

# Wednesday, September 25, 2019

Parallel Sessions 1 - 11h00 - 13h00

## Hall A

### **S1 - Big pictures re-viewed and reconsidered: A critical assessment of key large-scale restoration projects previously showcased at SER conferences**

A critical review of large-scale restoration projects featured at past SER conferences – what have we learned?

Moderator: Paddy Woodworth

11:00 Gondwana Link: Are we there yet?

**James Aronson**

11:25 Advancing towards the 15M hectares target: The Atlantic Forest Restoration Pact completes its first million hectares

**Pedro Brancalion**

11:50 Large-scale restoration after bauxite mining in the jarrah forest of southwest Australia: An ongoing evolution in science and practice

**Andrew Grigg**

12:15 The Working for Water Programme

**Christo Marais**

12:40 Discussion

## Hall B

### **S2 - Science to the service of tropical grassland restoration: Challenges and future prospects (Session 1 of 2)**

This symposium will feature grassland scientists whose research is directly linked to restoration and has been identified as key to improve tropical grasslands restoration.

Moderator: Elise Buisson

11:00 Restoring functional diversity in tropical grasslands

**Rafael Oliveira**

11:20 Theoretical basis for restoration of humid grasslands

**Kevin Kirkman**

11:40 What are the challenges for tropical grassland and savanna restoration using fire?

**Alessandra Fidelis**

12:00 Mitigating bush encroachment via habitat manipulation: Ecological cascade effects

**Melissa Schmitt**

12:20 Drought-tolerant savanna forbs: Comparing diversity and function between livestock and wild herbivore sites

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**Frances Siebert**

12:40 Disturbance, dominance and disaster:  
Heavyweights in structuring herbaceous  
savanna communities

**Dave Thompson**

## Hall C

### **S3 - Using ecological resilience concepts and landscape-scale approaches to prioritize restoration efforts**

This symposium provides information on spatially-explicit approaches for applying ecological resilience concepts that enables practitioners to target limited restoration resources to those areas where they are likely to have the greatest benefit for supporting biodiversity and maintaining ecosystem functioning and human well-being.

Moderator: Alexandra Urza

11:00 Using ecological resilience concepts to  
prioritize restoration efforts and determine  
effective strategies

**Jeanne Chambers**

11:20 Increasing operational resilience for  
sagebrush ecosystems by integrating  
indicator species metrics at multiple spatial  
scales into decision support tools

**Mark Ricca**

11:40 Restoration for resilience

**Lindsey Gillson**

12:00 Understanding abiotic and biotic drivers of  
plant establishment processes to anticipate  
future ecological resilience

**Alexandra Urza**

12:20 Social-ecological catchments for  
prioritizing restoration efforts

**Kevin Pope**

12:40 Restoring resistance and resilience in  
droughty ecosystems: Landscape-scale  
evidence for the benefit of adaptive  
management

**Matthew Germino**

## Hall D-1

### **S4 - Linking land and water conservation to community development in ecological restoration policy and projects: Lessons from South Africa**

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## Parallel Sessions 1 - 11h00 - 13h00

This symposium bridges science, policy and practice in the pursuit of land and water conservation and community development in South Africa. It summarises cutting-edge evidence of opportunities and challenges in ecosystem restoration policy and projects, and identifies priorities and ways forward for joint collaboration across stakeholders at multiple levels.

Moderator: Nicola Favretto

11:00 Thicket rehabilitation for socio-economic development in the Baviaanskloof, Eastern Cape

**Otto Beukes**

11:15 Linking land and water conservation to community development in ecological restoration policy and projects: Lessons from South Africa

**André Britz and Liz Eglington**

11:30 Community-based restoration of degraded landscapes: Developing a training model for sustainable land management at Machubeni, Eastern Cape

**Monde Duma**

11:45 Lessons for improving rural livelihoods through sustainable land management in Macubeni communal land: A landscape littered with skeletons of failed development projects

**James Gambiza**

12:00 Pursuing sustainable land management through community development: UNDP/DEA GEF 5 Sustainable Land Management project in South Africa

**Lehman Lindeque**

12:15 What is the real cost of pursuing socio-ecological thinking at the catchment scale? Using the Tsitsa Project, South Africa, as an example

**Michael Braack**

12:30 Discussion

## Hall D-2

### **S5 - Seeds for global restoration, Session 1 of 5: Sourcing the seed we need: Generating adequate and appropriate native seed supplies**

Determining seed needs - species, sources, and quantities - and maintaining genetic diversity through seed collection, cleaning and seed increase is essential for restoration success.

Moderators: Kingsley Dixon and Ted Chapman

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## Parallel Sessions 1 - 11h00 - 13h00

11:00 Why seed standards matter in the world of ecological restoration

**Kingsley Dixon**

11:20 Prioritization of the restoration species pool to maximize restoration outcomes

**Emma Ladouceur**

11:40 New approaches to the effective conservation of genetic diversity in native seed collecting with ash, *Fraxinus excelsior*, in the UK as a case study

**Clare Trivedi**

12:00 Brush and green seed harvesting: A comparison of species capture, viability, and cost in mesotrophic and calcareous grasslands

**Ted Chapman**

12:20 Unconscious evolution on a native seed farm reduces the fitness of restoration material

**Julie Etterson**

12:40 Selecting native plant material for restoration projects in different ecosystems: Successes and challenges

**Karma Bouazza**

## Meeting Room 07

### O1 - Ecological restoration in agricultural landscapes

Moderator: Julie Marcus

11:00 An unconventional PES Program leveraging ecological restoration and food

**Abdon L. Schmitt Filho**

11:20 A landscape approach is needed to improve farmers' livelihoods while reforesting degraded reserves in Ghana

**Emmanuel Acheampong**

11:40 A dry shrubland restoration within an irrigated farm landscape matrix in New Zealand

**Nicholas Dickinson**

12:00 Undervalued and overlooked: The positive contribution of naturally regenerated vegetation in agroecological landscapes

**Peta Zivec**

12:20 Threshold dynamics in the use of mobile bomas (livestock corrals) for rangeland rehabilitation

**Henry Wells**

# Wednesday, September 25, 2019

## Parallel Sessions 1 - 11h00 - 13h00

- 12:40 Ecological restoration on large scale commercial solar development:  
Opportunities for habitat restoration and agriculture



**Mickey Marcus**

## Meeting Room 08

### **O2 - Biodiversity and climate change**

Moderator: Marcelo Awade

- 11:00 Restoring mutualistic interactions on scenarios of climate change  
**Marcelo Awade**
- 11:20 Sleeping threats to biodiversity conservation: Extinction debt in global plant communities  
**William Fowler**
- 11:40 Climate change experiment suggests assisted migration may be necessary to save range-restricted plant species  
**Paul Reed**
- 12:00 Inspired by nature: Using wild populations to inform rare species translocations and evaluate success  
**Stephanie Koontz**
- 12:20 Mitigation-driven translocations: Phased destruction or an effective applied  
**Holly Bradley**
- 12:40 Securing, restoring, and reintroducing: A case study from Ontario, Canada  
**Liv Monck-Whipp**

## Meeting Room 09

### **O3 - Coastal restoration at large scales**

Moderator: Janine Adams

- 11:00 River diversions as coastal restoration tools: Plausibility, trade-offs, and ecological consequences  
**Dubravko Justic**
- 11:15 Assessment of estuary pressures and health key to the prioritisation of restoration activities on a national scale  
**Lara Van Niekerk**
- 11:30 Case studies of modified South African estuaries and implications for ecological restoration in these systems

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## Parallel Sessions 1 - 11h00 - 13h00

### **Steven Weerts**

- 11:45 Coastal bank and salt marsh restoration:  
Examples of low impact and soft  
engineering strategies



### **Mickey Marcus**

- 12:00 An assessment of restoration efforts in  
South African estuaries and a socio-  
ecological approach to sustaining  
ecosystem services

### **Janine Adams**

- 12:15 Cap and trade funded coastal wetland  
restoration-carbon sequestration projects:  
Examples from California and the  
northeastern United States

### **Elizabeth Watson**

- 12:30 A Standardized UAV Coastal Inventory  
Protocol for Consistent Restoration Project  
Planning

### **Tyler Penrod**

## Meeting Room 10

### **S6 - Traditional Ecological Knowledge, Local Ecological Knowledge, and Ecological Restoration**

Traditional Ecological Knowledge is a powerful tool that can help advance restoration of degraded ecosystems worldwide.

Moderator: Cristina Eisenberg

- 11:00 Social dimensions of the SER Standards:  
Traditional Ecological Knowledge and  
Local Ecological Knowledge and their  
importance to ecological restoration

### **Cristina Eisenberg**

- 11:20 Experiences from restoring a degraded  
forest ecosystem in South India over the  
last ten years with active involvement of  
Indigenous communities and their  
traditional knowledge

### **CR Hanumanth**

- 11:40 TEK and natural resources and adaptive  
management

### **Kansie Fox and Monroe Fox**

- 12:00 Integrating TEK and geospatial methods to  
restore Indigenous grasslands

### **Chris Anderson**

- 12:20 Natural resource management capacity  
building and an advocacy program for  
traditional and community leaders in rural  
areas

# Wednesday, September 25, 2019

Parallel Sessions 1 - 11h00 - 13h00

**Chief Livhuwani Matsila**

12:40 Discussion

## Meeting Room 11

### **O4 - National policy and planning**

Moderator: Samantha Braid

11:00 Promoting sustainable permanent grassland systems in Switzerland: Lessons learnt from 20 years of policy-driven restoration efforts

**Simone Quatrini**

11:20 Positive, negative, or neutral: An assessment of the role domestic law and policy plays in watershed and coastal restoration in the United States

**Anastasia Telesetsky**

11:40 Scale challenges emerging from the implementation of landscape restoration policies in Ecuador

**Daniel Wiegant**

12:00 The impact of a lack of policy framework for restoration in South Africa

**Samantha Braid**

12:20 Could South Africa's environmental legislation better support wetland restoration efforts?

**Franci Gresse**

12:40 Use of legal and regulatory frameworks for the effective restoration of the water resources

**Caroline Tlowana**

# Wednesday, September 25, 2019

Parallel Sessions 2 - 14h30 - 16h30

## Hall A

### **O5 - Scaling up to meet global targets**

Moderator: Leo Zulu

14:30 A typology of worldwide Forest and Landscape Restoration (FLR) projects

**Daniella Schweizer**

14:50 African Forest Landscape Restoration (AFR100) Initiative: An introduction to the commitment to restore 100 million hectares in Africa by 2030

**Petra Lahann**

15:10 Integrated Restoration System: A web-platform for large scale restoration

**Rubens Benini**

15:30 Placing marine ecosystem restoration in the context of international policy and global targets: Synergies and trade-offs

**Hazel Thornton**

15:50 Advancing Forest Landscape Restoration in Sub-Saharan Africa: Articulating knowledge gaps in interventions' design and in governance challenges and institutional arrangements

**Ida Nadia Djenontin**

16:10 Forest Landscape Restoration, community based forest management, and the role of social learning in Sub-Saharan Africa: Insights from Malawi

**Leo Zulu**

## Hall B

### **S7 - Science to the service of tropical grassland restoration: Challenges and future prospects (Session 2 of 2)**

This symposium will feature grassland scientists whose research is directly linked to restoration and has been identified as key to improve tropical grasslands restoration.

Moderator: Elise Buisson

14:30 A 10-year case study of tropical grassland restoration using a whole-turf translocation method

**Sylvain Boisson**

# Wednesday, September 25, 2019

## Parallel Sessions 2 - 14h30 - 16h30

14:50 Identifying priority species for grassland restoration – a conceptual framework illustrated for south Brazilian subtropical grasslands

**Gerhard Overbeck**

15:10 Challenges in applying seed ecology knowledge to restoration of grasslands on extremely impoverished soils

**Fernando A. O. Silveira**

15:30 Community-based seed production for large scale restoration: Socio-ecological challenges

**André Coutinho**

15:50 Functional traits predict herbaceous responses to land-use intensities in the grassy biomes of South Africa

**Stefan Siebert**

16:10 Discussion

## Hall C

### **S8 - Can we move beyond tradition: Embracing innovation in the new era of restoration**

Restoration notably lags in the up-take of innovation but embracing new approaches and technologies offers much potential to help restoration meet its global challenges

Moderator: Peter Harrison

14:30 What does innovation mean in the context of ecological restoration?

**Peter Harrison**

14:50 Working with the mine rehabilitation industry to develop large-scale seed enhancement technologies and restoration solutions

**Todd Erickson**

15:10 Using genomics to restore ecosystems and biodiversity

**Martin Breed**

15:30 Existing and emerging use of drones in restoration ecology

**Jake Robinson**

15:50 Moving beyond traditional restoration with genetics

**Peter Harrison**

16:10 Genomics and gene editing innovations in restoration

**Margaret Byrne**

# Wednesday, September 25, 2019

Parallel Sessions 2 - 14h30 - 16h30

## Hall D-1

### **O6 - Decision-support tools for large-scale projects**

Moderator: Jeremy Shelton

14:30 Improving Indonesia's tropical peat-fire emissions monitoring as a restoration tool

**Laura Graham**

14:50 Priorisation of catchment areas for improved water service delivery using GIS spatial analyses: A comparison of two South African river systems, the uMngeni and Umzimvubu

**Gary de Winnaar**

15:10 A transdisciplinary research framework to guide actions along the Great Green Wall for the Sahara and Sahel Initiative

**Deborah Goffner**

15:30 Assessing large-scale restoration interventions in Africa's Great Green Wall programme

**Moctar Sacande**

15:50 An information system for monitoring changes in South Africa's freshwater biodiversity and ecosystem condition

**Jeremy Shelton**

16:10 Spatially mapping target areas for planting trees to guide forested wetland restoration for optimum ecosystem services provision in the Wairarapa, New Zealand

**Tapuwa Marapara**

## Hall D-2

### **S9 - Seeds for global restoration, Session 2 of 5: Managing seed supplies: Assessing and maintaining seed quality**

Tracking seed origin, assessing seed quality, releasing dormancy and maintaining seed viability in storage present major challenges to the increased use of native species. This session will review new and innovative advances in seed technology for native species.

Moderator: Marcello De Vitis

14:30 Bet hedging through fine-scale intraspecific variation in seed dormancy and seed germination cues in the Australian arid tropics

**Adam Cross**

# Wednesday, September 25, 2019

## Parallel Sessions 2 - 14h30 - 16h30

14:50 Predicting and alleviating dormancy in challenging species: Insights and innovations from the Millennium Seed Bank Partnership

**Alice di Sacco**

15:10 Breaking dormancy of selected Asteraceae annuals in the winter-rainfall region of South Africa

**Roger Oliver**

15:30 The role of seeding density, species composition, and abiotic constraints to competitively exclude *Phragmites* re-invasion in Great Salt Lake wetland restorations

**Emily Tarsa**

15:50 Determining optimal germination cues for use in restoration seeding in a lowland fynbos ecosystem

**Stuart Hall**

16:10 Genetic identity and genetic purity: Who cares?

**Stanford Young**

## Meeting Room 02

### **W1 - Workshop ~ How to co-design a community-driven landscape rehabilitation intervention: A role-playing exercise**

Through a role-playing exercise, participants will build capacity in co-designing a community-driven landscape rehabilitation intervention, where multi-level stakeholders form part of the implementation team.

Moderator: Liezl le Roux

## Meeting Room 07

### **S10 - Using the past to manage the future: The role of long-term data in restoration ecology**

Long-term data from palaeoecology and repeat photography can inform realistic restoration targets by enhancing understanding of ecosystem dynamics and historic baselines.

Moderator: Lindsey Gillson

14:30 Long-term change in the biomes of southern Africa: Implications for restoration ecology

**Timm Hoffman**

# Wednesday, September 25, 2019

## Parallel Sessions 2 - 14h30 - 16h30

14:45 Using long-term ecological data to establish benchmarks for restoration in South African drylands

**Hana Petersen**

15:00 Tracking multiple ecosystem components to establish benchmarks for restoration in an arid rangeland in South Africa

**Igshaan Samuels**

15:15 Shifting baselines in the restoration ecology of Renosterveld

**Cherie Forbes**

15:30 Palaeoecology as a valuable source of information for restoration practices in globally endangered habitats: A case study from a Mediterranean seasonal wetland

**Saúl Manzano**

15:45 Long-term change in the forest-grassland mosaic of Central Highlands, Madagascar, and its conservation implications

**Tsilavo Razafimanantsoa**

16:00 Long-term evidence of wetland change: Accommodating variability in setting restoration options

**Peter Gell**

## Meeting Room 08

### **S11 - Insights from the prioritization of invasive alien plant control (as the first step towards effective restoration)**

This symposium brings together a diverse team of national government and research staff to reflect on the process and techniques developed to improve the spatial prioritization of degraded and invaded areas at both national and local scales in South Africa.

Moderator: Ryan Blanchard

14:30 The need for nationally defined priority areas for DEA NRM restoration activities

**Michael Braack**

14:50 Incorporating biodiversity priorities in Natural Resources Management (NRM) prioritization at a national scale

**Norma Malatji**

15:10 Prioritising restoration measures to protect ecosystem services in the Western Cape

**David Le Maitre**

15:30 Prioritization Tools: A case for the Management Unit Control Plan Tool: Costing and affordability

**Ryan Blanchard**

# Wednesday, September 25, 2019

## Parallel Sessions 2 - 14h30 - 16h30

15:50 Discussion

### Meeting Room 09

#### **S12 - Harnessing biological partnerships (positive species interactions) to increase coastal restoration success**

This symposium presents novel research on the incorporation of positive interactions in coastal restoration methodologies and the benefits they can confer marine ecosystem recovery.

Moderator: Stacy Zhang

14:30 Co-restoring seagrass and bivalves to increase restoration success – challenges and implementation

**Karine Gagnon**

14:50 Can intraspecific cooperation enhance restoration success and help meet multiple human goals?

**Carter Smith**

15:10 Evaluating the ability of bivalve facilitation to enhance seagrass bed resilience to disturbance

**Sarah Donaher**

15:30 Does facilitation promote establishment of native plants in a salt marsh recovering from invasive plant eradication?

**Wanqing Qian**

15:50 Inclusion of intra- and interspecific facilitation enhances seagrass restoration

**Stacy Zhang**

16:10 Discussion

### Meeting Room 10

#### **S13 - Opportunities for African mineral extraction sites to increase resilience for land, biodiversity and water, with a positive impact for local communities**

This symposium brings together a number of projects which are taking explicitly landscape-scale approaches to restoration in the context of mineral extraction sites and focuses on ideas to restore and deliver both nature and community benefits at local scale through a joined up approach to restoration and species specific planning and management.

Moderator: Shane Sparg

14:30 A review of African Quarry Life Award projects for biodiversity and community resilience, highlighting the key collaboration between academia, communities and the industry

# Wednesday, September 25, 2019

## Parallel Sessions 2 - 14h30 - 16h30

### **Stéphane Rivière**

- 14:50 Strengthening the resilience of agroforestry parks and the livelihoods of communities bordering the Pô Kaboré Tambi National Park, and the Dandé quarry in Burkina Faso

### **Idrissa Zeba**

- 15:10 Utilising Quarries to Propagate Threatened Species and Promote Agroforestry Strategies towards Enhancing Biodiversity, Ecosystem Services and Community Resilience in Ghana

### **Eric Larrey**

- 15:30 Quarries as safe havens for pioneer and migratory species: Potential positive value these habitats have for conservation

### **Shane Sparg**

- 15:50 Using a landscape approach to overcome barriers to restoration: Lessons from Tanzania

### **Pelle Bågesund**

- 16:10 Discussion

## Meeting Room 11

### **S14 - How ecological restoration improves public health: Synergies for local action**

We will explore the interfaces between ecological restoration and human health, and discuss the goals and objectives of the EcoHealth Network, a global initiative of long-term sites for science- and action-driven projects where restoration work and public health research and outreach are combined.

Moderators: James Aronson and Laura Orlando

- 14:30 Arid land rehabilitation in the Karoo, South Africa – Building skills, networks, and positive attitudes in globally-troubled times

### **Suzanne Milton**

- 14:50 Landscape restoration in Rwanda: Experience with the development of a Payments for Ecosystem Services system

### **James Blignaut**

- 15:10 Linking Traditional Ecological Knowledge (TEK), native grassland and soil health, and human health on Indigenous traditional lands

### **Cristina Eisenberg**

# Wednesday, September 25, 2019

## Parallel Sessions 2 - 14h30 - 16h30

15:30 Investigating the impacts of environmental pollution and highlighting the need for environmental restoration

**James Irlam**

15:50 Urban ecological restoration in Aotearoa New Zealand

**Bruce Clarkson**

16:10 Ecological restoration's impact on public health: Results of a literature review, some reflections and predictions

**Laura Orlando**

# Wednesday, September 25, 2019

Parallel Sessions 3 - 17h00 - 18h20

## Hall A

### **Ignite Session 1: Social and economic dimensions of restoration**

Moderator: TBD

17:00 Making money grow on trees: How water funds pay for long-term ecological restoration (across five continents!)

**David Schaub-Jones**

17:06 Good Wood: A business concept for restorative and sustainable tropical forest management

**Rosa Goodman**

17:12 Proactive Projects: Prerequisite for Real Revegetation of Western USA Rangelands

**Stanford Young**

17:18 Application of Canadian Forestry knowledge and tools to impact assessment, mitigation, and restoration of oil and gas disturbances in Alberta, Canada

**Jaime Pinzon**

17:24 Standards for certification of forest restoration projects in Spain

**Diana Colomina Pérez**

17:30 From monologue to dialogue: Creating a community of inquiry in online ecological restoration courses

**Emily Gonzales**

17:36 Ajabu's Adventures in Wonderland: Theater as a powerful tool for student and community engagement, education, experience, and transformation in a restored indigenous forest in Africa

**Amy McKelvey**

17:42 Discussion

## Hall B

### **O7 - Temperate grasslands**

Moderator: Lincoln Kern

17:00 Managing temperate grassland and developing a restoration enterprise in Victoria, Australia

**Lincoln Kern**

17:20 Long-term success of different intervention measures in grassland restoration: The concept of ecosystem multifunctionality

**Monika Carol Resch**

# Wednesday, September 25, 2019

## Parallel Sessions 3 - 17h00 - 18h20

17:40 Where have all the flowers gone?  
Grassland diversity loss in South Africa  
and implications for restoration

**Marlize Muller**

18:00 Grassland conservation and restoration in  
China: Achievements and outlook

**Yongjun Li**

## Hall C

### **O8 - Nature-based solutions**

Moderator: Errol Douwes

17:00 Unpacking ecosystem-based adaptation in  
the Western Cape in the context of existing  
nature-based projects and programmes

**Marte Nogva Mårstøl**

17:20 Building community resilience to climate  
change impacts through watershed  
restoration in Alebtong District, Northern  
Uganda

**Joan Angom Atalla**

17:40 Biodiversity loss, disease spread, public  
health, and ecological restoration

**Lui Schmitt**

18:00 Transitioning from carbon offset to  
optimised biodiversity: The Buffelsdraai  
Reforestation project

**Errol Douwes**

## Hall D-1

### **O9 - Ecosystem services**

Moderator: Virginia Matzek

17:00 Assessing, with limited resources, the  
contribution of wetland restoration to  
ecosystem services supply

**Douglas Macfarlane**

17:20 Investing in natural capital for a  
sustainable tourism economy

**Michelle Browne**

17:40 Drivers of community landscape service  
values across an East African landscape:  
A necessary understanding for bottom-up  
restoration

**Ethan Miller**

# Wednesday, September 25, 2019

## Parallel Sessions 3 - 17h00 - 18h20

18:00 Making carbon payments work for ecological restoration: Experiences from California

**Virginia Matzek**

## Hall D-2

### **O10 - Monitoring to improve restoration planning**

Moderator: Piet-Louis Grundling

17:00 The role of large herbivores in restoration: Insights from seven years of biodiversity research at a copper mine adjacent to Kruger National Park

**Anthony Swemmer**

17:20 Community asynchrony rather than climate change determine the temporal stability of plant community biomass: A 20-year experimental study in eastern Qinghai-Tibet Plateau

**Shuai Li**

17:40 The effects of vegetation restoration on soil carbon and nitrogen dynamics in a typical karst degraded area

**Wei Zhang**

18:00 Peatland degradation: From fire to restoration – southern African case studies

**Piet-Louis Grundling**

## Meeting Room 07

### **S15 - Opportunities for large-scale restoration with the pulp and paper sector**

Challenges and lessons learned by the paper and pulp sector on large scale restoration

Moderator: Daniel Arrrifano Venturi

17:00 The new generation plantations social learning curve

**David Lindley**

17:20 Mondi's wetlands restoration experience

**Brent Corcoran**

17:40 Experiences and lessons learned of forest restoration together with the pulp and paper sector in Brazil

**Daniel Arrrifano Venturi**

18:00 Suzano experiences with Forest Landscape Restoration in Brazil

**Rafael Henrique Baroni**

# Wednesday, September 25, 2019

Parallel Sessions 3 - 17h00 - 18h20

## Meeting Room 08

### **S16 - Amazon forest ecological restoration: Challenges of high biodiversity and land-use conflict**

Conservation and ecological restoration strategies can be harmonized within territorial planning frameworks to achieve multiple objectives related to conservation, climate mitigation, and economic development. This symposium aims to synthesize recent advances in ecological restoration of Amazonian forests, maximizing benefits to biodiversity and the inhabitants of agricultural frontiers.

Moderator: Eliane Ceccon

17:00 Strategies for a social construction of restoration in the Colombian Amazon

**Eliane Ceccon**

17:20 Knowledge for restoration ecology: Floristic and functional diversity along successional trajectories of abandoned tropical pastures Caquetá, Colombia

**Carlos Rodríguez León and  
Lilia Liseth Roa Fuentes**

17:40 Agroforestry for conservation: Building resilient landscapes in the Colombian Amazon

**María Fernanda Ordoñez**

18:00 Territorial production planning in Amazonia: The role of ecological restoration in reducing deforestation

**Maolenmarx Tatiana Garzón**

## Meeting Room 09

### **S17 - Assessing ecological and environmental impacts of dredging and other mitigation techniques on coastal estuaries**

This symposium will showcase estuarine benthic restoration efforts, including monitoring, environmental responses, ecological developments, successful treatments, and unintended consequences.

Moderator: Kevin Johnson

17:00 Options for the remediation of fine-grained, organic-rich sediments in a subtropical estuary

**Austin Fox**

17:20 Biological responses to aeration in an estuarine canal with fine-grained organic-rich sediments

**Xiao Ma**

# Wednesday, September 25, 2019

## Parallel Sessions 3 - 17h00 - 18h20

17:40 Benthic infauna abundances are driven by sediment organic content and impacted by benthic restoration via dredging

**Kevin Johnson**

18:00 Discussion

## Meeting Room 11

### **W2 - Knowledge Café: International Principles and Standards for the Practice of Ecological Restoration**

This Knowledge Café led by authors of the SER international Standards for ecological restoration, offers an opportunity for new users of the Standards to ask questions, as well as gain insights from seasoned users from around the world on how to effectively use the Standards and its many excellent tools.

Moderators: George Gann and Bethanie Walder

# Thursday, September 26, 2019

Parallel Sessions 4 - 11h00 - 13h00

## Hall A

### O11 - Monitoring

Moderator: Ramesh Venkataraman

11:00 Monitoring insect diversity and assemblages to assess restoration progression in an 800-ha restoration plot in South India



**Ramesh Venkataraman**

11:20 Monitoring of a long-term, large-scale restoration experiment in the thicket biome of the Eastern Cape, South Africa, using remote sensing

**Ruan de Wet**

11:40 A risk-based framework for completion criteria development

**Guy Boggs**

12:00 Arthropod assemblages in restored prairie, old field, and monospecific stands of reed

**Young D. Choi**

12:20 Rehabilitation within the KwaZulu-Natal National Botanical Gardens, South Africa: A review of the Kingfisher Lake habitat enhancement, rehabilitation monitoring indicators, and citizen science

**Megan Grewcock**

12:40 Discussion

## Hall B

### S18 - Marine ecosystem restoration in changing oceans

The symposium on marine ecosystem restoration presents an overview of the marine key habitats/species to restore, assesses the outcomes of different solutions for marine restoration across habitats, the effectiveness of restoration actions on the recovery of ecosystem services and the importance of stakeholder perceptions on marine restoration

Moderator: Roberto Danovaro

11:00 MERCES: Marine Ecosystem Restoration in Changing European Seas (H2020 funded project)

**Roberto Danovaro**

11:20 Marine restoration and MERCES key habitats/species: Approaches, timescales, bottlenecks, and up-scaling

**Chris Smith**

11:40 Success stories in restoration actions across coastal-marine ecosystems: The potential for synergies

# Thursday, September 26, 2019

## Parallel Sessions 4 - 11h00 - 13h00

### **Simonetta Fraschetti**

12:00 Principles and key concepts for ecological restoration in the deep-sea

### **Telmo Morato**

12:20 Effects of marine restoration on ecosystem services

### **Hazel Thornton**

12:40 Stakeholder perceptions on marine restoration: Beliefs, preferences and supporting actions

### **Nadia Papadopoulou**

## Hall C

### **S19 - Restoration meltdown: Defining, describing and dealing with secondary invasion**

Bringing together ecologists who work on restoration, secondary invasion and invasive species in general to discuss secondary invasion and its management during restoration.

Moderator: Mlungele Nsikani

11:00 Secondary invasion: The bane of weed management – identifying and overcoming the gap

### **Dean Pearson**

11:20 Dynamics and management of invasions, re-invasions, and secondary invasions in Great Salt Lake wetlands

### **Karin Kettenring**

11:40 Secondary invasion after clearing invasive *Acacia saligna* in the South African fynbos

### **Mlungele Nsikani**

12:00 Anticipating secondary invasions: Cautionary tales for ecosystem restoration

### **Stephanie Yelenik**

12:20 Secondary invasion: The need for a proper river restoration management plan

### **Sheunesu Ruwanza**

12:40 Patience or intervention? Identifying the best strategy for weed control during grassland restoration

### **Diane Larson**

## Hall D-1

### **S20 - Seeds for global restoration, Session 3 of 5: Assessing site conditions, formulating seeding strategies, and getting seeds restoration ready**

# Thursday, September 26, 2019

## Parallel Sessions 4 - 11h00 - 13h00

Progress in restoration planning: Guidelines for site assessment and species selection, informing seeding decisions, and new research to enhance seed for restoration readiness.

Moderators: Simone Pedrini and Adam Cross

11:00 Assessing the potential for seed-based restoration in a highly degraded freshwater marsh

**Carrie Reinhardt Adams**

11:20 Desert soil seed banks: A refuge for plant diversity and a resource for regeneration

**Sarah Barga**

11:40 Using patch dynamics to inform ecological restoration of semi-arid and Mediterranean-type fields in Namaqualand, South Africa

**Carina Becker**

12:00 Seed encrusting with salicylic acid: A novel approach to improve native grass survival



**Simone Pedrini**

12:20 An efficient method of coating native seeds: Single seed pellets vs multi seeds

**Khiraj Bhalsing**

12:40 Use of seed enhancement technologies for overcoming abiotic and biotic limitations to native plant establishment

**Matthew Madsen**

## Hall D-2

### **W3 - Workshop ~ Can we move beyond tradition: Embracing innovation in the new era of restoration**

The expected outcomes of this workshop will be compiled into an opinion piece for publication and wider dissemination.

Moderator: Peter Harrison

## Meeting Room 02

### **W4 - Workshop ~ Landscapes for livelihoods: Restoring land, water and community resilience in the Umzimvubu Watershed**

A proven, functional and effective collaborative approach to restoration through enhanced governance, underpinning healthy resilient ecosystem functions to build resilience and wellbeing in South African communal rangelands.

Moderator: Nicky Mcleod

# Thursday, September 26, 2019

Parallel Sessions 4 - 11h00 - 13h00

## Meeting Room 07

### **S21 - Alpine grassland restoration: From structure to function**

This symposium will be an opportunity for exchange and sharing of knowledge, experience and opinion face to face with global peer experts on alpine grassland restoration research, engineering, learning, suggesting and advising from the global platform.

Moderator: Shikui Dong

- 11:00 Restoration of structure and function of alpine grassland ecosystems worldwide: Challenges, strategies, and insights  
**Shikui Dong**
- 11:15 Soil seed banks in the alpine grassland ecosystem: Structure and function during vegetation degradation and restoration  
**Zhanhuan Shang**
- 11:30 Selection of suitable plant species for alpine meadow protection near an open-pit copper mine in Tibet  
**Shiliang Liu**
- 11:45 Soil organic carbon and nitrogen content of density fractions and the effect of meadow degradation on soil carbon and nitrogen fractions in alpine *Kobresia* meadow  
**Wenying Wang**
- 12:00 The impact of grazing systems on structure and function of alpine grassland for sustainable restoration and management  
**Xiaoxia Yang**
- 12:15 Plant composition and soil moisture play determining roles in improving ecosystem multifunctionality during restoration processes on the alpine steppes of the Qinghai-Tibetan Plateau  
**Yudan Xu**
- 12:30 Effects of simulated N deposition on photosynthesis and productivity of key plants from different functional groups of alpine meadows on the Qinghai-Tibetan plateau  
**Hao Shen**

## Meeting Room 08-09

**W5 - Workshop ~ Harnessing emerging ideas about "priority effects" to improve ecological restoration**

# Thursday, September 26, 2019

## Parallel Sessions 4 - 11h00 - 13h00

This workshop provides an opportunity for participants to share and synthesize knowledge on priority effects and to discuss key gaps in information that need to be addressed to more effectively integrate priority effects into the planning and implementation of ecological restoration projects and programs.

Moderators: Renaud Jaunatre and Cara Nelson

## Meeting Room 10

### **S22 - Shifting the role of science in community-based landscape restoration: From science FOR to science WITH society**

This workshop session aims to open up a transdisciplinary discussion for the integration of a gender and equity lens in the policy-making, research and practice of ecosystem restoration and community resilience initiatives. The practical workshop session is preceded by four presentations focused on gender equity case-studies, assessment tools and resources.

Moderator: Jessica Cockburn

11:00 Engaging society and building polycentric governance for integrated land and water management: Insights from a science-led restoration programme

#### **Tally Palmer**

11:20 Engaging local citizens in scientific monitoring for catchment restoration: Benefits and recommendations for optimising their involvement

#### **Nosiseko Mtati**

11:40 Getting to know the river: Experiences of a citizen technician from the Tsitsa River catchment, Eastern Cape, South Africa

#### **Grace Saunders**

12:00 Decolonization and democratization of livelihoods: Restoring human-land relations through co-management of natural resources

#### **Reuben Thifhulufhelwi**

12:20 Designing back from practice: Keeping the Olifants River and benefits flowing through systemic, collective action approaches during the worst drought on record

#### **Sharon Pollard**

12:40 Bringing research and catchment restoration planning and management into conversation with rural development

#### **Harry Biggs**

**Thursday, September 26, 2019**

Parallel Sessions 4 - 11h00 - 13h00

**Meeting Room 11**

**W6 - Workshop ~ Are you being heard? The power of communication in ecological restoration**

Learn how to effectively translate scientific knowledge and ecological restoration project information into compelling communication material for diverse audiences, including international stakeholders and partners, local communities and governments.

Moderator: Kay Montgomery

# Thursday, September 26, 2019

Parallel Sessions 5 - 14h30 - 16h30

## Hall A

### **S23 - Landscape restoration: Theoretical and practical challenges for meeting global targets**

This symposium will focus on the applying concepts and principles of landscape ecology to landscape-scale restoration in order to improve outcomes of current initiatives, programs, and projects at local to global scales.

Moderators: Cristian Echeverria and Cara Nelson

14:30 What is to be restored? Contribution from landscape sustainability science to landscape restoration



**Cristian Echeverria**

14:50 Defining the decision space for ecological restoration at the landscape scale

**Cara Nelson**

15:10 Co-creating conceptual and working Forest and Landscape Restoration frameworks based on core principles

**Pedro Brancalion**

15:30 Rewilding as an approach to large landscape restoration: An update on the work of the IUCN CEM Rewilding Task Force

**Rene Beyers**

15:50 Challenges and opportunities of forest landscape restoration implementation in the context of Latin America (20X20 Initiative) and Africa (AFR100)

**Anita Diederichsen**

16:10 Discussion

## Hall B

### **S24 - Conceptualising and implementing ecological restoration projects with rewilding by faunal species as one of the key targeted outcomes**

A symposium that aims to discuss, through case studies from around the world, various aspects involved in planning and implementing restoration projects aimed at rewilding by flagship faunal species and the potential metrics for monitoring and evaluating such initiatives.

Moderator: Ramesh Venkataraman

14:30 Rewilding with keystones: Using bison and fire to restore North American grasslands

**Cristina Eisenberg**

# Thursday, September 26, 2019

## Parallel Sessions 5 - 14h30 - 16h30

14:50 Rebuilding orangutan homes: Community-based, multi-sector, landscape-scale tropical peat swamp forest restoration

**Laura Graham**

15:10 Ecological impacts of the Eurasian Beaver Reintroduction Programme

**Simon Milne**

15:30 Restoring degraded forest ecosystems in South India for creating better habitats for wild Asiatic elephants (*Elephas maximus*): Design parameters, methods, and monitoring



**Ramesh Venkataraman**

15:50 Pollinator responses to restoring shrub steppe habitat for the Greater Sage-Grouse

**David Pilliod**

16:10 Applying an adaptive management approach to a wetland rehabilitation project: Using an urban South African wetland as an example

**Matthew Janks**

## Hall C

### **S25 - Linking fire and ecosystem restoration in Mediterranean climate-region shrublands and forests: A view from five continents**

The symposium will highlight efforts to better align shrubland and forest management and restoration practices before, during, and after fire in the world's five Mediterranean climate regions (MCRs), with the ultimate aim of identifying a common set of best practices for sustaining the resilience of MCR ecosystems in the Anthropocene.

Moderator: Hugh Safford

14:30 Introduction

**Hugh Safford**

14:35 Land use, ecosystems, and fire in the Mediterranean Basin

**Melanie Köbel and Ramón Vallejo**

14:53 Connecting fire and ecosystem restoration in California shrublands and forests: New tools and strategies

**Nicole Molinari and Marc Meyer**

15:11 Landscape change or climatic extremes? Analyzing the main drivers of megafires and the barriers to ecological restoration in the Chilean Mediterranean-climate region

**Juan Armesto and Marcela Bustamante**

# Thursday, September 26, 2019

## Parallel Sessions 5 - 14h30 - 16h30

15:29 Alien tree invasions, fire, and restoration in the Cape Floristic Region (CFR)

**Patricia Holmes and David Le Maitre**

15:47 Interactions between fire and ecological restoration in southwest Australia

**Ben Miller and Ebony Cowan**

16:05 Discussion

## Hall D-1

### **S26 - Recovery by nature: Ecological restoration through spontaneous succession**

This symposium presents both successes and limitations of the passive approach taken in various restoration projects, and attempts to identify the circumstance and strategies that are conducive to spontaneous recovery for successful restoration.

Moderator: Young D. Choi

14:30 Trajectories of old field succession and prairie restoration in the US Midwest: Cases for passive and active restoration

**Young D. Choi**

14:50 The potential for passive restoration in alien plant-invaded ecosystems in the Cape Floristic Region (CFR)

**Patricia Holmes**

15:10 Landscape and abiotic factors driving spontaneous succession: A meta-analysis at a country scale

**Klara Rehoukova**

15:30 Assisting natural regeneration in agricultural landscapes

**Jose M. Rey-Benayas**

15:50 Feasibility and limitations of passive restoration

**Chang-Seok Lee**

16:10 Worldwide patterns of spontaneous succession and implications for ecological restoration

**Karel Prach**

## Hall D-2

### **S27 - Seeds for global restoration, Session 4 of 5: Seeding strategies for improving biodiversity and ecosystem services**

Innovative methods for establishing native communities improve biodiversity, ecosystem services, and increase resistance to invasive species.

# Thursday, September 26, 2019

## Parallel Sessions 5 - 14h30 - 16h30

Moderator: Karin Kettinring

14:30 Seeds and stewards of the future: A U.S. collaboration

**Peggy Olwell**

14:50 Improving biodiversity in highly intensive farmland: Effects of agri-environment schemes using native seed mixtures on plant diversity, birds, and butterflies

**Sabine Tischew**

15:10 Improving biodiversity and related ecosystem services by sowing high-diversity seed mixtures of native plants in vineyards

**Anita Kirmer**

15:30 Re-establishment of *Protea repens* after clearing invasive *Acacia saligna*: Consequences of soil legacy effects and a native nitrophilic weedy species

**Mlungele Nsikani**

15:50 Seeding dates and seeding rates for grassland restoration in the semi-arid steppe of northern China

**Yuping Rong**

16:10 DroneSeed: Using UAVs to conduct surveys, herbicide applications, and aerial seed deployment in forests and rangelands

**Grant Canary and Matthew Aghai**

## Meeting Room 07

### **S28 - Towards a praxis of systems thinking, learning, and collective action for resilient and equitable restoration: Synthesis and examples from two southern African catchments**

This symposium aims to provide a synthesis of recent experiences and learnings in trans-disciplinary approaches and methodologies in supporting more resilient and equitable land and water restoration and linked community livelihood development processes with examples of their use in two catchment based programmes in southern Africa.

Moderator: Jan Graf

14:30 Systems thinking within restoration for resilience: Collectively understanding and managing relationships between land- and water-restoration and human livelihoods

**Sharon Pollard**

# Thursday, September 26, 2019

## Parallel Sessions 5 - 14h30 - 16h30

14:50 Integrated restoration planning: From science-led to science-management-society led planning in the Tsitsa catchment

**Bennie van der Waal**

15:10 Creating collective socio-ecological learning spaces for transformative learning and custodianship building in natural resource management practices

**Reuben Thifhulufhelwi**

15:30 Restoration and historicity: Practicing the long view with practitioners and communities to lay the groundwork for transformation within restoration

**Jan Graf**

15:50 Monitoring, evaluation, reflection, and learning: Transforming M&E into reflexive learning and adaptive management within restoration

**Karen Kotschy**

16:10 Developing a holistic thread of thought on restoration of land, water and society: A synthesis and experience from southern Africa

**Harry Biggs**

## Meeting Room 08-09

### **W8 - Workshop ~ The Global Arid Zone Project: Pooling knowledge and data gathering for global progress in arid and semi-arid restoration**

This workshop will offer an overview of the Global Arid Zone Project to-date, host a forum for discussing future directions of the global restoration database, and finish with a workshop finalizing the global experimental design.

Moderator: Nancy Shackelford

## Meeting Room 10

### **O12 - Tropical forests**

Moderator: Vera Lex Engel

14:30 The role of restoration plantings in the landscape structure and functionality of a tropical forest

**Débora Rother**

# Thursday, September 26, 2019

## Parallel Sessions 5 - 14h30 - 16h30

14:45 Using secondary forest studies to develop species selection guidelines for active forest restoration

**Michiel Van Breugel**

15:00 Multiple feedbacks can create resilient degraded states and stall restoration

**Stephanie Yelenik**

15:15 All roads lead to Rome: Convergence in the woody community assembly of different tropical forest restoration systems after 20 years

**Vera Lex Engel**

15:30 Fast-tracking tropical forest restoration: Testing scalable approaches to re-establish forest structure, function, and

**Hilary Brumberg**

15:45 Opportunities and challenges for the gain of scale on restoration activities in the Brazilian Atlantic Forest

**Daniel Venturi**

16:00 Restoring degraded tropical forests through watershed management: A case study from Lökkere Reserve Forest

**Anand Krishnamurthy**

## Meeting Room 11

### **S29 - Managing alien invasive species to restore aquatic ecosystems in South Africa**

See how managing alien invasive plants and fishes has resulted in ecosystem recovery South Africa.

Moderator: Olaf Weyl

14:30 Managing alien invasive species to restore aquatic ecosystems in South Africa

**Olaf Weyl**

14:50 Riparian restoration in fynbos catchments

**Karen Esler**

15:10 Invasive alien aquatic plant management: Ecosystem recovery and restoration

**Samuel Motitsoe**

15:30 An evaluation of methods for alien fish removals in headwater streams: Lessons from South Africa

**Jeremy Shelton**

15:50 Native fish recovery following the eradication of alien smallmouth bass from the Rondegat River

**Casey Broom**

**Thursday, September 26, 2019**

Parallel Sessions 5 - 14h30 - 16h30

16:10 Discussion

# Thursday, September 26, 2019

Parallel Sessions 6 - 17h00 - 18h20

## Hall A

### **Ignite Session 2: Ecological dimensions of restoration**

Moderator: TBD

- 17:00 Managing dynamic freshwater ecosystems with the competing demands of built environments and biodiversity: An assessment of the rehabilitation of the Dawidskraal wetlands, South Africa  
**Elizabeth Day**
- 17:06 Using disturbance as a conservation tool in Mediterranean temporary ponds  
**Anabela D.F. Belo**
- 17:12 Ridge to reef ecosystem restoration and sustainable management of the Jacotet River in Mauritius  
**Vere Ross-Gillespie**
- 17:18 Associations between hydrology, tree growth characteristics, and regeneration in a temperate swamp forest  
**Sarah Fischer**
- 17:24 Intraspecific trait variation of species commonly used in southwestern United States aridland restoration at early developmental stages  
**Magda Garbowski**
- 17:30 Evidence for contrasting functional groups of lianas in restored and reference tropical forests  
**Vera Lex Engel**
- 17:36 Evaluation of four seed mixes to improve botanical biodiversity in a solar field  
**Matt Taylor**
- 17:42 Restoration of Mediterranean aquatic ecosystems  
**Fabio Attore**
- 17:42 Discussion

## Hall B

### **O13 - Drastic disturbances - approaches**

Moderator: Peter Beckett

- 17:00 Effective strategies for the restoration of drastically disturbed sites  
 **David Polster**
- 17:20 Natural regeneration as restoration strategy to restore functional soils and ecosystems in post-mining sites  
**Jan Frouz**

# Thursday, September 26, 2019

## Parallel Sessions 6 - 17h00 - 18h20

17:40 A pathway to integrated objective-based monitoring at mines to ensure net positive biodiversity outcomes

**Chrizette Neethling**

18:00 Sudbury, Ontario, Canada: 40+ years of healing and creating novel functional ecosystems on a smelter-impacted landscape

**Peter Beckett**

## Hall C

### **S30 - Formation, degradation, and recovery of wetlands in drylands: Do our restoration strategies address key drivers of change?**

Four synthesis talks and a panel Q&A discussion on the application of knowledge of the fundamental drivers of ecosystem formation, degradation, and recovery, in the restoration of wetlands in drylands.

Moderator: Michael Grenfell

17:00 Disciplinary perspectives on timescales of ecosystem formation, degradation, and recovery in wetlands in drylands: What is the natural reference state?

**Michael Grenfell**

17:20 What existing wetland classification systems do not tell us: Implications for restoring wetlands in drylands and a proposal for a genetic geomorphic classification system

**Suzanne Grenfell**

17:40 Identifying ecological threshold breaches in wetlands: Development of a framework to improve wetland prioritisation and restoration in South Africa

**Damian Walters**

18:00 Rethinking wetland restoration by considering natural dynamics: Evidence from the Krom River unchannelled valley-bottom wetland, Eastern Cape

**Fred Ellery**

## Hall D-1

### **O14 - Aquatic systems - economic dimensions**

Moderator: John Dini

17:00 Predicting the existence and performance of U.S. water quality trading programs

# Thursday, September 26, 2019

## Parallel Sessions 6 - 17h00 - 18h20

### **Todd BenDor**

- 17:20 Examining the cost effectiveness of stream and coastal restoration in the Chesapeake Bay, U.S.A.

### **Joshua Running**

- 17:40 Restoring wetlands on a limited budget: The evolution of engineered interventions

### **Fareed Nagdi**

- 18:00 Methods for estimating the total economic values of accelerating restoration: Results for Washington's Elwha River after dam removal

### **John Loomis**

## Hall D-2

### **O15 - Restoration for skills development and social change**

Moderator: Kate Rowntree

- 17:00 Restoring habitat and hope: The Sagebrush in Prisons Project

### **Thomas Kaye**

- 17:20 Supporting 'green-preneurs' for landscape restoration

### **Kate Rowntree**

- 17:40 Building systemic praxis towards integrating sustainable livelihoods with ecosystem restoration in a South African ecological infrastructure flagship project

### **Jai Clifford-Holmes**

- 18:00 The implications of a "project" mindset on ecological restoration at community level: Mpophomeni township as a case study

### **Faye Brownell**

## Meeting Room 07

### **S31 - Transdisciplinary approaches in tropical forests restoration: Rethinking local communities participation and the physical attributes of the landscape (Session 1 of 2)**

Recognizing the difficulties and complexities to gain scale in forest restoration, in a context that involves multiple social actors, high environmental diversity and distinct levels of degradation, this symposium will discuss criteria that involve political, social, institutional, ecological and technological dimensions for mapping and prioritizing forest restoration areas.

Moderator: José Ambrósio Ferreira Neto

# Thursday, September 26, 2019

## Parallel Sessions 6 - 17h00 - 18h20

17:00 Participative governance in the social and environmental recovery process: The case of Renova Foundation in the Rio Doce Basin, Brazil

**José Carlos Carvalho**

17:20 The multidimensionality of the Environmental Vulnerability Index in the process of recovery of the Rio Doce Basin, Brazil

**Demetrius David da Silva**

17:40 Applying machine learning in the mapping of land use and land cover in focusing priority areas for environmental recovery of the Rio Doce basin

**Elpídio Fernandes Filho**

18:00 Mapping vocation for forest restoration and multifunctional landscapes in Rio Doce Basin, Brazil: Vocation for Restoration Index (VRI)

**Sónia Carvalho Ribeiro**

## Meeting Room 08-09

### **W9 - Workshop ~ Cultural landscapes: A concept explicitly applied in Europe in ecological restoration – How is it implemented elsewhere?**

Human traditional activities have shaped landscapes - resulting in cultural landscapes - not only in Europe but also in many other regions including for example the Amazon and the Andes; hence, we aim to bring the cultural landscape concept, widely applied in Europe, into focus to ecological restoration elsewhere.

Moderator: Tiago Toma

## Meeting Room 10

### **W10 - Workshop ~ Getting published in Restoration Ecology: A workshop for students and early career professionals**

How to effectively publish in Restoration Ecology: what are the main challenges, from making global generalizations with local and regional results to the language barrier, and how to effectively overcome these.

Moderator: Valter Amaral

## Meeting Room 11

### **O16 - Water security in southern Africa**

# Thursday, September 26, 2019

## Parallel Sessions 6 - 17h00 - 18h20

Moderator: Brilliant Petja

17:00 Long-term water security begins at the source: A case study of the Greater Cape Town Water Fund

**Louise Stafford**

17:20 The impact of the removal of invasive alien plants on water resources system yield: Helping Cape Town to avoid Day Zero

**James Cullis**

17:40 The effects of land degradation on sustainability of the Lesotho Highland Water Development Project: The need for land restoration

**Malipholo Hae**

18:00 Improved estimates of streamflow losses to Invasive Alien Plants in the Cape Floristic Region

**Glenn Moncrieff**

# Friday, September 27, 2019

Parallel Sessions 7 - 11h00 - 13h00

## Hall A

### **S32 - Unlocking ecological infrastructure investment to scale up ecological restoration with socio-economic benefits**

Our session will explore the means and outcomes necessary to enhance investment linked to restoration of ecological infrastructure.

Moderators: Karen Esler and Nadine Methner

11:00 Typologies and outcomes of ecological infrastructure restoration investment models

**Stephanie Midgley**

11:20 Livelihoods and ecological infrastructure interventions: What are the benefits for workers involved?

**Sheona Shackleton**

11:40 Strengthening the evidence for building resilience in ecosystem-based adaptation in Namaqualand: Ecological infrastructure, livelihoods, and benefits of natural resource management interventions

**Halcyone Muller**

12:00 Leveraging institutional scale investment in ecological infrastructure: Challenges and opportunities for South African institutional investors

**Jon Duncan**

12:20 Defining 'green' for ecological infrastructure bonds

**Lionel Mok**

12:40 Discussion

## Hall B

### **S33 - Ecological restoration of mined areas in Asia, Africa and Oceania: Opportunities, approaches and policy (Session 1 of 3)**

This symposium focuses on Asian-African-Australian ecological restoration of mined area for academic exchange and experience sharing.

Moderator: Shaoliang Zhang

11:00 Status and challenges of ecological restoration in coal mining areas in China

**Shaoliang Zhang**

11:20 Resilience measures for the social-ecological systems of closed mines

**Huping Hou**

# Friday, September 27, 2019

## Parallel Sessions 7 - 11h00 - 13h00

11:40 Soil properties and plant communities of mine dumps following technical reclamation, spontaneous revegetation, and near-natural restoration on the Loess Plateau, China

**Jiixin Mi**

12:00 The recovery of forest structure in a semi-arid mine dump: Estimation based on Worldview-2 satellite data

**Youngjun Yang**

12:20 Evaluation of recreational value to a restored wetland ecosystem based on mobile signaling data

**Peichao Dai**

12:40 Response of the ecological restoration plant *Neyraudia reynaudiana* for use in alleviation of heavy metal contamination

**Fuyao Chen**

## Hall C

### O17 - Dryland restoration

Moderator: Narayana Bhat

11:00 Restoration of degraded dryland ecosystems: A case study of Kuwait

**Narayana Bhat**

11:20 Creating species-diverse resource-conserving plant patches: A way forward to restore drylands

**Susana Bautista**

11:40 The functional and restoration ecology of the Succulent Karoo, South Africa

**Peter Carrick**

12:00 Monitoring dryland restoration outcomes to improve future treatments

**Seth Munson**

12:20 Challenges in determining the best rehabilitation parameters and criteria for arid areas with specific reference to the southern Kalahari region of South Africa

**Chrizette Neethling**

12:40 Arid Ecosystems Management Nexus Approach: Toward a Holistic System of Thinking of Managing Arid Ecosystems

**Meshal Abdullah**

## Hall D-1

# Friday, September 27, 2019

## Parallel Sessions 7 - 11h00 - 13h00

### **S34 - Long term experience from field practitioners: Restoring ecological functions of degraded and deforested forest landscapes for economic and ecosystems values**

Sharing lessons emerging from long term Forest Landscape Restoration projects worldwide.

Moderator: Anita Diederichsen

11:00 Gathering lessons learnt from WWF's experience worldwide: An overview based on 8 FLR long term field projects

**Daniel Vallauri**

11:20 Lessons learnt from 13 years of restoration in a moist tropical forest: The Fandriana – Marolambo Landscape in Madagascar

**Simon Rafanomezantsoa**

11:40 Forest Landscape Restoration: Conservation outcomes and lessons from Terai Arc Landscape, Nepal

**Ananta Ram Bhandari**

12:00 Ecological restoration as a tool to increase resilience to climate change: Learning with small farmers of the Colombian Andean-Amazon Piedmont

**Silvia Vejarano**

12:20 Back to the field! Open lesson learning is required to meet global FLR targets

**Stephanie Mansourian**

12:40 Discussion

## Hall D-2

### **O18 - Novel approaches to planning and prioritization**

Moderator: Jen Ford

11:00 Scaling up - practical challenges and solutions

 **Jen Ford**

11:20 How ecosystem networks reveal resilience

**Amy Shurety**

11:40 Is the restoration of thicket in the Albany Thicket Biome with woody species really not feasible?

**Mike Powell**

12:00 Native woodland restoration to counteract carbon land emission in Iceland

**Kristín Svavarsdóttir**

# Friday, September 27, 2019

## Parallel Sessions 7 - 11h00 - 13h00

12:20 Avoiding further degradation by supporting locally important functional ecological infrastructure for improved land-based livelihoods

**Nicholaus Huchzermeyer**

12:40 Collaborative Action Plan to boost adoption of direct seeding as a restoration technique in Brazil

**Lara Basso**

## Meeting Room 02

### **W11 - Workshop ~ Land...with compensation of an alien kind – the role of Invasive Alien Plant clearing in releasing water, restoring land and securing livelihoods**

The Green Business Value Chain Programme, funded by the Department of Environmental Affairs, seeks to catalyse the conversion of biomass from invasive alien trees (alien trees absorb large quantities of water, facilitate land degradation and impact livelihoods), through micro-enterprises associated with biomass value chains, into products that can catalyse land rehabilitation.

Moderator: Garth Barnes

## Meeting Room 07

### **S35 - Case studies of LandCare best practice in the Western Cape, South Africa**

The LandCare programme in the Western Cape has 14 best practice case studies displaying resilient communities conserving land and water of which 13 won awards at the National LandCare conference in Bloemfontein.

Moderator: Francis Steyn

11:00 Berg River Restoration Project: A sustainable trail from source to sea

**Francis Steyn**

11:20 Restoration of ecological infrastructure through collaboration and LandCare partnerships

**Rudolf Roscher**

11:40 A vibrant Junior LandCare Project in the Western Cape Province

**Grant Jephthas**

12:00 The Koup, the gold standard in community-based natural resource management in the Western Cape, South Africa

**Phyllis Pienaar**

# Friday, September 27, 2019

## Parallel Sessions 7 - 11h00 - 13h00

12:20 Integrated partnerships for securing natural resources in the Western Cape, South Africa

**Jan Smit**

12:40 Duivenhoks River – from extinction to sustainability

**Hannes Muller**

## Meeting Room 08-09

### **S36 - The 10-year journey of the Atlantic Forest Restoration Pact in Brazil and plans for the future**

The symposium will present the tools, knowledge products, governance process and progress made by the Atlantic Forest Restoration Pact to achieve its commitment to the Bonn Challenge to restore 1 million hectares of degraded and deforested lands by 2020 in one of the hottest global biodiversity hotspots.

Moderator: Ludmila Pugliese

11:00 The 10-year journey of the Atlantic Forest Restoration Pact (PACT)

**Severino Pinto**

11:20 Tools and Knowledge products to scale up forest restoration

**Pedro Brancalion**

11:40 There is hope for achieving ambitious commitments of Atlantic Forest restoration

**Renato Crouzeilles**

12:00 Who are the sponsors of the forest? The role of the private and public sector in financing forest and landscape restoration

**Miguel Calmon**

12:20 How to get more inclusive restoration programs? Governance process, social engagement, and gender perspective

**Ludmila Pugliese**

12:40 Discussion

## Meeting Room 10

### **S37 - The real costs and benefits of peatland restoration**

The symposium will address the challenge of conflict-free involvement of stakeholders into peatlands ecological restoration projects based on clear formulation of the targets and incentives on local, national and international level, costs-benefit analysis and methodology for indication of projects restoration success by ecosystem services.

Moderator: Tatiana Minayeva

# Friday, September 27, 2019

## Parallel Sessions 7 - 11h00 - 13h00

- 11:00 The incentives for peatland restoration:  
From pilots to international conventions  
**Tatiana Minayeva**
- 11:15 Partnerships in peatland restoration  
projects  
**Igor Semenov**
- 11:30 Resilience as a background principle of  
ecosystem restoration projects  
**Shane Grundy**
- 11:45 Peatland restoration support from local to  
national level: Case studies from South  
Africa  
**Piet-Louis Grundling**
- 12:00 When restoration contradicts the traditional  
land use  
**Burenbaatar Ganbaatar**
- 12:15 Paludiculture: A way to restore ecosystem  
services of peatlands with continued  
productive use for economic benefits  
**Jan Peters**
- 12:30 Engaging vulnerable groups in peatland  
restoration projects  
**Daria Ryazantseva**

## Meeting Room 11

### S38 - Maximising plant establishment potential: New tools and technologies

Ecologically-guided restoration practices are fundamental to maximising plant establishment potential - this symposium will present new tools and technologies.

Moderator: Alison Ritchie

- 11:00 Giving seeds a fighting chance: The use of  
seed enhancement technologies to  
overcome barriers to restoration success  
**Alison Ritchie**
- 11:20 Restoration-engineering and seed  
enhancement technologies offer new  
solutions for use in dryland (mine)  
rehabilitation  
**Todd Erickson**
- 11:40 Can delaying germination reduce winter  
mortality of fall-sown seeds in cold  
deserts?  
**Owen Baughman**
- 12:00 Protecting direct seeded grasses from  
herbicide application: Can new extruded  
pellet formulations be used in restoring  
natural plant communities?

# Friday, September 27, 2019

Parallel Sessions 7 - 11h00 - 13h00

**Vanessa Brown**

12:20 Application of restoration science to threatened species translocation: Insights from a short-range banded ironstone species

**Carole Elliott**

12:40 Rodent deterrent seed coating technologies for restoration seeding

**Justin Taylor**

# Friday, September 27, 2019

Parallel Sessions 8 - 14h30 - 16h30

## Hall A

### **S39 - The FEW Nexus & restoration: Achieving food, energy, and water security through ecological restoration in a changing climate**

We aim to develop explicit connections between the FEW (food-energy-water) nexus and restoration, advancing the ways that restoration practice, science, and policy facilitate food, energy, and water security and mitigate the impacts of food, energy, and water systems at local, regional, and global scales through invited speaker presentations and robust discussion.

Moderator: Mariah McIntosh

14:30 Restoration as a prominent solution to food-energy-water nexus challenges

**Mariah McIntosh**

14:50 The economic case for sustaining the marshes of southern Mesopotamia

**Azzam Alwash**

15:10 Modelling the interlinkages between food-energy-water and agricultural production in northern Ghana

**Martin Schultze**

15:30 Collective exploration of the impact of restoration in the Baviaanskloof through the lens of the Water, Energy, and Food Nexus

**Liezl le Roux and Justin Gird**

15:50 Why the UN Decade on Ecosystem Restoration matters for the Food-Energy-Water Nexus

**Musonda Mumba**

16:10 Discussion

## Hall B

### **S40 - Ecological restoration of mined areas in Asia, Africa and Oceania: Opportunities, approaches and policy (Session 2 of 3)**

This symposium focuses on Asian-African-Australian ecological restoration of mined area for academic exchange and experience sharing.

Moderator: Kingsley Dixon

14:30 Introduction

**Kingsley Dixon**

14:35 Making the most of seeds in mine site restoration

 **Simone Pedrini**

14:55 Ecological restoration on magnetite tailings: Six years of lessons learned

**Adam Cross**

# Friday, September 27, 2019

## Parallel Sessions 8 - 14h30 - 16h30

15:15 eDNA Metabarcoding - a new approach to monitoring of restoration

**Paul Nevill**

15:35 Using monitors to monitor mine site restoration: How does Australia's largest lizard species respond to mine site restoration?

**Sophie Cross**

15:55 Testing multiple substrates for terrestrial biodiversity monitoring using environmental DNA metabarcoding

**Mieke van der Heyde**

16:15 Discussion

## Hall C

### **S41 - Saving threatened species through ecological restoration**

Members of the Ecological Restoration Alliance of Botanic Gardens will provide guidance and illustrative examples of how to save threatened species through ecological restoration.

Moderator: Paul Smith

14:30 Species recovery programmes as an important component of ecological restoration: How restoration practitioners can learn from the botanic garden community

**Paul Smith**

14:50 How to monitor species and population recovery as part of ecological restoration programmes?

**Sandrine Godefroid**

15:10 Integrated scientific approaches to rare species restoration: Lessons learnt from Western Australia's Kings Park and Botanic Garden

**Carole Elliott**

15:30 Targeted action to restore populations of threatened plant species in the Cape Floristic Region

**Victoria Wilman**

15:50 Securing a future for the world's threatened trees through species recovery and ecological restoration programmes

**Kirsty Shaw**

16:10 Discussion

# Friday, September 27, 2019

Parallel Sessions 8 - 14h30 - 16h30

## Hall D-1

### **S42 - Sustaining catchment services through restoration and maintenance of ecological infrastructure: Global lessons from the uMngeni Catchment, South Africa**

This research symposium highlights some of the valuable research output and capacity building that has taken place within the context of restoration and maintenance of ecological infrastructure as part of the 5-year Centre for Water Resources Research project funded by the Water Research Commission.

Moderator: Graham Jewitt

14:30 Multi-sector partnership and collaborative water governance in the uMngeni Catchment

**Nontutuzelo Gola**

14:50 Catchment connectivity: A society-water-space trialectic

**Cathy Sutherland**

15:10 Benefits and costs of investing in ecological infrastructure for water security: Lessons from the uMngeni Catchment, South Africa

**Michelle Browne**

15:30 Optimising water and financial flows to guide investment in catchment protection and restoration

**Graham Jewitt**

15:50 Transdisciplinarity and social learning through socio-ecological research in the uMngeni Catchment, KwaZulu-Natal, South Africa

**Sabine Stuart-Hill**

16:10 Restored ecological infrastructure supports livelihood: Research provides the evidence

**Bonani Madikizela**

## Hall D-2

### **S43 - Soils, seedlings, and societies: Addressing limiting factors to increase post-planting growth and survival**

This symposium introduces the Target Plant Concept as a framework for planning, evaluating, and trouble-shooting restoration projects carried out with nursery-grown seedlings. To be successful, such projects need to consider seedling quality, as well as environmental, logistical, and social conditions that may limit seedling performance.

Moderator: Rebecca Sheridan

# Friday, September 27, 2019

## Parallel Sessions 8 - 14h30 - 16h30

- 14:30 The critical importance of nurseries for meeting ecosystem restoration goals  
**Diane Haase**
- 14:50 Why nurseries are successful and why nurseries fail  
**Kasten Dumroese**
- 15:10 Maximizing seedling outplanting success with organic soil amendments  
**Deborah Page-Dumroese**
- 15:30 Selecting and growing seedlings for desert ecosystems  
**Karma Bouazza**
- 15:50 Overcoming limiting factors to seedling establishment: Physiological, morphological, spatial, and temporal tactics  
**Jeremiah R. Pinto**
- 16:10 Discussion

## Meeting Room 02

### **W12 - Workshop ~ Greening the seas? Sharing our successes and challenges in marine and coastal restoration**

This highly interactive and participatory workshop will enable practitioners of marine and coastal restoration to share success stories, engage with traditional knowledge restoration frameworks, describe challenges and work together on solutions.

Moderators: Anuradha Rao and Richelle Kahui-McConnell

## Meeting Room 07

### **O19 - Mediterranean ecosystems**

Moderator: Carla Pinto-Cruz

- 14:30 Drought affects transitions between dominant plant species in California annual grasslands  
**Evan Batzer**
- 14:50 A good start but slow dynamics: Hopes and disappointment of a Mediterranean steppe grassland restoration experiment  
**Renaud Jaunatre**
- 15:10 Conditioning native plants to increase stress tolerance and improve restoration success  
**Justin Valliere**

# Friday, September 27, 2019

## Parallel Sessions 8 - 14h30 - 16h30

- 15:30 Restoration of Mediterranean temporary ponds in Portugal: Challenges and opportunities  
**Carla Pinto-Cruz**
- 15:50 What is preventing oak forest regeneration in human-modified landscapes? Evidence from a multi-site experiment in Central Mexico  
**David Douterlungne**
- 16:10 Comparing two contrasted methods to sand dune restoration after *Eucalyptus* clearing  
**Aviv Avisar**

## Meeting Room 08-09

### S44 - Restoration for whom, by whom?

In this session, we critically interrogate both the inclusivity and the sustainability of the restoration agenda and of restoration practices as these unfold across multiple places and scales.

Moderator: Marlene Elias

- 14:30 Stakeholders in Forest Landscape Restoration  
**Stephanie Mansourian**
- 14:45 A conceptual framework for exploring social and institutional dimensions of landscape restoration: The case of four market-based approaches in Kenya  
**Juliet Kariuki**
- 15:00 Using a political ecology lens to examine forest restoration, water insecurity, and climate change in rural Bolivia  
**Meagan Rathjen**
- 15:15 Equity and social inclusion in land restoration interventions in Ghana: Considering the 'by whom', 'for whom', and 'how'  
**Matt Kandel and Thomas Addoah**
- 15:30 How livelihood vulnerability influences participation in forest governance at the community level: A case study from Liberia  
**Sheila Onzere**
- 15:45 The politics of landscape restoration: Lessons from Vietnam  
**Pamela McElwee**
- 16:00 Discussion  
**Deepa Joshi**

# Friday, September 27, 2019

Parallel Sessions 8 - 14h30 - 16h30

## Meeting Room 10

### **O20 - Aquatic systems**

Moderator: Wandile Nomqophu

14:30 Restoring abandoned salt pans as waterbird habitat

**Johan Wasserman**

14:50 Hand weeding after direct seeding overcomes competition from high weed loads in riparian zones

**Fiona Ede**

15:10 How the characteristics of non-perennial pans in semi-arid conditions can inform their 're-creation' using the substrate from intact pans

**Fiona Eggers**

15:30 Assessing ecological outcomes of wetland restoration under resource constraints in South Africa

**Farai Tererai**

15:50 Creek restoration to support riparian habitat and extended flow

**Larry Vickerman**

16:10 Vegetative purification of Oman oil field byproduct water: A case study of the world's largest constructed wetland and its beneficial ecological offsets

**David Hancock**

## Meeting Room 11

### **S45 - Monitoring 30 years of large-scale tropical forest restoration: Results, advances, challenges, and opportunities of a multi-sector activity**

Recent advances allowed to monitor and identify drivers of tropical forest recovery and forest persistence in the last decades, and to quantify the outcomes for landscape composition. Based on these findings we are able to better discuss challenges and opportunities for successfully implementing large-scale forest restoration.

Moderator: Rafael B. Chaves

14:30 Challenges for large-scale restoration of tropical forests

**Pedro Brancalion**

14:50 Large-scale restoration in the Atlantic Forest: current status and perspectives

**Renato Crouzeilles**

# Friday, September 27, 2019

## Parallel Sessions 8 - 14h30 - 16h30

15:10 Geospatial tools and public policy: The decade of integration opportunities in the context of restoration commitments

**Rafael B. Chaves**

15:30 Mapbiomas: Methodology to produce 30 years of annual maps for forest dynamics

**Marcos Rosa**

15:50 How much is back and what are the consequences for habitat availability?

**Leandro Tambosi**

16:10 Age and persistence of secondary Atlantic Forests in Brazil

**Edson Santiami**

# Friday, September 27, 2019

Parallel Sessions 9 - 17h00 - 18h20

## Hall A

### **O21 - Fire**

Moderator: Raelene Crandall

17:00 Fire drives abandoned pastures to a savanna-like state in the Brazilian Atlantic Forest: Implications for ecological restoration

#### **Jerônimo Sansevero**

17:20 Fire, drought, and invasion of nonnative species interact to influence ecosystem resilience

#### **Raelene Crandall**

17:40 Pine savanna plant community patterns after fifteen years of biennial fires in different seasons

#### **Jennifer Fill**

18:00 An investigation into the fire regimes of the upper Tsitsa River catchment

#### **Gareth Snyman**

## Hall B

### **O22 - Trophic cascades and rewilding**

Moderator: Emily Gonzales

17:00 Restoring trophic cascades and the need for baselines and monitoring

#### **Rene Beyers**

17:20 Mapping the rewilding potential

#### **Néstor Fernández**

17:40 Developing a conceptual framework for restoring ecological function through rewilding: The Guam case study

#### **Hugo Thierry**

18:00 Ecological restoration through the management of hyperabundant wildlife: A 10-year review of predation, partnerships, and policies

#### **Emily Gonzales**

## Hall C

### **O23 - Invasive species - approaches**

Moderator: Beverley Clarkson

17:00 Preventing plant invasions by using botanic gardens and arboreta as sentinels

# Friday, September 27, 2019

## Parallel Sessions 9 - 17h00 - 18h20

### **Kurt Dreisilker**

- 17:20 Restoration as biocontrol: Mass-ratio or diversity-Invasion theory as guiding principle?

### **Kelly Lyons**

- 17:40 Reversing biodiversity decline in forest remnants: A restoration experiment using biocontrol beetles and manual clearance

### **Beverley Clarkson**

- 18:00 Connecting experts in biological and meteorological sciences to advance knowledge of pest management for restoration in a changing climate

### **Stephen Young**

## Hall D-1

### **S46 - Showcasing the importance of restoring fragmented habitats within an urban environment and sustaining the ecological resilience of high biodiversity hotspots within the Cape Town Metropole**

Restoring fragmented habitats within an urban environment through connectivity: highlighting ecological restoration, urban wetlands, species conservation, alternative veld management tools - restoring the ecological resilience of high biodiversity hotspots within the Fynbos biome.

Moderator: Anthony Roberts

- 17:00 Cape Flats Dune Strandveld: An endemic vegetation type in need of a helping hand

### **Louise Baldwin**

- 17:20 Survival of urban wetlands in Cape Town through wetland restoration

### **Andrea von Gunten**

- 17:40 Strandveld restoration within a complex mosaic in the absence of large herbivory

### **Zurelda Monique le Roux**

- 18:00 Restoring fragmented habitats using eland as a veld management tool

### **Petro Botha**

## Hall D-2

### **S47 - Seeds for global restoration, Session 5 of 5: Developing seed supplies and seeding strategies for Brazil's forests and savannas**

Seed networks and direct seeding strategies for Brazilian ecosystems upscale native seed supplies and enhance restoration success.

Moderators: Nancy Shaw and Sarah Barga

# Friday, September 27, 2019

## Parallel Sessions 9 - 17h00 - 18h20

- 17:00 Seed networks for upscaling native seed supply in Brazil  
**Danilo Urzedo**
- 17:20 Forest seed potential for direct seeding in tropical regions  
**Fatima Piña-Rodrigues**
- 17:40 Thirteen years of direct seeding for forest restoration in the Brazilian Amazon, Cerrado, and Atlantic biomes  
**Eduardo Campos Filho**
- 18:00 Tropical savanna restoration by direct seeding: Steps forward  
**André Coutinho**

## Meeting Room 08-09

### **O24 - Coastal reefs**

Moderator: Simon Branigan

- 17:00 Native oyster restoration in Europe: Background, progress, and best practice  
**Bernadette Pogoda**
- 17:20 Coastal reef restoration in temperate waters: Counteracting fish habitat loss with the construction of artificial stone reefs  
**Tim J.G. Wilms**
- 17:40 New global guidelines for shellfish reef restoration  
**Simon Branigan**
- 18:00 Integrative restoration protocols for temperate mesophotic reefs: The case of the Mediterranean coralligenous habitats  
**Silvija Kipson**

## Meeting Room 10

### **O25 - Urban areas**

Moderator: Ffion Atkins

- 17:00 A water sensitive Cape Town: Wetland restoration at a city scale?  
**Ffion Atkins**
- 17:20 The capacity of urban restored forests to support native birds: Ecological or social restoration?  
**Elizabeth Elliot Noe**
- 17:40 Restoration and stepping-stone corridor building in Cape Town: A school-node based, collaborative approach

# Friday, September 27, 2019

Parallel Sessions 9 - 17h00 - 18h20

**Frances Taylor**

18:00 Southern African cities in a changing climate: Investigating the transformative adaptation potential of the Sihlanzimvelo stream management programme

**Lulu van Rooyen**

## Meeting Room 11

**S48 - Transdisciplinary approaches in tropical forests restoration: Rethinking local communities participation and the physical attributes of the landscape (Session 2 of 2)**

Recognizing the difficulties and complexities to gain scale in forest restoration, in a context that involves multiple social actors, high environmental diversity and distinct levels of degradation, this symposium will discuss criteria that involve political, social, institutional, ecological and technological dimensions for mapping and prioritizing forest restoration areas.

Moderator: José Ambrósio Ferreira Neto

17:00 The operational dimension of ecological restoration: How to move from conceptual planning to the practice of planting trees with farmers and communities?

**Felipe Marauê Marques Tieppo**

17:20 Emergency recovery from the Fundão Dam failure: Preparation for ecosystem restoration

**Leonardo Ferreira da Silva**

17:40 Socioeconomic and environmental suitability of rural properties: A strategic engagement for community and forest recovery

**Lucas de Oliveira Scarascia**

18:00 Environmental recovery as a possibility of coping with social vulnerability in the Doce River Basin, Brazil

**José Ambrósio Ferreira Neto**

# Saturday, September 28, 2019

Parallel Sessions 10 - 11h00 - 13h00

## Hall A

### **S50 - Land restoration for improved livelihood in Africa: Challenges and opportunities**

In this symposium we will explore the challenges and opportunities in land restoration and focus on how restoration can improve the well-being of people in Africa. We will hear examples from Ethiopia, Malawi and Uganda, and get insight into how training and education can strengthen capacity in land restoration.

Moderator: Hafdis Hanna Aegisdottir

11:00 Review on land restoration training in eastern Africa: Case studies from Uganda

**Gerald Eilu**

11:20 Land rehabilitation for sustainable development in northern Ethiopia

**Mulugeta Sebhatleab**

11:40 Socio-economic factors affecting adoption of soil and water conservation measures in Malawi

**Setrida Mlamba**

12:00 UNESCO Man and the Biosphere (MAB) approach to ecological restoration in the Lake Chad Basin area

**Noëline Raondry Rakotoarisoa**

12:20 Capacity building for restoring land

**Hafdis Hanna Aegisdottir**

12:40 Discussion

## Hall B

### **S51 - Ecological restoration of mined areas in Asia, Africa and Oceania: Opportunities, approaches, and policy (Session 3 of 3)**

This symposium focuses on Asian-African-Australian ecological restoration of mined area for academic exchange and experience sharing.

Moderator: Klaus Kellner

11:00 Rehabilitation of mine tailings in Southern Africa

**Piet Van Deventer**

11:20 Rehabilitation of tailings storage facilities by re-seeding: A review of 10 years of research

**Klaus Kellner**

11:40 Rehabilitation of opencast coal mines in the Mpumalanga Highveld, South Africa: Challenges and opportunities

**Phil Tanner**

# Saturday, September 28, 2019

## Parallel Sessions 10 - 11h00 - 13h00

12:00 The status quo of mine rehabilitation policy frameworks in Southern Africa

**Fanus van Wyk**

12:20 Using landscape function analysis as a mine rehabilitation monitoring tool in South Africa

**Adrian Haagner**

12:40 Discussion

## Hall C

### S52 - Advancing resilience science for ecological restoration

Our symposium will showcase advances in the theory and practice of resilience that can be used to confront ongoing challenges associated with the application of resilience science to the restoration of land, water, and communities.

Moderator: Victoria Donovan

11:00 Managing for surprise and uncertainty in ecosystems

**Craig R. Allen**

11:20 Dryland degradation as a social-ecological regime shift: A Sub-Saharan case study

**Kristi Maciejewski**

11:40 How ecosystem networks reveal resilience

**Amy Shurety**

12:00 Tracking wildfire driven regime shifts across a biome: Implications for ecosystem restoration

**Victoria Donovan**

12:20 Monitoring outcomes: Transitioning from local restoration projects to regional restoration of pattern and process

**Dillon Fogarty**

12:40 Restoring old-growth grasslands: A major problem in the aftermath of global tree-planting

**William Bond**

## Hall D-1

### O26 - Restoration at the catchment scale

Moderator: Stanley Liphadzi

11:00 Application of an EFlows Model in the eco-revitalization of the River Ravi, Pakistan

**Catherine Brown**

# Saturday, September 28, 2019

## Parallel Sessions 10 - 11h00 - 13h00

11:20 Restoring the Colorado River Delta: A framework for binational cooperation in restoration science, finance, and resource management

**Peter Skidmore**

11:40 Riparian Rehabilitation in the upper Berg & Breede River, Western Cape, South Africa

**Johann van Biljon**

12:00 A cost-benefit analysis of river restoration in Switzerland

**Ivana Logar**

12:20 Integrated Catchment Management in Lesotho

**Henrik Hartmann and Makomoreng Fanana**

12:40 Lessons learnt from global fish passage practices and how this translates to the current restoration and protection of rivers and fish passage in Africa

**Kieren Bremner**

## Hall D-2

### O27 - Seed and seedlings

Moderator: Owen Baughman

11:00 State of the research: Using activated carbon in herbicide protection pods to simultaneously reseed desirable species and treat invasive annual weeds

**Owen Baughman**

11:20 Testing for evolutionary change in restoration: A genomic comparison between ex situ, native, and commercial seed sources of *Helianthus maximiliani*

**Jill Hamilton**

11:40 Using dispersal and germination life traits of native vegetation to promote ecological restoration in southern New Caledonia

**Bruno Fogliani**

12:00 The importance of root hydraulic function for the survival of planted seedlings in dry conditions

**Rebecca Sheridan**

12:20 Long-term effects of ecological restoration on soil seed banks in urban forest patches

**Lea Johnson**

12:40 Germination strategies of selected Kuwaiti desert plants and their implications for dryland restoration

**Narayana Bhat**

# Saturday, September 28, 2019

Parallel Sessions 10 - 11h00 - 13h00

## Meeting Room 02

### **W13 - Workshop ~ Why post-fire management is so different among Mediterranean-climate countries? Looking for an integrated strategy**

The workshop will discuss the various, often contrasting post-fire management approaches that are usually adopted in the different Mediterranean-climate countries in order to develop an integrated strategy for the MCRs

Moderator: V. Ramon Vallejo

## Meeting Room 07

### **O28 - Invasive species - cases**

Moderator: Griffin Shanungu

11:00 Mountain Catchment Area restoration as an extreme sport: A case from South Africa

**Donovan Kotze**

11:20 Spatial prioritisation of invasive alien plants clearing on La Réunion Island

**Pauline Fenouillas**

11:40 Restoring ecosystem function: The conundrum of woody encroachment in South Africa

**Kathleen Smart**

12:00 To restore or not to restore: Examining the socioeconomic impacts of *Prosopis juliflora* in the Banni grassland, India

**Ramya Ravi**

12:20 Influence of herbivores on ecological restoration after invasive shrub clearing in the Kafue Flats Wetlands, Zambia

**Griffin Shanungu**

12:40 Discussion

## Meeting Room 08-09

### **S53 - Microbes in restoration ecology**

In this session, we critically interrogate both the inclusivity and the sustainability of the restoration agenda and of restoration practices as these unfold across multiple places and scales.

Moderator: Ferran Garcia-Pichel

# Saturday, September 28, 2019

## Parallel Sessions 10 - 11h00 - 13h00

- 11:00 Understanding changes in biological soil crust's bacterial communities in rehabilitated sites of phosphate mines in the Negev Desert  
**Talia Gabay**
- 11:20 Beneficial heterotrophs enhance the effectiveness of cyanobacteria-based biocrust restoration in drylands  
**Ferran Garcia-Pichel**
- 11:40 Development and application of microbial inoculum for biological soil crust restoration in drylands  
**Ana Giraldo Silva**
- 12:00 Trees, soils, and microbes: Restoration of degraded landscapes  
**Peter Edward Mortimer**
- 12:20 Indigenous soil microbes as bio-tools for enhancing plant diversity and soil function in dryland restoration  
**Miriam Muñoz-Rojas**
- 12:40 Use of nitrogen fixers in the restoration of legume shrubs in Mediterranean ecosystems  
**María Pérez-Fernández**

## Meeting Room 10

### O29 - Human dimensions

Moderator: Anazelia Tedesco

- 11:00 Positioning scientists as relevant and respectful partners in forest restoration  
**Elizabeth G. King**
- 11:20 Restoration, projectality, and the projectization of local development  
**Jon Anderson**
- 11:40 Towards ethical water management: Piloting an ethics methodology on the Cape Flats Aquifer in the Philippi Horticultural Area  
**Leanne Seeliger**
- 12:00 Gender-responsive forest restoration: Supporting ongoing initiatives in Brazil  
**Anazelia Tedesco**
- 12:20 Cultivating camas connections  
**Kathryn Matthews**
- 12:40 Community participative eco-restoration of degraded sacred groves in the Western Ghats, a global biodiversity hotspot in southern India

# Saturday, September 28, 2019

Parallel Sessions 10 - 11h00 - 13h00

Meera Chandran

## Meeting Room 11

### O30 - Using genetic data in restoration and seed sourcing decisions

Moderator: Francis Kilkenny

11:00 Phenotypic and molecular genetic differentiation of *Prosopis flexuosa* (Leguminosae) provenances: Implications for Argentinian arid lands restoration

**Mariano Cony**

11:20 Determining the scale of local adaptation: What can we learn from a large-scale reciprocal transplant study of an important restoration grass species?

**Francis Kilkenny**

11:40 Restore & Renew: Providing large-scale evolutionary, environmental, and ecological information in support of restoration practices

**Maurizio Rossetto**

12:00 Using SNP genetic data to create provenance maps for seed sourcing

**Sheree Walters**

12:20 Introducing genomics in restoration ecology: How many seed zones does *Carex bigelowii* have in Norway?

**Kristine Westergaard**

12:40 Seed sourcing for plant restoration: Provenance effects alone do not categorically define seed sourcing methods under field conditions

**Bahram Mirfakhraei**

# Saturday, September 28, 2019

Parallel Sessions 11 - 14h00 - 16h00

## Hall A

### **S54 - Priority regions for implementing global restoration commitments**

Recent advances allowed to monitor and identify drivers of tropical forest recovery and forest persistence in the last decades, and to quantify the outcomes for landscape composition. Based on these findings we are able to better discuss challenges and opportunities for successfully implementing large-scale forest restoration.

Moderator: Pedro H. S. Brancalion

14:00 Global restoration opportunities in tropical rainforest landscapes

**Pedro H. S. Brancalion**

14:20 Landscape variation in biodiversity recovery for tropical and temperate

**Renato Crouzeilles**

14:40 Global multicriteria and multibiome priority maps for restoration and their associated vast contributions to biodiversity conservation and climate change mitigation

**Bernardo Strassburg**

15:00 The role of Brazil in leading the global restoration movement

**Miguel Calmon**

15:20 Alignment of biodiversity and ecosystem service benefits under forest and landscape restoration

**Fangyuan Hua**

15:40 Discussion

## Hall B

### **O31 - Wetlands**

Moderator: Kate Snaddon

14:00 Ecological opportunities and constraints for wetland restoration for water quality enhancement

**Adwoa Awuah**

14:20 Assessing the structural integrity and functionality of wetland restoration interventions: A case from Working for Wetlands, South Africa

**Eric Munzhedzi**

14:40 A multi-criteria analysis approach to strategic planning for wetland rehabilitation in South Africa - progress and pitfalls

# Saturday, September 28, 2019

## Parallel Sessions 11 - 14h00 - 16h00

### **Kate Snaddon**

15:00 Wetland restoration policies in the European Union

### **Kris Decler**

15:20 Restoration in freshwater ecosystems: Taking climate change into account

### **Leonard Sandin**

15:40 Are the 'building blocks' of South Africa's wetland restoration working? A focus on the integrity and functioning of structural interventions

### **Craig Cowden**

## Hall C

### **S55 - Enhancing forest restoration in Africa: How to select species and deliver restoration that benefits people and biodiversity**

This symposium will share experiences learned from forest restoration projects in Kenya, Uganda and Malawi, that have brought significant livelihood benefits to rural communities, as well as benefiting native and threatened biodiversity.

Moderator: Kirsty Shaw

14:00 Selecting species and delivering forest restoration that benefits people and biodiversity: Tools and resources

### **Kirsty Shaw**

14:20 Species-diverse forest restoration in East Africa for biodiversity conservation

### **Mark Nicholson**

14:40 Establishing seed collecting networks and community nurseries to ensure Uganda's Bonn Challenge pledge brings benefits to people and biodiversity

### **Godfrey Ruyonga**

15:00 Restoring the forests of Mulanje Mountain: Securing a future for a Critically Endangered tree and providing jobs for more than 500 people

### **Ibrahim Mitole**

15:20 Ex-situ plant conservation in eastern Madagascar: Creating a resource for future forest restoration endeavours

### **Chris Birkinshaw**

15:40 Discussion

## Hall D-1

# Saturday, September 28, 2019

## Parallel Sessions 11 - 14h00 - 16h00

### **O32 - Knowledge transfer**

Moderator: Emma Ladouceur

14:00 Ecological restoration 30 years later:  
Which priorities should we focus on?

**Mauro Horacio Fernández Cuppari**

14:20 Promoting rangeland restoration and  
climate resilience through case studies

**Tipton Hudson**

14:40 Looking outside scientific literature: What  
is restored, and which factors decide?

**Dagmar Hagen**

15:00 The critical value for transferring  
knowledge between restoration projects

**Pål Skovli Henriksen and Dagmar**

15:20 The decade of ecological restoration:  
Plans for required urgent synthesis of  
restoration across ecosystems and  
treatments

**Emma Ladouceur**

15:40 Scaling up landscape restoration through  
education on sustainable business models

**Berglind Orradottir**

## Hall D-2

### **S56 - Restoration ethics: The human part of the restoration puzzle**

The purpose of this symposium is to explore how human relationships with nature affect restoration accomplishments and how to (possibly using translational research) integrate restoration goals with stakeholder and practitioner values.

Moderator: Diane Larson

14:00 The land ethic, restoration, and me

**Diane Larson**

14:20 Naming invasive alien plants (IAPs) into  
indigenous languages: KwaZulu-Natal  
case study, South Africa

**Bheka Nxele**

14:40 Emotion-based restoration planning and  
communications tool – understanding and  
removing barriers to restoration  
collaboration

**Tom Hilditch**

15:00 Public resistance against ecological  
restoration: Possible reasons and feasible  
solutions

**Robert Pal**

# Saturday, September 28, 2019

## Parallel Sessions 11 - 14h00 - 16h00

15:20 Can translational research be used to engage and hear stakeholders, rather than another mechanism to get others to agree with us?

**Aida Farag**

15:40 Discussion

## Meeting Room 07

### **O33 - Restoring social-ecological systems**

Moderator: Berit Köhler

14:00 Planning and implementing restoration projects from a social-ecological systems perspective - which aspects should be included on the "social" side, and when to consider them?

**Berit Köhler**

14:20 A relational understanding of social-ecological restoration: New perspectives for restoration research, policy, and

**Jessica Cockburn**

14:40 Perceptions of French practitioners on applying the cultural landscapes concept in ecological restoration

**Tiago Toma**

15:00 Resources, restoration, rights, relevance and resilience: The role of facilitating access to natural resources from within a protected area, South Africa

**Louise Swemmer**

15:20 Incorporating community participation and native plant resource conservation with degraded subtropical forest restoration

**Zhanfeng Liu**

15:40 Curbing inexorable attrition of Albany Thicket: Working towards coordinated approaches and solutions

**Kyra Lunderstedt**

## Meeting Room 08-09

### **O34 - Drastic disturbances - cases**

Moderator: Nana Esi Assiredua Aidoo

14:00 Germination analysis of naturally and ecologically-restored sites in phosphate mining fields in Zin Valley, Israel

**Tom Zylberberg**

# Saturday, September 28, 2019

## Parallel Sessions 11 - 14h00 - 16h00

14:20 Ongoing restoration on phosphate open-pit mining fields: What can we learn from the arthropod community?

**Guy Rotem**

14:40 Biodiversity responses to restoration of linear features associated with oil and gas exploration in boreal peatlands of western Canada

**Jaime Pinzon**

15:00 Restoration in Canada's oil sands

**Neil Sandstrom**

15:20 Building a comprehensive compensations strategy for the eastern Cesar department, Colombia

**Pilar Vasquez Noriega**

15:40 Perception of stakeholders on the posting of reclamation bonds in the small-scale mining sector in Ghana: A case study of Prestea Huni-Valley District, Ghana

**Nana Esi Assiredua Aidoo**

## Meeting Room 10

### O35 - Coastal vegetation

Moderator: Anuradha Rao

14:00 Diagnostic phytoplankton pigments as indicators for measuring restoration success in coastal waters

**Anne Goffart**

14:20 A decision framework for restoring kelp beds: A case study in eastern Tasmania

**Cayne Layton**

14:40 A thorough and accessible method for restoration site selection: A coastal case study using seagrass

**Anuradha Rao**

15:00 A preliminary study on aquatic vegetation restoration in the northwestern Arabian

**Takahiro Yamamoto**

15:20 Performance and biomass: Carbon sequestration of rehabilitated mangroves in Myanmar and Vietnam

**Sang Phan**

15:40 Participative ecological restoration of the mangrove ecosystem in the Monterrico Multiple Use Reserve: Capacity building to restore degraded mangrove areas in the Pacific Coast of Guatemala

# Saturday, September 28, 2019

Parallel Sessions 11 - 14h00 - 16h00

Ana Silvia Morales

## Meeting Room 11

### S57 - Restoring Nature: An ant job!

During this symposium, based on several experimental or large scale ecological restoration operations, it will be demonstrate that ants can be used as ecological engineers for restoration because of their key roles on numerous ecosystem functions such as soil modification, seed dispersal, invasive species control, etc.

Moderator: Thierry Dutoit

14:00 Topsoil removal compromises campo rupestre regeneration by reshaping diaspore fate and interactions with potential ground-dwelling dispersers

**Andre Arruda**

14:20 Above and below-ground effects of harvester ants in Mediterranean dry grasslands

**Tania De Almeida**

14:40 Restoring ecosystem services provided by ant communities in a savannah-like ecosystem

**Clara Frasconi-Wendt**

15:00 Novel ant assemblages in multi-perturbated Neo-Caledonian ecosystems: Limit or opportunities for their restoration?

**Olivier Blight**

15:20 Complete disruption of rehabilitation succession on a mine site in northern Australia by fire exclusion and invasive ants

**Ben Hoffman**

15:40 Using harvester ants for restoring Mediterranean dry grassland vegetation and soil after a petroleum leak

**Thierry Dutoit**