



2022 Annual Meeting and International Conference of the Korean Society of Environmental Biology

Climate Change, Biodiversity, and ESG

Oct. 19(Wed) ~ 21(Fri), 2022
Paradise Hotel, Busan, Korea

2022 Annual Meeting and International Conference of the Korean Society of Environmental Biology

Oct. 19(Wed) ~ 21(Fri), 2022

Organized by

Korean Society of Environmental Biology

Sponsored by

국립백두대간수목원 Baekdudaegan National Arboretum, KSI 한국기초과학지원연구원 KOREA BASIC SCIENCE INSTITUTE, Sanigen, SGBIO, 한화솔루션, 한국환경대학교 HANKYONG NATIONAL UNIV., KISTI 한국과학기술정보연구원, KEI 한국환경연구원, BMS, 국립생물자원관, 환경부 책임운영기관, 미래에너지기술개발사업, 가천대학교 Gachon University, 고려대학교 부설 한국곤충연구소 Korean Entomological Institute, A TIME TO BUILD, 한국과학창의재단 Korea Foundation for the Advancement of Science & Creativity, GENOMICBASE (주)제노믹베이스, TEC A Company of Life Science, 미래생태(주), AQUOSYS (주)한국아쿠오시스 Korea AQUOSYS, 제주대학교 자율운영중점연구소, bt 부산관광공사

한국환경생물학회 Korean Society of Environmental Biology

Opening remarks



Ladies, gentlemen, and honored guests,

On this beautiful afternoon and at this nice place, we meet here to have the Annual Meeting and International Conference of the Korean Society of Environmental Biology in 2022. On behalf of the members of our society, I would like to extend my gratitude and a warm welcome to our plenary and featured speakers and presenters, especially those coming from overseas.

As the world is getting to overcome the pandemic, many of us are embracing the opportunity to reconnect – with each other, and with efforts to restore connections within nature.

The theme of this conference is “Climate change, Biodiversity and ESG”. While ESG concept is relatively new to our society members, it is the key factors when measuring the sustainability and ethical impact of an investment in a business society. Biodiversity and climate change are drawing considerable attention in ESG, but understanding and implementation of these are less mature than the Society and Governance factors. Since our society members have been conducting outstanding research in the field of biodiversity, climate change and pollution issue, I am confident that we will be able to fill the missing piece in ESG.

The prime goal of this conference is to further strengthen the ESG strategy to the challenges we all face in a world where biodiversity and climate security have become defining issues. To achieve this goal, environmental biology research requires active collaboration with other fields, and I am confident that this conference will be a good start to collaborate and contribute our research for sustainable and resilience society.

In this conference, we prepare two plenary lectures and more than 10 special sessions to share our work, knowledge and experiences, and look to the future in environmental biology and ESG.

Again, I welcome you all to the Annual Meeting and International Conference of the Korean Society of Environmental Biology in 2022. Special thanks to Dr. Rhee, Jay Hyuk and Dr. Park, Won Seog, the keynote speakers, and also to the sponsors who helped make this conference possible. For those of you coming from other countries I hope you have a wonderful time in this beautiful city of Busan.

I wish you a fruitful and worthwhile conference.

Thank you and enjoy your stay.

October, 2022

President of Korean Society of Environmental Biology, **Kijong Cho**

Program at a Glance

Date/Time		Day 1			Day 2				Day 3							
		Oct. 19 (WED)			Oct. 20 (THU)				Oct. 21 (FRI)							
		Grand1+2+3	Grand 4	P	Grand1+2+3	Grand 4	Sydney	P	Grand1+2+3	Grand 4	P					
8	00-10				Registration				Poster A (Miami + Venice)							
	10-20															
	20-30															
	30-40															
	40-50															
	50-60															
9	00-10								Student Oral Presentation 1	Student Oral Presentation 2	Special Symposium	Poster B (Miami + Venice)	Registration			
	10-20															
	20-30															
	30-40															
	40-50															
	50-60															
10	00-10								Award & Special Lecture 1 (구양환경생물학상 시상식 및 수상자 특별강연)		Poster A (Miami + Venice)	Session 10	Session 11	Poster B (Miami + Venice)		
	10-20															
	20-30															
	30-40															
	40-50															
	50-60															
11	00-10								Group Photo		Poster A (Miami + Venice)	Coffee Break		Poster B (Miami + Venice)		
	10-20															
	20-30															
	30-40															
	40-50															
	50-60															
12	00-10	Registration							Session 3	Session 4	Session 5	Poster A (Miami + Venice)	Coffee Break / Poster Presentation A		Poster B (Miami + Venice)	
	10-20															
	20-30															
	30-40															
	40-50															
	50-60															
13	00-10	Opening Ceremony & Celebratory Photo							Lunch				Poster A (Miami + Venice)	Closing Ceremony & Awards		Poster B (Miami + Venice)
	10-20															
	20-30															
	30-40															
	40-50															
	50-60															
14	00-10	Keynote Session							Session 6	E Session 7	General Oral Presentation	Poster A (Miami + Venice)			Poster B (Miami + Venice)	
	10-20															
	20-30															
	30-40															
	40-50															
	50-60															
15	00-10	Coffee Break							Coffee Break				Poster A (Miami + Venice)			Poster B (Miami + Venice)
	10-20															
	20-30															
	30-40															
	40-50															
	50-60															
16	00-10	Coffee Break							Coffee Break				Poster A (Miami + Venice)			Poster B (Miami + Venice)
	10-20															
	20-30															
	30-40															
	40-50															
	50-60															
17	00-10	Session 1	Session 2	Coffee Break / Poster Presentation B					Poster A (Miami + Venice)			Poster B (Miami + Venice)				
	10-20															
	20-30															
	30-40															
	40-50															
	50-60															
18	00-10										Poster A (Miami + Venice)	General Assembly Member Meeting		Poster B (Miami + Venice)		
	10-20															
	20-30															
	30-40															
Banquet																

E English session

Program Timetable

Title	2022 Annual Meeting and International Conference of the Korean Society of Environmental Biology
Theme	Climate Change, Biodiversity, and ESG
Date	Oct. 19(Wed) ~ 21(Fri), 2022
Venue	Paradise Hotel, Busan, South Korea

Oct. 19 (WED)

Time	Program		Poser A
12:00~	Registration		
13:00~13:15	Opening Ceremony (Grand Ballroom 1+2+3) Opening address: Kijong Cho (President of KOSEB) Congratulatory message : Min Hwan Suh (President of NIBR)		
13:15~13:20	Celebratory Photo		
13:20~13:50	Plenary Lecture 1 (Grand Ballroom 1+2+3) "Pursuing the ESG in post-2020 global diversity framework under convention on biological diversity" Won Seog Park (Chung-Ang Univ.)		
13:50~14:00	Coffee Break / E-부스 상영		
14:00~15:10	Keynote Session (Grand Ballroom 1+2+3) "How corporate are responding to twin challenges : climate change and biodiversity loss"		
15:10~15:30	Coffee Break / E-부스 상영		
15:30~16:00	Plenary Lecture 2 (Grand Ballroom 1+2+3) "Sustainability and ESG management" Jay Hyuk Rhee (Korea Univ.)		
16:00~16:10	Coffee Break / E-부스 상영		
16:10~17:50	Special Session 1 (Grand Ballroom 1+2+3) "ESG special session on climate risk and biodiversity (TCFD VS TNFD)"	Special Session 2 (Grand Ballroom 4) "Development of integrated models for climate change adaptation"	
	Coffee Break / E-부스 상영		
17:50~18:00	Coffee Break / E-부스 상영		

Oct. 20 (THU)

Time	Program			Poser A
08:00~	Registration			
08:30~09:40	Student Oral Presentation 1 (Grand Ballroom 1+2+3)	Student Oral Presentation 2 (Grand Ballroom 4)	Special Symposium (Sydney) "Endocrine disruptors and alternative chemicals"	
09:40~10:00	Coffee Break / E-부스 상영			

10:00~11:00	Award & Special Lecture 1 (Grand Ballroom 1+2+3) 제1회 구양환경생물학상 시상식 및 수상자 특별강연 "Microplastic and endocrine disruptor: Role of environmental biology in ESG era"			Poser A
11:00~11:10	Group Photo			
11:10~11:30	Coffee Break / Poster Presentation A (Miami + Venice)			
11:30~13:10	Special Session 3 (Grand Ballroom 1+2+3) "The role of small and medium-sized enterprises (SMEs) in Korea's advanced environment"	Special Session 4 (Grand Ballroom 4) "Environmental protection and remediation"	Special Session 5 (Sydney) "The role of liberal education in the age of environmental crisis"	
13:10~14:10	Lunch			Poser B
14:10~15:50	Special Session 6 (Grand Ballroom 1+2+3) "Paradigm shift and challenge for cooperation for effective public communication of science and technology"	Special Session 7 (Grand Ballroom 4) "Diverse aspects of omics in ecological studies"	General Oral Presentation (Sydney)	
15:50~16:10	Coffee Break / E-부스 상영			
16:10~17:50	Young Scientist & Student Oral Presentation 3 (Grand Ballroom 1+2+3)	Special Session 8 (Grand Ballroom 4) "Linking international perspectives for advances in environmental research"	Special Session 9 (Sydney) "Exploration of organic substances in various environmental systems by analytical science and technology"	
17:50~18:10	Coffee Break / Poster Presentation B (Miami + Venice)			
18:10~18:40	General Assembly Member Meeting (Sydney)			
18:40~	Banquet			

Oct. 21 (FRI)

Time	Program		
09:00~	Registration		
09:30~11:10	Special Session 10 (Grand Ballroom 1+2+3) "Diversity of the undiscovered taxa in Korea"	Special Session 11 (Grand Ballroom 4) "Post 2020, the conservation strategy of wild plants seed in Baekdudaegan National Arboretum"	Poser B
11:10~11:30	Coffee Break / E-부스 상영		
11:30~12:00	Special Lecture 2 (Grand Ballroom 1+2+3) "Effects of persistent herbicides on physiology and biochemical responses to the marine phototrophic dinoflagellates" Jang-Seu Ki (Sangmyung Univ.)		
12:00~12:20	Closing Ceremony & Awards		



2022 Annual Meeting and International Conference of the Korean Society of Environmental Biology

Plenary Lecture 1

Date & Time : Oct. 19 (Wed) 13:20 - 13:50

Room : Grand Ballroom 1+2+3

Chair: Prof. Chan woo Kim
Gyeongsang National University, Korea

13:20 - 13:50 PL-1 Pursuing the ESG in post-2020 global diversity framework
under convention on biological diversity
Won Seog Park (Chung-Ang University, Korea)

Plenary Lecture 2

Date & Time : Oct. 19 (Wed) 15:30 - 16:00

Room : Grand Ballroom 1+2+3

Chair: Prof. Chan woo Kim
Gyeongsang National University, Korea

15:30 - 16:00 PL-2 Sustainability and ESG management
Jay Hyuk Rhee (Korea University, Korea)





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Special Lecture 1 (제1회 구양환경생물학상 수상자)

Date & Time : Oct. 20 (Thu) 10:30 - 11:00

Room : Grand Ballroom 1+2+3

Chair: Prof. Doo-Hyung Lee
Gachon University, Korea

10:30 - 11:00 SL-1 Microplastic and endocrine disruptor:
Role of environmental biology in ESG era
Myung Chan Gye (Hanyang University, Korea)

Special Lecture 2 (2022 과총 우수논문상 수상자)

Date & Time : Oct. 21 (Fri) 11:30 - 12:00

Room : Grand Ballroom 1+2+3

Chair: Dr. Chi-Yong Ahn
Korea Research Institute of Bioscience and Biotechnology, Korea

11:30 - 12:00 SL-2 Effects of persistent herbicides on physiology and
biochemical responses to the marine phototrophic
dinoflagellates
Jang-Seu Ki (Sangmyung University, Korea)





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Keynote Session

How corporate are responding to twin challenges :
climate change and biodiversity loss

Date & Time : Oct. 19 (Wed) 14:00 - 15:10

Room : Grand Ballroom 1+2+3

14:00 - 15:00	KS-1	How corporate are responding to twin challenges : climate change and biodiversity loss Ah Ryung Lee (KPMG Korea, Korea)
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2022 Annual Meeting and International Conference of the Korean Society of Environmental Biology

Special Symposium

Endocrine disruptors and alternative chemicals

Date & Time : Oct. 20 (Thu) 08:30 - 09:40

Room : Sydney

Chair: Prof. Myung Chan Gye
Hanyang University, Korea

08:30 - 08:50	SS-1	Utility of an embryonic zebrafish assay for evaluating endocrine disrupting potentials of chemicals and newly developed their alternatives Kitae Kim (Seoul National University of Science and Technology, Korea)
08:50 - 09:10	SS-2	Endocrine disruption potential of bisphenol A and its analogues Myung Chan Gye (Hanyang University, Korea)
09:10 - 09:25	SS-3	Development of low-cost alternatives with lower endocrine disrupting activity (Substitutes for nonylphenol surfactants) Sung Hun Jung (SFC. Co., Ltd, Korea)
09:25 - 09:40	SS-4	Physical and biological property of 1,4-bis(2-ethylhexyl) cyclohexane-1,4-dicarboxylate Myungik Yoo (Hanwha Solutions, Korea)



Special Session 1

ESG special session on climate risk and biodiversity (TCFD VS TNFD)

Date & Time : Oct. 19 (Wed) 16:10 - 17:50

Room : Grand Ballroom 1+2+3

Chair: Prof. Won Seog Park
Chung-Ang University, Korea

16:10 - 16:40	S1-1	[Keynote Speaker] Biodiversity conservation and ESG Min Hwan Suh (National Institute of Biological Resources, Korea)
16:40 - 17:10	S1-2	[Keynote Speaker] Environmental regulations and ESG Do Hyung Kim (Yoon & Yang LLC, Korea)
17:10 - 17:40	S1-3	[Keynote Speaker] ESG in a business context: How can companies positively contribute towards ESG improvements Nando Hoffmann (Carlsberg, Switzerland)
17:40 - 17:50	Panel discussion	[Panel member] TCFD vs TNFD Chan woo Kim (Gyeongsang National University, Korea) Jay Hyuk Rhee (Korea University, Korea) Yong Sik Ok (Korea University, Korea)

Special Session 2

Development of integrated models for climate change adaptation

Date & Time : Oct. 19 (Wed) 16:10 - 17:50

Room : Grand Ballroom 4

Chair: Dr. Young-Il Song
Korea Environment institute, Korea

16:10 - 16:20	S2-1	Development of integrated model for climate change impacts Young-Il Song (Korea Environment institute, Korea)
16:20 - 16:40	S2-2	Projecting temperature-related mortality by SSP scenarios Ho Kim (Seoul National University, Korea)
16:40 - 17:00	S2-3	Application of a forest integrated model for climate change adaptation Mina Hong (Korea University, Korea)
17:00 - 17:20	S2-4	Gridded projection of crop production using process-based models Kwang Soo Kim (Seoul National University, Korea)
17:20 - 17:40	S2-5	Assessment of climate change impact on wildlife habitat Changwan Seo (National Institute of Ecology, Korea)
17:40 - 17:45	S2-6	Development of a forest carbon model for climate change adaptation Hyung-Sub Kim (Korea University, Korea)
17:45 - 17:50	S2-7	Development of crop suitability model for climate change adaptation Shinwoo Hyun (Seoul National University, Korea)
17:50 - 17:55	S2-8	Development of a pest risk model for climate change adaptation Jinsol Hong (Korea University, Korea)

Special Session 3

The role of small and medium-sized enterprises (SMEs) in Korea's advanced environment

Date & Time : Oct. 20 (Thu) 11:30 - 13:10

Room : Grand Ballroom 1+2+3

Chair: Prof. Baik-Ho Kim
Hanyang University, Korea

11:30 - 11:45	S3-1	Sustainable business and research: A case study of Blue Carbon Sung Joon Song (GeoSystem Research Corporation, Korea)
11:45 - 12:00	S3-2	A case study on the implementation of ESG in small and medium enterprises - Focus on the case of INTIN Yujin Lee (Intin Inc., Korea)
12:00 - 12:15	S3-3	Commercialization by using hygiene and safety(KC) certified products and high-efficiency equipment certified pumps Jae Kun Kim (Sung Jin IND, Korea)
12:15 - 12:30	S3-4	Introduction: The past, present, and future of ESG management in LS Cable & System Jungin Shin (LS Cable & System, Korea)
12:30 - 12:45	S3-5	Application of nonpoint pollution reduction facilities to secure water friendly space Eunmi Gwon (Ecostar Co. Ltd., Korea)
12:45 - 13:00	S3-6	Review of environmental studies utilizing aquatic organisms SeongDae Moon (NeoEnBiz Co., Korea)
13:00 - 13:15	S3-7	The eco-friendly control of cyanobacterial blooms using highly refined hydrogen peroxide Nam Kwon (Hansol Chemical, Korea)

Special Session 4

Environmental protection and remediation

Date & Time : Oct. 20 (Thu) 11:30 - 13:10

Room : Grand Ballroom 4

Chair: Prof. Man-Young Jung
Jeju National University, Korea

11:30 - 12:00	S4-1	[Keynote Speaker] Behaviors of conjugative plasmids in different environments Masaki Shintani (Shizuoka University, Japan)
12:00 - 12:30	S4-2	[Keynote Speaker] Cellular physiology and kinetics govern the substrate competitiveness of ammonia oxidizers Christopher J. Sedlacek (University of Vienna, Austria)
12:30 - 12:50	S4-3	Genomic and physiological characterizations of a novel Thermoplasmatales reveal their ecological niches in acidic and thermophilic environments So-Jeong Kim (Korea institute of Geoscience and Mineral Resources, Korea)
12:50 - 13:10	S4-4	Kinetics and community analysis of groundwater microbes in Jeju island Man-Young Jung (Jeju National University, Korea)

Special Session 5

The role of liberal education in the age of environmental crisis

Date & Time : Oct. 20 (Thu) 11:30 - 13:10

Room : Sydney

Chair: Prof. Eungbin Kim
Yonsei University, Korea

11:30 - 12:00	S5-1	[Keynote Speaker] Successes and failures in response to the climate crisis in Germany, and the tasks of the church Markus Dröge (Evangelischen Kirche Berlin-Brandenburg-schlesische Oberlausitz, Germany)
12:00 - 12:30	S5-2	The three dimensions of ecological spirituality and liberal arts education Ick-sang Shin (Sungkonghoe University, Korea)
12:30 - 13:00	S5-3	Soil ecosystem responses to soil heating and wetting in maritime Antarctic regions Dockyu Kim (Korea Polar Research Institute, Korea)
13:00 - 13:10	Q&A	Hak Chol Kim (Yonsei University, Korea)

Co-organized by Korean Theology Forum for Climate Crisis and Research Institute for Liberal Education, Yonsei University.

Special Session 6

Paradigm shift and challenge for cooperation for effective public communication of science and technology

Date & Time : Oct. 20 (Thu) 14:10 - 15:50

Room : Grand Ballroom 1+2+3

Chair: Prof. Eungbin Kim
Yonsei University, Korea

14:10 - 14:30	S6-1	What is 'SCIENCE' for you? Eungbin Kim (Yonsei University, Korea)
14:30 - 14:50	S6-2	Trends in environmental education of science museum Joon-Young Choi (Busan National Science Museum, Korea)
14:50 - 15:10	S6-3	The importance of introductory chapter for classes of general biology for liberal education Soo Chul Chang (Yonsei University, Korea)
15:10 - 15:30	S6-4	Science, taking it to public: sow your own kind of seeds Sojeng Yim (PIEXO2, Korea)
15:30 - 15:50	Panel Discussion	

Co-organized by KOFAC(Korea Foundation for the Advancement of Science&Creativity) and Research Institute for Liberal Education, Yonsei University.

Special Session 7

Diverse aspects of omics in ecological studies

Date & Time : Oct. 20 (Thu) 14:10 - 15:50

Room : Grand Ballroom 4

Chair: Dr. Chi-Yong Ahn

Korea Research Institute of Bioscience and Biotechnology, Korea

14:10 - 14:35	S7-1	[Keynote Speaker] Understanding the plankton community based on microscope and DNA sequencing approaches Jun Yang (Chinese Academy of Sciences, China)
14:35 - 15:00	S7-2	Freshwater microalgae omics approaches for Korean ecological studies Jang-Seu Ki (Sangmyung University, Korea)
15:00 - 15:25	S7-3	Exploration of antibiotic resistome and microbiome profiles of fish farm effluents in Jeju Tatsuya Unno (Jeju National University, Korea)
15:25 - 15:50	S7-4	Whole genome phylogeny of <i>Microcystis</i> with a focus on the toxic genotype Zhun Li (Korea Research Institute of Bioscience and Biotechnology, Korea)

Special Session 8

Linking international perspectives for advances in environmental research

Date & Time : Oct. 20 (Thu) 16:10 - 17:50

Room : Grand Ballroom 4

Chair: Prof. Ikju Park
Kyungpook National University, Korea

16:10 - 16:25	S8-1	Understanding genomic structures, evolutionary event, and expression response of saxitoxin biosynthesis gene <i>sxtA</i> in the toxic marine dinoflagellate <i>Alexandrium pacificum</i> (group IV) Quynh Thi Nhu Bui (Sangmyung University, Korea)
16:25 - 16:40	S8-2	Effective control of harmful <i>Microcystis</i> blooms using <i>Paucibacter aquatile</i> DH15: from lab-scale to field research Ve Van Le (Korea Research Institute of Bioscience & Biotechnology, Korea)
16:40 - 16:55	S8-3	Sediment physicochemical properties and microbial community structure determine <i>Zostera marina</i> litter-derived carbon dynamics during litter decomposition Zhaxi Suonan (Pusan National University, Korea)
16:55 - 17:10	S8-4	In vivo toxic effects of <i>Nemopilema nomurai</i> jellyfish venom in zebrafish (<i>Danio rerio</i>) Ramachandran Loganathan Mohan Prakash (Gyeongsang National University, Korea)
17:10 - 17:25	S8-5	Inhibitory efficacy of myricetin against <i>Nemopilema nomurai</i> jellyfish venom metalloproteinase using computational approach Ravi Deva Asirvatham (Gyeongsang National University, Korea)
17:25 - 17:40	S8-6	Environmental identification of <i>Amaranthus</i> species using Visible-Near-Infrared (Vis-NIR) spectroscopy and machine learning methods Subramani Pandian (Rural Development Administration, Korea)
17:40 - 17:55	S8-7	Predicting the impact of climate change on the habitat distribution of famine weed (<i>Parthenium hysterophorus</i>) globally and locally in South Korea Anil Poudel (Hankyong National University, Korea)

Special Session 9

Exploration of organic substances in various environmental systems
by analytical science and technology

Date & Time : Oct. 20 (Thu) 16:10 - 17:50

Room : Sydney

Chair: Dr. Kyoung-Soon Jang, Dr. Jong Bok Seo
Korea Basic Science Institute, Korea

16:00 - 16:25	S9-1	[Keynote Speaker] Dissolved organic matter and microbial processes on mountainsides Jianjun Wang (Chinese Academy of Sciences, China)
16:25 - 16:45	S9-2	Biogeochemical cycling of dissolved organic matter and the associated environmental effects in typical lakes in China Yongqiang Zhou (Chinese Academy of Sciences, China)
16:45 - 17:05	S9-3	Smart fertilizer developments using plant lignin and coal-derived humic substances Jong-Rok Jeon (Gyeongsang National University, Korea)
17:05 - 17:25	S9-4	Particulate matter 2.5's cellular toxicology and its natural modulators Byeong-Churl Jang (Keimyung University, Korea)
17:25 - 17:45	S9-5	Microfluidic platforms for environmental screening applications Hyun Soo Kim (Kwangwoon University, Korea)

Special Session 10

Diversity of the undiscovered taxa in Korea

Date & Time : Oct. 21 (Fri) 09:30 - 11:10

Room : Grand Ballroom 1+2+3

Chair: Prof. Jong-Seok Park
Chungbuk National University, Korea

09:30 - 09:50	S10-1	[Keynote Speaker] Coleoptera inventory projects: past, present, and future Victoria Bayless (Louisiana State University, USA)
09:50 - 10:05	S10-2	Novel species of the genus <i>Metschnikowia</i> isolated from Alnus Ambrosia Beetle <i>Xylosandrus germanus</i> Minji Bang (Seoul Women's University, Korea)
10:05 - 10:20	S10-3	Morphological and molecular analysis of the novel species belong to genus <i>Monochaetia</i> isolated from <i>Moechotypa diphysis</i> Seong-Keun Lim (Kyungpook National University, Korea)
10:20 - 10:35	S10-4	New record of two <i>Tintinnopsis</i> species (Protozoa: Ciliophora: Tintinnida) from Korean coastal waters Ji Hye Moon (Gangneung-Wonju National University, Korea)
10:35 - 10:50	S10-5	Diversity and assemblage structure of litter-dwelling beetles in different sizes of islands using a sifting method Ui-Joung Byeon (Chungbuk National University, Korea)

Special Session 11

Post 2020, the conservation strategy of wild plants seed in Baekdudaegan National Arboretum

Date & Time : Oct. 21 (Fri) 09:30 - 11:10

Room : Grand Ballroom 4

Chair: Prof. Sun Hee Hong
Hankyong National University, Korea

09:30 - 09:40	Introduction	Sun Hee Hong (Hankyong National University, Korea)
09:40 - 10:00	S11-1	Conservation strategy for wild plant seeds in Baekdudaegan National Arboretum, Republic of Korea Chae Sun Na (Baekdudaegan National Arboretum, Korea)
10:00 - 10:20	S11-2	An external perspective on seed collection strategy of Baekdudaegan National Arboretum Gyu Yong Chung (Andong National University, Korea)
10:20 - 10:40	S11-3	Industrial values of wild plant Yeong-Su Kim (Baekdudaegan National Arboretum, Korea)
10:40 - 11:00	S11-4	A corporate perspective on the conservation of useful wild plants in the cosmetic industry Jin Young Lee (Amorepacific R&I Center, Korea)
11:00 - 11:10	Q&A	Sun Hee Hong (Hankyong National University, Korea)

General Oral Presentation

Date & Time : Oct. 20 (Thu) 14:10 - 15:50

Room : Sydney

Chair: Prof. Sang Rul Park
Jeju National University, Korea

14:10 - 14:25	GS-1	Understanding stand dynamics of natural and managed temperate forests under climate change in South Korea Moonil Kim (Pyeongtaek University, Korea)
14:25 - 14:40	GS-2	Population dynamics of Antarctic scallop <i>Adamussium colbecki</i> (Smith, 1902) in Tera Nova Bay, Antarctica Sun Kyeong Choi (Jeju National University, Korea)
14:40 - 14:55	GS-3	A new strategy of metal biochar fabrication Dong-Wan Cho (Korea Institute of Geoscience and Mineral Resources, Korea)
14:55 - 15:10	GS-4	Notes on small jellyfish in Korean waters; not moon-like or giant, but ecologically important and often problematic Jinho Chae (Marine Environmental Research & Information Laboratory, Korea)
15:10 - 15:25	GS-5	Species-specific eDNA analysis of the index species in soil ecosystem, <i>Allonychiurus kimi</i> (Collembola: Onychiuridae) Yun-Sik Lee (Korea University, Korea)
15:25 - 15:40	GS-6	Adsorption properties of the polyethylenimine-modified industrial biomass waste-based adsorbent for removal of harmful cyanobacterial species and cyanotoxin from aqueous solution Sok Kim (Korea University, Korea)
15:40 - 15:50	Q&A	

Student Oral Presentation 1

Date & Time : Oct. 20 (Thu) 08:30 - 09:40

Room : Grand Ballroom 1+2+3

Chair: Prof. Ikju Park
Kyungpook National University, Korea

08:30 - 08:40	ST-01	Differential susceptibility to arsenic in glutathione S-transferase omega 2 (<i>GST-O2</i>)-targeted freshwater water flea <i>Daphnia magna</i> mutants Eunjin Byeon (Sungkyunkwan University, Korea)
08:40 - 08:50	ST-02	Bacterial species diversity of family Burkholderiaceae colonizing midgut of <i>Riptortus pedestris</i> (Hemiptera: Alydidae) and symbiotic effects of the bacteria on <i>R. pedestris</i> Do-Hun Gook (Gachon University, Korea)
08:50 - 09:00	ST-03	Morphology and phylogenetics of <i>Paraamphidinium jejuensis</i> gen. nov., a new species of sand-dwelling dinoflagellates from Jeju Island Su-Min Kang (Jeju National University, Korea)
09:00 - 09:10	ST-04	Individual-based phenology modeling of <i>Haemaphysalis longicornis</i> Jaejun Song (Korea University, Korea)
09:10 - 09:20	ST-05	Population genetics and ecological niche modelling of three dung beetles in Mongolia: Predicting future genetic diversity and distribution under climate change Changseob Lim (Korea University, Korea)
09:20 - 09:30	ST-06	Metabarcoding analysis of the stomach contents of the introduced voracious predator fish (Cyprinidae: <i>Erythroculter erythropterus</i>) in the Nakdong River from Korea Hee-kyu Choi (Sangji University, Korea)
09:30 - 09:40	ST-07	Molecular characterization of two dopamine receptor in <i>Haemaphysalis longicornis</i> : dopamine receptor (D1) and invertebrate specific D1-like dopamine receptor (InvD1L) Seoyul Hwang (Kyungpook National University, Korea)

Student Oral Presentation 2

Date & Time : Oct. 20 (Thu) 08:30 - 09:40

Room : Grand Ballroom 4

Chair: Dr. Yongeun Kim
Korea University, Korea

08:30 - 08:40	ST-08	The strategies of designating Marine Protected Areas to protect seagrass habitats have a positive effect on the increase in the seagrass meadows area Tae Hyeon Kim (Jeju National University, Korea)
08:40 - 08:50	ST-09	Morphology, phylogeny, and fatty acid composition of a new useful euglenoid <i>Eutreptiella</i> sp. (KCTC 19016P) from Korean coastal waters Sungmo Kang (Korea Research Institute of Bioscience and Biotechnology, Korea)
08:50 - 09:00	ST-10	Species identification of Tilapia (<i>Oreochromis</i> spp.) and potential habitat prediction Ju Hyoun Wang (Sangji University, Korea)
09:00 - 09:10	ST-11	The effects of nitrogen sources and water temperatures on the growth of <i>Ulva ohnoi</i> causing green tides on Jeju Island in Korea Yejin Heo (Jeju National University, Korea)
09:10 - 09:20	ST-12	Endocrine disruption by low concentration bisphenols in <i>Bombina orientalis</i> Jenny Lee (Hanyang University, Korea)
09:20 - 09:30	ST-13	Comparative population genetics using GBS and DNA barcodes revealed the origin of differential grasshopper, <i>Melanoplus differentialis</i> , in the Republic of Korea Jiseok Kim (Kyungpook National University, Korea)
09:30 - 09:40	ST-14	How a widespread Korean freshwater fish, <i>Zacco koreanus</i> has evolved unique genetic lineages: different ecotypes or cryptic species? Yu Rim Kim (Sangji University, Korea)

Young Scientist & Student Oral Presentation 3

Date & Time : Oct. 20 (Thu) 16:10 - 17:50

Room : Grand Ballroom 1+2+3

Chair: Dr. In-Hyun Nam

Korea Institute of Geoscience and Mineral Resources, Korea

16:10 - 16:23	YS-01	Establishment of ultrasonic stimulation method for promoting the growth of <i>Haematococcus lacustris</i> Sang-Il Han (Korea Atomic Energy Research Institute, Korea)
16:23 - 16:36	YS-02	Epigenetic plasticity enables copepods to cope with ocean acidification Young Hwan Lee (Sungkyunkwan University, Korea)
16:36 - 16:49	YS-03	Environmental identification of <i>Amaranthus</i> species using Visible-Near-Infrared (Vis-NIR) spectroscopy and machine learning methods Subramani Pandian (National Institute of Agricultural Sciences, Korea)
16:49 - 17:02	YS-04	Potential global invasion risk of small hive beetle, <i>Aethina tumida</i>, considering host distribution Jinsol Hong (Korea University, Korea)
17:02 - 17:15	YS-05	Strategies for natural ecosystem conservation and management in Korea National Parks Jeong Eun Kim (Korea National Park Research Institute, Korea)
17:15 - 17:25	ST-15	Recent trends and temporal changes in growth and abundance of temperate seagrass <i>Zostera marina</i> in Jeju Island, Korea Kyeonglim Moon (Jeju National University, Korea)
17:25 - 17:35	ST-16	Characterization of clade compositions of <i>Burkholderia</i> bacteria in soil and <i>Riptortus pedestris</i> (Hemiptera: Alydidae) in South Korea Joo-Young Kim (Gachon University, Korea)
17:35 - 17:45	ST-17	The development of research on Environmental, Social, and Governance (ESG): A bibliometric analysis Sachini Supunsala Senadheera (Korea University, Korea)
17:45 - 17:55	ST-18	Molecular understanding of the common cordgrass <i>Spartina anglica</i>; from a global perspective to its invasion of Korean coasts Buhari Lawan Muhammad (Sangmyung University, Korea)



2022 Annual Meeting and International Conference of the Korean Society of Environmental Biology

Poster Presentation

■ Poster Presentation

	Schedule	Topics	Poster Presentation
Poster Presentation A	Set-up : Oct. 19, 13:00 Removal: Oct. 20, 13:00	1, 2, 3, 4, 5	Oct. 20, 11:10 ~ 11:30
Poster Presentation B	Set-up : Oct. 20, 14:00 Removal: Oct. 21, 12:00	6, 7, 8, 9	Oct. 20, 17:50 ~ 18:10

■ Poster Topics

1. 유해생물 (Harmful organisms)
2. 바이오에너지 (Bioenergy)
3. 동물생태·분류·유전 (Animal ecology, classification, genetics)
4. 식물생태·분류·유전 (Plant ecology, classification, genetics)
5. 미생물생태·분류·유전 (Microbial ecology, classification, genetics)
6. 생물다양성 및 생물모니터링 (Biodiversity and Biomonitoring)
7. 생태독성 및 환경호르몬 (Ecotoxicity and environmental hormones)
8. 재난분석과학 (Disaster Analysis Science)
9. 기타 (Others in Environmental Biology)

■ Poster Presentation Layout

Poster Presentation A	Poster Presentation B
P1-01 ~ P1-09 P2-01 P3-01 ~ P3-11 P4-01 ~ P4-09 P5-01 ~ P5-14	P6-01 ~ P6-30 P7-01 ~ P7-06 P8-01 P9-01 ~ P9-03



Poster Presentation

1. 유해생물 (Harmful organisms)

- P1-01 **Species composition and seasonal population dynamics of ticks (Acari: Ixodidae) as a vector of SFTS virus from 2019 to 2021 in Gyeonggi-do, South Korea**
Young Min Jung, Do-Hun Gook, Minhyung Jung, Jung-Wook Kho, Soowan Kim, Joo-Young Kim, and Doo-Hyung Lee (Gachon University, Korea)
- P1-02 **Development of cyanobacteria control and recovery strategy using adsorption and desorption**
Jeong Sik Choi, Yun Hwan Park, Sok Kim, Jino Son, Jaewon Park, and Yoon-E Choi (Korea University, Korea)
- P1-03 **Development of harmful alga control technology using bio-derived materials**
Yun Hwan Park, Jeong Sik Choi, Joeun Chung, Jaewon Park, Sok Kim, and Yoon-E Choi (Korea University, Korea)
- P1-04 **Thermotaxic diel vertical migration of the harmful dinoflagellate *Cochlodinium (Margalefidinium) polykrikoides* response to marine heatwaves**
Young Kyun Lim, Jin Ho Kim, HyeJoo Ro, and Seung Ho Baek (Korea Institute of Ocean Science and Technology, Korea)
- P1-05 **Development of cyanobacteria control strategy based on Chitosan adsorbents for industrial application**
Yun Hwan Park, Kyoung Suk Han, Woo Seok Han, Chung Ju Kim, and Sungho Yun (Korea University, Korea)
- P1-06 **Development of adsorption-based cyanobacteria control strategy using PEI-Cotton with additional modification of bacterial culture medium**
Yun Hwan Park, Kyoung Suk Han, Woo Seok Han, Chung Ju Kim, and Sungho Yun (Korea University, Korea)
- P1-07 **Physiological characteristics and habitat prediction analysis of the golden apple snail *Pomacea canaliculata* wintering individuals**
Jung Soo Han, I Chan Shin, and Hwang Goo Lee (Sangji University, Korea)
- P1-08 **Identification and expression of a novel saxitoxin synthesis gene *sxtB* from the harmful marine dinoflagellate *Alexandrium catenella***
Han-Sol Kim, Quynh Thi Nhu Bui, Sofia Abassi, and Jang-Seu Ki (Sangmyung University, Korea)
- P1-09 **Removal property of cyanotoxin microcystin-LR in an aqueous phases by isolated bacteria from soli environment**
Joo Eun Chung, Jung Sik Choi, Yun Hwan Park, Sok Kim, and Yoon-E Choi (Korea University, Korea)

2. 바이오에너지 (Bioenergy)

- P2-01 **Study of biomass and fucoxanthin productivity from *Nitzschia palea* HY1**
Hyunji Won, Eunmi Ro, Baik ho Kim, Seungbeom Seo, and EonSeon Jin (Hanyang University, Korea)

3. 동물생태·분류·유전 (Animal ecology, classification, genetics)

- P3-01 ***Acrotrichis grandicollis* (Mannerheim, 1844) and *Acrotrichis similis* Sundt, 1969 new to Korea (Coleoptera: Ptiliidae)**
Taeyoung Jang and Jong-Seok Park (Chungbuk National University, Korea)
- P3-02 **A new species of the genus *Trissemus* Jeannel (Staphylinidae: Pselaphinae: Goniaceritae) from Korea**
Yeon-Jae Choi, Sun-Jae Park, Seung-Gyu Lee, and Jong-Seok Park (Chungbuk National University, Korea)
- P3-03 **Diversity of Chironomidae larvae (Diptera) in drinking water treatment plants (DWTPs)**
Jae-Won Park and Ihn-Sil Kwak (Chonnam National University, Korea)
- P3-04 **Possibility of new species known as *Lourinia armata* (Claus, 1866) from Korean waters**
Jinwook Back and Heejin Moon (National Marine Biodiversity Institute of Korea)
- P3-05 **New record of *Pleuronema marinum* Dujardin, 1841 (Protozoa, Ciliophora) from South Korea**
Jeong Hyeon Yeo, Ji Hye Choi, Atef Omar, and Jae-Ho Jung (Gangneung-Wonju National University, Korea)
- P3-06 **Creating a pond environment to induce behavior enrichment of captive bred storks, *Ciconia boyciana***
Sungchae Moon, Jae Beom Yoo, Na Hee Kwon, Young Sook Nam, and Yun Seob Moon (Korea National University of Education, Korea)
- P3-07 **The first observation of bitterling's spawning events in a small mussel, *Corbicula fluminea* as a novel host in the Nakdong River basin from Korea**
Jin Kyu Seo, Hee-kyu Choi, and Hyuk Je Lee (Sangji University, Korea)
- P3-08 **Integrative taxonomy uncovers new *Culicoides* Latreille, 1809 (Diptera: Ceratopogonidae) biting midge species from Dokdo Island South Korea**
Wongyu Lee and Yeon Jae Bae (Korea University, Korea)
- P3-09 **Environmental factors affecting calling activities of black-spotted pond frogs (*Pelophylax nigromaculatus*) in South Korea**
Jaeyoung Seo, Sera Kwon, Kyo Soung Koo, and Yikweon Jang (Ewha Womans University, Korea)
- P3-10 **A close look for the genetic and morphological differences between Kumkang fat minnow (*Rhynchocypris kumgangensis*) and a new species, Deogyu fat minnow (*Rhynchocypris deogyensis*) from Korea**
Soon Young Hwang, Ji Young Kim, Jae Goo Kim, Soonku So, and Hyuk Je Lee (Sangji University, Korea)
- P3-11 **Population genetic structures and demographic expansion of exotic jellyfish *Carybdea brevipedalia* in Korean coasts inferred from mitochondrial *COI* analysis**
Buhari Lawan Muhammad, Yoseph Seo, Jinho Chae, and Jang-Seu Ki (Sangmyung University, Korea)

4. 식물생태·분류·유전 (Plant ecology, classification, genetics)

- P4-01 **The complete chloroplast genome sequences of eight *Orostachys* species: comparative analysis and assessment of phylogenetic relationships**
Ha-Rim Lee, Kyung-Ah Kim, Ha-Lam Kang, Yoo-Jung Park, Sung-Mo An, Yoo-Bin Lee, and Kyeong-Sik Cheon (Sangji University, Korea)
- P4-02 **The complete chloroplast genome sequences of *Adenophora lamarckii* (Campanulaceae): comparative analysis with congeneric species**
Yoo-Jung Park, Halam Kang, Sung-Mo An, Ha-Lim Lee, Yoo-Bin Lee, Kyung-Ah Kim, and Kyeong-Sik Cheon (Sangji University, Korea)

- P4-03 **Antioxidant activity of ten lamiaceae plant seed extracts**
JunHyeok Kim, Hee Ho Lee, Chung Youl Park, Hyun Min Kim, Young Ho Jung, Da Hyun Lee, Kyeongmin Kim, Sae Hyun Kim, and Chae Sun Na (Baekdudaegan National Arboretum, Korea)
- P4-04 **Plant virus detection using next generation sequencing (NGS) in South Korean wild plants**
Chung Youl Park, Da Hyun Lee, Young Ho Jung, Hyeon Min Kim, Kyeong Min Kim, JunHyeok Kim, and Chae Sun Na (Baekdudaegan National Arboretum, Korea)
- P4-05 **Microbial diversity analysis of *Bupleurum latissimum* Nakai from Ulleung-do of South Korea using next generation sequencing**
Kyeong Min Han, Mi Na Choi, Jung Hun Pi, Sea Hyun Kim, Yeong Su Kim, and Chae Sun Na (Baekdudaegan National Arboretum, Korea)
- P4-06 **Chloroplast genome mapping of crop wild relatives of *Allium* using reference genome of *Allium* genus**
Kyeongmin Kim, Chung Youl Park, Do Hyun Kim, Da Hyun Lee, Hyeon Min Kim, Jun Hyeok Kim, Gyu Young Chung, and Chae Sun Na (Baekdudaegan National Arboretum, Korea)
- P4-07 **CRISPR based gene editing system for breeding of pre-harvest sprouting tolerant *Brassica napus* (L.)**
Soo-In Sohn, Subramani Pandian, Young-Ju Oh, and Eun-Kyoung Shin (National Institute of Agricultural Sciences, Korea)
- P4-08 **Identification of transgenic canola (*Brassica napus* L.) and their hybrids with *B. juncea* using visible-near infrared spectroscopy**
Soo-In Sohn, Subramani Pandian, Eun-Kyoung Shin, and Young-Ju Oh (National Institute of Agricultural Sciences, Korea)
- P4-09 **Effect of four different environmental raster resolutions on species distribution modelling of alien plants in South Korea**
Ga Eun Kim, Yong Ho Lee, Ji Yeon Yun, Sue Hyuen Choi, Seung Hwan Kim, and Sun Hee Hong (Hankyong National University, Korea)

5. 미생물생태·분류·유전 (Microbial ecology, classification, genetics)

- P5-01 **Identification of fungal species collected from insects belonging to orders of Coleoptera, Hemiptera, and Dermoptera in Korea**
Soo-Min Hong, Seong-Keun Lim, Seung-Yeol Lee, and Hee-Young Jung (Kyungpook National University, Korea)
- P5-02 **Utilization and applicable technology using biological resources isolated from costal and island area**
Jae-Hyoung Joo, Kira Moon, Jae-Cheol Lee, Byung Hee Chun, Nakyeong Lee, Seunghui Song, Sung Moon Lee, Yun Ji Kim, WonWoo Lee, Aslan Hwanhwi Lee, and Kyung Min Choi (HONAM National Institute of Biological Resources, Korea)
- P5-03 ***Mucilaginibacter straminoryzae* sp. nov., isolated from periphyton**
So-Ra Ko, Ve Van Le, Mingyeong Kang, Hee-Mock Oh, and Chi-Yong Ahn (Korea Research Institute of Bioscience & Biotechnology, Korea)
- P5-04 **The inhibitory effect of biological nitrification inhibitors on the nitrification activity of three different groups of ammonia-oxidizing microorganisms in co-culture**
Seongwook Kim, Yun Ji Choi, Saem Han, Min-Ju Kang, and Man-Young Jung (Jeju National University, Korea)
- P5-05 **Morphology, phylogeny, and fatty acid composition of a new useful euglenoid *Eutreptiella* sp. (KCTC 19016P) from Korean coastal waters**
Sungmo Kang, Ki-Hyun Kim, Namhyun Chung, and Zhun Li (Korea Research Institute of Bioscience and Biotechnology, Korea)

- P5-06 **Distribution of sand-dwelling dinoflagellate species in Pyoseon Beach of Jeju Island during spring and summer season 2022**
Su-Min Kang and Jin Ho Kim (Jeju National University, Korea)
- P5-07 **Study for lactic acid bacterial diversity of environmental samples in Jeju Island**
Hina Ayub and Man-Young Jung (Jeju National University, Korea)
- P5-08 **Study on the physiological characterization of comammox bacterium *Nitrospira inopinata* under acidic conditions**
Yun Ji Choi, Saem Han, and Man-Young Jung (Jeju National University, Korea)
- P5-09 **Diversity and adaptation strategies of nitrifying microorganisms in the groundwater sources of Jeju Island**
Saem Han, and Man-Young Jung (Jeju National University, Korea)
- P5-10 **Comparative genomics and physiology of novel *Brachybacterium* sp. unveiling its metabolic potential**
Adeel Farooq, Myunglip Lee, Seam Han, and Man-Young Jung (Jeju National University, Korea)
- P5-11 **Activity variations of ammonia and methane oxidizers at various copper concentrations**
Min-Ju Kang, Miye Kwon, and Man-Young Jung (Jeju National University, Korea)
- P5-12 **Phylogenetic analysis of bacterial diversity in the marine sponge, *Callyspongia conforderata* and *Spirastrella insignis* collected from Jeju**
So Hyun Park, Ji Young Kim, and Moon Soo Heo (Jeju National University, Korea)
- P5-13 **Morphology and molecular phylogenetic position of three new epilithic diatom species of Han River from Korea**
Liyao Jiang, In-Hwan Cho, Chen Yi, Byeong-Hun Han, Young-Hyo Kim, and Baik-Ho Kim (Hanyang University, Korea)
- P5-14 **Characterization of an extracellular protease EcpZ-1 from *Pseudoalteromonas* sp. strain SiA1**
Kyuwon Jeon, Dockyu Kim, and Eungbin Kim (Yonsei University, Korea)

6. 생물다양성 및 생물모니터링 (Biodiversity and Biomonitoring)

- P6-01 **Coastal warming heightens direct impacts of seawater temperature on nutrients near aquaculture farms**
Yoonja Kang, Jae Hyung Lee, and Dong-Hun Lee (Chonnam National University, Korea)
- P6-02 **Wild hybridization between Native *Mauremys reevesii* and invasive *Mauremys sinensis* in South Korea**
Kyo Soung Koo, Eun Sol Kim, Ji Hee Park, Kayoung Yun, Hae Jun Baek, and Yikweon Jang (Ewha Womans University, Korea)
- P6-03 **Size distribution and their energy flux in belowground food web**
June Wee, Hyun-Gi Min, Yun-Sik Lee, Taewoo Kim, Yongeun Kim, and Kijong Cho (Korea University, Korea)
- P6-04 **Management and role of the Baekdudaegan Global Seed Vault**
Chihyeon Song, Hayan Lee, Jinki Kim, Minsun Kim, Suna Kang, and Kee Hwa Bae (Baekdudaegan National Arboretum, Korea)
- P6-05 **Effect of apple snail (*Pomacea canaliculata*) on aquatic invertebrates in rice fields**
Jinu Eo, Soon-Kun Choi, So-Jin Yeob, and Min-Kyeong Kim (National Institute of Agricultural Sciences, Korea)

- P6-06 **eDNA metabarcoding analysis of compositional variation in the gut content of filter feeder *Polypedilum* (Chironomidae) in the weirs and streams**
Boobal Rangaswamy, Chang-Woo Ji, Won-Seok Kim, Jae-Won Park, Yong-Jun Kim, and Ihn-Sil Kwak (Chonnam National University, Korea)
- P6-07 **Discovery of exotic turtle leeches and cases of parasitism on invasive and native species in South Korea**
Eun Sol Kim, Kyo Soung Koo, Ji Hee Park, and Yi kweon Jang (Ewha Womans University, Korea)
- P6-08 **Trend analysis of YouTube videos related to exotic amphibians and reptiles in South Korea**
Taeun Um, Kyosung Koo, Eunsol Kim, Narin Park, Younji Kim, and Yikweon Jang (Ewha Womans University, Korea)
- P6-09 **Experiment on the food preference for invasive and native turtles in South Korea**
Jihee Park, Kyo Soung Koo, and Yikweon Jang (Ewha Womans University, Korea)
- P6-10 **Distributional shifts of Canopy-forming algae in Korea under climate change**
Sun Kyeong Choi and Sang Rul Park (Jeju National University, Korea)
- P6-11 ***Bemisia tabaci* density prediction using machine learning algorithms in tomato greenhouses**
Taechul Park, SoEun Eom, Kimoon Son, Ji-won Jeong, Mincheol Kim, and Jung-Joon Park (Gyeongsang National University, Korea)
- P6-12 **Geostatistical analysis for *Frankliniella occidentalis* in commercial hot pepper greenhouse using variogram models**
SoEun Eom, Taechul Park, Kimoon Son, Ji-won Jeong, Mincheol Kim, and Jung-Joon Park (Gyeongsang National University, Korea)
- P6-13 **Monitoring the movement of native *Mauremys reevesii* and invasive *Trachemys scripta elegans* in Geumho Reservoir, South Korea, using GPS-based Telemetry**
Hakyung Kang, Kyo Soung Koo, and Yikweon Jang (Ewha Womans University, Korea)
- P6-14 **Characteristic analysis of invasive turtles inhabiting Jinju Geumho reservoir according to period and habitation environment**
Kayoung Yun, Jeongmin Oh, KyoSoung Koo, and Yikweon Jang (Ewha Womans University, Korea)
- P6-15 **Population management of American Bullfrog using calling behavior and territoriality during breeding season**
Minkyung Kwak, Kyo Soung Koo, and Yikweon Jang (Ewha Womans University, Korea)
- P6-16 **Restored ecological role of Chilbal-do (Island) based on adaptive restoration**
Dae Seung Jeon, Yang Mo Kim, Gwang Gyun Kim, Dong Sun Ahn, Jong Hwan Kim, Jae Kook Jung, and Hang Hwa Hong (Dadohaehaesang National Park Western Office, Korea)
- P6-17 **Biomass and species variation of *Ulva* spp. exposed to different nutrient gradients in Jeju Island, Korea**
SeongBin Ham, Kyeonglim Moon, Young Baek Son, and Sang Rul Park (Jeju National University, Korea)
- P6-18 **Distribution and historical records of diatom assemblages in surface and sediment cores from the Yellow and Bohai seas**
Hanna Bae, Jinsoo Park, Sung Joon Song, and Jong Seong Khim (GeoSystem Research Corporation, Korea)
- P6-19 **First record of the invasive ascidian *Microcosmus squamiger* Michaelsen, 1927 (Ascidiacea: Pyuridae) in Jeju Island, South Korea**
Chang-Ho Yi, Seung-Hyun Lee, Ji Min Kim, and Seongjun Bae (Marine Biodiversity Institute of Korea, Korea)
- P6-20 **Analysis of habitat characteristics of odonata climate-sensitive biological indicator species (CBIS) and candidate species**
Chae Hui An, Jung Soo Han, and Hwang Goo Lee (Sangji University, Korea)

- P6-21 **A study on habitat characteristics and food sources of brown dipper (*Cinclus pallasii*)**
Chul Woo Park, Jung Soo Han, Hwang Goo Lee, and Jun Kil Choi (Sangji University, Korea)
- P6-22 **Spatial variation of the microalgae in the Han River and its tributaries with focusing on the correlation with water quality**
Taehee Kim, Han-Sol Kim, Quynh Thi Nhu Bui, Ha-eun Lee, and Jang-Seu Ki (Sangmyung University, Korea)
- P6-23 **Prediction of habitat distribution changes of endangered conifer *Abies nephrolepis* Maxim. on climate change scenarios using MaxEnt model**
Da Hyun Lee, Jun Gi Byeon, Young Ho Lee, and Chae Sun Na (Baekdudaegan National Arboretum, Korea)
- P6-24 **Inhabitation status of the dominant Cyprinid fish species (*Zacco platypus* and *Zacco koreanus*) population in the Seom River**
Ji Hye Bae, Ju Hyoun Wang, Jung Soo Han, Chae Hui An, Wan Ok Lee, Jun Kil Choi, and Hwang goo Lee (Sangji University, Korea)
- P6-25 **Phytoplankton community differences between lake and river sections of the Han River (Korea): Paldang Reservoir and Seongsan bridge stations**
Taehee Kim, Yeon-Su Lee, Buhari Lawan Muhammad, Ha-Eun Lee, and Jang-Seu Ki (Sangmyung University, Korea)
- P6-26 **Effect of three different environmental raster scales on species distribution modelling of alien plants in the South Korea**
Ji Yeon Yun, Yong Ho Lee, Ga Eun Kim, Sue Hyuen Choi, Seung Hwan Kim, and Sun Hee Hong (Hankyung National University, Korea)
- P6-27 **Analysis of soil seed bank in four different biotopes**
Sue Hyuen Choi, Yong Ho Lee, Ga Eun Kim, Ji Yeon Yun, Seung Hwan kim, and Sun Hee Hong (Hankyung National University, Korea)
- P6-28 **Correlation between the occurrence of harmful cyanobacteria in the Namhan River basin and environmental factors**
Young Hyo Kim, In Hwan Cho, Byeong Hun Han, Ha Kyung Kim, and Baik Ho Kim (Hanyang University, Korea)
- P6-29 **The effect of monsoon rainfall patterns on epilithic diatom communities in the stream and river, Korea**
In Hwan Cho, Young Hyo Kim, Ha Kyung Kim, Eun A Hwang, and Baik Ho Kim (Hanyang University, Korea)
- P6-30 **Seasonal features of benthic diatom community of the lower Han River**
Byeong-Hun Han, Chen Yi, In-Hwan Cho, Young-Hyo Kim, Liyao Jiang, and Baik-Ho Kim (Hanyang University, Korea)

7. 생태독성 및 환경호르몬 (Ecotoxicity and environmental hormones)

- P7-01 **Gene responses in *Zacco platypus* fish as a biomarker to applications for lake environmental monitoring**
Won-Seok Kim, Kiyun Park, and Ihn-Sil Kwak (Chonnam National University, Korea)
- P7-02 **Functional diversity of the microbial community in an abandoned mine**
Taewoo Kim, June Wee, Yong Ho Lee, Sun-Hee Hong, and Kijong Cho (Korea University, Korea)
- P7-03 **Short- and long-term single and combined effects of microplastics and chromium on the freshwater water flea *Daphnia magna***
Haksoo Jeong, Young Hwan Lee, Alaa El-Din H. Sayed, Chang-Bum Jeong, Bingsheng Zhou, Jae-Seong Lee, and Eunjin Byeon (Sungkyunkwan University, Korea)

- P7-04 **Applicability of *Brassica juncea* as bioindicator for As contamination in soil near the abandoned mine area**
Eunji Chae and Jeong-Gyu Kim (Korea University, Korea)
- P7-05 **Modification of arsenic contaminated *Phragmites japonica* biochar with silicon and the stabilization of arsenic**
Hyun-Gi Min and Jeong-Gyu Kim (Korea University, Korea)
- P7-06 **Qualitative status and quantitative analysis of pesticide residues of wild bird carcasses collected from islands of Marine National Park**
Jae Hoon Kim, Hyun A Jeon, Bo Yeon Hwang, and Woo Hyun Kim (National Park Service, Korea)

8. 재난분석과학 (Disaster Analysis Science)

- P8-01 **Novel electrochemical PMI marker biosensor based on quantum dot dissolution using a double-label strategy**
Bongjin Jeong, Rashida Akter, Jeonghyun Oh, Gyu Ri Kim, Chang-Geun Ahn, Jong-Soon Choi, and Md. Aminur Rahman (Korea Basic Science Institute, Korea)

9. 기타 (Others in Environmental Biology)

- P9-01 **Evaluation of drought damage by the growth stage of maize in Saemangeum reclaimed land**
Yang Yeol Oh, Hee Kyoung Ock, Su Hwan Lee, Hak Sung Lee, Kwang Seung, Lee, Bo Seong Seo, Kang Ho Jung, Jin Hee Ryu, Sung Yung Yoo, and Tae Wan Kim (National Institute of Crop Science, Korea)
- P9-02 **Characterization of three novel CAs related to photosynthetic reactions under different pH in the marine dinoflagellates *Prorocentrum minimum***
Jeongmin Shin, Ha-eun Lee, Han-sol Kim, and Jang-Seu Ki (Sangmyung University, Korea)
- P9-03 **Implementation of fuzzy logic in a system dynamics model: An application to the Korean rice production systems**
Yongun Kim, Yun-Sik Lee, June Wee, Jinsol Hong, and Kijong Cho (Korea University, Korea)



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