



**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

**Daugavpils University**  
**Institute of Life Sciences and Technology**

**11th INTERNATIONAL CONFERENCE ON  
BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October, 2022



**BOOK OF ABSTRACTS**

**Daugavpils University Academic Press “Saule”**  
**Daugavpils 2022**



**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

**INTERNATIONAL SCIENTIFIC COMMITTEE:**

**Dr., Prof. Arvīds Barševskis**, Chairman of the Conference, Institute of Life Sciences and Technology, Daugavpils University, Daugavpils, Latvia

**Dr., Prof. Inese Kokina**, Institute of Life Sciences and Technology, Daugavpils University, Daugavpils, Latvia

**Dr. Assoc. Prof. Analyn Anzano Cabras**, University of Mindanao, Davao, Philippines

**Dr. Prof. Linards Sisenis**, Forest Faculty, Latvia University of Life Sciences and Technologies, Latvia

**Dr., Prof. Ingrida Šauliene**, Šiauliai Academy, Vilnius University, Šiauliai, Lithuania

**Dr. Polina Degtjarenko**, University of Tartu, Estonia

**Dr. Dmitry Telnov**, Institute of Life Sciences and Technology, Daugavpils University, Daugavpils, Latvia

**Dr. Evita Strode**, Latvian Institute of Aquatic Ecology, Daugavpils University Agency, Riga, Latvia

**Dr. Muza Kirjušina**, Institute of Life Sciences and Technology, Daugavpils University, Daugavpils, Latvia

**Published by: Daugavpils University Academic press “Saule”.**

**Izdevējdarbības reģistr. apliecība Nr. 2-0197.**

**Vienibas iela 13, Daugavpils, LV-5400, Latvija.**

**WEB support:** [https://biodiversityconference.biology.lv/public/conferences/6/AB\\_2022.pdf](https://biodiversityconference.biology.lv/public/conferences/6/AB_2022.pdf)

ISBN 978-9984-14-971-4

**This conference is supported by:**



*The Project “Threatened species in Latvia: improved knowledge, capacity, data and awareness” LIFE19 GIE/LV/000857 LIFE FOR SPECIES is implemented with the financial support of the LIFE Programme of the European Union and Latvian State Regional Development Agency.*

*This publication reflects only authors’ view. Neither European Climate, Infrastructure and Environment Executive Agency nor European Commission are responsible of any use that may be made, or the information contained therein.*



## CONTENTS

GROWING CONDITIONS OF WILD CLOUDBERRY <i>RUBUS CHAMAEMORUS</i> IN LATVIA Āboliņa Laura .....	14
DIVERSITY AND ECOLOGICAL FEATURES OF DOTHIDEOMYCETES AND SORDARIOMYCETES IN ALLUVIAL BLACK ALDER FORESTS (LITHUANIA) Arslanova Tatjana, Rukšėnienė Jone .....	15
HOW RARE ARE RARE SPECIES? EXAMPLES OF <i>CARDAMINE FLEXUOSA</i> AND <i>VERONICA MONTANA</i> Auniņa Liene.....	16
MODELLING OWL AND WOODPECKER HABITAT SUITABILITY TO EVALUATE FOREST CONSERVATION IN LATVIA Avotins Andris, Bergmanis Madars, Priednieks Janis, Aunins Ainars .....	17
LONG TERM CHANGES IN SMALL MAMMAL DIVERSITY IN LITHUANIA Balčiauskas Linas, Balčiauskienė Laima .....	18
LIFE (OR NOT) IN THE FAST LANE: DIVERSITY OF THE ROADKILLED MAMMALS IN LITHUANIA Balčiauskienė Laima, Stratford Jos, Kučas Andrius, Balčiauskas Linas.....	19
HOW DO FUTURE PRIMARY SCHOOL TEACHERS FACE THE PROBLEM OF BIODIVERSITY LOSS RELATED TO FOOD CONSUMPTION? Banos-González Isabel, Esteve-Guirao Patricia, Valverde-Pérez Magdalena.....	20
FAUNISTIC STUDIES FOR BIODIVERSITY CONSERVATION IN THE PHILIPPINE ARCHIPELAGO. AN EXAMPLE OF RESEARCH ON LONGHORNED BEETLES (CERAMBYCIDAE) Barševskis Arvīds, Cabras Analyn Anzano, Medina Milton Norman .....	21
ESTIMATION OF ANTIOXIDANT ENZYME ACTIVITIES IN WHEAT SEEDLINGS ( <i>TRITICUM AESTIVUM</i> L.) AFTER EXPOSURE TO A MODULATED EXTREME TEMPERATURE INFLUENCE AND SUBSEQUENT RECOVERY Batjuka Anna, Škute Natalja, Petjukevičs Aleksandrs, Umbraško Inta.....	22
CENSUS AND GENETIC ANALYSIS OF <i>HYLA ORIENTALIS</i> (BEDRIAGA, 1890) (ANURA, HYLIDAE) IN LATVIA, 30 YEARS AFTER ITS REINTRODUCTION: PRELIMINARY RESULTS Birbele Elza, Di Marzio Alessandro, Deksne Gunita, Gulbe Elīna, Šķērstiņa Rebeka, Puchades Lucia ...	23
RARE SPECIES OF <i>SORBUS</i> L. IN LATVIA AND THEIR PROTECTION STATUS Bojāre Aiva, Roze Daina, Evarts-Bunders Pēteris, Strode Linda .....	24



**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

USE OF THE PLUTOF SYSTEM IN THE MANAGEMENT OF ANIMAL AND PLANT COLLECTIONS AT DAUGAVPILS UNIVERSITY Borodin Oleg, Petrov Dmitry, Borodina Olga .....	25
FULGOROMORPHA & CICADOMORPHA (HEMIPTERA) OF LATVIA Borodin Oleg.....	26
ZOOPLANKTON COMMUNITY IN THE DAUGAVA RIVER AND PĻAVIŅAS RESERVOIRSECTION JĒKABPILS-VECZELĶI Brakovska Aija, Paidere Jana .....	27
NETWORK OF FOREST HABITATS OF EUROPEAN IMPORTANCE IN LATVIA – ANALYSIS OF 9010* WESTERN TAIGA INVENTORY DATA Brūmelis Guntis, Ikauniece Sandra, Laime Brigita, Priede Agnese, Tjarve Didzis, Ābeltiņa Ieva, Puga Jānis <sup>2</sup> .....	28
REVIEW OF FOSSIL SILVANID FLAT BARK BEETLES (INSECTA: COLEOPTERA: SILVANIDAE) Bukejs Andris <sup>1</sup> , Alekseev Vitalii I. ....	29
IDENTIFICATION OF NEW HYBRIDS IN THE DIFFICULT PLANT GROUP <i>RANUNCULUS</i> SECT. <i>BATRACHIUM</i> Butkuvienė Jurgita, Sinkevičienė Zofija, Patamsytė Jolanta, Bobrov Alexander A., Chemeris Elena, Naugžemys Donatas.....	31
DAZZLING NEW EASTER EGG WEEVILS FROM THE PHILIPPINES: TRENDS AND THREATS Cabras Analyn Anzano .....	32
PRELIMINARY ASSESSMENTS OF LATVIAN AMPHIBIAN AND REPTILE CONSERVATION STATES BASED ON IUCN CRITERIA Čeirāns Andris .....	33
CONTRIBUTION BY THE LIFE FOR SPECIES PROJECT TO THE PROTECTION OF THREATENED SPECIES IN LATVIA Cekstere Gunta, Dmitry Telnov, Dzenis Jēkabs .....	34
INFLUENCE OF GREAT CORMORANT NESTING ON VEGETATION DEVELOPMENT AND SOIL CHEMICAL COMPOSITION ON ABELU ISLAND OF LAKE KANIERIS Cekstere Gunta, Laivins Maris.....	35
EVALUATION OF LIDAR DATA UTILITY IN SEARCH FOR LARGE NESTS Daknis Pēteris, Elferts Didzis, Kalvāns Aigars, Avotiņš Andris .....	36



**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

READY! SET! LICHEN! – CITIZEN SCIENCE FOR LICHEN SURVEY ON FOREST LAND IN ESTONIA Degtjarenko Polina, Lõhmus Piret, Copoț Ovidiu, Rosenvald Raul, Lõhmus Asko, Lotman Silvia.....	37
BALTIC COD ( <i>GADUS MORHUA</i> ) CONDITION AND HEALTH STATUS IN THE CHANGING ECOSYSTEM OF EASTERN BALTIC: CODHEALTH Deksne Gunita, Putnis Ivars, Krūze Ēriks, Selezņova Maija, Baranova Tatjana, Šics Ivo, Rozenfelde Loreta, Hudjakova Darja, Ustups Didzis .....	38
EFFECT OF REPELLENT “CERVACOL EXTRA” ON HEIGHT INCREMENT IN SCOTS PINE YOUNG STANDS Dubrovskis Edgars, Miezīte Olga, Jansone Baiba .....	39
NEW INSIGHT INTO AN OBSCURE SPECIES <i>ROSA CIESELSKII</i> BLOCKI IN LATVIA40 Evarts-Bunders Pēteris, Evarte-Bundere Gunta, Bojāre Aiva .....	40
MAPPING SPECIES DISTRIBUTION OF KUHLS PIPISTRELLE ( <i>PIPISTRELLUS KUHLII</i> ) IN EASTERN IRAN Farashi Azita .....	41
BIOLOGICAL DIVERSITY ASSOCIATED WITH THE SUBSTRATE OF THE EASTERN REGION OF THE GULF OF RIGA Fedorovska Anete, Andersone Ingrida.....	42
TRAINING PRIMARY AND KINDERGARTEN TEACHERS WITH PEDAGOGICAL SKILLS TO PROMOTE ECOCENTRIC EDUCATION Ferreira Maria Eduarda, Costa António, Pitarma Rui.....	43
THE IMPORTANCE OF RETENTION TREES IN EPIPHYTIC SPECIES CONSERVATION Gerra-Inohosa Linda, Jansone Diāna, Lībiete Zane.....	44
THE HELMINTHFAUNA STUDY OF <i>RANA TEMPORARIA</i> LINNAEUS, 1758 IN LATVIA Grāvele Evita, Pupiņš Mihails, Vasilenko Volodymyr, Mickevičius Saulius, Kirjušina Muza.....	45
THE POSSIBLE FUNCTIONAL IMPORTANCE OF SHELL APPENDAGES IN <i>JAPONIA SAETIGERA</i> (GASTROPODA: CYCLOPHORIDAE) Greķe Kristīna, Telnovs Edvins, Kagainis Uģis, Telnov Dmitry .....	46
USE OF AUTOMATED SYSTEM TO STUDY THE EFFECT OF SEROTONIN CONCENTRATION CHANGES ON THE BEHAVIOUR OF FRUIT FLIES ( <i>DROSOPHILA MELANOGASTER</i> MEIGEN, 1830) Grigorjeva Tatjana, Maļutina Vita Viktorija, Kotova Annija, Krama Tatjana, Munkevics Māris, Popovs Sergejs, Krams Ronalds, Krams Indriķis .....	47
PARNASSUS-LEAVED WATER-PLANTAIN ( <i>CALDESIA PARNASSIFOLIA</i> ) – A NEW SPECIES IN THE FLORA OF LATVIA Grīnberga Laura, Suško Uvis.....	48
MODELLING AND CONTROL OF MARINE SYSTEMS UNDER UNCERTAINTY Gromov Dmitry, Upmann Thorsten.....	49



**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

MOLECULAR IDENTIFICATION OF <i>SARCOCYSTIS</i> SPECIES FOUND IN SHEEP AND GOATS FROM LITHUANIA Gudiškis Naglis, Marandykina-Prakienė Alina, Juozaitytė-Ngugu Evelina, Prakas Petras, Butkauskas Dalius .....	50
HABITAT REQUIREMENTS OF CRITICALLY ENDANGERED JEWEL BEETLE <i>EURYTHYREA QUERCUS</i> (HERBST, 1780) IN THE CZECH REPUBLIC Helclová Michaela, Kozel Petr, Čížek Lukáš .....	51
BIODIVERSITY OF MICROALGAE WITH EMPHASIS ON PRACTICAL IMPORTANCE - A REVIEW Hodhodi Alireza, Rabiépour Alireza .....	52
ENVIRONMENTAL FILTER AND BIOTIC INTERACTION DRIVE <i>GEOMETRIDAE</i> (LEPIDOPTERA) PHYLOGENETIC STRUCTURE AND THEIR ASSEMBLAGES ON MT. WILHELM ELEVATIONAL GRADIENT, NEW GUINEA Ibalim Sentiko, Novotny Vojtech, Toko Pagi, Koane Bonny, Janda Milan, Segar Simon .....	53
BIOLOGICAL AND GENETIC DIVERSITY OF THE LATVIAN POPULATION OF CROP WILD RELATIVE SPECIES <i>TRIFOLIUM FRAGIFERUM</i> Ieviņš Gederts .....	54
THE CHANGES OF SPECIES COMPOSITION AND ABUNDANCE OF GROUND COVER VEGETATION DURING THE FIRST FIVE YEARS AFTER THE CLEARCUT IN HYLOCOMIOSA FOREST SITE TYPE Indriksons Aigars, Ratniece Anita Ieva, Straupe Inga .....	55
RARE EPIPHYTE TRANSPLANTATION EXPERIMENTS IN DIFFERENT AGED DECIDUOUS FOREST STANDS Irbe Inese, Mežaka Anna, Moisejevs Rolands, Stepanova Dace .....	56
NATURAL ENEMIES OF HARD TICKS <i>IXODES</i> SPP. (ACARI, IXODIDA) AND POSSIBILITIES OF THEIR USE IN TICK POPULATION REGULATION Jankevica Liga, Dubova Ilze, Salmane Ineta, Silaks Arturs, Grodskis Eduards .....	57
DEAD BETTER THAN ALIVE – THE CASE OF RETENTION TREES AND MICROHABITATS IN HEMIBOREAL FORESTS Jansone Diāna, Matisons Roberts, Donis Jānis, Lībiete Zane, Jansons Āris .....	58
ARE CORMORANT COLONIES INFLUENCING FLUCTUATIONS OF SMALL MAMMAL POPULATIONS? Jasiulionis Marius, Balčiauskas Linas, Balčiauskienė Laima .....	59
<i>ARMERIA MARITIMA</i> FROM THE BALTIC SEA REGION AS EXTREMOPHILE SPECIES: TOLERANCE AGAINST HEAVY METALS AND SALINITY Jēkabsone Astra, Karlsons Andis, Ievins Gederts .....	60
THE LATVIAN RED LIST OF DRAGONFLIES ODONATA: PRELIMINARY RESULTS Kalniņš Mārtiņš, Pīpkalēja Zane .....	61



**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

DISTRIBUTION AND POPULATION SIZE OF THE FRESHWATER PEARL MUSSEL <i>MARGARITIFERA MARGARITIFERA</i> (MOLLUSCA: BIVALVIA) IN LATVIA IN 2020–21 (NATIONAL REPORT) Kalniņš Mārtiņš, Kukāre Ilze, Rudzīte Mudīte, Liepiņš Kaspars, Kukārs Normunds, Rudzītis Māris, Pīpkalēja Zane.....	62
MODAL VERBS IN DISCURSIVE CONSTRUCTIONS OF ENVIRONMENTAL ISSUES BY GRETA THUNBERG.....	63
Kapranov Oleksandr .....	63
AIMING MORE DIVERSE BIOLOGICAL CONTROL AGENT FOR CONIFER STUMP PROTECTION AGAINST ROOT ROT: APPLICATION OF DIFFERENT BIOLOGICAL WASTE SUBSTRATES FOR CULTIVATION OF SAPROBIC BASIDIOMYCETES .....	64
Kļaviņa Dārta, Burņeviča Natālija, Rudzīte Lība, Gaitnieks Tālis .....	64
NORWAY SPRUCE WOOD FUNGAL COMMUNITY COMPOSITION IN YOUNG LIVING TREES IS AFFECTED BY THINNING.....	65
Kļaviņa Dārta, Bitenieks Krišs, Polmanis Kaspars, Daugaviete Mudrīte, Gaitnieks Talis.....	65
CANOPY OPENNESS VS. DEADWOOD MICROHABITATS: WHAT IS MORE IMPORTANT FOR SAPROXYLIC BEETLES IN PALAEARCTIC REGION?.....	66
Kozel Petr, Šebek Pavel, Drag Lukáš, Čížek Lukáš .....	66
THE EFFECT OF THE ECOLOGICAL TRAPS ON THE PASSERINE (PASSERIFORMES LINNAEUS, 1758) BIRD SURVIVAL AND REPRODUCTION .....	67
Krams Ronalds, Krama Tatjana, Elferts Didzis, Brūmelis Guntis, Dauškane Iluta, Cīrule Dina, Daukšte Janīna, Raibarte Patrīcija, Strode Linda, Šmits Agnis, Krams Indriķis .....	67
PRELIMINARY RESULTS OF <i>CREPIS MOLLIS</i> (JACQ.) ASCH. (ASTERACEAE) DISTRIBUTION IN THE FLORA OF LATVIA .....	69
Krasnopoļska Dana .....	69
INVESTIGATION OF LIPIDS IN SEEDS OF INVASIVE PLANT SPECIES.....	70
Krasovska Liega.....	70
SUSTAINABLE DEVELOPMENT OF THE COMPOSITE MATERIAL WASTE RECYCLING TECHNOLOGY .....	71
Krauklis Andrejs .....	71
TEACHER'S PROFESSIONAL COMPETENCE AND THE ATTRACTIVENESS OF WORKPLACE ENVIRONMENT IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT .....	72
Kravale-Pauliņa Mārīte, Fjodorova Ilona, Oļehnoviča Eridiana .....	72
USING LICHEN FUNCTIONAL TRAITS AS INDICATORS OF NATURAL FOREST BIOTOPES IN FENNOSCANDIAN HEMIBOREAL NATURAL OLD BROAD-LEAVED DECIDUOUS FORESTS (EU HABITATS DIRECTIVE HABITAT CODE 9020) .....	73
Kruglikova Aleksandra, Mežaka Anna, Rolands Moisejevs, Oļehnoviča Evita, Pastare-Skutele Anna, Nītcis Māris.....	73
DIET, GROWTH AND BODY CONDITION OF BALTIC COD ( <i>GADUS MORHUA</i> ) IN RESPONSE TO ECOSYSTEM CHANGES IN THE EASTERN BALTIC SEA.....	74



**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

Krūze Ēriks, Baranova Tatjana, Šics Ivo, Putnis Ivars, Rozenfelde Loreta, Plikšs Martins, Deksnē Gunita, Ustups Didzis .....	74
TWO-YEAR EXPERIENCE WITH PLANT SPECIES ADDITION IN URBAN LAWNS: THE CASE OF THE LATVIAN FUND FOR NATURE CAMPAIGN	
Krūzmane Madara, Rūsiņa Solvita, Sniedz-Kretalova Rūta, Brizga-Kalniņa Liene .....	75
TRANSFORMATION OF NATURA 2000 92A0 HABITAT DUE TO MASS INVASION OF WALNUT ( <i>JUGLANS REGIA</i> L.) IN UKRAINE	
Kucherko Ihor, Zamoroka Andrew .....	76
PLANT TROPISMS AS ADAPTIVE RESPONSES TO THE CHANGING ENVIRONMENT: COMPLEX VIEW ON MOLECULAR MECHANICS OF SIGNAL TRANSDUCTION	
Kulbachna Alina Oleksandrivna, Škute Natalja.....	77
IMPACTS OF INVASIVE ALIEN PLANTS ON ECOSYSTEM SERVICES OF HATHNIKUND LAKE IN YAMUNANAGAR HARYANA INDIA	
Kumar Jitender.....	78
EVALUATION OF ALLERGENIC POLLEN SPREAD IN URBAN GREEN SPACES: RASEINIAI CASE	
Kundrotienė Vilma, Šaulienė Ingrida .....	79
TAXONOMICAL DIVERSITY OF YEWS <i>TAXUS</i> AND EX SITU CONSERVATION IN NATIONAL BOTANIC GARDEN OF LATVIA	
Lāce Linda, Strode Linda.....	80
GROWTH DYNAMICS OF <i>QUERCUS ROBUR</i> FOLLOWING THINNING IN MIXED STANDS	
Liepiņa Agnese Anta, Matisons Roberts, Brūmelis Guntis .....	81
DISTRIBUTION OF NON-INDIGENOUS SPECIES <i>SINELOBUS STANFORDI</i> , <i>CHELICOROPHIUM CURVISPINUM</i> AND <i>DIKEROGAMMARUS VILLOSUS</i> IN LATVIAN PORTS	
Lilienfelde Paula, Kostanda Māra.....	82
THE VALUE OF MONITORING INFORMATION FOR WATER QUALITY MANAGEMENT	
Luhede Amelie, Yaqine Houda, Bahmanbijari Reza, Römer Michael, Upmann Thorsten .....	83
A BRIEF COMPARISON OF SUB-SPECIES OF GREAT EGRET <i>ARDEA ALBA</i> : A REVIEW	
Mahdiany Bora Khashayar .....	84
APHIDS OF THE GENUS <i>DYSAPHIS</i> (HEMIPTERA: APHIDIDAE) IN VILNIUS CITY AND ITS SUBURBS (LITHUANIA)	
Masoit Barbora Ieva, Havelka Jekaterina .....	85
MOLECULAR INVESTIGATIONS OF <i>TRICHINELLA</i> SPP. IN PREDATORY MAMMALS FROM LITHUANIA	
Maziliauskaitė Evelina, Butkauskas Dalius, Kirjušina Muza, Juozaitytė-Ngugu Evelina, Prakas Petras ..	86
<i>ROSA TOMENTOSA</i> AND <i>R.SHERARDII</i> – NEW KNOWLEDGE OF DISTRIBUTION AND OCCURANCE IN LATVIA	
Medne Maija, Evarts - Bunders Pēteris, Evarte - Bundere Gunta, Bojāre Aiva .....	87





**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

IMAGE PROCESSING FOR UAV MONITORING OF <i>AURELIA AURITA</i> IN COASTAL AREAS OF THE GULF OF RIGA Meikališa Santa Katrīna.....	88
COMPOST OF MACROALGAE FROM THE BALTIC SEA - A PRODUCT OF SUSTAINABLE AGRICULTURE AND MARINE FARMING Meškis Sandijs, Skutele Kristiāna, Dorbe Adrija.....	89
<i>BETULA NANA</i> : DO YOU KNOW HOW I GROW? Metāle Madara Margita <sup>1</sup> , Dauškane Iluta <sup>1</sup> , Matisons Roberts <sup>2</sup> .....	90
RARE MOSS <i>DICRANUM VIRIDE</i> METAPOPOPULATION SPATIAL PATTERNS IN DECIDUOUS FOREST LANDSCAPE IN LATVIA Mežaka Anna, Irbe Inese .....	91
BIOTIC FACTORS INFLUENCE ON HEALTHS STATE OF <i>PINUS SYLVESTRIS</i> L. IN THE YOUNG FOREST STAND IN MYRTILLOSA Miezīte Olga, Dubrovskis Edgars, Jansone Baiba .....	92
MOLECULAR IDENTIFICATION OF <i>SARCOCYSTIS</i> SPP. IN INTESTINES OF MUSTELIDS FROM LITHUANIA Moskaliova Darija, Šneideris Donatas, Butkauskas Dalius, Juozaitytė-Ngugu Evelina, Prakas Petras .....	93
BODY ELEMENTAL COMPOSITION VARIABILITY AND REPRODUCTIVE SUCCESS OF BUFF-TAILED BUMBLEBEES ( <i>BOMBUS TERRESTRIS</i> LINNAEUS, 1758) IN AGRICULTURAL LANDSCAPES Munkevics Maris, Krams Ronalds, Popovs Sergejs, Krama Tatjana, Elferts Didzis, Dobkeviča Linda, Raibarte Patrīcija, Krams Indriķis.....	94
RIVER MODIFICATION HAS AN IMPACT ON THE GENETIC STRUCTURE OF COMMON REED POPULATIONS Naugžemys Donatas, Patamsytė Jolanta, Butkuvienė Jurgita, Žvingila Donatas .....	95
MOVING FORWARD TOWARDS SUSTAINABLE RESEARCH AND CONSERVATION OF PHILIPPINE BEETLES: MORE QUESTIONS THAN ANSWERS Milton Norman Medina .....	96
THE FIRST REPORT ABOUT ANALYSIS OF EUROPEAN EEL ( <i>ANGUILLA ANGUILLA</i> ) MITOCHONDRIAL DNA DIVERSITY IN PART OF BALTIC LAKELAND Oreha Jelena, Morozova Aleksandra, Garkajs Alberts, Kirjushina Muza, Kostousov Vladimir G., Škute Natalja.....	97
EVALUATION OF RISK ASSESSMENTS FOR 24 INVASIVE SPECIES IN LATVIA. MAIN THREATS AND CHALLENGES Ozols Jānis, Balalaikins Maksims, Birzaks Jānis, Bojāre Aiva, Čeirāns Andris, Dukule-Jakušenoka Karīna, Evarte-Bundere Gunta, Jakubāne Iveta, Paidere Jana, Valainis Uldis.....	98
RESEARCH OF THE PONTO-CASPIAN AMPHIPODS IN THE DAUGAVA RIVER, LATVIA Paidere Jana, Brakovska Aija, Savicka Marina .....	99



**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

TWO NEW SPECIES OF THE GENUS <i>METAPOCYRTUS</i> HELLER 1912, SUBGENUS <i>DOLICHOCEPHALOCYRTUS</i> SCHULTZE 1925 (COLEOPTERA, CURCULIONIDAE, ENTIMINAE, PACHYRHYNCHINI) FROM NORTHERN MINDANAO PHILIPPINES Pajota Efrhain Loidge Pasamba .....	100
PEATLAND DIVERSITY CONSERVATION EXPERIENCE IN LATVIA Pakalne Māra .....	101
PEATLAND RESTORATION FOR GREENHOUSE GAS EMISSION REDUCTION AND CARBON SEQUESTRATION IN THE BALTIC SEA REGION Pakalne Māra, Barisa Keita.....	102
BRYOPHYTE SPECIES DIVERSITY ALONG BLACK ALDER SWAMP FOREST CHRONOSEQUENCE Pastare-Skutele Anna, Oļehnoviča Evita, Mežaka Anna, Liepiņa Ligita .....	103
HIGH STUMPS AS NESTING SITES FOR BEES AND WASPS IN BOREAL FORESTS..... Paukkunen Juho, Sutinen Suvi, Björklund Heidi, Purhonen Jenna	104
A WAY TO ORGANIZE BOTANICAL FIELD PRACTICES FOR UNIVERSITY STUDENTS IN CONDITIONS OF PANDEMICS OR/AND WARS Peregrym Mykyta, Turisová Ingrid, Matsai Nataliia, Tashev Alexander, Péntesné Kónya Erika, Havryliuk Yuliia .....	105
SHORT TERM RESPONSE OF SAPROXYLIC BEETLES AND ACULEATE HYMENOPTERA TO FOREST DISTURBANCE AND TWO DIFFERENT LEVELS OF POST-DISTURBANCE LOGGING – CANOPY OPENNESS IS MORE IMPORTANT THAN DEAD WOOD Perlík Michal.....	106
FACTORS INFLUENCING GROUND VEGETATION IN FOREST STANDS FERTILIZED WITH WOOD ASH AND AMMONIUM NITRATE Petaja Guna .....	107
VARIABILITY OF MICROSATELLITE SSR DNA LOCI AND GENETIC IDENTIFICATION OF INVASIVE AQUATIC PLANT: <i>ELODEA CANADENSIS</i> (MICHX.) IN EASTERN AND CENTRAL PART OF LATVIAN WATERBODIES Petjukevičs Aleksandrs, Škute Natalja.....	108
EXPERIMENTAL STUDY OF CADMIUM - INDICATING FRESHWATER DIATOMS Petrenas Gediminas, Kazlauskas Martynas .....	109
RED LIST ASSESSMENT OF DORMICE IN LATVIA: FOUR SPECIES, FOUR DIFFERENT IUCN CATEGORIES OF THREAT Pilāts Valdis .....	110
INTESTINAL MICROBIOME COMPOSITION DIVERSITY OF THE BUFF-TAILED BUMBLEBEE ( <i>BOMBUS TERRESTRIS</i> LINNAEUS, 1758) IN PRESENT AND FORMER AGRICULTURAL LANDS Popovs Sergejs, Krama Tatjana, Krams Ronalds, Munkevics Maris, Gudra Dita, Megnis Kaspars, Fridmanis Davids, Krams Indrikis .....	111
THREAT OF PREDATION ALTERS <i>DROSOPHILA MELANOGASTER</i> MOVEMENT PATTERNS	



**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

Popovs Sergejs, Munkevics Maris, Trakimas Giedrius, Krama Tatjana, Krams Ronalds, Grigorjeva Tatjana, Krams Indrikis .....	112
CHARACTERISTICS AND SPATIAL PATTERNS OF EU HABITAT 6410 MOLINIA MEADOWS ON CALCAREOUS, PEATY OR CLAYEY-SILT-LADEN SOILS IN LATVIA Pošiva-Bunkovska Anete .....	113
MOWING OF GREAT FEN-SEDGE <i>CLADIUM MARISCUS</i> DOES NOT RESULT IN THE RECOVERY OF SPECIES-RICH SMALL-SEDGE FEN COMMUNITIES Priede Agnese .....	114
PLANT TISSUE CULTURE APPROACH TO STUDY HEAVY METAL TOLERANCE OF <i>ARMERIA MARITIMA</i> Purmale Liva <sup>1</sup> , Karlsons Andis <sup>2</sup> , Ieviņš Ģederts <sup>1</sup> .....	115
BIOCHEMICAL AND GENETIC EVALUATION OF LATVIAN <i>RUBUS CHAMAEMORUS</i> POPULATION Rashal Isaak, Miķelsone Andra, Krasņevska Nikole, Vasiļjeva Svetlana, Grauda Dace, Butkauskas Dalius .....	116
BENZANTHRONE LUMINOPHORES: ARE THEY EQUAL FOR EFFECTIVE AND RAPID STUDY OF TREMATODA AND NEMATODA PARASITES? Rubenina Ilze, Kirjusina Muza, Mezaraupe Ligita, Gavarane Inese .....	117
IDENTIFYING KEY PARAMETERS FOR ASSESSMENT OF SEMI-NATURAL GRASSLAND HABITAT CONSERVATION DEGREE Rūsiņa Solvita <sup>1</sup> , Elferts Didzis <sup>2</sup> , Galniece Baiba <sup>3</sup> , Ancāne Marta <sup>1</sup> .....	118
AN ECOCRITICISM COURSE AND ITS DEVELOPMENT OF ENGLISH PRE-SERVICE TEACHERS' PEDAGOGICAL CONTENT KNOWLEDGE OF SUSTAINABILITY (PCKS) Saiful Jepri Ali <sup>1</sup> , Setyorini Ari <sup>2</sup> .....	119
TEACHERS' PERSPECTIVES ON BIODIVERSITY EDUCATION Sarkhosh Mehdi, Naeb Pashaei Katayoon .....	120
LONG-TERM TRENDS IN ATMOSPHERIC POLLEN: A 19-YEAR RETROSPECTIVE Šauliēne Ingrida, Šukienė Laura .....	121
THE MORPHOLOGICAL CHANGES IN THE FUNCTIONALLY DIFFERENT PLANT ORGANS IN THE PRESENCE OF CYCLOSPORINE A Savicka Marina, Škute Natalja.....	122
POLLARDING: AN OVERLOOKED TOOL IN THE CONSERVATION OF DEADWOOD DEPENDENT FAUNA Sebek Pavel.....	123
COMPLEX LIMNOLOGICAL SURVEY OF EUTROPHIC LAKE SAUKAS Skuja Agnija <sup>1</sup> , Ozoliņš Dāvis <sup>1</sup> , Paidere Jana <sup>1,2</sup> , Druvietis Ivars <sup>1</sup> , Grīnberga Laura <sup>1</sup> , Kokorīte Ilga <sup>3</sup> .....	124



**11th INTERNATIONAL CONFERENCE ON BIODIVERSITY RESEARCH**  
Daugavpils, 20 – 21 October 2022

FLORIVORY BY <i>ZACLADUS GERANII</i> REDUCES SEED SET IN <i>GERANIUM SYLVATICUM</i> Soininen Jaakko Olavi Santeri, Kytöviita Minna-Maarit.....	125
USE OF AEROBIOLOGICAL DATA FOR VEGETATION STUDIES Sozinova Olga, Djubina Nikola, Titane Paula Eliza.....	126
WE MIGHT WIN THE BATTLE, BUT NOT THE WAR: BREEDING OF SMALL MAMMALS IN THE COMMERCIAL ORCHARDS Stirkė Vitalijus, Balčiauskas Linas, Balčiauskienė Laima.....	127
THE VEGETATION SUCCESSION AFTER FOREST MANAGEMENT ACTIVITIES IN LANGERVALDE URBAN FOREST TRACT, JELGAVA CITY, LATVIA Straupe Inga .....	128
PLANT COMMUNITIES WITH DWARF BIRCH <i>BETULA NANA</i> L. IN LATVIA Strode Linda, Brūmelis Guntis.....	129
NEW RECORDS OF <i>NAJAS FLEXILIS</i> , <i>NAJAS TENUISSIMA</i> AND OTHER <i>NAJAS</i> SPECIES IN LATVIA Suško Uvis, Čakare Maija, Jēkabsone Jolanta, Vītola Inga, Grīnberga Laura, Zviedre Egīta, Līcīte Vita, Skrinda Irēna, Evarts-Bunders Pēteris .....	130
SUSTAINABLE WAY OF LIFE AND EDUCATION AS THE MOST IMPORTANT FACTORS INFLUENCING CLIMATE CHANGES Switala Eugeniusz.....	132
LIFE FOR SPECIES PROJECT: FIRST EVER EXTINCTION RISK ASSESSMENT OF LATVIAN INVERTEBRATES Telnov Dmitry.....	133
TO THE KNOWLEDGE OF <i>ERYTHRUS PHILIPINUS</i> VIVES, 2021, <i>XYSTROCERA DANILEVSKII</i> VIVES, 2013 AND <i>XYSTROCERA FESTIVA</i> THOMSON, 1860 (COLEOPTERA: CERAMBYCIDAE) WITH NEW DISTRIBUTION DATA IN THE PHILIPPINES Torrejos Chrestine B, Barševskis Arvīds .....	134
IDENTIFICATION OF MICROORGANISMS ISOLATED FROM REPTILES BY RAMAN SCATTERING METHODS Umbrasko Inta, Batjuka Anna, Petjukevičs Aleksandrs, Škute Natalja.....	135
FOREST LOCAL LANDSCAPE DESIGN PLANNING Upenieks Andris, Veinberga Laura, Zariņš J.....	136
THE PROBLEM OF INVASIVE ALIEN SPECIES FROM AN EDUCATIONAL POINT OF VIEW Valverde Pérez Magdalena, Baños González Isabel, Esteve Guirao Patricia, Ruíz Navarro Ana.....	138
AMPHIBIANS AS A PESTICIDE POLLUTION INDICATOR Vasylenko Volodymyr, Shtopko Mykhailo, Sidorenko Marina, Mickevičius Saulius .....	139
FOREST LANDSCAPE ECOLOGICAL PLANNING IN NEARBY RIGA FORESTS Veinberga Laura, Germanis J., Zarins J.....	140



**THE PROBLEM OF INVASIVE ALIEN SPECIES FROM AN EDUCATIONAL POINT OF VIEW**

**Valverde Pérez Magdalena, Baños González Isabel, Esteve Guirao Patricia, Ruíz Navarro Ana**

Didáctica de las Ciencias Experimentales. Facultad de Educación. Universidad de Murcia, Spain  
*mvp@um.es, ibbg1@um.es, p.esteve@um.es, anaruiz@um.es*

The United Nations General Assembly has set the fight against the biodiversity loss as one of the priorities developed in the 2030 Agenda on Sustainable Development Goals. To achieve this, education plays a key role in involving citizens in problems such as those related to invasive alien species (IAS), which are currently one of the main causes of said biodiversity loss. From this perspective, this work proposes the design of an educational proposal for the training of these students of the Degrees in Early Childhood Education and Primary Education, given their strategic role in promoting sustainability from schools. To this end, first, a diagnostic analysis of the knowledge and perception of these future teachers about the problem of IAS is carried out. For this, the questionnaire proposed in the LIFE INVASAQUA project has been used, collecting 2 a total of 102 responses. Results suggest a low level of knowledge about the problem, and the existence of a certain tendency towards an ecological perception of the impacts generated by IAS. This could limit their feeling affected by the existence of IAS and realize the scope of this problem. Consequently, an educational proposal is designed for the training of these students, which consists of 6 activities contextualized in the possession of Florida freshwater turtles as pets. The objective is for students to recognize and be critical of the problem and identify appropriate educational guidelines to address it at school, to promote responsible attitudes among pupils. This framework discusses the educational implications that its implementation could have in initial teacher training.