## **CONTENTS**

INNOVATIVE TECHNOLOGIES IN THE FIELD OF ENVIRONMENTAL PROTECTION	9
Bondar O., Artyushyn L., Mashkov O. Adaptation of principles of control of "smart" bombs to solving the tasks of ecological security of Ukraine in emergency situations.	9
THEORETICAL ECOLOGY	17
Ivanenko M., Prytula N. Critical analysis of the methodology for calculating the Complex Air Pollution Index and directions for its improvement in Ukraine.	17
Litvak O. Formation of youth's socio-ecological responsibility through the implementation of STEM education concept	21
Mukha R., Gniezdilova V. Digital ecology: an interdisciplinary reflection on its object, subject and methodology	28
Sakun A., Yermakov Yu. Modern methodological approaches to assessing the environmental condition of recreational areas.	34
Tykhomyrova T., Bosiuk A., Shestopalov O., Novozhylova T., Filenko O. Features of teaching grantwriting basics to students in environmental specialties.	38
AGROECOLOGY	44
Voitkiv P., Ivanov Ye., Shmaliy Yu. The current state of land resources of the Rava-Ruska territorial community of Lviv region.	44
RADIOECOLOGY	52
Parakhnenko V., Goncharuk V., Mandebura S. Environmental legislation as a tool for regulating technological hazards in the field of radioecology.	52
ENVIRONMENTAL SAFETY	57
Kochanov O., Nekos A., Bezsoonyi V. Mathematical modeling of chemical contamination for environmental hazard assessment at hazardous chemical facilities.	57
Krainiukov O., Pronenko M. Implementation of a biotesting system for ecotoxicological assessment of hazardous properties of wastes.	63
Radomska M., Klymenko N. Drivers of fast fashion consumption practices and ecological footprint growth	68
Kharchenko V. Environmental meteorological conditions as a component of assessing the efficiency of the Kakhovka reservoir.	74
Tsyhanenko-Dziubenko I., Kireitseva H., Vovk V., Khamdosh I. Evolutionary changes in heavy metal deposition mechanisms in wetland ecosystems under increasing anthropogenic pressure.	78
ENVIRONMENTAL MONITORING	85
<b>Boiko O., Lukianova V., Derman V., Tutskyi D., Sorochynska O.</b> Results of ecological and geochemical monitoring of soil contamination with heavy metals in the area of sand sites of Bortnychi Aeration Station	85
Khabarova H., Kovalenko G., Barbashev S. State and prospects of using remote air monitoring methods in Ukraine	92
ECOLOGY OF PRODUCTION	98
Belokon K. Development of a system of catalytic purification of technological gases of agglomeration production from sulfur dioxide.	98
Vladimirov R. The role trap models in solving problems of modern oil and gas geology.	.105
Kovalenko Yu., Dmytrenko T. Consideration of the life cycle of thermal insulation materials in the environmental impact assessment of building insulation technologies.	.110
Khomiak I., Vasylenko O. Phytocenotic diversity in the area of the solid waste landfill of the Korosten	.117
Yakovyshyna T., Moskalov M. Ecological assessment of the destructive impact of the construction activities to the urban ecosystems soils.	.122

Yanenko V., Klepko A. Monitoring of biodiversity and noise pollution within the Ovidiopol wind power plant	127
ECOLOGY OF WATER RESOURCES.	135
Valerko R., Bondarchuk V., Herasymchuk L. Correlation analysis of quarry water composition indicators in the context of assessing anthropogenic pressure on river ecosystems.	135
<b>Yerukh M., Marenkov O.</b> The European bitterling <i>Rhodeus amarus</i> (Bloch, 1782) oogenesis dynamic in the Zaporizke (Dniprovske) reservoir.	141
Linenko Ye., Nechypoirenko D., Shkop A., Lifer V. Comprehensive analysis of methods for treating wastewater contaminated with petroleum products.	151
Sereda T., Manturova O., Afanasyev S. Changes in structural indicators of Dnieper phytoplankton nearby the Kherson city after the demolition of the Kakhovskia hydropower plant DAM	156
Stepova O., Tiahnii L. Assessment of the impact of biogenic elements in the Vorskla river using the algoindication method.	162
Yakovlev V., Dmytrenko T. Some features and characteristics of nitrate pollution of decentralised water supply sources in the areas of man-caused impact.	168
ENVIRONMENTAL IMPLICATION OF MILITARY ACTIONS	177
Sharyi G., Kozlov V. Environmental and military resilience: a new paradigm for Ukraine's frontline territories	177
ECOLOGY AND CLIMATE CHANGE	182
Nikitina O., Lemeshko V. The impact of climate change on the dynamics of natural biotopes in the geosystem of the Southern Bug river	182
Khandogina O., Diadin D., Drozd O. Spatial assessment of the vulnerability of the Derhachi community to extreme temperatures and drought under climate change conditions.	186
ECOLOGY AND DEMOGRAPHY	197
Hrabko N., Kolisnyk A., Chernyakova O., Romanchuk M., Vovkodav G. Assessment of risks associated with demographic losses of the population of Ukraine.	197
CLIMATE CHANGE	.206
Herasymchuk O., Kagukina A., Shevchuk L., Pidvysotskyi V. The state of soil resources in the Zhytomyr region in the context of climate change.	
GENERAL ENVIRONMENTAL SAFETY ISSUES	212
Chugai A., Shapochka M. Review of methodological approaches to assessing the technogenic load on the air basin	
ENVIRONMENTAL MANAGEMENT ISSUES	. 216
Samoilenko N., Novozhylova T., Shestopalov O., Chikiriakin K., Tytarenko A. Improving the quality of environmentalists' training in management disciplines related to environmental protection and ecological safety	216
<b>Tsopa V., Cheberiachko Yu., Borisovska O., Deryugin O., Cheberiachko L.</b> Improvement of the environmental management system in accordance with the ISO 14000, ISO 31000, ISO 19011 standards	221
SUSTAINABLE DEVELOPMENT ISSUES.	. 233
<b>Boichuk V., Riznychuk N.</b> The current state of urban greening in Ivano-Frankivsk in the context of ecological sustainability: problems, challenges and strategic development directions.	233
Korobchuk L. Development of urbanization and challenges of human ecology: ways of ensuring sustainable development of eco-management of Ukrainian cities during the war period.	. 237
Yakymenko I., Madzhd S., Salavor O., Nychyk O., Shapovalov Ye., Hrehirchak N., Giritch A. European Union academic project management in sustainable development for Ukrainian students.	

PRESERVATION OF BIOLOGICAL AND LANDSCAPE DIVERSITY	246
Goncharuk V., Parakhnenko V. Assessment of the effectiveness of environmental inspection in the context of landscape resilience to technological loads.	246
Lyubinska L., Kolodiy V., Hryhorchuk I., Liubinskyi O., Horishny M., Vlasov S., Pakulyak A. Biological resources of the Crataegus in the conditions of the Staroushytsky territorial community of the NPP "Podilsky Tovtry"	252
Melnyk-Shamrai V., Shamrai V., Kurbet T., Ivaniuk R., Kahukina A. Biodiversity conservation in protected areas within forest ecosystems.	256
Yatsemirska N. Ecological monitoring of the Smotrych river to ensure ecological balance and sustainable nature use in the conditions of the nnp "Podil'ski Tovtry".	265
WASTE MANAGEMENT.	. 270
<b>Voloshyn V., Burko V.</b> Additional energy conditions within the principle of thermodynamic duality as a mechanism for creating industrial waste and their minimization in the technological process.	270
Hetta A., Kovrov O. Modern vermicomposters, their advantages and disadvantages.	277
<b>Kozhemiakin G., Pruttskov D., Belokon K., Rumiantsev V., Bendiuh V.</b> Principles of developing a regional waste management strategy and pathways for effective implementation.	285
Panas N. Ecological assessment of the impact of waste management methods on the environment	290
Prykhodko V. Resource potential of residues from municipal solid waste.	295
AUTHORS' CREDENTIALS.	. 301