



NELSON MANDELA
UNIVERSITY

**Sustainability Research Unit
Research Associate Symposium Report**

6 August 2018
Nelson Mandela University
Sustainability Research Unit
George Campus



Developing research themes and key questions for understanding multi-functional landscapes

Compiled by: Dr. Bianca Currie
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Introduction

The Sustainability Research Unit's (SRU) seeks to be an energizing open space for inter, multi and trans-disciplinary thinking and learning for motivated students and academics to come together to thrive and grow. The unit vision is to be a space where talented people come together to think, learn and co-create inspiring ideas. The annual Research Associate Symposium is one such space created by the unit for the purposes of learning, co-creating and sharing. In the past the symposium has showcased and celebrated research work and its outcomes undertaken by associates within the SRU and the School of Natural Resource Management (SNRM) on the George Campus of Nelson Mandela University. The 2018 symposium reflected on current research on the George Campus and additional areas of potential research and practice within a social ecological framework.

The relationship between humans and their environment is embedded in a complex social-ecological system (SES) in which social and ecological components are integrated. SES's are composed of several subsystems and internal variables at spatial and temporal scales. Anderies *et al.* (2004), Ostrom (2009) and more recently McGinnis and Ostrom (2014), provide a common framework by which to assess the social and ecological dimensions and identify the variables for study that can contribute to sustainable resource use and management.

The social-ecological systems framework and the multi-functional landscape context provided a common research space to bring together research associates, academics, students and practitioners to cross disciplinary boundaries and to discuss the impact of ongoing and new research in the field of natural resource management and its allied disciplines. The social-ecological systems framework helps to transcend differing resource sectors, geographic areas, biophysical conditions and temporal domains providing a common language and structure in which to describe, diagnose and organise research findings so that they are comparative.

Abstracts for the SRU Research Associate Symposium were invited to illustrate critical issues highlighting one or more of the components (sub systems) found within a social-ecological system and how the topic contributes to understanding a particular social-ecological system problem. The symposium offered a diversity of engagements which included the presentations to set the scene for plenary and small group dialogues, a social networking event and field trip on the second day.

The SRU symposium was designed to elicit contributions from SRU partners and research friends for the design of a science programme for an international mixed research unit proposal being submitting to the French institute, Centre National de la Recherche Scientifique (CNRS). The SRU is formulating the proposal together with partners from Lyon University in France, local partners such as the Nelson Mandela University's, School of Natural Resource Management and the South African Environmental Observation Network (SAEON). The outcomes of the SRU Research Associate Symposium contributed to the scientific programme component of the proposal. This short report documents who attended, the various engagements and the outcomes of the event.

Participants

An invitation to the SRU Research Associate Symposium (see Appendix 1 – invitation) was sent to SRU and SNRM Research Associates, partners and friends. There were a total of 23 attendees who are listed in Table 1 below.

Table 1. Complete list of attendees at the SRU Research Associates Symposium

Name	Organisation
Prof. Andrew Leitch	NMU, Deputy Vice Chancellor: Research
Dr. Kwezi Mzilikazi	NMU, Director: Research Management
Dr. Bianca Currie	NMU SRU, Director
Ms. Stef Freitag	SANParks
Mr. Stephen Stead	Visual Resource Management Africa
Dr. Karin Badenhorst	Footsteps Foundation
Prof. Dirk Roux	SANParks / SRU Adjunct Professor
Mr. Joh Henschel	SAEON
Ms. Amanda Manyami	Rhodes University, Masters student
Prof. Rob Fincham	NMU SRU, Research Associate
Dr. Jackie Dabrowski	NMU SRU, Research Associate
Prof. Christo Fabricius	NMU SRU, Emeritus Professor
Navashni Govender	SANParks
Dr. Chloe Guerbois	NMU SRU, Post Doctorate Fellow
Current Musunungure	NMU SRU, PhD student
Sibo Nontangana	NMU SRU, Masters student
Braam du Preez	NMU SNRM lecturer
Prof. Herve Fritz	NMU SRU, Adjunct Professor
Dr. Lisa Heider	NMU SRU, PhD graduate
Ms. Simone Heymans	Independent researcher
Ms. Jama Mashele	NMU SNRM PhD student and lecturer
Ms. Samantha McCulloch	NMU SRU, PhD student
Dr. Jan Venter	NMU SNRM faculty member

Method of engagement

The SRU Research Associate Symposium programme provided space for several presentations, plenary and small group dialogues, a networking event and field trip. The symposium programme (Appendix 1) began with a welcome note from Dr. Bianca Currie who opened the event inviting participants to be a part of developing a research agenda for an International Mixed Unit science project being formulated at the SRU. Her welcome was proceeded by a keynote address from Prof. Herve Fritz, Adjunct professor with the SRU which followed from the enthusiasm expressed for Long Term Social Ecological Research in Africa at the Future Earth Seedbeds of Transformation Conference in Port Elizabeth early in the year. Prof. Fritz focused on the needs and benefits of long term social-ecological research (LTSER) and provided a more detailed look at the International Mixed Unit proposal representing a collaboration between French universities and South African partners.

The key note address was followed by several presentations given by associates and partners. The abstracts for these presentation follow:

- Prof Christo Fabricius – Welcome to the new face of the Anthropocene: the interface - The interface is a zone of intersection where e.g. two or more adjacent land uses (such conservation and agriculture) join and mesh; where two ecosystems (e.g. aquatic and terrestrial) form an ecotone; where several knowledge systems and mental models (e.g. natural and social sciences, formal and informal knowledge systems) connect; or where several sectors of society (e.g. farmers, academics, authorities and NGOs) interact. Conventionally, the interface is seen as messy and overly complex. Most actors and agencies stay away from the interface, unless to resolve conflicts, resist incursion or infringe on each other’s intellectual, institutional or real property rights and territories. The interface is also an unexplored area of diversity and creativity, whether referring to ecosystem processes and benefiting from ecosystem services, problem solving, creative thinking, economic opportunities or seeking institutional synergies. This is what I wish to explore in this presentation: how to harness the creative potential of ecological, mental and institutional interfaces for the long-term benefit of conservation (defined as the Biodiversity Convention does). The output will be a discussion outlining different perspectives about the interface, with practical suggestions about harnessing the creative potential of ‘interface-centred management’, with an emphasis on conservation.
- Dr. Joh Henschel - Karoo trajectories of change in the Anthropocene - The Karoo is often regarded as South Africa’s best-kept secret, an arid remote Outback to be left untouched by new developments lest it loses its special character. Covering a good third of South Africa, the Succulent- and Nama-Karoo, however, now face many changes from internal and external factors. It is time to take stock of current knowledge and challenges concerning the Karoo’s ecological and social dimensions. Accordingly, the GSSA has planned to publish a Karoo Special Issue in the African Journal of Range and Forage Science. This Issue boasts an impressive array of information. An overarching lead article is followed by six sections, each with several articles, concerning the following themes: Climate in the Anthropocene, Gharo across History, Long-term Trends and Processes, Dynamics of Current Developments, Farming Impacts, Ecosystem Processes and Rehabilitation, and ends with a Synthesis. Ironically, Karoo ecology has received more scientific attention than its people, and the Karoo Special Issue therefore sets out to merge different disciplines, if not in individual papers bar the transdisciplinary Lead Article, then at least by the arrangement of different articles. The Karoo Special Issue will be published by the end of 2018.
- Prof. Dirk Roux - Cultural ecosystem services as emergent properties of people-place interaction in national parks - This presentation will explore (a) the diversity of activities on offer in national parks that facilitate people-place interactions; (b) how these activities translate into cultural ecosystem services; and (c) the main factors influencing delivery of cultural ecosystem services by national parks. Three relatively divergent parks served as case studies: Garden Route (relatively open access and spatially fragmented), Table Mountain (nestled around a city), and Mountain Zebra (fenced with iconic large herbivores and carnivores) National Parks. Focus group meetings were held with staff

from each of the parks to identify activities that facilitate people-place interactions. The relationship between these activities and six classes of cultural ecosystem services (aesthetic appreciation, cultural heritage, education, recreation, sense of place and social relations) were then explored. Finally, participants were prompted to elaborate on the enablers, threats, opportunities and trade-offs related to providing each class of cultural ecosystem service as experienced in their park.

We found that each park offered a multitude of activities that allowed visitors to interact with nature or places of cultural interest, with most activities translating into more than one class of cultural ecosystem services. There were distinct differences between parks, for example one park employed field guides to enable certain people-nature interactions (e.g. cheetah tracking) whereas another outsourced many activities to concessionaires. The fenced park could regulate activities and participation through gated access and a booking system whereas staff from open-access parks often felt overwhelmed by people's ever-changing means of access and ways of interacting with nature. Across all three parks affordability and income potential were important factors in weighing trade-offs, such as between introducing a new species and offering a new experience, or facilitating access to a safe and healthy environment and charging fees for enjoying nature experiences. Based on these and other insights from the study, we make recommendations to help inform SANParks' ongoing balancing of their dual mandate of conserving biodiversity and contributing to societal well-being.

- Dr. Karin Badenhorst, Prof. Robert Fincham and Stephen Stead - Towards Building an Adaptive Governance Research Framework: Key Drivers to Enable Sustainable Transformation in the SEE (Socio Economic Ecological) Nexus - We are in the process of building a research framework, exploring alternative governance mechanisms to enable sustainable transformation in the SEE Nexus. Adaptive governance has been widely applied in the Climate Change study field, especially in the context of the interaction between Social Science and Ecology (Socio-Ecological Systems). By bringing Economic Systems into this relationship, a whole new range of challenges and opportunities will be introduced in the search for sustainable solutions to counter the increasing range of socio-ecological threats to our planet and society. In the development of the framework different types of events will be explored, considering interventionist sources of transformation versus more evolutionary transformation, considering both the destructive and constructive character of events. The concept of new economic pathways within the context of sustainable ecological corridors, should lead to value creation as opposed to value destruction, evolving a new definition of value in the SEE nexus. Key drivers in the SEE nexus will be identified, including for example drivers that can enable or stifle the shift from power, property and poverty to people, planet and progress. We believe the concepts of adaptive governance can be extended to facilitate a continuous transformative process. The framework will aim to substantiate conceptual philosophy with practical reality, for example, by aligning the conceptual and spatial perspectives with actual marginalised or threatened communities and ecologies, in particular focusing on the various forces driving urban, peri-urban and rural land-use. We believe that the development of this body of work in the form of an overarching research framework, linked to long term SEE research monitoring and evaluation, will open up a wealth of further research and study opportunities to add further value to the excellent work currently being done at the SRU.

- Ms. Amanda Manyani – How do urban dwellers identify with features within the urban green spaces in the Eastern Cape? - Public urban green spaces contain various features that play a crucial role in supporting urban social-ecological systems. The various natural and artificial features contained in public urban green spaces are key contributors to the quality of life and well-being of urban dwellers. Yet, this has been largely ignored in urban design in South Africa, especially in the poorer townships. Additionally, most research on the links between nature and human well-being in urban areas comes from developed world contexts which assume a westernised view of the relationship. Yet, in many societies of the global South, including in South Africa, worldviews and experiences of nature takes on different meanings to those of the global north. To show these differences, a combination of methods was used in this study, green spaces were assessed and evaluated by structured observations so as to record the available features within the spaces. A survey of 360 interviews was conducted by targeting green space users and those households within 100 metres from a green space. Results indicated that, across all the green space types, they were low levels of maintenance, safety, recreational facilities and natural elements. The attributes of these spaces therefore influenced the motives of visitors as more than 90 % of the respondents stated passing through only when in transit whilst the active motives of visiting the spaces were only pursued by a few. With regards to attitudes and preferences towards particular features, they were strong negative feelings towards natural features. This reveals that the current design and features within the studied urban green spaces does not offer a better well-being and quality of life that other countries enjoy in the developed world. The South African specific context in green space utilisation, perception and people's preferences is thus crucial for urban planning and sustainability.
- Dr. Jackie Dabrowski - Rising eutrophication levels in the wake of institutional decay - South Africa is a semi-arid country with an average annual rainfall below 500 mm, compared with the world average of about 860 mm. With such a limited, yet critical resource, stressed water quantities are frequently at the fore in public debate. There is growing concern that the quality of our natural water resources is in decline which exacerbates the limits of supply. Impacts affecting our water quality are diverse and include industrialisation, mining, agriculture and urban development. A concerning trend is the increase in partially treated or untreated sewage entering our watercourses. Rich in nutrients, organic matter, endocrine disrupting compounds and pathogens, this represents a threat to our ecosystems and their ability to sustainably deliver services such as clean water, recreation, tourism and fisheries. As a semi-arid country, we rely heavily on water stored in impoundments. Impoundments which are sensitive to eutrophication and degradation if the inflowing water contains sewage. The impacts can be devastating to ecosystems and a case study is presented on the Bronkhorstspuit River as an example. But why is this happening, and what can be done about it? Attempts to answer these questions have revealed numerous complex management problems present at different scales (e.g. municipal and national). Many of these problems can be addressed with simple preventative maintenance but institutional complexity has rendered simple solutions almost impossible to achieve. As a result, a general feeling of apathy has begun to surround the issue of sewage in natural water resources, and there is a sense that this

is the 'new norm'. Concerned groups raise red flags, only to discover that institutions mandated to protect our water resources are largely non-functional and in a state of disarray. In some cases, this has led to the self-organisation of groups and individuals concerned about deteriorating water quality in their locality. Learning opportunities are discussed from these groups, along with a call to elevate this issue to the highest level on the national agenda.

The presentations set the scene for dialogues focused on the critical issues and research opportunities in long term social-ecological systems research and aimed at developing research themes and key questions.

Plenary and small group dialogue around critical social-ecological systems (SES) issues

Drawing on the diverse collective perspectives and intelligence in the room a plenary and two small group dialogues of twenty minutes each, were facilitated. The desired outcomes of the dialogues was to formulate a research agenda, identifying themes, priorities and research areas and to formulate key questions we should be asking for the next five years. The SRU hoped to identify the priorities for their research partners, and friends in light of the International Mixed Unit's scientific proposal. The focus of each dialogue included:

- Plenary dialogue: The plenary conversation was initiated by posing a question to the group. Participants were asked how we build a multi-functional production landscape that preserves the potential for eco system services? The question was designed to provide a context in which any of the participants would be able to situate their work and experience. It was also designed to develop a shared repertoire for the small group dialogues.
- Small group dialogues: Also drawing from the collective intelligence of the group, the small group dialogues were based on a social learning approach where small groups of participants interact, engage and deliberate with one another. They reflect on their own and other perspectives, exchanging knowledge and co-creating innovative ideas. Participants were expected to contribute their own thinking and experiences, share their views and ideas, respect everyone's view as equally valid and without judgment, listen to understand and with empathy, connect ideas, listen together for patterns, insights and deeper questions and question assumptions. The small group dialogues were aimed at plotting the way forward for research for a socially just and ecologically sustainable future.

In the first dialogue participants were tasked with formulating a research agenda by identifying themes and priority research areas the IMU could support. In the second dialogue the participants were tasked with formulating key questions we should be asking for the next five years.

Cheese and wine social networking event

At the end of the day a social networking event was held. The event was an opportunity to wind down and provide an informal space for further engagement and discussion. The event showcased local wines from the Herold Winery in Waaboonskraal.



Figure 1. Research Associate Symposium participants (from left), Dr. Lisa Heider (SRU, PhD graduate), Amanda Manyani (Rhodes University, Masters student), Dr. Bianca Currie (SRU Director), Prof. Andrew Leach (NMU DVC: Research), Sibon Nontangana (SRU, post graduate researcher) and Dr. Stephanie Freitag (SANParks).

Field Trip

Despite the cold and wet weather, a small group of participants joined in on a field trip the following day. The field trip included stops in Smutsville, Sedgefield to explore sustainability challenges against a backdrop of climate change and human environment tensions. The group considered urbanising challenges and took a closer look at the features of a typical formal green space and youth community centre within a low-income area in the Knysna Municipality which helped to provide insight into the social reality of the youth in the area. The session was led by Professor Robert Fincham and Amanda Manyani from Rhodes University.

The group moved on to Brenton-on-sea for lunch and discussions, led by Braam du Plessis and Dr Tineke Kraaij from the Nelson Mandela University School of Natural Resource Management, on the complexity of prescribed burning in a mosaic landscape, and the effects of fire on fynbos and coastal thicket vegetation. The discussions considered how varying fire intensities affected natural recovery of vegetation post the Knysna Fire in 2017 and included examples of current research taking place by Nelson Mandela University master students, Sam Msweli and Tiaan Strydom.

Dialogue outcomes

The participant deliberations in the small group dialogues were captured on flipchart papers and later transferred into an electronic format for ease of analysis. An adapted Wordle (<https://wordart.com>) of the text captured on flipchart papers provides an overview of the words commonly used in the conversations. See Figure 2.



Figure 2. Wordle derived from the text captured from small group dialogues

From the Wordle, human nature connectedness and co-existence featured strongly as a theme for research in social-ecological systems, as did governance. Participants in the symposium also highlighted several priorities for research. There was strong agreement that communication, collaborations and sharing scientific outputs was an imperative as was multi-disciplinary approaches to our work.

Using Atlas ti software and an inductive process of coding the written flip chart notes from each of the small group dialogues the dominant themes and research principles put forward by the participants were order and grouped. Frequency counts was used to prioritise the emergent themes which can be found in Table 2.

Table 2. Emergent research themes from the small group dialogues.

Theme	Frequency count
Theme - SES (scales, interactions, interfaces & co-existence)	22
Theme - Value creation, benefits, trade-offs & vulnerability transfers	10
Theme - Sustainability transformations, climate change and & SDG Goals (incl. social justice & food security, water)	10
Theme - Governance	8
Theme - Migration, Land reform & urban planning	5
Theme - M & E (indicators)	4
Theme - Social learning & collective understanding	4
Theme - Ecosystems	3
Theme - Global change (4 th industrial revolution, technology)	1
Theme - Power	1

Participants also made a strong call for greater collaboration in inter-, multi- and trans-disciplinary research where existing paradigms should be challenged. The need for mechanisms, platforms and strategies for better communication and sharing of work was expressed and supervision and funding were raised as challenges for research.

Lastly, participants posed 13 key questions for research going into the next five years. These questions include:

1. What is the influence of scale on social-ecological systems?
2. How does knowledge transcend multiple boundaries?
3. How to identify social-ecological thresholds and regime shifts?
4. How do protected areas contribute to social-ecological resilience at different scales?
5. How to engage prior local knowledge in social-ecological adaptation?
6. What are the trajectories of change and how stable is the system going to be?
7. How can we create employment in the chaos in every field?
8. What are the alternatives to economic solutions to sustainability?
9. What are cultural connections to nature? (Diversity of cultural connections)
10. How do we contain our urban footprint in a critical diverse landscape? (Interfaces urban/natural)
11. How does mobility shape functionality of landscapes? (Power & privilege; Economics; Climate change)
12. How do we move towards adaptive governance for a changing context? (Value; 4th industrial revolution; Global change)
13. How do we encourage innovation in the African context?

Conclusion

The SRU Research Associate Symposium was successful in bringing together diversity of critical thinkers who participated in and contributed to the development of the science programme component for the IUM proposal being submitted to the CNRS later this year. The social learning dialogue method of engagement facilitated rich discussions between participants providing insight into the research priorities and pressing questions of SRU research associates and partners. The symposium provided a space for academics to meet and interact, think, learn and co-create. The outcomes place multi-, inter- and trans-disciplinary research at the social, ecological and economic interfaces of social-ecological systems to the fore, where understanding of vulnerability transfers, value creation and trade-offs need to be understood for transformations for sustainable development.

The SRU thanks all the participants for taking the time to engage and contribute their valuable thinking towards research needs going into the future.

References

Anderies, J.M., Janssen, M.A., and Ostrom, E. 2004. A framework to analyse the robustness of social ecological systems from an institutional perspective. *Ecology and Society* 9(1): 18. <https://www.ecologyandsociety.org/vol9/iss1/art18/>

Ostrom, E. 2009. A general framework for analysing sustainability of social ecological systems. *Science* 325, 419

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RESEARCH ASSOCIATE SYMPOSIUM (Save the date / Expression of Interest)

6 August 2018

The Sustainability Research Unit (SRU) of the Nelson Mandela University invites you to the 3rd Research Associate Symposium taking place on the 6th of August 2018 at the George Campus.

The Symposium showcases and celebrates research work and its outcomes undertaken by Associates within the SRU and the School of Natural Resource Management (SNRM) on the George Campus of Nelson Mandela University. It provides an exciting day of engagement between research associates, academics, students and practitioners to discuss the impact of on-going and new research in the field of natural resource management and its allied disciplines.

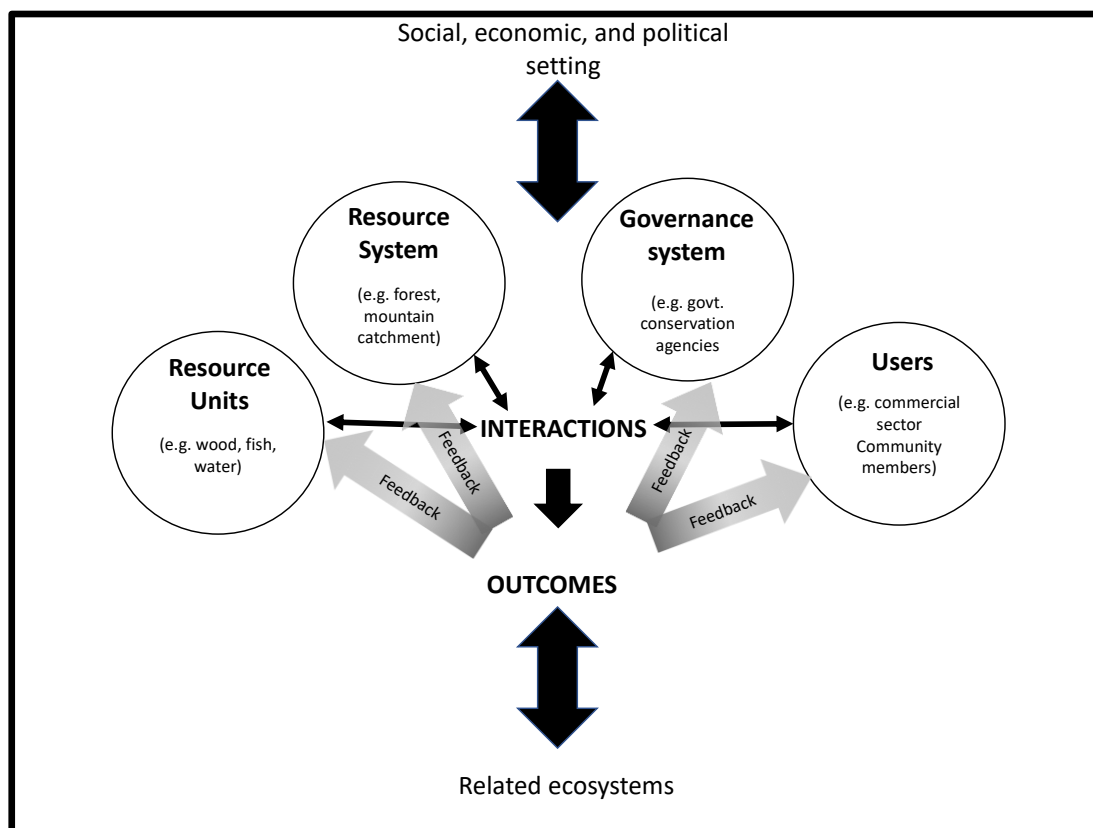
This year the intention is that the proceedings of the day will allow us to reflect on current research on the George Campus and additional areas of potential research and practice within a social ecological framework.

The Research Associate Symposium will include:

- A **keynote address** focused on the role of long term social ecological research (LTSER) in Africa by Professor Herve Fritz.
- Several **10** and **30-minute presentations** showcasing current areas of research, the outcomes of the research, and its significance
- **Small group dialogue** around critical social-ecological systems (SES) issues
- Cheese and wine **social networking event** concluding the 1st day
- Optional extra **field trip** on day 2 examining the restoration and recovery after the Knysna fires. The trip will include a talk out in the field by Dr. Tineke Kraaij, a Fynbos ecologist with a specific interest in fire ecology, alien plant invasion and improving control measures. (Cost: R650)

Inviting abstracts from research associates

We are inviting abstracts from research associates in SNRM and SRU that illustrate critical issues highlighting one or more of the components (sub systems) found within a social ecological system and how the topic contributes to understanding a particular social ecological system problem. The relationship between humans and their environment is embedded in a complex social ecological system (SES) in which social and ecological components are integrated. SESs are composed of several subsystems and internal variables at spatial and temporal scales. Anderies et, al. (2004), Ostrom (2009) and more recently McGinnis and Ostrom (2014) provide a common framework by which to assess the social and ecological dimensions and identify the variables for study that can contribute to sustainable resource use and management.



(Parrot et, al. (2012) adapted from Ostrom (2009))

The social ecological systems framework helps to transcend differing resource sectors, geographic areas, biophysical conditions and temporal domains providing a common language and structure in which to describe, diagnose and organise research finding so that they are cumulative.



Research Associate Symposium

6th of August 2018

Nelson Mandela University, George Campus, Admin Building, Conference Room

Draft Programme

	DAY 1 – 6 August 2018	
08h30 - 09h00	Arrival and registration	Ms. Luzanne Visagie
09h00 - 09h10	Welcome and introduction	Dr. Bianca Currie
09h10 - 09h35	Promoting Long-Term Social-Ecological Research (LTSER) to meet the new challenges of sustainability in the Anthropocene	Prof. Herve Fritz
09h35 - 10h00	Welcome to the new face of the Anthropocene: the interface	Prof. Christo Fabricius
10h00 – 10h25	Karoo trajectories of change in the Anthropocene	Dr. Joh Henschel
10h25 - 10h55	Tea	
10h55 - 11h20	Cultural ecosystem services as emergent properties of people-place interaction in national parks	Prof. Dirk Roux
11h20– 11h45	Towards building an adaptive governance research framework: key drivers to enable sustainable transformation in the socio-economic-ecological (SEE) nexus	Dr. Karin Badenhorst
12h10 - 12h35	How do urban dwellers identify with features within urban green spaces in the Eastern Cape?	Ms. Amanda Manyani
12h35 - 13h00	Critical eutrophication levels in the wake of institutional decay	Dr. Jackie Dabrowski
13h00 – 14h00	Light Finger Lunch	
14h00 - 14h20	Plenary dialogue – Critical issues and research opportunities in long term social ecological systems research. (Brainstorming critical issues for small group dialogues).	Dr. Bianca Currie (facilitator)
14h20 - 14h30	Setting the scene for dialogues	Dr. Bianca Currie
14h30 - 15h30	Small group dialogues around critical issues for long term social ecological systems research	Table hosts: Samantha McCulloch Sibo Nontangana Current Musunungure
15h30 - 16h00	Tea	

16h00 – 16h45	Feedback sessions from small group dialogues and plenary discussion	Table hosts: Samantha McCulloch Sibo Nontangana Current Musunungure
17h00 onwards	Cheese and Wine tasting Venue: The Deck	Luzanne Visagie
DAY 2 – 7 August 2018		
	Field trip (Optional extra) R500 The Garden Route Biosphere Reserve: Exploring sustainability challenges against a backdrop of climate change and human-environment tensions.	
09h00	Depart from George Campus	
09h40	Arrival at Swartvlei Lake (Sedgefield) Introduction to the Garden Route Biosphere Reserve and its social ecological challenges	Dr. Bianca Currie
10h00	Arrival at Smutsville (Sedgefield) 1 st stop – Urbanising challenges Short drive through Smutsville 2 nd stop – A closer look at the intra-features of a typical formal green space within low-income areas of South Africa	Dr Robert Fincham Ms. Amanda Manyani
12h30	Arrival at Brenton on Sea (Knysna) 1 st stop - the effects of fire on fynbos and coastal thicket vegetation, considering how varying fire intensities (e.g. prescribed burn vs. wild fire) affects natural recovery of the vegetation Lunch pack / Picnic break 2 nd stop – Queens view – complexity of prescribed burning in a mosaic landscape	Dr. Tineke Kraaij Mr. Tiaan Strydom Mr. Braam du Plessis
15h30	Depart for George Campus	