

# Oral Program

Sunday 17 September 2017					
17:00-18:00	<b>Registration</b> Room: Ramada Ballroom Foyer				
18:00-19:30	<b>Welcome drinks reception</b>				
Monday 18 September 2017					
07:30-08:50	<b>Registration</b> Room: Ramada Ballroom Foyer				
08:50-09:10	<b>Welcome and introductions</b> Room: Ramada Ballroom				
09:10-09:20	<b>ISEM Best Young Research Award announcement</b>				
09:20-10:00	<b>PL01: Application of systems thinking and ecological models to reduce environmental fragmentation</b> Brian Fath, <i>Towson University, USA</i>				
10:00-12:05	<b>Special Session in memory of the late Prof. Sven Eric Jørgensen;</b> Chair: Brian Fath Room: Ballroom				
10:00-10:30	<b>Invited Speaker of Honor: Prof. Bernard Patten, <i>University of Georgia, USA</i></b>				
10:30-10:50	<b>Refreshment break</b> Room: Ramada Ballroom Foyer				
10:50-11:05	<b>[O7.01] Potential of machine learning to model Spatio-temporal of species distribution</b> <i>S. Lek*, P.B. Ngor, Université Toulouse III, France</i>				
11:05-11:20	<b>[SO02] Habitat availability and environmental preferences drive population reduction and species range shift by responding to climate change</b> <i>F. Li, Y.S. Park*, Kyung Hee University, Republic of Korea</i>				
11:20-11:35	<b>[SO03] Demonstrating the maintenance of information within information cycles</b> <i>T. Abel, Tzu Chi University, Taiwan</i>				
11:35-11:50	<b>[SO04] Harmful algal bloom modelling: Running before we can walk? A critical evaluation of the current state of knowledge</b> <i>G.B. Arhonditsis*, Y. Shimoda, University of Toronto, Canada</i>				
11:50-13:50	<b>Lunch and Poster session 1</b> Tam Mora and Blackstone Music Bar				
13:50-15:40	<b>Symposium session 1: Systems and network analysis</b>	<b>Symposium session 2: Energy systems theory and emergy evaluation applied to analyze and understand changes in ecological systems</b>	<b>Symposium session 3: Terrestrial and forest ecosystem management</b>	<b>Symposium session 4: Advances in ecological modelling of freshwater ecosystems</b>	<b>Symposium session 5: Model-data fusion for agricultural and forest ecosystem modelling</b>
	Chair: Caner Kazanci Room: Ramada Ballroom 1	Chair: Daeseok Kang Room: Ramada Ballroom 2	Chair: Dongwook Ko Room: Ramada Ballroom 3	Chair: Kwang-Seuk Jeong Room: Ramada Ballroom 4	Chair: Hyun Seok Kim Room: Udo
13:50-14:10	<b>[O1.01] Application of point-wise mutual</b>	<b>[O2.01] Change and transition in urban</b>	<b>[O3.01] Early forecasting of crop condition using</b>	<b>[O4.01] Modeling the influence of</b>	<b>[O5.01] A road map for developing and applying</b>

	<p><b>information to ecological and economic systems</b> B.D. Fath<sup>1,2</sup>, <sup>1</sup>Towson University, USA, <sup>2</sup>International Institute for Applied Systems Analysis, Austria</p>	<p><b>systems: The story of Chicago told with Energy Systems Language models</b> D.E. Campbell*, H.A. Walker, S.B. Balogh, L.E. Erban, R. Boumans, T.R. Gleason, USEPA, OED, NHEERL, AED, USA</p>	<p><b>an integrative remote sensing method for corn and soybeans in Iowa and Illinois, USA</b> B. Seo*, J. Lee, S. Kang, Kangwon National University, Republic of Korea</p>	<p><b>accumulation of nutrients in watershed and long-term change in lake water quality</b> E. Komatsu*, T. Fukushima<sup>1</sup>, K. Kamiya<sup>1,2</sup>, T. Ouchi<sup>2</sup>, <sup>1</sup>University of Tsukuba, Japan, <sup>2</sup>Ibaraki Kasumigaura Environmental Science Center, Japan</p>	<p><b>object-oriented Bayesian networks to “wicked” problems</b> N. Benjamin-Fink*, B. Reilly<sup>2</sup>, <sup>1</sup>Tshwane University of Technology, South Africa, <sup>2</sup>Conservation Beyond Borders, USA</p>
14:10-14:30	<p><b>[O1.02] What will ecosystem modelling reveal about improved trawl selectivity? Case study: <i>Mullus barbatus</i></b> I. Saygu*<sup>1</sup>, S.J.J. Heymans<sup>2</sup>, H. Ozbilgin<sup>3</sup>, A.R. Eryasar<sup>4</sup>, G. Gokce<sup>1</sup>, <sup>1</sup>Cukurova University, Turkey, <sup>2</sup>Scottish Marine Institute, UK, <sup>3</sup>Mersin University, Turkey, <sup>4</sup>Recep Tayyip Erdoğan University, Turkey</p>	<p><b>[O2.02] Implications of the system and network theoretical approaches on the future environmental policy</b> S. Lee, Korea Environment Institute, Republic of Korea</p>	<p><b>[O3.02] Modelling analysis of climate and soil depth effects on pine tree dieback in Korea using biome-bgc</b> S. Kang*<sup>1</sup>, J-H. Lim<sup>2</sup>, E-S. Kim<sup>2</sup>, N. Choi<sup>1</sup>, <sup>1</sup>Kangwon National University, Republic of Korea, <sup>2</sup>National Institute of Forest Science, Republic of Korea</p>	<p><b>[O4.02] Applications of scanning detector of change-points to monthly streamflow and rainfall in Xijiang, Southern China</b> J. Jiang, China Meteorological Administration Training Centre, China</p>	<p><b>[O5.02] Climate change impact on wheat crop in diverse agro-climatic zones of India</b> G. Sonkar*, N. Singh, N.K. Sharma, R.K. Mall, Institute of Environment and Sustainable Development, India</p>
14:30-14:50	<p><b>[O1.03] Structure as the key driver of resilience in social-ecological networks under large-scale disturbances</b> M. Bass*, J. Pither, R. Tyson, L. Parrott, University of British Columbia Okanagan Campus, Canada</p>	<p><b>[O2.03] Linking landuse, ecosystem service and human-welling- A case study of energy modeling in Zhifanggou Vally, the Loess Plateau of China</b> Z.H. Xu*, H.J. Wei, X.B. Dong, Beijing Normal University, China</p>	<p><b>[O3.03] Comparison and evaluation of species distribution model algorithms using 6<sup>th</sup> Korean National Forest Inventory data</b> J. Park*<sup>1,2</sup>, M. Park<sup>1</sup>, J. Jung<sup>1</sup>, H.S. Kim<sup>1,2</sup>, <sup>1</sup>Seoul National University, Republic of Korea, <sup>2</sup>National Center for AgroMeteorology, Republic of Korea</p>	<p><b>[O4.03] Building an agent-based model to explore integrated water management strategies in the Rio Grande/Bravo Basin</b> S. Plassin*<sup>1</sup>, J.R. Friedman<sup>1</sup>, S. Paladino<sup>1</sup>, K. Hanson<sup>1</sup>, K.B. Vache<sup>2</sup>, J. Koch<sup>1</sup>, <sup>1</sup>University of Oklahoma, USA, <sup>2</sup>Oregon State University, USA</p>	<p><b>[O5.03] Application of weather forecast data by the unified model to forecast possible risks of crop diseases and insect pests</b> E.W. Park*<sup>1,2</sup>, K.S. Do<sup>1</sup>, H.S. Kim<sup>2</sup>, J.W. So<sup>3</sup>, M.I. Ahn<sup>3</sup>, J.S. Park<sup>3</sup>, Y.S. Shin<sup>3</sup>, J.H. Park<sup>3</sup>, W.S. Kang<sup>3</sup>, S.G. Kim<sup>3</sup>, <sup>1</sup>National Center for Agricultural Meteorology, Republic of Korea, <sup>2</sup>Seoul National University, Republic of Korea, <sup>3</sup>Epinet Co., Republic of Korea</p>
14:50-15:10	<p><b>[O1.04] Integrated socio-ecological system dynamics</b></p>	<p><b>[O2.04] Emergy evaluation the sustainability of land</b></p>	<p><b>[O3.04] Parameterization of a forest landscape simulation model for a</b></p>	<p><b>[O4.04] Prediction of chlorophyll a loading in the middle reach of the</b></p>	<p><b>[O5.04] Long-term monitoring carbon/water/energy/en</b></p>

	<b>modelling to estimate environmental water requirement corresponding to the level of ecosystem restoration in Lake Bakhtegan, Iran</b> A. Bagheri* <sup>1,2</sup> , M.H. Bagheri <sup>1</sup> , A. Nazaridoost <sup>2</sup> , <sup>1</sup> Tarbiat Modares University, Iran, <sup>2</sup> Islamic Azad University Parand Branch, Iran	<b>transfer in China</b> N.C. Lu* <sup>1</sup> , S. Ulgiati <sup>2</sup> , X.B. Dong <sup>1</sup> , <sup>1</sup> Beijing Normal University, China, <sup>2</sup> Parthenope University of Naples, Italy	<b>montane forest across environmental gradients in Korea</b> D.W. Ko* <sup>1</sup> , W.T. Lim <sup>1</sup> , W.H. Cho <sup>1</sup> , E.S. Kim <sup>2</sup> , J-H. Lim <sup>2</sup> , <sup>1</sup> Kookmin University, Republic of Korea, <sup>2</sup> National Institute of Forest Science, Republic of Korea	<b>Korean regulated river using artificial neural network</b> H.G. Kim* <sup>1</sup> , K.S. Jeong <sup>2</sup> , G.J. Joo <sup>1</sup> , <sup>1</sup> Pusan National University, Republic of Korea, <sup>2</sup> Dongju College, Republic of Korea	<b>tropy fluxes between various ecosystems and atmosphere in Korea</b> M. Kang* <sup>1</sup> , J. Kim <sup>1,2</sup> , S-H. Lee <sup>1,2</sup> , J. Kim <sup>1</sup> , S-W. Choi <sup>1</sup> , Y.M. Indrawati <sup>1,2</sup> , <sup>1</sup> National Center for Agro Meteorology, Republic of Korea, <sup>2</sup> Seoul National University, Republic of Korea	
15:10-15:30	<b>[O1.05] Which cycling index should I prefer?</b> C. Kazanci* <sup>1</sup> , Q. Ma <sup>2</sup> , <sup>1</sup> University of Georgia, USA, <sup>2</sup> Chinese Academy of Sciences, China		<b>[O3.05] Assessing the potential impact of climate change on tree mortality in temperate forest in France through a spatial approach</b> A.A. Taccoen* <sup>1,2</sup> , J.C. Gégout <sup>1,2</sup> , C. Piedallu <sup>1,2</sup> , I. Seynave <sup>1,2</sup> , A. Gégout-Petit <sup>3</sup> , V. Pérez <sup>1</sup> , <sup>1</sup> ENGREF, France, <sup>2</sup> Forêt-Bois (LERFoB), France, <sup>3</sup> Université de Lorraine, France		<b>[O5.05] The NCAM land-atmosphere modeling package (lamp) in South Korea</b> S-J. Lee*, J. Park, H. Shin, H. Na, <i>National Center for AgroMeteorology, Republic of Korea</i>	
15:30-15:40	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	
15:40-16:00	<b>Refreshment break</b> Room: Ramada Ballroom Foyer					
16:00-17:50	<b>Symposium session 1: Systems and network analysis (continued)</b>	<b>Symposium session 2: Energy systems theory and emergy evaluation applied to analyze and understand changes in ecological systems (continued)</b>	<b>Symposium session 3: Terrestrial and forest ecosystem management (continued)</b>	<b>Symposium session 4: Advances in ecological modelling of freshwater ecosystems (continued)</b>	<b>Symposium session 5: Model-data fusion for agricultural and forest ecosystem modelling (continued)</b>	
	<b>Chair: Caner Kazanci</b> Room: Ramada Ballroom 1	<b>Chair: Daeseok Kang</b> Room: Ramada Ballroom 2	<b>Chair: Dongwook Ko</b> Room: Ramada Ballroom 3	<b>Chair: Kwang-Seuk Jeong</b> Room: Ramada Ballroom 4	<b>Chair: Hyun Seok Kim</b> Room: Udo	
16:00-16:20	<b>[O1.06] A fundamental model for food web</b> H.W. Chen* <sup>1</sup> , W.C. Liu <sup>2</sup> , <sup>1</sup> National Chiayi	<b>[O2.06] Emergy valuation and marine spatial planning in Korea</b> D. Kang* <sup>1</sup> , J. Nam <sup>2</sup> , H.	<b>[O3.06] Improving environmental fire risk modelling</b> T.D. Penman*, D.A.	16:00-16:30	<b>[O4.06_Inv] Model ensembles: A viable approach</b>	<b>[O5.06] Estimating rice yield in South Korea using a remote sensing derived and biophysical process</b>

	University, Taiwan, <sup>2</sup> Academia Sinica, Taiwan	Choi <sup>2</sup> , <sup>1</sup> Pukyong National University, Republic of Korea, <sup>2</sup> Korea Maritime Institute, Republic of Korea	Ababei, The University of Melbourne, Australia		<b>to mitigate domain- and uncertainty- constraints of individual ecological models</b> F. Recknagel* <sup>1</sup> , G. Arhonditsis <sup>1</sup> , <sup>1</sup> Uni versity of Adelaide, Australia, <sup>2</sup> University of Toronto Scarborough, Canada	<b>based model, BESS-Rice</b> Y. Huang* <sup>1</sup> , Y. Ryu <sup>1</sup> , C. Jiang <sup>1</sup> , J. Kong <sup>1</sup> , S. Kim <sup>1</sup> , M. Kang <sup>2</sup> , J. Kim <sup>2</sup> , <sup>1</sup> Seoul National University, Republic of Korea, <sup>2</sup> National Center for Agro Meteorology, Republic of Korea
16:20-16:40	<b>[O1.07] The influence of nutrient enrichment on riverine food webs: Are the defences compromised?</b> A.D. Canning*, R.G. Death, Massey University, New Zealand	<b>[O2.07] Energy-equity analysis of South Korea's residential energy use, 1998-2013</b> H. Park, Yonsei University, Republic of Korea	<b>[O3.07] Robust adaptive management alternatives considering economic profitability and biodiversity conservation for European forests</b> A.L.D. Augustynczyk*, R. Yousefpour, University of Freiburg, Germany	16:30- 16:50	<b>[O4.07] Towards the development of integrated modelling systems in aquatic biogeochemistry : A Bayesian approach</b> D.K. Kim*, G.B. Arhonditsis, Univ ersity of Toronto, Canada	<b>[O5.07] Development of a micro-scale open source CFD model to predict wind environment on mountainous terrain</b> I.B. Lee, T.H. Ha*, Seoul National University, Republic of Korea
16:40-17:00	<b>[O1.08] Collaborative modeling institute: An institutionalized model- making paradigm and protocol for transdisciplinary team systems science</b> S.J. Whipple*, B.C. Patten, University of Georgia, USA	<b>[O2.08] The energy-water extricable link for arid regions: Case of Namibia</b> N.A. Kgabi, Namibia University of Science and Technology, Namibia	<b>[O3.08] How spatial targeting of incentive payments for forest carbon storage can be adjusted over time for competing land uses</b> Y. Kim* <sup>1</sup> , S. Cho <sup>2</sup> , <sup>1</sup> Seoul National University, Republic of Korea, <sup>2</sup> University of Tennessee, USA	16:50- 17:10	<b>[O4.08] Density stratification of the Seomjin river estuary in summer</b> Y.M. Kim*, J.K. Kim, H.K. Lee, Chonnam National University, Republic of Korea	<b>[O5.08] Development of water demand forecasting service for cropping land</b> J.Y. Choi*, S.H. Lee, Y.H. Shin, M.K. Hong, S.J. Lee, Seoul National University, Republic of Korea
17:00-17:20	<b>[O1.09] Hierarchical trends of world commodities trade flow</b>	<b>[O2.09] Nexus thinking in a water-food-ecosystem: Decoupling with</b>	<b>[O3.09] Integrated modelling approach to estimate climate impact</b>	17:10- 17:30	<b>[O4.09] Application of SOM to</b>	<b>[O5.09] Estimating forest water use in Gyeonggi Province, Korea for user-</b>

	<p><b>network</b> A. Nobi<sup>1</sup>, N. Jung<sup>2</sup>, T.H. Lee<sup>2</sup>, L.A. Quang<sup>2</sup>, J.W. Lee<sup>*2</sup>, <sup>1</sup>Noakhali Science and Technology University, Bangladesh, <sup>2</sup>Inha University, Republic of Korea</p>	<p><b>ecosystem water supply and agricultural water demand according to land cover change</b> C.H. Lim<sup>*</sup>, Y.Y. Choi, W.K. Lee, S.W. Jeon, Korea University, Republic of Korea</p>	<p><b>of forest products</b> A. Alam<sup>*</sup>, S. Kellomäki, A. Kilpeläinen, University of Eastern Finland, Finland</p>	<p><b>understand community dynamics of zooplankton in brackish reservoir where the impacts of eutrophication and salinity are mixed through sluice gate</b> J.M. Suh<sup>*1</sup>, K.H. Chang<sup>1</sup>, K.S. Jeong<sup>2</sup>, Y.J. Kim<sup>3</sup>, M.Y. Jin<sup>1</sup>, Y. Oda<sup>1</sup>, <sup>1</sup>Kyung Hee University, Republic of Korea, <sup>2</sup>Dong Ju College, Republic of Korea, <sup>3</sup>Daejin University, Republic of Korea</p>	<p><b>customized forest management using localized JULES model.</b> H.T. Lee<sup>*</sup>, J.H. Park, S.S. Cho, H.N. Na, H.J. Shin, S.-J. Lee, M.S. Kang, J. Kim, H.S. Kim, Seoul National University, Republic of Korea</p>	
17:20-17:40	<p><b>[O1.10] Networking as the solution to the common pool problem in sustainable water management</b> G. Paluszak<sup>1</sup>, J. Wisniewska-Paluszak<sup>*2</sup>, <sup>1</sup>University of Warsaw, Poland, <sup>2</sup>Poznan University of Life Sciences, Poland</p>	<p><b>[O2.10] Transition from non-renewable to renewable energy among the SMEs in South Africa: Willingness and envisage business models</b> Y.S. Hosu<sup>*</sup>, S.L. Vikela, Walter Sisulu University, South Africa</p>		17:30-17:50	<p><b>[O4.10] Freshwater diatom blooms in winter: Transcriptome, metabolome and ecological modelling</b> K. Jeong<sup>*1</sup>, K.Y. Jeong<sup>1</sup>, G.J. Joo<sup>2</sup>, <sup>1</sup>Dongju College, Republic of Korea, <sup>2</sup>Pusan National University, Republic of Korea</p>	<p><b>[O5.10] Application of an empirical leaf wetness model to operation of a disease warning system in a ginseng field</b> K.S. Kim<sup>*1</sup>, K.J. Lee<sup>1</sup>, J.Y. Kang<sup>2</sup>, D.Y. Lee<sup>2</sup>, S.W. Jang<sup>2</sup>, B.W. Lee<sup>1</sup>, D.H. Choi<sup>1</sup>, <sup>1</sup>Seoul National University, Republic of Korea, <sup>2</sup>Korea Ginseng Corporation Research Institute, Republic of Korea</p>
17:40-17:50	Discussion	Discussion	Discussion		Discussion	

**Tuesday 19 September 2017**

09:00-09:40	<b>PL02: Modeling eco-evolutionary dynamics: Bridging between theories and applications</b> Ulf Dieckmann, <i>International Institute for Applied Systems Analysis, Austria</i> Room: Ramada Ballroom					
09:40-10:20	<b>PL03: Structure and species abundance of the mutualistic networks under interspecific competition</b> Deok-Sun Lee, <i>Inha University, Republic of Korea</i>					
10:20-10:50	<b>Refreshment break</b> Room: Ramada Ballroom Foyer					
10:50-12:40	<b>Symposium session 6: Invasive species: establishment, expansion, and management [NIE]</b>	<b>Symposium session 7: Machine learning in ecological modelling</b>	<b>Symposium session 8: Hydro-climatic settings and renewable energy challenges of arid environments</b>	<b>Symposium session 9: Molecular ecology/evolution and genomics</b>	<b>Symposium session 10: Coastal ecosystem modeling / monitoring</b>	
	Chair: Eun-Jin Park Room: Ramada Ballroom 1	Chair: Sovan Lek Room: Ramada Ballroom 2	Chair: Nnnesi Kgabi Room: Ramada Ballroom 3	Chair: Yong-Jin Won Room: Ramada Ballroom 4	Chair: Jongkyu Kim Room: Udo	
10:50-11:10	10:50-11:15	<b>[O6.01_Inv] Modelling spatial spread of the pine wilt disease - how does vector beetle dispersal affect disease expansion?</b> F. Takasu, <i>Nara Women's University, Japan</i>		<b>[O8.01] Atmospheric water-holding capacity of the arid environment</b> N.A. Kgabi*, J.T. Ithindi, <i>Namibia University of Science and Technology, Namibia</i>	<b>[O9.01] Multiple modes of positive selection detected by incomplete selective sweeps in African populations of <i>Drosophila melanogaster</i></b> Y. Kim, <i>Ewha Womans University, Republic of Korea</i>	<b>[O10.01] A comparative account of detritus food chain around virgin and reclaimed islands of Sundarban estuarine mangrove ecosystem, India: A modelling study</b> M. Roy* <sup>1</sup> , J. Mukherjee <sup>1</sup> , S. Ray <sup>2</sup> , <sup>1</sup> West Bengal State University, India, <sup>2</sup> Vishva-Bharati, India
11:10-11:30	11:15-11:35	<b>[O6.02] A network-theoretic modelling of spatial distribution of <i>Lantana camara</i> in Rajaji Tiger Reserve, India</b>	<b>[O7.02] Can multiclass classification be useful for data-driven habitat modelling in a small spring-fed river?</b> Y. Matsuzawa*, S. Fukuda, <i>Tokyo University of Agriculture and Technology, Japan</i>	<b>[O8.02] Modelling the water-air interactions of the Namibian atmosphere: Meteorological factors</b> S. Reju*, G. Mbokoma, N. Kgabi, <i>Namibia University of Science and Technology, Namibia</i>	<b>[O9.02] Adaptive evolution of mud-tidal snails to the change of salinity</b> P.T. Ho, W.K. Lee, B. Lee, Y.J. Won*, <i>Ewha Womans University, Republic of Korea</i>	<b>[O10.02] Relationship between fish distribution and their environmental DNA in a semi-closed bay</b> S. Yoon* <sup>1</sup> , A. Kasai <sup>1</sup> , S. Yamamoto <sup>2</sup> , T. Minamoto <sup>2</sup> , K. Minami <sup>1</sup> , K. Miyashita <sup>1</sup> , R. Masuda <sup>3</sup> , M. Kondoh <sup>4</sup> , <sup>1</sup> Hokkaido

		S. Bhattacharya <sup>1</sup> , P.A. Pathak <sup>2</sup> , G. Agrawal <sup>1</sup> , S. Upadhyay* <sup>1</sup> , <sup>1</sup> Shiv Nadar University, India, <sup>2</sup> Nalanda University, India				University, Japan, <sup>2</sup> Kobe University, Japan, <sup>3</sup> Kyoto University, Japan, <sup>4</sup> Ryukoku University, Japan
11:30-11:50	11:35-11:55	<b>[O6.03] Optimizing the surveillance of biological invasions through simulation modelling</b> M.D. Triska* <sup>1,2</sup> , M. Renton <sup>1</sup> , <sup>1</sup> The University of Western Australia, Australia, <sup>2</sup> Plant Biosecurity Cooperative Research Centre, Australia	<b>[O7.03] Transition in niches: Recolonization pattern of Eurasian otter in the Korean peninsula identified by diffusion kernel and artificial neural network</b> S. Hong* <sup>1</sup> , T.S. Chon <sup>1,2</sup> , G.J. Joo <sup>1</sup> , <sup>1</sup> Pusan National University, Republic of Korea, <sup>2</sup> Kyung Hee University, Republic of Korea	<b>[O8.03] Long-term trend of carbon cycle in inland waters by using advanced eco-hydrologic and biogeochemical coupling model</b> T. Nakayama*, S. Maksyutov, National Institute for Environmental Studies, Japan	<b>[O9.03] Genome-environmental association of stoneflies to predict local adaptation</b> M. Gamba*, K. Watanabe, Ehime University, Japan	<b>[O10.03] Sediment pollution in Gamak Bay of Korea</b> S.J. Park* <sup>1</sup> , B.K. Kim <sup>2</sup> , J.K. Kim <sup>3</sup> , M.O. Lee <sup>3</sup> , <sup>1</sup> Geosystem Research Corporation, Republic of Korea, <sup>2</sup> Korea Gas Corporation, Republic of Korea, <sup>3</sup> Chonnam National University, Republic of Korea
11:50-12:10	11:55-12:15	<b>[O6.04] Current status and future studies for the management of Invasive Alien Species (IASs) in Korea</b> H.R. Song*, J. Kim, E.J.	<b>[O7.04] Modelling China's freshwater fishes: Patterns, diversity and biogeography</b> C. Guo* <sup>1</sup> , Y. Chen <sup>1</sup> , S. Lek <sup>2</sup> , Y.S. Park <sup>3</sup> , Z. Li <sup>1</sup> , <sup>1</sup> Chinese Academy of Sciences, China, <sup>2</sup> Université de Toulouse, France, <sup>3</sup> Kyung Hee University, Republic of	<b>[O8.04] Wind shear coefficients and energy yields estimations of arid inland and coastal locations</b> M.E. Okorie* <sup>1</sup> , F. Inambao <sup>2</sup> , Z. Chiguvare <sup>1</sup> , <sup>1</sup> Namibia University of Science and Technology, Namibia, <sup>2</sup> University of KwaZulu-	<b>[O9.04] How habitat type drive local adaptation of aquatic insect: <i>Ephemera strigata</i> within reach scale</b> B. Li*, S. Yeagshi, T. Carvajal, K. Watanabe, Ehime University, Japan	<b>[O10.04] The dispersal of seed(<i>Halophila nipponica</i>) in the coast of Korea</b> B.K. Kim* <sup>1</sup> , M.O. Lee <sup>2</sup> , J.K. Kim <sup>2</sup> , <sup>1</sup> Korea Gas Corporation, Republic of Korea, <sup>2</sup> Chonnam National University, Republic of Korea

		Park, National Institute of Ecology, Republic of Korea	Korea	Natal, South Africa		
12:10-12:30	12:15-12:40	<b>[O6.05_Inv] Developing climate envelop models for nutria (<i>Myocastor coypus</i>) using reported distributions from around the world: Using You Tube for Science</b> J. Carter, USGS Wetland and Aquatic Research Center, USA	<b>[O7.05] Random forests for instream fish habitat modelling using high resolution ecohydraulic data</b> S. Fukuda*, S. Aihara, Tokyo University of Agriculture and Technology, Japan	<b>[O8.05] The viability and potential value of concentrated solar power (CSP) systems for electricity generation in the Namibian environment</b> G. Gope*, J. Amunyela, M. Okorie, Namibia University of Science and Technology, Namibia	<b>[O9.05] Chain reaction in a holobiont system: Interactions between the eukaryotic host and prokaryotic symbionts</b> G. Jeong* <sup>1</sup> , S. Park <sup>1,2</sup> , P. Noh <sup>2</sup> , J.C. Choe <sup>2</sup> , M. Choi <sup>3</sup> , <sup>1</sup> National Institute of Ecology, Republic of Korea, <sup>2</sup> Ewha Womans University, Republic of Korea, <sup>3</sup> Seoul National University, Republic of Korea	<b>[O10.05] Trophic network analysis of Gwangyang Bay ecosystem in Korea</b> Y-H. Kang* <sup>1</sup> , C-K. Kang <sup>2</sup> , J.K. Kim <sup>1</sup> , <sup>1</sup> Chonnam National University, Republic of Korea, <sup>2</sup> GIST, Republic of Korea
12:30-12:40			<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>
12:40-14:00	<b>Lunch</b> Tam Mora and Blackstone Music Bar					
14:00-15:40	<b>Symposium session 11: Development of integrated models for climate change impacts on various ecosystems</b>	<b>Symposium session 12: Applications of mathematical models to ecology and epidemiology</b>	<b>Symposium session 13: Applications of artificial intelligence for plant diseases and insects recognition</b>	<b>Special Session for ISEM Best Young Research Award</b>	<b>Symposium session 14: A game-theoretic approach to find survival strategies in animal and human society</b>	
	<b>Chair: Kijong Cho</b> Room: Ramada Ballroom 1	<b>Chair: Toshiyuki Namba</b> Room: Ramada Ballroom 2	<b>Chair: Hyongsuk Kim</b> Room: Ramada Ballroom 3	<b>Chair: Brian Fath</b> Room: Ramada Ballroom 4	<b>Chair: Muyoung Heo</b> Room: Udo	
14:00-14:20	<b>[O11:01] Development of integrated models for climate change impacts</b> Y.I. Song, Korea Environment Institute, Republic of Korea	<b>[O12.01] Resistant plasmid transfer leads to bistability of bacteria populations</b> S-L. Xu, Monash University, Australia	<b>[O13:01] Anomaly detection of plant diseases and insects using convolutional neural networks</b> D.S. Park <sup>1</sup> , A. Fuentes* <sup>1</sup> , S. Yoon <sup>2</sup> , Y.J. Lee <sup>1</sup> , J.W.	<b>[YR01] Using agent-based models to predict behavioral and physiological responses of top predators to environmental change: A case study with Weddell</b>	14:00-14:30	<b>[O14:01_Inv] Variation, reputation and negotiation when individuals contribute to a</b>



			Lee <sup>1</sup> , S.C. Kim <sup>3</sup> , <sup>1</sup> Chonbuk National University, Republic of Korea, <sup>2</sup> Mokpo National University, Republic of Korea, <sup>3</sup> National Institute of Agricultural Sciences, Republic of Korea	<b>seals (<i>Leptonychotes weddellii</i>)</b> R.S. Beltran* <sup>1</sup> , J.M. Burns <sup>1</sup> , J.W. Testa <sup>1,2</sup> , <sup>1</sup> University of Alaska Anchorage, USA, <sup>2</sup> National Oceanic and Atmospheric Administration, USA		<b>common good</b> J.M. McNamara, <i>University of Bristol, UK</i>
<b>14:20-14:40</b>	<b>[O11.02] Projecting heat-related deaths in Korea</b> E.J. Kim, H. Kim*, <i>Graduate School of Public Health, Seoul National University, Republic of Korea</i>	<b>[O12.02] Sex ratio asymmetry influence on population dynamics</b> O.L. Revutskaya*, G.P. Neverova, M.P. Kulakov, E.Y. Frisman, <i>Russian Academy of Sciences, Russia</i>	<b>[O13.02] Deep regression-based classification of malnutrition and marssonina bloch</b> J.H. Lee* <sup>1</sup> , K.H. Park <sup>1</sup> , Y.K. Hong <sup>2</sup> , B.J. Kim <sup>1</sup> , <sup>1</sup> Chonbuk National University, Republic of Korea, <sup>2</sup> National Academy of Agricultural Science, Republic of Korea	<b>[YR02] Influence of delayed density dependent birth rate on population dynamics</b> E.Y. Frisman <sup>1</sup> , G.P. Neverova* <sup>1,2</sup> , <sup>1</sup> Institute for Complex Analysis of Regional Problems, Russia, <sup>2</sup> Institute of Automation and Control Processes, Russia	<b>14:30-14:50</b>	<b>[O14:02] Public goods cooperation by asymmetric players</b> H.O. Ohtsuki* <sup>1</sup> , T.R. Reeves <sup>1</sup> , S.F. Fukui <sup>2</sup> , <sup>1</sup> SOKEN DAI, Japan, <sup>2</sup> Waseda University, Japan
<b>14:40-15:00</b>	<b>[O11.03] Coupled pest-crop model to assess effects of climate changes on crop yields</b> J. Hong, M. Lee, K. Cho*, <i>Korea University, Republic of Korea</i>	<b>[O12.03] A spatially explicit model for sexual populations</b> P.Y. Lee, <i>National Taiwan University, Taiwan</i>	<b>[O13.03] Tomato disease detection using patch-based convolutional neural networks</b> H.S. Kim* <sup>1</sup> , Y.J. Kim <sup>1</sup> , S.P. Adhikari <sup>1</sup> , C.Y. Yang <sup>1</sup> , K.S. Han <sup>2</sup> , H.D. Lee <sup>2</sup> , <sup>1</sup> Chonbuk National University, Republic of Korea, <sup>2</sup> National Institute of Agricultural Sciences, Republic of Korea	<b>[YR03] The quest for the perfect method: Optimizing fish visual census techniques with an individual-based simulation model</b> M.P. Pais*, H.N. Cabral MARE – Marine and Environmental Sciences Centre, Faculdade de Ciências, Universidade de Lisboa, Portugal	<b>14:50-15:10</b>	<b>[O14.03] Asymmetric interaction paired with a super-rational strategy might resolve the tragedy of the commons without requiring recognition or negotiation</b> J.Z. He <sup>1,2</sup> , R.W. Wang* <sup>3</sup> , C.X.J. Jensen <sup>4</sup> , Y.T. Li <sup>5</sup> , <sup>1</sup> Chinese Academy of Science, China, <sup>2</sup> Yunnan University of Finance and Economics, China, <sup>3</sup> Northwestern

						Polytechnical University, China, <sup>4</sup> Pratt Institute, USA, <sup>5</sup> Yunnan University, China
15:00-15:20	<b>[O11.04] An integrated model for assessing vulnerability of forest resources to climate change - Development and application of the model in relation to local and global interests-</b> W.K. Lee, Korea University, Republic of Korea	<b>[O12.04] Effects of spatiotemporal evenness of releases of sterile insects on control of pests with limited mobility</b> Y. Ikegawa*, C. Himuro, Ryukyu Sankei Co. Ltd., Japan	<b>[O13.04] Weed detection on welsh onion field using region-based fully convolutional networks</b> I. Sarker* <sup>1</sup> , H.C. Yang <sup>1</sup> , H.S. Kim <sup>1</sup> , V. Rajamani <sup>1</sup> , Z.I. Mannan <sup>1</sup> , G.H. Kim <sup>2</sup> , D.H. Lee <sup>2</sup> , <sup>1</sup> Chonbuk National University, Republic of Korea, <sup>2</sup> National Institute of Agricultural Sciences, Republic of Korea	<b>[YR04] Integrating biodiversity into biosphere-atmosphere interactions using individual-based models (IBM)</b> B. Wang, University of Virginia, USA	15:10-15:30	<b>[O14.04] A Structural antitrust Strategy for enhanced cooperation in social networks</b> H. Yang, C-M. Ghim*, Ulsan Institute of Science and Technology, Republic of Korea
15:20-15:40	<b>[O11.05] Linking empirism and modeling in impact assessment of agroforestry for rehabilitation of degraded cropland</b> A. Khamzina, Korea University, Republic of Korea	<b>[O12.05] Basic reproduction number for spatial epidemic models</b> K. Sato, Shizuoka University, Japan	<b>[O13.05] Human pose estimation with multi-stage residual-like deep convolutional neural network</b> Y. Nie* <sup>1</sup> , J.B. Park <sup>1</sup> , S. Yoon <sup>2</sup> , D.S. Park <sup>1</sup> , A. Fuentes <sup>1</sup> , M.H. Lee <sup>3</sup> , <sup>1</sup> Chonbuk National University, Republic of Korea, <sup>2</sup> Mokpo National University, Republic of Korea, <sup>3</sup> National Institute of Agricultural Sciences, Republic of Korea			
15:40-15:50	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>			
15:50-16:10	<b>Refreshment break</b> Room: Ramada Ballroom Foyer					
16:10-17:30	<b>General session 1: Biogeochemical cycle</b>	<b>General session 2: Biodiversity</b>	<b>General session 3: Adaptation and evolution</b>	<b>General session 4: Plant ecology</b>	<b>General session 5: Physiological ecology</b>	
	Chair: Sukguen Jung Room: Ramada Ballroom 1	Chair: Kyung Ah Koo Room: Ramada Ballroom 2	Chair: Who-Seung Lee Room: Ramada Ballroom 3	Chair: Stuart Whipple Room: Ramada Ballroom 4	Chair: Yeong-choy Kam Room: Udo	
16:10-16:30	<b>[GEN01.01] Modelling</b>	<b>[GEN02.01] How much</b>	<b>[GEN03.01]</b>	<b>[GEN04.01] Possible links</b>	<b>[GEN05.01] Is circadian</b>	

	<p><b>organic matter dynamics of a reclaimed and a virgin Island of Sundarban mangrove wetland soils - a comparative study</b> M. Roy*<sup>1</sup>, J. Mukherjee<sup>1</sup>, S. Ray<sup>2</sup>, <sup>1</sup>West Bengal State University, India, <sup>2</sup>Visva-Bharati, India</p>	<p><b>are biodiversity mainstreamed in urban municipalities? Status of mainstreaming efforts with urban biodiversity indicators in major Japanese cities</b> Y. Uchiyama*, R. Kohsaka, Tohoku University, Japan</p>	<p><b>A mathematical model for evolution</b> X. Leng, Freelance, USA</p>	<p><b>between the Eastern Pacific Warm Pool and global vegetation growth during the satellite era</b> Z.S. Wang*, M. Huang, M. Hao, X.L. Yue, Chinese Academy of Sciences, China</p>	<p><b>rhythm a good indicator in the environmental assessment? The toxic effects of contaminants in trace level on the behavior responses of Goldfish (<i>Carassius auratus</i>)</b> H. Pan.*, N. Xing., S. Li., Z. Ren., B. Ren., T. Zhang., L. Qi., S. Xu., J. Song., J. Ma., Shandong Normal University, China</p>
16:30-16:50	<p><b>[GEN01.02] A simple continuous model of soil organic matter transformations</b> S.I. Bartsev*, A.A. Pochekutov, Institute of biophysics SB RAS, Russia</p>	<p><b>[GEN02.02] Application of open source tools for biodiversity conservation and natural resource management in East Africa</b> V.N. Mose*<sup>1</sup>, D. Western<sup>1</sup>, P. Tyrrell<sup>2</sup>, <sup>1</sup>African Conservation Centre, Kenya, <sup>2</sup>South Rift Association of Land Owners, Kenya</p>	<p><b>[GEN03.02] Mathematical modeling of the mechanism of a reproductive strategies differentiation in natural populations (on an example of arctic fox, <i>Alopex lagopus</i>)</b> O.L. Zhdanova*<sup>1</sup>, E.Y. Frisman<sup>2</sup>, <sup>1</sup>Institute for Automation and Control Processes FEB RAS, Russia, <sup>2</sup>Institute for Complex Analysis of Regional Problems FEB RAS, Russia</p>	<p><b>[GEN04.02] Assessment of remote sensing spatial data quality for modelling adaptive significance of seed dormancy in legumes</b> J. Brus*<sup>1</sup>, V. Pechanec<sup>1</sup>, P. Smykal<sup>1</sup>, I. Hradilova<sup>1</sup>, M. Duchoslav<sup>1</sup>, M. Hybl<sup>2</sup>, P. Kopecky<sup>2</sup>, <sup>1</sup>Palacký University, Czech Republic, <sup>2</sup>Crop Research Institute, Czech Republic</p>	<p><b>[GEN05.02] The development of a new on-line assessment technology of water quality based on the electrocardiogram (ECG) characteristics of Zebra fish (<i>Danio rerio</i>)</b> N. Xing*, J. Ma, Z. Ren, M. Yang, H. Pan, S. Li, B. Ren, J. Song, S. Xu, L. Qi, Shandong Normal University, China</p>
16:50-17:10		<p><b>[GEN02.03] Data-driven habitat modelling of aquatic flora in the Fuchu Yosui Irrigation System</b> S. Aihara*, S. Fukuda, Tokyo University of Agriculture and Technology, Japan</p>	<p><b>[GEN03.03] Biological evolution and ecology (some identical laws)</b> L.A. Sheromov, Siberian University, Russia</p>	<p><b>[GEN04.03] Shifting spectra: Using a NATural Surface (NATSU) spectral reflectance database to identify a key distinction between the colours of flowers and their backgrounds</b> M. Shrestha<sup>1,2</sup>, Z. Bukovac<sup>1</sup>, J. Garcia<sup>2</sup>, V. Phan<sup>1</sup>, M. Burd<sup>1</sup>, A.G. Dyer<sup>2,1</sup>, A. Dorin*<sup>1</sup>, <sup>1</sup>Monash University, Australia, <sup>2</sup>RMIT University, Australia</p>	
17:10-17:30	<p><b>[GEN01.04] Modelling nitrogen transformations</b></p>	<p><b>[GEN02.04] The climate change effects on the</b></p>	<p><b>[GEN03.04] Environmental integration: patterns of</b></p>		<p><b>[GEN05.04] Effects of salinity stress on thermal</b></p>

	<b>in a cold-climate mining pond</b> L. Nilsson*, A. Widerlund, Luleå University of Technology, Sweden	<b>distributions of coastal warm-adapted evergreen plants</b> K. Koo, Korea Environment Institute, Republic of Korea	<b>correlation between environmental factors, early life decisions, and their long-term consequences</b> W.S Lee* <sup>1</sup> , M. Mangel <sup>2-3</sup> , P. Peres-Neto <sup>4</sup> , <sup>1</sup> Korea Environment Institute, Republic of Korea, <sup>2</sup> University of California, USA, <sup>3</sup> University of Bergen, Norway, <sup>4</sup> Concordia University, Canada		<b>tolerance of amphibian tadpoles: implication of a double impact of global warming</b> M.F. Chuang, Y.J. Chung, Y.C. Kam*, Tunghai University, Taiwan
<b>17:45–18:30</b>	<b>ISEM General Meeting</b> Room: Ramada Ballroom 1				
<b>19:00–21:00</b>	<b>iRIC special session: Masahiko Sekine</b> Room: Ramada Ballroom 1				
<b>Wednesday 20 September 2017</b>					
<b>09:00-09:40</b>	<b>PL04: Coupled social-economic and ecological dynamics: Examples from lake water eutrophication, Mongolian rangeland, and illegal logging of tropical forests</b> Yoh Iwasa, Kyushu University, Japan				
<b>09:40-10:20</b>	<b>PL05: The optimal scale of global economy under the ecological constraints: The role of market and technology</b> Xi Ji, Peking University, China				
<b>10:20-10:40</b>	<b>Refreshment break</b> Room: Ramada Ballroom Foyer				
<b>10:40-12:30</b>	<b>Symposium session 15: Ecosystem services: scenario analysis and assessment modeling [NIE]</b>	<b>Symposium session 12: Applications of mathematical models to ecology and epidemiology(continued)</b>	<b>Symposium session 16: Aquatic and river ecosystem management</b>	<b>Symposium session 17: Wildlife ecology and management for different wildlife species under current human-interacted environment</b>	<b>Symposium session 14: A game-theoretic approach to find survival strategies in animal and human society(continued)</b>
	<b>Chair: Wooyeong Ju</b> Room: Ramada Ballroom 1	<b>Chair: Toshiyuki Namba</b> Room: Ramada Ballroom 2	<b>Chair: Masahiko Sekine</b> Room: Ramada Ballroom 3	<b>Chair: Xuehua Liu</b> Room: Ramada Ballroom 4	<b>Chair: Muyoung Heo</b> Room: Udo
<b>10:40-11:00</b>	<b>[O15.01] Development of scenario and modeling of ecosystems services in South Korea</b> W.Y. Song <sup>1</sup> , C. Park <sup>1</sup> , D.K. Lee <sup>1</sup> , H.S. Kwon* <sup>1</sup> , <sup>1</sup> Dankook university, Republic of Korea, <sup>2</sup> University of Seoul, Republic of Korea, <sup>3</sup> Seoul National	<b>[O12.06] Global stability and limit cycles on some biological control systems</b> Y. Saito, Shimane University, Japan	<b>[O16.01] Modeling functional groups of phytoplankton in a regulated river</b> S. Park*, J-H. Min, C. Shin, J. Choi, J. Jeon, K. Kim, National Institute of Environmental Research, Republic of Korea	<b>[O17.01] Prediction of potential geographical range of Korean Uroctea spiders (<i>U. lesserti</i> and <i>U. compactilis</i>) in relation to climate change</b> Y.C. Park* <sup>1</sup> , S.J. Lim <sup>1</sup> , K.S. Park <sup>2</sup> , Y.G. Choi <sup>3</sup> , <sup>1</sup> Kangwon National University, Republic of Korea,	<b>[O14.06] The influence of the error types on the cooperation with negotiation</b> K. Ito* <sup>1</sup> , J.M. McNamara <sup>2</sup> , A.D. Higginson <sup>1</sup> , A. Yamauchi <sup>3</sup> , <sup>1</sup> University of Exeter, UK, <sup>2</sup> University of Bristol, UK, <sup>3</sup> Kyoto University, Japan

	University, Republic of Korea, <sup>4</sup> National Institute of Ecology, Republic of Korea			<sup>2</sup> Yubong Girls' High School, Republic of Korea, <sup>3</sup> Korean Institute of Biospeleology, Republic of Korea	
11:00-11:20	<b>[O15.02] The impacts of built-up expansion patterns on ecosystem water conservation service</b> X.L. Ke*, K.P. Pu, B.H. Yang, <i>Huazhong Agricultural University, China</i>	<b>[O12.07] Multistability of population systems: New approaches to forecasting dynamics</b> G.P. Neverova* <sup>1,2</sup> , E.Y. Frisman <sup>2</sup> , <sup>1</sup> <i>Institute of Automation and Control Processes, Russia</i> , <sup>2</sup> <i>Institute for Complex Analysis of Regional Problems, Russia</i>	<b>[O16.02] Classification and modelling of phytoplankton using the modified EFDC model in the Yeongsan River, Korea</b> C.M. Shin* <sup>1</sup> , J.K. Choi <sup>1</sup> , J-H. Min <sup>1</sup> , S.Y. Park <sup>1</sup> , J.H. Park <sup>2</sup> , Y.S. Song <sup>3</sup> , K. Kim <sup>1</sup> , <sup>1</sup> <i>National Institute of Environment Research, Republic of Korea</i> , <sup>2</sup> <i>Yeongsan River Environment Research Center, Republic of Korea</i> , <sup>3</sup> <i>Geo System Research Corporation, Republic of Korea</i>	<b>[O17.02] Are termite mounds always grazing hotspots in African savannas?</b> J. Muvengwi* <sup>1,2</sup> , F. Parrini <sup>1</sup> , E.T.F. Witkowski <sup>1</sup> , A.B. Davies <sup>1,3</sup> , <sup>1</sup> <i>Bindura University of Science Education, Zimbabwe</i> , <sup>2</sup> <i>University of the Witwatersrand, South Africa</i> , <sup>3</sup> <i>Carnegie Institution for Science, USA</i>	<b>[O14.07] When and with whom to negotiate: An extension of the Hawk-Dove model with negotiation.</b> H. Kim <sup>1</sup> , M. Heo* <sup>1</sup> , T.S. Chon <sup>1</sup> , U. Dieckmann <sup>2</sup> , <sup>1</sup> <i>Pusan National University, Republic of Korea</i> , <sup>2</sup> <i>International Institute for Applied Systems Analysis, Austria</i>
11:20-11:40	<b>[O15.03] Quantifying ecotourism in the era of big data</b> C. Kim*, Y. Kim, <i>Korea Environment Institute, Republic of Korea</i>	<b>[O12.08] Effects of nutrient recycling on deer-plants dynamics</b> T. Namba*, R. Isono, Y. Fujiwara, <i>Osaka Prefecture University, Japan</i>	<b>[O16.03] A numerical approach to divulge riparian vegetation patterns in response to sediment deposition dynamics in regulated river reaches</b> B. Nallaperuma*, T. Asaeda, M.H. Rashid, <i>Saitama University, Japan</i>	<b>[O17.03] Risk analysis of noise impact from wind turbine construction to a critically endangered dolphin population</b> P.Y. Lee*, C.F. Chen, L.S. Chou, <i>National Taiwan University, Taiwan</i>	<b>[O14.08] Combination with anti-tit-for-tat remedies problems of tit-for-tat</b> S.D. Yi <sup>1</sup> , S.K. Baek* <sup>2</sup> , J-K. Choi <sup>3</sup> , <sup>1</sup> <i>Seoul National University, Republic of Korea</i> , <sup>2</sup> <i>Pukyong National University, Republic of Korea</i> , <sup>3</sup> <i>Kyungpook National University, Republic of Korea</i>
11:40-12:00	<b>[O15.04_Inv] Species distribution modelling to understand biodiversity in S. Korea</b> H.S. Kwon*, S.H. Kim, B. Jun, I. Kim, <i>National Institute of Ecology, Republic of Korea</i>	<b>[O12.09] A mathematical model of <i>Aedes vexans</i> mosquitoes life cycle taking into account the host seeking stage and oviposition sites seeking stage</b> P.N.T Pyton* <sup>1</sup> , A. Bah <sup>1</sup> , P. Ibrahima Ndiaye <sup>2</sup> , <sup>1</sup> <i>Cheikh Anta</i>	<b>[O16.04] Influence of river management on vegetation dynamics in a river channel and its ecological modeling</b> M. Denda*, Y. Kayaba, <i>Public Works Research Institute, Japan</i>	<b>[O17.04] Estimating the survival rates of northern fur seals (<i>Callorhinus ursinus</i>) from Tyuleniy Island and modeling the population number dynamics</b> O.L. Zhdanova* <sup>1</sup> , E.A. Kuzin <sup>2</sup> , E.Y. Frisman <sup>3</sup> , <sup>1</sup> <i>Institute for</i>	<b>[O14.09] A new explanation for altruism-social cooperation</b> X. Leng, <i>Freelance, USA</i>

		<i>Diop University, Senegal, 2Alioune Diop University, Senegal</i>		<i>Automation and Control Processes FEB RAS, Russia, 2Pacific Research Fisheries Center (PRF- Center), Russia, 3Institute for Complex Analysis of Regional Problems FEB RAS, Russia</i>	
12:00-12:20	<b>[O15.05] Estimation of agricultural land-use changes and ecosystem services in mountainous agricultural watersheds using an agent-based model (ABM)</b> I.K. Kim, <i>National Institute of Ecology, Republic of Korea</i>	<b>[O12.10] The effect of mosquito feeding behavior in the <i>P. falciparum</i> malaria dynamics</b> S. Kim, G. Cho, I.H. Jung*, <i>Pusan National University, Republic of Korea</i>	<b>[O16.05] Estimating fish habitat condition based on river landscape attributes</b> M. Sekine*, J. Wang, Y. Dong, K. Yamamoto, A. Kanno, <i>Yamaguchi University, Japan</i>	<b>[O17.05] Landscape use by the endangered Suweon Treefrog (<i>Dryophytes suweonensis</i>)</b> A. Borzee* <sup>1,2</sup> , Y. Jang <sup>2</sup> , <sup>1</sup> <i>Seoul National University, Republic of Korea, 2Ewha Womans University, Republic of Korea</i>	
12:20-12:30	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>
12:30-13:50	<b>Lunch and Poster Session 2</b> Tam Mora and Blackstone Music Bar				
13:50-15:40	<b>Symposium session 18: Climate change: response, prediction, and management[NIE]</b>	<b>Symposium session 19: Individual-based, spatial, and simulation models</b>	<b>Symposium session 16: Aquatic and river ecosystem management (continued)</b>	<b>Symposium session 17: Wildlife ecology and management for different wildlife species under current human-interacted environment (continued)</b>	<b>Symposium session 20: Socio-economic models</b>
	<b>Chair: Changwan Seo Room: Ramada Ballroom 1</b>	<b>Chair: Gudrun Wallentin Room: Ramada Ballroom 2</b>	<b>Chair: Masahiko Sekine Room: Ramada Ballroom 3</b>	<b>Chair: Xuehua Liu Room: Ramada Ballroom 4</b>	<b>Chair: Hector Pollitt Room: Udo</b>
13:50-14:10	<b>[O18.01_Inv] Satellite observation of climate change features for ecological modeling</b> V. Lakshmi, <i>University of South Carolina, USA</i>	<b>[O19.01] Land use change in agricultural systems: Integrating human decisions and cropping system performance using a devs-based cellular automata model</b> D.O. Ferraro*, D. Blanco, R. Castro, <i>Universidad de Buenos Aires, Argentina</i>	<b>[O16.06] Development and application of 1-D and 2-D numerical model for river ecosystem</b> T. Kono* <sup>1</sup> , Y. Akamatsu <sup>1</sup> , H. Nagano <sup>2</sup> , <sup>1</sup> <i>Yamaguchi University, Japan, 2National Institute of Technology, Gunma College, Japan</i>	<b>[O17.06] Modelling personality of bird movement in heterogenous landscape</b> X. Li, <i>Chinese Academy of Sciences, China</i>	<b>[O20.01] Modelling approaches to assess the economic and environmental impacts of policy</b> H. Pollitt* <sup>1</sup> , J-F. Mercure <sup>2</sup> , S. Lee <sup>3</sup> , <sup>1</sup> <i>Cambridge Econometrics, UK, 2Radboud University, The Netherlands, 3Meijo University, Japan</i>
14:10-14:30	14:20-14:40 <b>[O18.02] Agent-based</b>	<b>[O19.02] Understanding patterns in <i>Echinococcus</i></b>	<b>[O16.07] Development of distribution prediction</b>	<b>[O17.07] Home range use in territorial primates:</b>	<b>[O20.02] What drives environmental conflicts in</b>

		<p><b>model of the subsistence land-use dynamics of an Arctic community</b> M. Cenek*, M. Franklin, C. Sheaffer, H.T. Thomas, <i>University of Alaska Anchorage, USA</i></p>	<p><b>multilocularis transmission: An agent-based modeling approach</b> K.M. Mori*<sup>1</sup>, C.S. Semniuk<sup>2</sup>, D.M. Marceau<sup>1</sup>, Q.H. Hassan<sup>1</sup>, A.M. Massolo<sup>1</sup> <sup>3</sup>, <sup>1</sup><i>University of Calgary, Canada</i>, <sup>2</sup><i>University of Windsor, Canada</i>, <sup>3</sup><i>University of Pisa, Italy</i></p>	<p><b>model for biomass of fish and benthic invertebrates in Takatsu River and Saba River, Japan</b> Y. Akamatsu*, R. Inui, T. Kono, <i>Yamaguchi University, Japan</i></p>	<p><b>focusing on inter-group interaction and sleeping sites</b> Y. Yi*<sup>1</sup>, E. Kim<sup>1</sup>, A. Choi<sup>1</sup>, R. Oktaviani<sup>2</sup>, J.C. Choe<sup>1</sup>, <sup>1</sup><i>Ewha Womans University, Republic of Korea</i>, <sup>2</sup><i>Javan Gibbon Research &amp; Conservation Project, Republic of Korea</i></p>	<p><b>Natura 2000 protected areas? Romania as a case study</b> C. Ioja*, A. Hossu, M. Nita, D. Onose, D. Badiu, S. Manolache, S. Bacau, D. Panzaru, <i>University of Bucharest, Centre for Environmental Research and Impact Studies, Romania</i></p>
14:30-14:50	14:40-15:00	<p><b>[O18.13] Probable impacts of climate change on the threatened terrestrial vertebrates of the Pacific Islands</b> L. Kumar, <i>University of New England, Australia</i></p>	<p><b>[O19.03] Modelling of the plant communities boundaries by a second-order phase transition model</b> Y. Ivanova*<sup>1</sup>, V. Soukhovolsky<sup>2</sup>, <sup>1</sup><i>Institute of Biophysics SB RAS, Russia</i>, <sup>2</sup><i>V.N.Sukachev Institute of Forest SB RAS, Russia</i></p>	<p><b>[O16.08] Sensitivity analysis on introduction of fish assemblage dynamics model to river ecosystem numerical simulation</b> Y. Mizoguchi*<sup>1</sup>, Y. Toda<sup>2</sup>, <sup>1</sup><i>Saitama University, Japan</i>, <sup>2</sup><i>Nagoya University, Japan</i></p>	<p><b>[O17.08] Estimate ungulate density around the Korean Demilitarized Zone using camera trapping data</b> A. Lim*, T.Y. Choi, H.B. Park, D.G. Woo, E.G. Song, <i>National Institute of Ecology, Republic of Korea</i></p>	<p><b>[O20.03] Mangrove plantation and coastline changes: Valuing land accretion services of planted mangroves</b> S. Das, <i>Institute of Economic Growth, India</i></p>
14:50-15:10	15:00-15:20	<p><b>[O18.04] Climate-driven uncertainties in modeling terrestrial ecosystem net primary productivity in China</b> M. Huang*<sup>1</sup>, F. Gu<sup>2</sup>, <sup>1</sup><i>Chinese Academy of Sciences, China</i>,</p>	<p><b>[O19.04] Simulation modeling of selective cutting in the forest stands of the Far East Russia</b> A.N. Kolobov*, E.Y. Frisman, <i>Russian Academy of Science, Russia</i></p>	<p><b>[O16.09] Effects of cascade dams on fish compositions and spatio-temporal distributions in Qingjiang River, central China</b> G. Huang*<sup>1,2</sup>, Q.D. Wang<sup>1</sup>, S.W. Ye<sup>1</sup>, X.H. Chen<sup>1,2</sup>, J.S. Liu<sup>1</sup>, Z.J. Li<sup>1</sup>, <sup>1</sup><i>Chinese Academy of Sciences, China</i>, <sup>2</sup><i>University of Chinese Academy of Sciences, China</i></p>	<p><b>[O17.09] Evaluating the effects of resource extraction and climate change on landscape connectivity for American marten populations using a spatially-explicit IBM</b> C.C. Day*<sup>1</sup>, P.A. Zollner<sup>1</sup>, J.H. Hilbert<sup>2</sup>, N.P. McCann<sup>1</sup>, <sup>1</sup><i>Purdue University, USA</i>, <sup>2</sup><i>Great Lakes Indian Fish and Wildlife Commission, USA</i></p>	<p><b>[O20.04] Empirical models reveal the inadequacy of social capital to decrease dependency on natural resources in rural livelihoods</b> M. Mbiba*<sup>1,2</sup>, M. Collinson<sup>1,4</sup>, L. Hunter<sup>1,3</sup>, W. Twine<sup>1</sup>, <sup>1</sup><i>University of the Witwatersrand, South Africa</i>, <sup>2</sup><i>Bindura University of Science Education, Zimbabwe</i>,</p>

		<sup>2</sup> Chinese Academy of Agricultural Sciences, China				<sup>3</sup> University of Colorado Boulder, USA, <sup>4</sup> Umeå University, Sweden
15:10-15:30	15:20-15:40	<b>[O18.05] Modelling the impact of fixed and dynamic routing of beverage product carbon footprint</b> E.Y.C. Wong, Y. Wei*, F.F.Y. Chan, <i>Hang Seng Management College, Hong Kong</i>	<b>[O19.05] EcoNet 3.0: A free online software for ecosystem modeling, simulation and analysis</b> C. Kazanci, <i>University of Georgia, USA</i>	<b>[O16.10] Impacts of wind and dam operation on the flow dynamics and stratification of a man-made reservoir, Korea: Implications on the cyanobacterial dynamics</b> J-H. Min*, J. Choi, C. Shin, S. Park, K. Kim, <i>National Institute of Environmental Research, Republic of Korea</i>	<b>[O17.10] Modelling the nutrient landscape for giant pandas in the Qinling mountains, China</b> X. Liu* <sup>1</sup> , Q. Huang <sup>2</sup> , Y. Li <sup>1</sup> , J. Kraus <sup>2</sup> , M. Songer <sup>2</sup> , <sup>1</sup> Tsinghua University, China, <sup>2</sup> Smithsonian Conservation Biology Institute, USA	<b>[O20.05] Managing the interactive barriers of implementing e-waste management practices</b> Y. XU* <sup>1,2</sup> , S. Ramzan <sup>1</sup> , <sup>1</sup> Northwestern Polytechnical University, China, <sup>2</sup> Monash University, Australia
15:30-15:40		Discussion	Discussion	Discussion	Discussion	Discussion
15:40-16:00	Refreshment break Room: Ramada Ballroom Foyer					
16:00-17:20		<b>General session 6: Population dynamics</b>	<b>General session 7: Numerical models in fishery science</b>	<b>General session 8: Urban ecosystem</b>	<b>General session 9: Public relation and education</b>	
		Chair: Kei Tokita Room: Ramada Ballroom 2	Chair: Saang-Yoon Hyun Room: Ramada Ballroom 3	Chair: Sudipto Mandal Room: Ramada Ballroom 4	Chair: TBD Room: Udo	
16:00-16:20			<b>[GEN07.01] Mathematical modelling of energy infrastructure effects on eel migration and mortality rates</b> J. Gaskell* <sup>1</sup> , T. Benson <sup>1</sup> , P. Veza <sup>1</sup> , J. de Bie <sup>1</sup> , M.R. Owen <sup>1</sup> , P.S. Kemp <sup>1</sup> , <sup>1</sup> University of Nottingham, UK, <sup>2</sup> HR Wallingford, UK, <sup>3</sup> Politecnico di Torino, Italy, <sup>4</sup> University of Southampton, UK	<b>[GEN08.01] Understanding the mechanism of urban material metabolism with MFA and ENA-an experimental study for Beijing, China</b> Y. Li*, Y. Zhang, <i>Beijing Normal University, China</i>	<b>[GEN09.01] Effects of spatial resolution on cost efficiency of payment system for ecosystem system services</b> S. Cho*, N. Poudyal, P. Armsworth <i>University of Tennessee, USA</i>	



16:20-16:40		<b>[GEN06.02] Population viability analysis of the Japanese rock ptarmigan</b> S. Abe*, F. Takasu, <i>Nara Women's University, Japan</i>	<b>[GEN07.02] Effect of sewage treatment on fishery resources in Jinhae Bay</b> K.M. Kim*, K.H. Kim, I.C. Lee, <i>Pukyong National University, Republic of Korea</i>	<b>[GEN08.02] Orchestrating SDG implementation in a city: Platform for research and action</b> Z. Stasiskiene, <i>Kaunas University of Technology, Lithuania</i>	<b>[GEN09.02] Effects of geopark visits for education: Regional certifications as an educational tool for conservation of local resources in socio-ecological perspectives</b> Y. Tanaka*, R. Kohsaka, <i>Tohoku University, Japan</i>
16:40-17:00		<b>[GEN06.03] Applying principal components in MaxEnt to determine past current and future trends of red spiny lobster in Galapagos Islands, Ecuador</b> W. Moya, G. Jacome*, C. Yoo, <i>Kyung Hee University, Republic of Korea</i>	<b>[GEN07.03] Analysis of data from bottom-trawl surveys in the Korean coastal water for investigation of the optimal survey design</b> H.T. Lee* <sup>1</sup> , Y.I. Seo <sup>2</sup> , S.Y. Hyun <sup>1</sup> , <sup>1</sup> <i>Pukyong National University, Republic of Korea</i> , <sup>2</sup> <i>National Institute of Fisheries Science, Republic of Korea</i>	<b>[GEN08.03] The effect of road composition on pedestrian thermal comfort</b> Y.H. Cho*, B.S. Lin, <i>National Taiwan University, Taiwan</i>	<b>[GEN09.03] Monitoring pollinators in Korea through a new citizen science program</b> H. Serret*, Y. Jang, <i>Ewha Womans University, Republic of Korea</i>
17:00-17:20			<b>[GEN07.04] A size-based model for fish stock assessments in Korean situation</b> S.Y. Hyun* <sup>1</sup> , Y. Seo <sup>1</sup> , <sup>1</sup> <i>Pukyong National University, Republic of Korea</i> , <sup>2</sup> <i>National Institute of Fisheries Science, Republic of Korea</i>	<b>[GEN08.04] Urban traffic noise management of Burdwan city in India using artificial neural network model</b> R. Banerjee <sup>1</sup> , A. Mondal <sup>1</sup> , S. Ghosh <sup>1</sup> , S. Mandal* <sup>1</sup> , S. Ray <sup>2</sup> , <sup>1</sup> <i>The University of Burdwan, India</i> , <sup>2</sup> <i>Visva Bharati University, India</i>	<b>[GEN09.04] Human health-environment contributed by ecosystem services</b> M. Kim*, W.Y. Joo, <i>National Institute of Ecology, Republic of Korea</i>
19:00-22:00	<b>Conference Dinner (ticketed event)</b> Room: Ramada Ballroom 1				
<b>Thursday 21 September 2017</b>					
09:00-09:40	<b>PL06: The astronomical theory of human migration</b> Axel Timmermann, <i>Pusan National University, Republic of Korea</i>				
09:40-10:10	<b>Refreshment break</b> Room: Ramada Ballroom Foyer				
10:10-12:00	<b>Symposium session 18: Climate change: response, prediction, and management (continued)</b>	<b>Symposium session 19: Individual-based, spatial, and simulation models (continued)</b>	<b>Symposium session 21: Insect modeling in space and time</b>	<b>Symposium session 22: Data analysis and modelling in ecological epidemiology</b>	<b>General session 10: Environmental monitoring/management</b>
	Chair: Changwan Seo	Chair: Gudrun Wallentin	Chair: Dongsoon Kim	Chair: Marko Jusup	Chair: Santanu Ray

	Room: Ramada Ballroom 1	Room: Ramada Ballroom 2	Room: Ramada Ballroom 3	Room: Ramada Ballroom 4	Room: Udo
10:10-10:30	10:10-10:40 [O18.06_Inv] The challenges of climate change call for new scientific and institutional responses. What should they be? B.C. Patten, University of Georgia, USA	[O19.06] Developing systematic methods for ecological assessment for mapping habitats N. Takashina, OIST, Japan	[O21.01] Comparison of several models for predicting impacts of climate change on the phenology of insects J-H. Lee*, H. Lee, H. Kim, Seoul National University, Republic of Korea	[O22.01] Climatic phenomena and malaria incidence in South Africa: From wavelet-based data analysis to complex networks-based modelling M. Jusup* <sup>1</sup> , A. Tsuzuki <sup>2</sup> , T. Funo <sup>3</sup> , H. Inaba <sup>4</sup> , Y. Morioka <sup>5</sup> , T. Doi <sup>5</sup> , S. Behera <sup>5</sup> , M. Hashizume <sup>2</sup> , P. Kruger <sup>6</sup> , N. Minakawa <sup>2</sup> , <sup>1</sup> Hokkaido University, Japan, <sup>2</sup> NEKKEN, Japan, <sup>3</sup> Kyushu University, Japan, <sup>4</sup> University of Tokyo, Japan, <sup>5</sup> JAMSTEC, Japan, <sup>6</sup> Limpopo Province Department of Health, South Africa	[GEN10.01] Assessing anthropogenic impact on deep water methane seep ecosystem H.W. Chen* <sup>1</sup> , Z.Y. Lin <sup>2</sup> , H.J. Lin <sup>2</sup> , <sup>1</sup> National Chiayi University, Taiwan, <sup>2</sup> National Chung-Hsing University, Taiwan
10:30-10:50	10:40-11:00 [O18.07] Weather driven modelling of the outbreak risk: A case study of dengue in Japan H. Nishiura, Hokkaido University, Japan	[O19.07] The geometry of behavioral spaces framework: Agent-based model validation M. Cenek* <sup>1</sup> , S. Dahl <sup>2</sup> , M. Franklin <sup>1</sup> , <sup>1</sup> University of Alaska Anchorage, USA, <sup>2</sup> Columbia University, USA	[O21.02] An oviposition model of <i>Monochamus alternatus</i> (Coleoptera: Cerambycidae) and its application for the evaluation of adult occurrence in the field S.H. Kwon, M. Go, G.H. Ko, D-S. Kim*, Jeju National University, Republic of Korea	[O22.02] An increase in gene flow by urbanization: Predictions on population structure of <i>Aedes aegypti</i> R. Yamaguchi* <sup>1</sup> , Y. Tachiki <sup>2</sup> , N. Minakawa <sup>3</sup> , S. Iwami <sup>4</sup> , <sup>1</sup> Tokyo Metropolitan University, Japan, <sup>2</sup> Kyoto University, Japan, <sup>3</sup> Nagasaki University, Japan, <sup>4</sup> Kyushu University, Japan	[SO01] Advantages and disadvantages of network analysis as a tool for ecological studies with some Indian examples S. Ray* <sup>1</sup> , A. Banerjee <sup>1</sup> , N. Rakshit <sup>1</sup> , J. Mukherjee <sup>1</sup> , M. Chakrabarty <sup>2</sup> , <sup>1</sup> Visva-Bharati, India, <sup>2</sup> Durgapur Govt. College, India
10:50-11:10	11:00-11:20 [O18.08] Ecosystem modelling to estimate blue carbon in a human-dominated	[O19.08] Identifying the spatio-temporal risk variability of avian influenza A H7N9 in China P. Zhang* <sup>1</sup> , J.W. Wang <sup>1</sup> , P.M. Atkinson <sup>2</sup> , <sup>1</sup> Jilin University, China,	[O21.03] Development and validation of the population model of <i>Phyllonorycter ringoniella</i> Matsumura (Lepidoptera: Gracillariidae) S. Geng*, C.	[O22.03] Statistical physics of vaccination Z. Wang* <sup>1</sup> , Y. Wang <sup>2</sup> , <sup>1</sup> Northwestern Polytechnical University, China, <sup>2</sup> Shanxi Normal University, China	[GEN10.03] Analysis of dynamics in the predation on rice plants by golden apple snail ( <i>Pomacea canaliculata</i> ) with harvesting J.M. Addawe*, Z.G.

		<p><b>estuarine and shallow coastal system</b>  A. Sohma*<sup>1</sup>, H. Shibuki<sup>2</sup>, F. Nakajima<sup>3</sup>, K. Kuwae<sup>4</sup>, <sup>1</sup>Osaka City University, Japan, <sup>2</sup>Mizuho Information and Research Institute, Japan, <sup>3</sup>The University of Tokyo, Japan, <sup>4</sup>Port and Airport Research Institute, Japan</p>	<sup>2</sup> Lancaster University, UK	Jung, Andong National University, Republic of Korea		Baoanan, R.C. Addawe, University of the Philippines Baguio, The Philippines
11:10-11:30	11:20-11:40	<p><b>[O18.09] Bioclimatic zone of the Northeast Asia : Development and response to climate change</b>  Y.Y. Choi*, C.H. Lim, S.W. Jeon, J.E. Ryu, Korea University, Republic of Korea</p>	<p><b>[O19.09] Spatial analysis of anthropogenic landscape disturbance and Leishmaniasis in Cordoba, Colombia</b>  D. Erazo<sup>1</sup>, C. González<sup>1</sup>, C. Tovar<sup>2</sup>, J. Cordovez*<sup>1</sup>, <sup>1</sup>Universidad de los Andes, Colombia, <sup>2</sup>Universidad del Sinu, Colombia</p>	<p><b>[O21.04] Introduction of a new simulation program aiming omnipotence</b>  K.S. Choi*<sup>1</sup>, D-S. Kim<sup>1</sup>, <sup>1</sup>NIHHS, Republic of Korea, <sup>2</sup>Cheju National University, Republic of Korea</p>	<p><b>[O22.04] Diversity, stability and the relative species abundance of replicator dynamics with complex interspecies interactions</b>  K. Tokita, Nagoya University, Japan</p>	<p><b>[GEN10.04] Estimating carrying capacity using range overlap of reintroduced Asiatic Black Bears in Jirisan National Park, Republic of Korea</b>  D. Andersen*<sup>1</sup>, Y. Yi<sup>1</sup>, A. Borzée<sup>1,2</sup>, Y. Jang<sup>1</sup> <sup>1</sup>Ewha Women's University, Republic of Korea, <sup>2</sup>Seoul National University, Republic of Korea</p>
11:30-11:50	11:40-12:00	<p><b>[O18.10] Probabilistic change of wheat productivity and water use in China for global mean temperature</b></p>	<p><b>[O19.10] Spatial simulation of ecological systems</b>  G. Wallentin, University of Salzburg, Austria</p>	<p><b>[O21.05] Application of phenology modelling for management of multiple key pests of apple</b>  C. Jung*<sup>1</sup>, S. Geng<sup>1</sup>, D-H. Lee<sup>2</sup>, <sup>1</sup>Andong National University, Republic of Korea, <sup>2</sup>National Institute of Horticultural and</p>	<p><b>[O22.05] Spatial analysis of malaria spread at Greater Giyani Local Municipality in the Limpopo province, South Africa</b>  I. Shingo*<sup>1,2</sup>, T. Funo<sup>1</sup>, N. Minakawa<sup>3</sup>, <sup>1</sup>Kyushu University, Japan, <sup>2</sup>JST</p>	

		<b>changes of 1°C, 2°C, and 3°C</b> .J. Liu*, Q.M. Chen, <i>IGSNRR, China</i>		<i>Herbal Science, Republic of Korea</i>	<i>PRESTO, Japan, <sup>3</sup>Nagasaki University, Japan</i>	
<b>11:50–12:00</b>			<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	
<b>12:00-13:30</b>	<b>Lunch</b> Tam Mora and Blackstone Music Bar					
<b>13:30-15:20</b>		<b>Symposium session 18: Climate change: response, prediction, and management [NIE] (continued)</b>	<b>Symposium session 23: Response of ecological communities to disturbance</b>	<b>Symposium session 21: Insect modeling in space and time (continued)</b>	<b>Symposium session 24: Behavioral responses and monitoring under stressful environmental conditions</b>	<b>General session 11: Risk assessment</b>
		<b>Chair: Changwan Seo</b> Room: Ramada Ballroom 1	<b>Chair: Young-Seuk Park</b> Room: Ramada Ballroom 2	<b>Chair: Dongsoon Kim</b> Room: Ramada Ballroom 3	<b>Chair: Zongming Ren</b> Room: Ramada Ballroom 4	<b>Chair: Sung-Cheol Koh</b> Room: Udo
<b>13:30-13:50</b>		<b>[O18.11_Inv] Landscape exposure models identify the benefits of reducing emission levels to lower climate-driven vegetation stress</b> J.H. Thorne*, H. Choe, R.M. Boynton, M.W. Schwartz, <i>University of California, USA</i>	<b>[O23.01] Species-abundance relationships in inferring pollution impacts on benthic macroinvertebrate communities in streams</b> T.S. Chon* <sup>1,5</sup> , X.D. Qu <sup>2</sup> , M.Y. Song <sup>3</sup> , K. Tokita <sup>4</sup> , Y.S. Park <sup>1</sup> , <sup>1</sup> <i>Kyung Hee University, Republic of Korea</i> , <sup>2</sup> <i>China Institute of Water Resources and Hydropower Research, China</i> , <sup>3</sup> <i>Inland Fisheries Research Institute, Republic of Korea</i> , <sup>4</sup> <i>Nagoya University, Japan</i> , <sup>5</sup> <i>Pusan National University, Republic of Korea</i>	<b>[O21.06] Species distribution modelling for pest management</b> H.J. Choe <sup>1</sup> , J.W. Kang <sup>1</sup> , K. Cho <sup>2</sup> , J-J. Park* <sup>1</sup> , <sup>1</sup> <i>Gyeongsang National University, Republic of Korea</i> , <sup>2</sup> <i>Korea University, Republic of Korea</i>	<b>[O24.01] Abnormal animal movement behaviors caught by computer vision implemented in detection of threat factors in natural environment</b> Y. Liu* <sup>1</sup> , C. Xia <sup>2</sup> , R. Wu <sup>1</sup> , Z. Wang <sup>1</sup> , J. Xiao <sup>1</sup> , T.S. Chon <sup>3</sup> , <sup>1</sup> <i>South China Institute of Environmental Sciences, China</i> , <sup>2</sup> <i>Yantai Institute of Coastal Zone Research, China</i> , <sup>3</sup> <i>Ecology and Future Research Association, Republic of Korea</i>	<b>[GEN11.01] Climate change mitigation policies vs. productivity shocks in a dynamic CGE modeling framework: The case of a developing economy</b> B.K. Pradhan* <sup>1</sup> , J. Ghosh <sup>2</sup> , <sup>1</sup> <i>Institute of Economic Growth, India</i> , <sup>2</sup> <i>Institute of Economic Modelling Studies, India</i>
<b>13:50-14:10</b>		<b>[O18.12] Climate change impact and vulnerability assessment for</b>	<b>[O23.02] Modelling species distribution of disturbance-tolerance/sensitive insects in the Lower Mekong Basin</b>	<b>[O21.07] Modelling the spatiotemporal dynamic of invasion and spread of <i>Tuta absoluta</i> in Africa</b> R. Guimapi* <sup>1,2</sup> , S. Mohamed <sup>1</sup> , G. Okeyo <sup>2</sup> , F.	<b>[O24.02] Behavior persistence in defining threshold switch in stepwise response of aquatic organisms exposed to toxic</b>	<b>[GEN11.02] Threshold analysis and prediction of biological behavior model</b> S. Li*, T. S. Chon, Z. Ren, <i>Institute of</i>

		<p><b>subalpine ecosystem in South Korea</b> C. Seo<sup>*1</sup>, S. Hong<sup>1</sup>, I. Jang<sup>1</sup>, J.Y. Jeon<sup>1</sup>, M. Shin<sup>1</sup>, H.M. Jeong<sup>1</sup>, S.U. Park<sup>1</sup>, K.A. Koo<sup>2</sup>, <sup>1</sup>National Institute of Ecology, Republic of Korea, <sup>2</sup>Korea Environmental Institute, Republic of Korea</p>	<p>R. Sor<sup>*1</sup>, Y-S. Park<sup>2</sup>, S. Lek<sup>1</sup>, <sup>1</sup>Université Paul Sabatier – Toulouse III, France, <sup>2</sup>Kyung Hee University, Republic of Korea</p>	<p>Ndjomatchoua<sup>1,4</sup>, S. Ekesi<sup>1</sup>, H. Tonnang<sup>1,3</sup>, <sup>1</sup>ICIPE – African Insect Science for Food and Health, Kenya, <sup>2</sup>Jomo Kenyatta University of Agriculture and Technology (JKUAT), Kenya, <sup>3</sup>International Maize and Wheat Improvement Center (CIMMYT), Kenya, <sup>4</sup>Université de Yaoundé I, Cameroon</p>	<p><b>chemicals</b> Z. Ren, S. Li, T. Zhang<sup>*</sup>, Shandong Normal University, China</p>	<p>Environment and Ecology, Shandong Normal University, China</p>
14:10-14:30			<p><b>[O23.03] Conservation implications of endemic freshwater invertebrates</b> M.J. Bae<sup>*1</sup>, Y.S. Park<sup>1</sup>, <sup>1</sup>Nakdonggang National Institute of Biological Resources, Republic of Korea, <sup>2</sup>Kyung Hee University, Republic of Korea</p>	<p><b>[O21.08] Status of apiculture and effects of ecological conditions in Japan: How knowledge of beekeeping is transmitted in inter-generational manner</b> R. Kohsaka<sup>*</sup>, Y. Uchiyama, Tohoku University, Japan</p>	<p><b>[O24.03] Automatic measuring of leaf area for analyzing feeding behavior of lepidopteran larva</b> C.W. Ji<sup>*</sup>, J.R. Cho, C-G. Park, K-H. Kim, B.Y. Seo, National Academy of Agricultural Science, Republic of Korea</p>	<p><b>[GEN11.03] The online assessment of environmental stress caused by cadmium chloride (CdCl<sub>2</sub>) based on physiological changes of zebra fish (<i>Danio rerio</i>)</b> L. Qi<sup>*</sup>, J. Song, B. Ren, N. Xing, J. Ma, M. Yang, H. Pan, S. Li, T. Zhang, B. Ren, Shandong Normal University, China</p>
14:30-14:50	14:40-15:00	<p><b>[O18.14] Climate-change driven range shifts of exploitable chub mackerel (<i>Scomber japonicus</i>) projected by bio-physical coupling individual based model in the western</b></p>	<p><b>[O23.04] Does lunar cycle trigger the fish migration from the Tonle Sap Lake, Cambodia?</b> R. Chea<sup>*1</sup>, P. Ngor<sup>2,3</sup>, S. Lek<sup>3,1</sup>, <sup>1</sup>University of Battambang, Cambodia, <sup>2</sup>Mekong River Commission, Cambodia, <sup>3</sup>University of Toulouse, France</p>	<p><b>[O21.09] American cutaneous leishmaniasis in Colombia: The role of the disease cycles</b> D. Olivera-Mesa<sup>*</sup>, C. González, J.M. Cordovez, Universidad de los Andes, Colombia</p>	<p><b>[O24.04] Tracking individual movements using a web camera – an attempt to study behaviours of guppy</b> A. Okada<sup>*</sup>, F. Takasu, Nara Women's University, Japan</p>	<p><b>[GEN11.04] Ecological informatics based integrative water quality index to monitor and manage of stream ecosystem</b> S.C. Koh<sup>*1</sup>, J.H. Choi<sup>1</sup>, B.H. Kim<sup>1</sup>, M.Y. Song<sup>2</sup>, T.S. Chon<sup>2</sup>, <sup>1</sup>Korea Maritime University, Republic of Korea, <sup>2</sup>Pusan National University, Republic of Korea</p>

		<b>North Pacific</b> S. Jung, Jeju National University, Republic of Korea				
14:50-15:10	15:00-15:20	<b>[O18.15] Impact of the global sea level rise on eutrophication</b> F. Kies* <sup>1</sup> , M. Monge-Ganuzas <sup>2</sup> , C. Corselli <sup>1</sup> , P. De Los Rios <sup>3</sup> , <sup>1</sup> Universit à Degli Studi di Milano- Bicocca, Italy, <sup>2</sup> Basque government, Spain, <sup>3</sup> Universidad Católica de Temuco, Chile	<b>[O23.05] Development of growing self-organizing map applied to spatial information on benthic macroinvertebrate communities in streams</b> D.J. Hong* <sup>1</sup> , Y.S. Park <sup>2</sup> , E.Y. Cha <sup>1</sup> , T.S. Chon <sup>1,2</sup> , <sup>1</sup> Pusan National University, Republic of Korea, <sup>2</sup> Kyung Hee University, Republic of Korea	<b>[O21.10] Ecological model-based recent and future suitability for dengue fever and prediction of number of cases- a case study of Ecuador</b> G. Jacome*, C. Yoo, Kyung Hee University, Republic of Korea	<b>[O24.05] Exploring behavioural interactions of aquatic organisms in three-dimensional space by visual sensing</b> C. Xia* <sup>1</sup> , T.S. Chon <sup>2</sup> , <sup>1</sup> China Academy of Sciences, China, <sup>2</sup> Ecology & Future Research Association, Republic of Korea	
15:10-15:20			<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	
15:20-15:45	<b>Refreshment Break</b> Room: Ramada Ballroom Foyer					
15:45-16:15	<b>Post award and Conference closing address</b> Room: Ramada Ballroom					