15th International Symposium of Aquatic Plants - 2018

Sunday 18 February

12.00 Registrations open

5.00 Welcome reception, Rydges Hotel

Monday 19 February

Welcome/housekeeping

8.30 **PLENARY ADDRESS**
New Zealand's fresh waters: aquatic plants and ecosystem health – lessons and directions
Dr Clive Howard-Williams and Dr John Clayton, NIWA, NZ

9.15 **KEYNOTE ADDRESS**
What genetic variation can tell us about aquatic plant diversity, invasions, and management
Dr Ryan Thum, Research Professor, Montana State University, US

BIODIVERSITY, CONSERVATION AND BIOMONITORING - Session 1
Chair: Prof Ludwig Triest

10.00 Genetic connectivity and dispersal distances in aquatic plants
Prof Ludwig Triest, Vrije Universiteit Brussel, Belgium

10.15 Population biology of invasive aquatic plants in South Africa
Dr Rosie Mangan, Rhodes University, South Africa

10.30 *Morning tea*

BIODIVERSITY, CONSERVATION AND BIOMONITORING - Session 2
Chair: Dr Tobias Bickel

11.00 The response of macrophyte species traits to environmental factors in Fennoscandian lakes
Dr Janne Alahuhta, University of Oulu, Finland

11.15 Nursery fishponds as a hot spot areas for aquatic plants
Katerina Francova, Faculty of Fisheries and Protection of Waters, University of South Bohemia in České Budějovice, Czech Republic

11.30 Environmental filtering and competitive exclusion drive biodiversity-invasibility relationships in Minnesota shallow lakes
Dr Daniel Larkin, University of Minnesota, United States

11.45 Aquatic and wetland pest plants and their management on the West Coast of the South Island, New Zealand
Tom Belton, Department of Conservation, New Zealand

12.00 Long-term effects of liming in boreal softwater lakes: effects on sediment chemistry, water quality and vegetation
Dr Esther Lucassen, Radboud University, Nijmegen (B-WARE Research centre), The Netherlands

12.15 Charophytes, climate change and agricultural intensification
Dr Michelle Casanova, Water Research Network, Federation University, Australia

12.30 *Lunch*

BIODIVERSITY, CONSERVATION AND BIOMONITORING - Session 3
Chairs: Paul Champion and Richard Lansdown

1.30 Circumpolar analysis of lake macrophyte communities for setting the baseline for future assessment
Dr Seppo Hellsten, Finnish Environment Institute, SYKE, Finland

1.45 What triggered the decline in diversity of emergent aquatic plants in the Upper Lough Erne area?
Dr Ambroise Baker, University College, London, UK

2.00 Response of macrophyte species turnover to habitat connectivity at the catchment scale in northern UK lakes
Junyao Sun, Wuhan Botanical Garden, Chinese Academy of Sciences, China

2.15 Phenology of *Zizania texana*, an endangered aquatic macrophyte in the United States, under different water velocities.
Dr Jeffrey Hutchinson, University of Texas at San Antonio, United States

2.30 Effects of rising temperature and nutrient enrichment on quality and palatability of a submerged macrophyte
Peiyu Zhang, Netherlands Institute of Ecology, Netherlands

2.45 Aquatic plants as indicators of ecological quality, are they good indicators of eutrophication?
Prof Geoff Phillips, University of Stirling, UK

3.00 *Afternoon tea*

BIODIVERSITY, CONSERVATION AND BIOMONITORING - Session 4
Chair: Prof Teresa Ferreira

3.30 Cost-Efficient remote sensing with drones for monitoring of aquatic plant distribution on wetlands
Dr Henri Vanhanen, Natural Resources Institute Finland (Luke), Finland

3.45 Assessment of quality of three marine benthic habitat types in northern Baltic Sea
Dr Kaire Torn, Estonian Marine Institute, University of Tartu, Estonia

4.00 A new paradigm for biomonitoring - An example building on the Danish Stream Plant Index
Dr Annette Baattrup-Pedersen, Aarhus University, Denmark

4.15 Developing policy-relevant river macrophyte monitoring in permanent and temporary Mediterranean Rivers of Cyprus: preliminary results
Dr Paraskevi Manolaki, Department of Biology, University of Patras, School of Pure and Applied Sciences, Open University of Cyprus, Cyprus

4.30 Predicting aquatic macrophyte richness and abundance in Mediterranean lakes under different management scenarios
Prof Eva Papastergiadou, Department of Biology, University of Patras, Greece

4.45 The Portuguese IBMR platform: a tool for macrophyte-based monitoring and research
Teresa Ferreira, Centro de Estudos Florestais, Instituto Superior de Agronomia, Universidade de Lisboa, Portugal.

5.00 Speaking sessions end

6.00 Poster Reception Evening, Rydges Hotel

Tuesday 20 February

8.25 Welcome/housekeeping

8.30 **KEYNOTE ADDRESS**
Science-based Management of Invasive Aquatic Plants?
Dr Mike Netherland, US Army Engineer Research and Development Center, Florida, US

MANAGEMENT AND INVASIVE PLANTS - Session 1
Chair: Dr Andreas Hussner

9.15 Biological and social impacts of invasive aquatic weeds at Lake Tahoe: perceptions vs. Reality
Dr Lars Anderson, WaterweedSolutions, USA

9.30 Vegetative regeneration of invasive *Ludwigia cytotypes* from clonal bud banks across resource gradients: colonizing diploid outperforms polyploid
Dr Brenda Grewell, USDA-ARS Exotic & Invasive Weeds Research Unit, Davis, California, USA

9.45 The role of plant fragments for the dispersal of native and invasive alien aquatic plants in running waters
Patrick Heidbuechel, Heinrich Heine University, Duesseldorf, Germany

10.00 Monoecious hydrilla: growth and carbohydrate dynamics in the absence of photosynthesis
Erika Haug, North Carolina State University, USA

10.15 *Morning tea*

MANAGEMENT AND INVASIVE PLANTS - Session 2
Chair: Dr Andreas Hussner

10.45 Mechanisms of invasion resistance of aquatic plant communities
Antonella Petruzzella, Netherlands Institute of Ecology, The Netherlands

11.00 Investigations on expansion and risk of a novel neurotoxic cyanobacteria co-invading on submerged aquatic plants
Dr Susan Wilde, University of Georgia, United States

11.15 Removal of alien plants: any effects on native macrophyte recovery and pollinator services?
Dr Iris Stiers, Vrije Universiteit, Brussel, Belgium

11.30 Risk assessment of four aquatic species under the new European invasive species Regulation: challenges and data gaps
Dr Johan van Valkenburg, National Plant Protection Organization, The Netherlands

11.45 Competition success of *Limnocharis flava*, *Monochoria vaginalis* and *Ipomea aquatica* in nutrient rich water
Dr Champika Ellawala, Kankanamge University of Ruhuna, Sri Lanka

12.00 Pre field trip talk title TBC
Mary de Winton, NIWA, New Zealand

12.15 Pre field trip talk title TBC
Marcus Girvan, Boffa Miskell, New Zealand

12.30 *Lunch*

MANAGEMENT AND INVASIVE PLANTS - Session 3
Chair: Dr John D. Madsen

1.30 Quantitative techniques for assessing changes in distribution and abundance of aquatic plants after management
Dr John Madsen, US Department of Agriculture, Agricultural Research Service, USA

1.45 Improving aquatic plant management in the California Sacramento-San Joaquin Delta
Dr David Bubenheim, NASA Ames Research Center, United States

2.00 Increasing the odds of detection - aquatic weed surveillance in New Zealand
Mary de Winton, NIWA, New Zealand

2.15 Detection of aquatic plant species using Unmanned Aerial Systems technology
Gray Turnage, Mississippi State University, United States

2.30 Potential methods for detecting, mapping, and quantifying macrophytes using novel remote sensing technologies
Andrew Howell, North Carolina State University, USA

2.45 Calibration and Validation of EcoSat: A new BioBase product using high-resolution satellite imagery for the detection and mapping of emergent and surface growing aquatic plants
Ray Valley, C-MAP USA, Inc. Minneapolis, USA

3.00 *Afternoon tea*

MANAGEMENT AND INVASIVE PLANTS - Session 4
Chair: Prof Rob Richardson

3.30 Integrating herbicides and triploid grass carp for monoecious hydrilla management
Dr Robert Richardson, North Carolina State University, United States

3.45 Control of *Cabomba caroliniana* with flumioxazin: control efficacy and the effect of environmental factors
Dr Tobias Bickel, Department of Agriculture and Fisheries, Australia

4.00 Endothall case study evaluations for Eurasian watermilfoil, hybrid watermilfoil and curlyleaf pondweed
Dr Cody Gray, UPI, USA

4.15 Managing Delta arrowhead in South Africa
Dr Grant Martin, Center for Biological control, Rhodes University, South Africa

4.30 Does enemy release explain the invasion success of *Sagittaria platyphylla* in Australia and South Africa?
Dr Raelene Kwong, Agriculture Victoria, Department of Economic Development, Jobs, Transport and Resources, Australia

4.45 Predicting the realised host range of a biocontrol agent imported from USA to control *Sagittaria platyphylla* in south-eastern Australian aquatic environments
Jackie Steel, Agriculture Victoria, Department of Economic Development, Jobs, Transport and Resources, Australia

5.00 Speaking sessions end

Wednesday 21 February

Full day fieldtrip followed by Conference Dinner at **Skyline Restaurant and Gondola**, Queenstown.

Thursday 22 February

8.25 Welcome/housekeeping

MANAGEMENT AND INVASIVE PLANTS - Session 5
Chairs: Prof Rob Richardson and Dr Tony Dugdale

8.30 Utilizing daily reservoir operations to improve aquatic herbicide treatments
Dr Kurt Getsinger, USAERDC, USA

8.45 Mesocosm and field evaluations of PROCELLACOR - a new herbicide for selective control of invasive aquatic plants
Dr Mark Heilman, SePRO Corporation, USA

9.00 Understanding microbial decay and molecular transformation of the herbicide endothall, in addition to the impact of water movement, to better predict its efficacy against submersed weeds
Dr Tony Dugdale, Agriculture Victoria Research, Australia

9.15 Optimising the management of aquatic *Alternanthera philoxeroides* (Mart.) Griseb. (alligator weed) targeted for eradication from catchments and waterways
Daniel Clements, Agriculture Victoria Research, Australia

9.30 Managing aquatic weeds in Lake Wendouree: issues and challenges
Dr Nimesha Fernando, Federation University, Australia

9.45 The Center for Aquatic and Invasive Plants: A model for integrated research and outreach
Dr Jason Ferrell, University of Florida, United States

10.00 *Morning tea*

10.30 **KEYNOTE ADDRESS**
Ecosystem restoration of shallow lakes in tropical and subtropical China: overcoming the negative resilience of the turbid states
Prof Zhengwen Liu, Nanjing Institute of Geography and Limnology, Chinese Academy of Science

ECOSYSTEM RESPONSE AND RESTORATION - Session 1
Chair: Prof Elisabeth Gross

11.15 How are different stress factors affecting plant quality? Insights from *Myriophyllum spicatum*
Prof Elisabeth M. Gross, LIEC - Univ Lorraine, France

11.30 The effects of salt and light stress on growth of *Stuckenia pectinata*: constraints on re-establishment in a degraded coastal lake
Qian Hu, University of Canterbury, New Zealand

11.45 Intraspecific variation in the sensitivity of two macrophyte species to copper contamination
Eva Roubeau Dumont, Paul Sabatier University, France

12.00 Iron plaque formation on wetland plants with different radial oxygen loss and its role on macrolides depletion in auqatic system
Dr Yiping Tai, Jinan University, China

12.15 Drivers for belowground dynamics in macrophyte communities under environmental changes
Dr Arie Vonk, University of Amsterdam, The Netherlands

12.30 *Lunch*

ECOSYSTEM RESPONSE AND RESTORATION - Session 2
Chair: Dr Liesbeth Bakker

1.30 The impact of herbivores on carbon stocks and carbon cycling in aquatic vegetation
Dr Liesbeth Bakker, Netherlands Institute of Ecology, The Netherlands

1.45 The tolerance of four selected aquatic plant species to elevated water temperatures and low dissolved CO2
Casey Williams, BIO-WEST US

2.00 Carbon limitation in aquatic macrophytes overlooked
Prof Jan Roelofs, Radboud University Nijmegen (Reseach Centre B-WARE), The Netherlands

2.15 The biocontrol of *Egeria densa* Planchon (Hydrocharitaceae) in South Africa and the effect of climate change on the success of the programme.
Rosali Smith, Rhodes University, Department of Entomology, South Africa

2.30 Effects of global change CO_2 scenarios on the growth and physiology of submerged aquatic plants
Prof Julie Coetzee, Rhodes University, South Africa

2.45 Manipulating the environment to control invasive alien plants within riparian habitats
Dr Zarah Pattison, University of Stirling, UK

3.00 *Afternoon tea*

ECOSYSTEM RESPONSE AND RESTORATION - Session 3
Chair: Dr Fleur Matheson and Assoc Prof Tenna Riis

3.30 The role of macrophyte habitats for stream ecosystem functioning
Prof Tenna Riis, Aarhus University, Denmark

3.45 Feedback effects of submersed macrophytes on water level, nutrient retention and turbidity in a lowland river
Dr Jan Koehler, Leibniz Institute of Freshwater Ecology and Inland Fisheries, Germany

4.00 Hidden defences against drag forces: two newly discovered micro-level adaptations of macrophytes to deal with hydrodynamic stress.
Jonas Schoelynck, University of Antwerpen, Ecosystem Management Research Group, Belgium

4.15 Impact of supply of water alongside the riverbed on the development of the populations of various Water Crowfoots
Prof Krzysztof Szoszkiewicz, Poznan University of Life Sciences, Department of Ecology and Environmental Protection, Poland

4.30 Impact of hydromorphological alterations on macrophyte diversity
Dr Daniel Gebler, Department of Ecology and Environmental Protection, Poznan University of Life Sciences, Poland

4.45 The concentration of a reactive oxygen species, H_2O_2, as an indicator of total environmental stress and biomass of submerged macrophytes in the lowland stream
Prof Takashi Asaeda, Saitama University, Japan

5.00 Speaking sessions end

Friday 23 February

8.25 Welcome/housekeeping

ECOSYSTEM RESPONSE AND RESTORATION - Session 1
Chair: Dr Sabine Hilt

8.30 The importance of macrophyte growth form diversity for microbial mediated nitrogen (N) cycling in freshwater ecosystems
Maidul I. Choudhury, Swedish University of Agricultural Sciences, Sweden

8.45 Allelopathic interactions between cyanobacteria and macrophytes: state of the art and potential application in lake restoration
Dr Runbing Xu, Yunnan University, China

9.00 Effects of emergent macrophytes on the phytoplankton community of a tropical reservoir: a mesocosm study
Yiluan Song, National University of Singapore, Singapore

9.15 How green is my river - revisited 10 years on
Dr. Matthew O'Hare, Centre for Ecology and Hydrology, Edinburgh

9.30 The contrasting responses of periphyton to different nitrogen (ammonia and nitrate) loadings and dominated macrophyte species in a mesocosm study
Dr Yu Cao, Wuhan Botanical Garden, China

9.45 Shifting the ecological balance in urban waters by feeding the ducks
Sven Teurlincx, NIOO-KNAW (Netherlands Institute of Ecology), The Netherlands

10.00 The winner takes it all: groundwater discharge can give periphyton a competitive advantage over macrophytes
Dr Sabine Hilt, Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany

10.15 *Morning tea*

ECOSYSTEM RESPONSE AND RESTORATION - Session 2
Chair: Assoc Prof Julie Coetzee

10.45 Plant species richness as a stabilising property of shallow lakes
Prof Nigel Willby, University of Stirling Scotland, UK

11.00 Quantifying ecosystem benefits of biological control of invasive aquatic weeds in southern Africa
Samuel Motitsoe, Rhodes University, South Africa

11.15 Inducing a shift from turbid to clear water state using a novel combination of aquatic macrophytes: a tropical mesocosm study
Darren Sim, National University of Singapore, Freshwater and Invasion Biology Laboratory, Singapore

11.30 Natural restoration of aquatic vegetation in degraded lakes: from theory to practice
Dr Wei Li, Laboratory of Aquatic Plant Biology, Wuhan Botanical Garden, Chinese Academy of Sciences, China

11.45 A multi-facted study exploring non-linear restoration of invaded freshwater systems.
Dr Emily Strange, Rhodes University, South Africa

12.00 Identifying critical nutrient loads and mowing strategies that balance between maintaining a good water quality and avoiding nuisance by submerged macrophytes in shallow lake ecosystems
Prof Wolf M. Mooij, Netherlands Institute of Ecology (NIOO-KNAW), The Netherlands

12.15 Assessing aquatic macrophyte growth responses to the phosphorus binding product lanthanum-bentonite modified clay (Phoslock): a lake restoration tool
Kate Waters, Centre for Ecology & Hydrology, UK

12.30 Closing Remarks

12.45 Announcements International Scientific

1.00 *Lunch*