

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 2022



Siberian Branch
Russian Academy of Sciences
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 2022

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

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), Tumen N. Chimitdorziev (RF), Chimidnyam Dorjsuren (Mongolia), Chultem Dugarjav (Mongolia), Alexey A. Dymov (RF), 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), Natal'ya I. Kirichenko (RF), Grigoriy B. Kofman (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), Qinglin Li (Canada), Sune Linder (Sweden), Sergei R. Loskutov (RF), Tatyana A. Moskalyuk (RF), Elena N. Muratova (RF), Sergei V. Osipov (RF), Igor N. Pavlov (RF), Heli Peltola (Finland), Viliam Pichler (Slovakia), Alexander V. Pimenov (RF), Anatoly S. Prokushkin (RF), Valery P. Putenikhin (RF), Olga A. Shapchenkova (RF), Dmitriy G. Schepaschenko (RF, Austria), Christiane Schmuilius (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), Vyacheslav V. Tarakanov (RF), Alexander N. Tashev (Bulgaria), Elena E. Timoshok (RF), Josef Urban (Czechia), Vladimir V. Usenya (Belarus), Vladimir A. Usoltsev (RF), Eugene A. Vaganov (RF), Viktor I. Voronin (RF), Chuankuan Wang (China), Adam X. Wei (Canada), Vasily T. Yarmishko (RF)

Leading Editor

Tat'yana A. Nikitina

Scientific Editor

Kseniya A. Kryukova

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

Novosibirsk
Siberian Branch of the Russian Academy of Sciences



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 crops
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) ISSN 2311–1410 (Print), ISSN 2312–2099 (Online) is published by the Siberian Branch of the Russian Academy of Sciences in Russian and in English.

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

Novosibirsk

Siberian Branch of the Russian Academy of Sciences

Prospekt Akademika Lavrent'eva, 17, Novosibirsk, 630090 Russian Federation

CONTENTS

RESEARCH ARTICLES

<i>O. A. Prituzhalova, M. V. Gorshkova</i> Comparative Analysis of the Requirements of the Russian Forest Legislation and FSC Forest Certification	3
<i>L. V. Afanas'eva, O. V. Kalugina, M. V. Oskorbina, T. M. Kharpukhaeva</i> Features of Elemental Composition and Pigment Complex of the Siberian Larch Needles Under Impact of Irkutsk Aluminum Smelter Emissions	20
<i>S. A. Shavnin, D. Yu. Golikov, A. A. Montile, A. V. Kapralov, A. V. Grigor'eva</i> Relationships Between Morphological Characteristics of Roots and Stem Sapwood Twisted Layer of Scots Pine Trees, Growing in the Upper Bog	33
<i>S. V. Gorbunova, A. O. Sen'kov, D. H. Fayzulin</i> The Experience of Using a Humic Preparation for Growing Coniferous Ball-Rooted Seedlings in the Conditions of Arkhangelsk Oblast	41
<i>S. S. Makarov, I. B. Kuznetsova, S. A. Rodin, S. Yu. Tsaregradskaya, A. I. Belan</i> Adaptation of European Cranberry <i>Oxycoccus palustris</i> Pers. to Non-Sterile Conditions with the Addition of Organic Products and Hormones	52

SCIENTIFIC HERITAGE

<i>O. A. Zyryanova</i> Scientific Heritage of Professor Akira Osawa	61
--	----

* JUBILEE

<i>E. P. Kashkarov</i> * In the Center of Siberian Anticyclone (Celebrating 70 th Birthday of Oleg Alexandrovich Pomortsev)	sss
---	-----

* IN MEMORIAM

* Leonid Iosifovich Milyutin (17.05.1931 – 26.01.2022)	sss
* Alexander Petrovich Kazankin (05.06.1929 – 20.01.2022)	sss

* Article is published in online edition