

CONTENTS

Zheko Radev. LIPID CONTENT IN BEE POLLEN OF SOME PLANTS IN FORESTRY AREA	289
Zheko Radev. COMPARING PROTEIN CONTENT IN BEE POLLEN FROM DIFFERENT FORESTRY AREAS	293
Gradimir Gruychev. HARE DYNAMICS IN PLAIN AREAS OF SOUTH BULGARIA: EFFECT OF HABITAT FEATURES AND PREDATOR ABUNDANCE ..	298
Nikolina Gribacheva, Gana Gecheva, Miglena Zhiyanski, Eli Pavlova-Traykova, and Rositsa Yaneva. ACTIVE AND PASSIVE MOSS MONITORING OF TRACE ELEMENTS IN URBAN AND MOUNTAIN AREAS, BULGARIA	309
Neda Amiri and Soleiman Mohammadi Limaiei. VALUATION OF CARBON SEQUESTRATION AND ESTIMATION OF CO ₂ EMISSION IN THE HYRCANIAN FORESTS OF IRAN	318
Stanimir Stoilov. PRODUCTIVITY AND COSTS OF CABLE YARDING IN GROUP SHELTERWOOD SYSTEM IN DECIDUOUS FORESTS	331
Youlin Tepeliev, Radka Koleva, and Ventzeslav Dimitrov. VERIFICATION OF FOREST HIGH RESOLUTION LAYERS 2015: TREE COVER DENSITY AND DOMINANT LEAF TYPE IN BULGARIA	343
Martina Stancheva. IMPACT OF THE WATER TEMPERATURE INCREASE IN THE DOSPAT DAM ON THE KEY INDICATORS CHARACTERIZING AQUACULTURE EFFICIENCY	354
Panagiotis Lattas, Pavlos Chasilidis, Aggeliki Tsakona, Natalia Golfopoulou, and Theocharis Zagas. OPTIMIZATION OF OAK FOREST MANAGEMENT PRACTICES IN SOUTHERN GREECE	367
Witness Mojeremane, Kamogelo Makgobota, Thembinkosi Mathowa, Kakambi Obusitswe, Melusi Rampart, Demel Teketay, Gosame Neo-Mahupeleng, Topoyame Makoi, and Ronnie Mmolotsi. EVALUATION OF DORMANCY-BREAKING TREATMENTS ON SEED GERMINATION OF TWO LEGUMINOUS TREE SPECIES FROM CHOBE DISTRICT, NORTHERN BOTSWANA	380
Sagar Dhakal and Prem Kumar Khosla. EFFECTS OF GEOGRAPHICAL DIRECTIONS ON PHYTOSOCIOLOGICAL ATTRIBUTES AND BIOMASS AT TAXUS OCCURRENCE FOREST, NORTH-WESTERN HIMALAYA	396
Kanda Raharja, Bintang Charles Hamonangan Simangunsong, Iwan Hilwan, and Elias Elias. SOIL COMPACTION AND EROSION LEVEL DUE TO GAP PLANTING IN INDONESIAN DEGRADED TROPICAL RAINFOREST	412

Jens Hepper. FURTHERING FOREST EDUCATION – A CASE STUDY FROM GERMANY	427
Svetoslav Anev and Adriana Marinova. PHYSIOLOGICAL ADAPTATION OF EUROPEAN BEECH (<i>FAGUS SYLVATICA</i> L.) AND WILD CHERRY (<i>PRUNUS AVIUM</i> L.) SAPLINGS AFTER WINDTHROW	436
Tatyana Fomicheva, Alexander Adamovsky, Ion Dubovich, Yuriy Tunytsya, Khrystyna Vasylyshyn, Anatoliy Deyneka, and Maryana Vyniarska. PROSPECTS FOR ECOLOGICAL TOURISM DEVELOPMENT: UKRAINIAN CARPATHIANS FOREST FUND TERRITORIES AS A CASE STUDY	446
Yulia L. Bredikhina, Natalia M. Turovtseva, and Serhii M. Podorozhnyi. THE VOLUME-SPACE ARRANGEMENT OF THE TREE PLACEMENTS IN NOVOOLEKSANDRIVSKY PARK IN MELITOPOL	459
Ihor F. Buksha, Tetiana S. Pyvovar, Maksym I. Buksha, Volodymyr P. Pasternak, and Taras I. Buksha. MODELLING AND FORECASTING THE IMPACT OF CLIMATE CHANGE ON FORESTS OF UKRAINE FOR 21ST CENTURY TIME HORIZON	470
Abiodun Oladipo, Ademola Adebayo, Olakunle Ogunyemi, Adegboyega Aduradola, and Fu Fang-Fang. EFFECTS OF MYCORRHIZAE INOCULATION AND WATER REGIME ON THE GROWTH OF <i>CASSIA FISTULA</i> L. SEEDLINGS	483
Pandu Yudha Adi Putra Wirabuana, Budi Mulyana, Alnus Meinata, Fahmi Idris, and Ronggo Sadono. ALLOMETRIC EQUATIONS FOR ESTIMATING MERCHANTABLE WOOD AND ABOVEGROUND BIOMASS OF COMMUNITY FOREST TREE SPECIES IN JEPARA DISTRICT	496

**Acknowledgement to reviewers of the manuscripts
submitted to Forestry Ideas in 2021:**

Eleni M. **Abraham** – Aristotle University of Thessaloniki, Greece

Ioan Vasile **Abrudan** – Transilvania University of Brasov, Romania

Yonas **Bahta** – University of the Free State, Bloemfontein, South Africa

Roberto **Bargagli** – University of Siena, Italy

Eva **Bártová** – University of Veterinary and Pharmaceutical Sciences, Brno, Czechia

Ioannis **Bazos** – National and Kapodistrian University of Athens, Greece

Szymon **Bijak** – Warsaw University of Life Sciences, Poland

Zlatozar Nikolaev **Boev** – National Museum of Natural History, Sofia, Bulgaria

Stelian Alexandru **Borz** – Transilvania University of Brasov, Romania

Maria V. **Brennerova** – Czech Academy of Sciences, Prague, Czechia

Petro **Bulakh** – M. M. Gryshko National Botanical Garden, National Academy of Sciences of Ukraine, Kyiv, Ukraine

Francis **Buner** – University of Basel, Switzerland

Jarosław **Burczyk** – Kazimierz Wielki University, Bydgoszcz, Poland

Erhan **Çalışkan** – Karadeniz Technical University, Trabzon, Turkey

Luca **Canova** – University of Pavia, Italy

Anabel Calzado **Carretero** – University of Huelva, Spain

Marlene **Chahine** – Lebanese University, Beirut, Lebanon

Dhritiman **Chanda** – Assam University, Silchar, India

Ganka **Chaneva** – Sofia University 'St. Kl. Ohridski', Bulgaria

Nathalie **Cools** – Research Institute for Nature and Forest (INBO), Geraardsbergen, Belgium

Yulia A. **Davydova** – Institute of Plant and Animal Ecology, Russian Academy of Sciences, Moscow, Russia

Yurii **Debryniuk** – National Forestry University of Ukraine, Lviv, Ukraine

Alexander **Delkov** – Forest Research Institute, Bulgarian Academy of Sciences, Sofia, Bulgaria

Maria **Dimou** – Aristotle University of Thessaloniki, Greece

Igor **Drobyshev** – Lund University, Sweden

Vladimir M. **Dubyanskiy** – Stavropol Plague Control Research Institute, Russia

Onome **Ejeromedoghene** – Southeast University, Nanjing, China

Ramazan Cuneyt **Erenoglu** – Canakkale Onsekiz Mart University, Canakkale, Turkey

Lee E. **Frelich** – Center for Forest Ecology, University of Minnesota, USA
Emil **Galev** – University of Forestry, Sofia, Bulgaria
Anna **Gamero** – Czech Society for Ornithology, Prague, Czechia
Sergey P. **Gaponov** – Voronezh State University, Russia
Veselina **Gospodinova** – University of Mining and Geology ‘St. Ivan Rilski’, Sofia, Bulgaria
Sergei Pavlovich **Grippa** – Petrozavodsk State University, Russia
Gradimir **Gruychev** – University of Forestry, Sofia, Bulgaria
Dinesh **Gupta** – Dr. Y. S. Parmar University of Horticulture and Forestry, Nauni, Solan, Himachal Pradesh, India
Miroslav **Hájek** – Czech University of Life Sciences Prague, Czechia
Yuriy Ivanovich **Hayda** – West Ukrainian National University, Ternopil, Ukraina
Eduard **Hochbichler** – University of Natural Resources and Life Sciences Vienna (BOKU), Austria
Yordan **Hristov** – Stellenbosch University, South Africa
Tseko **Ivanov** – Agricultural Academy, Sofia, Bulgaria
Vladan **Ivetić** – University of Belgrade, Serbia
Robert **Jandl** – Federal Research and Training Centre for Forests, Natural Hazards and Landscape, Vienna, Austria
Jernej **Jevsenak** – Slovenian Forestry Institute, Ljubljana, Slovenia
Marek **Ježík** – Institute of Forest Ecology, Slovak Academy of Sciences, Bratislava, Slovakia
Lina **Jocienė** – Vytautas Magnus University, Kaunas, Lithuania
Raff **Johannes** – Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany
Ezzat **Khan** – University of Malakand, Chakdara, Pakistan
Svitlana **Klymenko** – Dnepropetrovsk National University, Dnipro, Ukraine
Vasil **Kolev** – University of Forestry, Sofia, Bulgaria
Katarzyna **Komosinska-Vassev** – Medical University of Silesia, Sosnowiec, Poland
Georgi **Kostov** – University of Forestry, Sofia, Bulgaria
Frank **Krumm** – Swiss Federal Institute for Forest, Snow and Landscape Research WSL, Birmensdorf, Switzerland
Eugenija **Kupcinskiene** – Vytautas Magnus University, Kaunas, Lithuania
Birhanu Kebede **Kuris** – Ambo University, Oromia, Ethiopia
İlker Zeki **Kurtoğlu** – Recep Tayyip Erdogan University, Rize, Turkey
Hanna **Kwaśna** – Poznan University of Life Sciences, Poland
Apostolos P. **Kyriazopoulos** – Democritus University of Thrace, Orestiada, Greece
Petro **Lakyda** – National University of Life and Environmental Sciences of Ukraine,

Kyiv, Ukraine

Sabah **Lamlom** – Omar Al-Mukthar University, Bayda, Libya

Peter **Lohmander** – Optimal Solutions, Umeå, Sweden

Irina **Lyanguzova** – Komarov Botanical Institute, Russian Academy of Sciences, Moscow, Russia

Krasimira **Malinova** – University of Forestry, Sofia, Bulgaria

Ludmila **Malinova** – University of Forestry, Sofia, Bulgaria

Angamuthu **Manikandan** – ICAR-Central Institute for Cotton Research, New Delhi, India

Vitas **Marozas** – Vytautas Magnus University, Kaunas, Lithuania

Sergey Mikhaylovich **Matveev** – Voronezh State University of Forestry and Technologies 'G.F. Morozov', Russia

Valentyna L. **Meshkova** – Ukrainian Institute for Forestry Research and Forest Improvement, Kharkov, Ukraine

Volodymyr M. **Mezhenskyj** – National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine

Panagiotis **Michopoulos** – Forest Research Institute of Athens, Greece

Boyan **Milchev** – University of Forestry, Sofia, Bulgaria

E. Charles **Morris** – Western Sydney University, Sydney, Australia

Jose **Navarro-Pedreño** – Miguel Hernández University of Elche, Spain

Ani Adiwinata **Nawir** – Center for International Forestry Research, Jl. CIFOR, Bogor, Indonesia

Dina V. **Nesterkova** – Institute of Plant and Animal Ecology, Ural Branch, Russian Academy of Sciences, Yekaterinburg, Russia

Liviu **Nichiforel** – University 'Stefan cel Mare', Suceava, Romania

Jiří **Novák** – Forestry and Game Management Research Institute, Opočno, Czechia

Nunung Puji **Nugroho** – Research Institute for Forestry Technology on Watershed Management, Surakarta, Indonesia

Maya **Nustorova** – University of Forestry, Sofia, Bulgaria

Aurelia **Onet** – University of Oradea, Romania

Tolga **Öztürk** – Istanbul University, Cerrahpasa, Turkey

Vladimir Petrovich **Pasternak** – State Forest Resources Agency of Ukraine and the National Academy of Sciences of Ukraine, Kharkiv, Ukraine

Emilia **Pers-Kamczyc** – Polish Academy of Sciences, Institute of Dendrology, Koronik, Poland

Andrea R. **Proto** – Mediterranean University of Reggio Calabria, Italy

Rajashekhar **Rao** – Papua New Guinea University of Technology, Lae, Papua New Guinea

Mika **Rekola** – University of Helsinki, Finland

Oksana **Pelyukh** – Ukrainian National Forestry University, Lviv, Ukraine

Anna **Petrakieva** – University of Forestry, Sofia, Bulgaria

Olena **Pinchevska** – National University of Life and Environmental Sciences of Ukraine, Kyjev, Ukraine

Konstantinos **Poirazidis** – Ionian University, Kerkira, Greece

Neptali **Ramirez-Marcial** – Colegio de la Frontera Sur (ECOSUR), San Cristóbal de Las Casas, Chiapas, Mexico

Tsvetanka **Raycheva** – Agricultural University, Plovdiv, Bulgaria

Albert **Reif** – Institute of Silviculture, University of Freiburg, Germany

Bhayu **Rhama** – University of Palangka Raya, Indonesia

Samsuri – University of Sumatera Utara, Indonesia

Francesco **Santilli** – University of Pisa, Italy

Argyrios **Sapounidis** – Hellenic Fisheries Research Institute, University of Ioannina, Greece

Winfried **Schröder** – University of Vechta, Germany

Stepan **Senator** – Institute of Ecology of the Volga river basin of RAS, Togliatti, Russia

Dmitry **Shchepashchenko** – International Institute for Applied Systems Analysis, Laxenburg, Austria

Peter **Shurulinkov** – Institute of Biodiversity and Ecosystem Research at BAS, Sofia, Bulgaria

Roar **Solheim** – Natural History Museum, Agder University, Norway

Ihor **Soloviy** – Ukrainian National Forestry University, Lviv, Ukraine

Nicolas W. **Sotherton** – Game Conservancy Trust, Fordingbridge, Hampshire, UK

Raffaele **Spinelli** – National Research Council, Rome, Italy

Gavriil **Spyroglou** – Forest Research Institute, Athens, Greece

Line Tau **Strand** – Norwegian University of Life Sciences (UMB), Norway

Andrzej **Szymanski** – Poznan University of Technology, Poland

Alexander **Tashev** – University of Forestry, Sofia, Bulgaria

Andreas **Thrasylvoulou** – Aristotle University of Thessaloniki, Greece

Mulualem **Tigabu** – Swedish University of Agricultural Sciences (SLU), Alnarp, Sweden

Toma **Tonchev** – University of Forestry, Sofia, Bulgaria

Lyubcho **Trichkov** – Executive Forests Agency, Sofia, Bulgaria

Stefanos **Tsiaras** – Aristotle University of Thessaloniki, Greece

Ivaylo **Velichkov** – Forest Research Institute, Bulgarian Academy of Sciences, Sofia, Bulgaria

Lidia **Vetchinnikova** – Forest Research Institute, Karelian Research Centre of Russian Academy of Sciences, Petrozavodsk, Russia

Cengiz **Yücedağ** – Mehmet Akif Ersoy University, Burdur, Turkey

Larisa Anatolyevna **Yushchouk** – Legislative Assembly of the Novosibirsk Region, Russia

Nikolay **Zafirov** – University of Forestry, Sofia, Bulgaria

Lyudmyla **Zahvoyska** – Ukrainian National Forestry University, Lviv, Ukraine

Peter **Zhelev** – University of Forestry, Sofia, Bulgaria

Miglena **Zhiyanski** – Forest Research Institute, Bulgarian Academy of Sciences, Sofia, Bulgaria

