: Pacific Inst. Geogr., Rus. Acad. Sci., Far East. Br., 2018. 660 p. ....	73
--	----

CHRONICLE

<i>T. S. Sedel'nikova</i> 2 <sup>nd</sup> International Congress on Plants Research and Technology (IPSAT 2018), 5 <sup>th</sup> National Botanical Congress and 2 <sup>nd</sup> Symposium on Aerobiology and Palinology (APAS 2018) .....	75
---	----

\* JUBILEE

* Estella Fedorovna Vedrova (Celebrating the 80 <sup>th</sup> Birthday) .....	SSS
---	-----