

# **WELCOME TO THE 2019 EIANZ ANNUAL CONFERENCE**

## **RESILIENCE & INNOVATION**



Environment Institute  
of Australia and  
New Zealand

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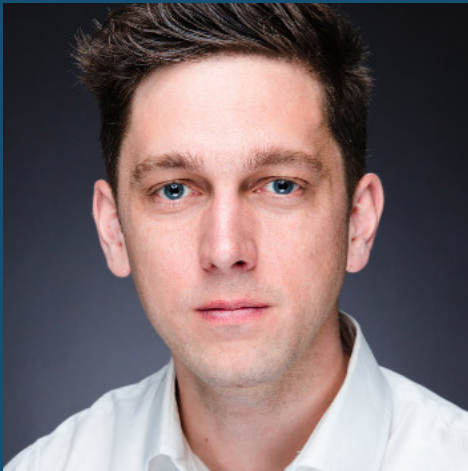


# KEYNOTE SPEAKERS



## **PROF ANDY KORONIOS, CEO SMARTSAT**

Professor Andy Koronios is currently the CEO Designate of the SmartSat CRC. Andy has recently led a bid to establish a space industry-focused Cooperative Research Centre (CRC) aimed at catapulting Australia into the global space industry through collaborative research and development with the support of over 80 participants from industry, government and academia.



## **ANTON ANDREACCHIO, CONVERGEN**

Anton has qualifications in mathematical and computer sciences and has founded leading animation and virtual reality studios with applications in sport, live entertainment and real estate.



## **LORD MAYOR OF ADELAIDE SANDY VERSCHOOR**

Sandy was elected as an Area Councillor in the 2015 by-election and served as Deputy Lord Mayor from June 2017 to November 2018. She has had a career in both the public and private enterprise, not-for-profits, and Local and State government, including three years as General Manager City Culture and Community Services for the City of Adelaide.



## **THE HON DAVID SPEIRS MP**

David Speirs is the Minister for Environment and Water in the South Australian Parliament. He is a founding member of Friends of the Lower Field River, a landcare group established by Hallett Cove residents to protect the local environment.



### **SIMON GRIFFITHS, WHO GIVES A CRAP**

Simon is an engineer and economist turned social entrepreneur. In 2007, after turning down his dream job offer as a corporate high-flyer, he moved from Australia to South Africa to immerse himself in his true passion: development aid. There he discovered that the biggest problem faced by NGOs and social entrepreneurs is a lack of funding



### **DR HELEN MURPHY, CSIRO**

Dr Helen Murphy is a Senior Research Scientist and ecologist and leads the Landscape Management Group in CSIRO's Biodiversity, Ecosystem Knowledge and Services Program. Helen has increasingly contributed to science underpinning ecological threat management and was one of 18 independent experts invited to author the 2016 Australian State of the Environment report.



### **TIM JARVIS AM**

Tim Jarvis AM is an explorer, environmental scientist, published author & environmental advocate, whose career has included leading a polar expedition, providing guidance on international aid projects and environmental advice to major global organisations.



### **CHLOE SWARBRICK MP, GREEN PARTY OF AOTEAROA NEW ZEALAND**

Chlöe cut her political teeth as a 22 year old, running a ground-breaking campaign for election as the Mayor of Auckland in 2016. She is now a Green Party MP, and Aotearoa's youngest MP in 40 years. She brings to parliament her experience as a policy wonk, journalist, business owner and a community project leader. She is focused on opening up parliament and politics to all New Zealanders. Chlöe is the Green Party spokesperson on: Education (including Tertiary), Open Government, Sensible Drug Law Reform, Local Government, Arts Culture & Heritage, Small Business, Broadcasting, Mental Health and Youth.





### **ADJUNCT PROF ROB FOWLER**

Rob Fowler is an Adjunct Professor in the Law School at the University of South Australia and has been involved in the field of environmental law for over forty years. Rob is a co-founder of the Australian Centre for Environmental Law (ACEL), a member of the Board of the SA Environment Protection Authority, has chaired the Board for the IUCN Academy of Environmental Law (IUCNAEL) and from 2014 has served as Convener of the Australian Panel of Experts in Environmental Law (APEEL).



### **REG CARRUTHERS, DIRECTOR AEROSPACE AND SPACE DEFENCE SA/ SASIC**

Reg Carruthers joined the Royal Australian Air Force in 1981, graduating from the RAAF Academy in 1983 with a Bachelor of Science. After graduating as a Navigator, he flew the P3C Orion completing operations and exercises nationally and internationally. In January 2016 Reg transferred to the Public Service as Director of the Woomera Test Range. In October 2016 Reg transferred to State Government as Director Aerospace and Space Defence SA/SASIC (SA Space Industry Centre) within Defence SA. Reg works with industry, academic institutions and Defence to support the growth of the defence industry in South Australia.

# PROGRAM

## CONFERENCE DAY ONE | MONDAY 4 NOVEMBER

7:30-8:45	REGISTRATION OPENS, WELCOME TO COUNTRY & CONFERENCE OPENING			
8:45	WELCOME TO ADELAIDE The Lord Mayor of Adelaide Sandy Verschoor			
9:20	KEYNOTE PRESENTATION Simon Griffiths, Co-Founder & CEO at Who Gives A Crap			
10:00	PRESENTATION ON APEEL PROJECT OUTCOMES Professor Rob Fowler, Law School, University of South Australia			
10:30	MORNING TEA			
11:00	KEYNOTE PRESENTATION Dr. Helen Murphy, CSIRO		KEYNOTE PRESENTATION Chlöe Swarbrick MP, Green Party of Aotearoa New Zealand (via video link)	
12:30	LUNCH			
	Advancing Knowledge	Communities & Cities	Social Impact Assessment	Data & New Technology
1:30-1:50	Julian Howard PFAS in the community: A South Australian case study of observed effects and the spectrum of responses	Stephen Holmes SCEED Communities	Brad Williams Resilience and Innoative Leadership - Lessons learnt during the closure of the Flinders Power business	Stuart Phinn Environmental Mapping, Measurement, Monitoring and Modelling: Earth Observation Realities.
1:50-2:10	Pip Marks Learning from the past is not a given	Lindi Bowen Resource Recovery Innovation in an regional city	Jane Munday Assessing significance: The values of values	Lynn Riggs Trends in household consumption and Carbon Emission
2:10-2:30	Gordon Young Effective management of toxic work environments	Lucy Band & Jen Scott A culture of calm: A new policy perspective on quiet spaces in cities	Rachel Maas Starting SIA field-work before significant project decisions are made - learning form case studies cross Australia and New Zealand	Anu Vijayan Decision support for Natural asset management
2:30-2:50	Anna-Kate Goodall Green Infrastructure, ecosystem services and the enablers and barriers for their implementation within wine-grape vineyards	Claudia Baldwin Using green infrastructure to adapt to heatwaves in cities	Lynn Riggs Potential Social Impacts of Land-use Changes 2020-2050	Suzanne Orme Introducing the Future-Fit Business Benchmark V2

## AFTERNOON SESSIONS

	<b>Advancing Knowledge</b>	<b>Succession Planning</b>	<b>Integrated Assessment</b>	<b>Environmental Awareness &amp; Management</b>
3:30-3:50	<b>Ballanda Sack</b> Can the law recognise, value and protect Aboriginal cultural heritage landscapes?	<b>Jane Kitson</b> Murihiku Cultural Water Classification system: a tool to empower whānau management of freshwater cultural uses	<b>Martin Ward</b> A 'new' assessment methodology termed "Integrated Assessment"	<b>Sophie St John</b> Innovation stakeholder teams
3:50-4:10	<b>Dr Aroha Spinks &amp; Moira Poutama</b> Developing coastal zone transition action plans to mitigate climate change impacts using mātauranga Māori (Māori traditional knowledge), science and ecological economics	<b>Alan Chenoweth</b> Reconstructing the concept of professionalism	<b>Robert Quigley</b> Integrated assessment tool use in urban planning case study	<b>Tim Walker</b> From tunnels to bridges and railways to wharfs - 10 years' of innovative environmental management in a creative construction environment
4:10-4:30	<b>David Hinchley</b> Proactive Indigenous community-based IA	<b>Patrick Maiden</b> Taking our people to the second horizon: Building technical resilience in ecologists	<b>Dr Karen Banwell</b> Why use Integrated Assessment: The importance of collaborative relationships	<b>Jade Wikaira</b> Cultural impact assessments: The intention and reality
4:30-4:50	<b>David Cole</b> A Balancing Act – Ships and Biosecurity Risk: Ballast Water Management and the Law	<b>Stuart Waters</b> Do we have what it takes to be innovative Environmental Managers	<b>Daniella von Rabenau</b> Sustainability Accreditation & Innovation: A Case Study	<b>Cara Parsons</b> Innovative habitat creation: installation and success of chainsaw carved hollows in subtropical Australia
4:45	END OF DAY 1: Wrap-up of Day 1			



## CONFERENCE DAY TWO | TUESDAY 5 NOVEMBER

### MORNING SESSIONS

8:00	EIANZ ANNUAL GENERAL MEETING		
9:00	WELCOME TO DAY 2		
9:15	KEYNOTE PRESENTATION The Hon David Speirs MP	KEYNOTE PRESENTATION Reg Carruthers, Defence SA	KEYNOTE PRESENTATION Prof Andy Koronios, SmartSat
10:45 - 11:15	MORNING TEA		
	<b>Energy &amp; Renewables</b>	<b>Strategic Environmental Assessment</b>	<b>Environmental Awareness &amp; Management</b>
11:15-11:35	<b>Matthew Peel</b> Seawater pumped hydro	<b>Tom Holden</b> Implementing strategic assessments - some lessons learned	<b>Leo Drynan</b> Water, water, everywhere, nor any drop to drink - Namoi Region Water for the Future Strategy
11:35-11:55	<b>Elizabeth Harvey</b> Aus H2 industry	<b>Mitchell Ross</b> Just how "strategic" are Strategic Environmental Assessments?	<b>Fiona Gainsford</b> The forgotten people - improving environmental outcomes through asset management
11:55-12:15	<b>Ashley Manna</b> ElectraNet: Transmission Infrastructure for a Renewable Future.	<b>ZsuZsa Banhalmi-Zakar</b> Spatiotemporal trends in referrals under Australia's EPBC	<b>Thomas Simonson</b> Vulnerable: the quantum of local government infrastructure exposed to sea level rise
12:15-12:35	<b>Jessica Berry</b> Concerns in large-scale renewable projects	<b>Carolyn Cameron</b> Improving Australian Strategic Assessment Process: lessons from Domestic & International SEA experts	<b>Alan Chenoweth</b> Country Roots
12:35 - 1:30	LUNCH		

### AFTERNOON SESSIONS

	<b>Panel Session   Innovatively building resilience</b>	<b>Project Management - Impact Assessment</b>	<b>Environmental Awareness &amp; Management</b>
1:30-1:50	<b>Prof. Helen Ross</b> Framing resilience to achieve innovation	<b>Karl Rosen</b> Port Kembla accelerated approvals	<b>Sarah-Lena Reinhold</b> Indigenous Worldview and Equality in Science for Policy
1:50-2:10	<b>Dr Claudia Baldwin</b> Building and assessing community resilience	<b>Megan Jones</b> How understanding stakeholder expectations can assist environmental impact assessment (EIA) remain resilient into the future	<b>Erik Lock</b> Learnings on regulatory transparency for the South Australian minerals and energy sector
2:10-2:30	<b>Dr Anna Lukasiewicz</b> How does justice fit into resilience in disaster management?		
	<b>Assoc. Prof. Melissa Nursey-Bray</b> Governance and caring for country: Implications for understanding of resilience	<b>Pratik Solanki</b> How alliance contracting can benefit environmental outcome	<b>Bryan Jenkins</b> Managing to limits in not enough
	<b>Dr Steve Skull</b> Building resilience as part of the Qld Coastal Hazard Adaptation Strategy process		
2:30	AFTERNOON TEA (timed for Melbourne Cup Race)		
3:00	KEYNOTE PRESENTATION Anton Andreachhio, Convergen		
3:45	CLOSING REMARKS AND INVITATION TO 2020 EIANZ CONFERENCE		



# FIELD TRIPS

## FIELD TRIP 1 | PORT ADELAIDE AND SURROUNDS

The field trip will cover Port Adelaide rejuvenation projects, the remediation of contaminated land where former industrial uses once existed, current industrial uses, Outer Harbor Port operations, Defence Industry Hub, and how all in an area are developed and operated with socioeconomic, heritage, site contamination, environmental protection and ecological conservation challenges. Lunch and a cruise on the Port Adelaide river will be included.

### TIMETABLE

9:00	Bus pick up from InterContinental Adelaide North Tce to Port Adelaide
9:30	Leave InterContinental
10:00	Arrive at Dolphin Explorer Port River Cruise, 1 Commercial Road Port Adelaide
10:30-12:30	Cruise departs
1:00-3:00	Lunch at Pirate Life Brewery- 18 Baker st Port Adelaide – 8317 2111
3:30	Bus pick to return back to Adelaide City
4:15-4:30	Arrival back at InterContinental Adelaide North Tce





## FIELD TRIP 2 | SINCLAIR'S GULLY WINERY TOUR

Sustainable environment practices are the foundation of Sinclair's Gully's business operations, from the conservation of its fragile bush land in the 20 acre sanctuary on the property, sustainable biodynamic vineyard management practices to its zero waste 100% recycling program, the onsite collection of all water and reuse of waste water on the surrounding garden, its energy program and solar power project, through to measuring and implementing strategies to minimise its carbon and ecological footprint.

Sue and Sean's commitment to sustainable practices and the environment made it a natural progression for Sinclair's Gully to complete the advanced eco certification accreditation program (one of only two cellar doors to achieve this nationally) with Ecotourism Australia. Sinclair's Gully completed the Climate Action Program, achieving climate action innovator certification in June 2010. These programs crystallise the sustainable values and practices in operation at Sinclair's Gully and demonstrate our commitment to triple bottom line sustainability in all aspects of our business; economic, environmental and social sustainability, in achieving best practice environmentally sustainable operations and reducing our carbon footprint.

Our sustainable biodynamic vineyard was planted in 1998, with our first vintage in 2003. We do not spray synthetic pesticides or herbicides on our vineyard and have reintroduced native grasses across the entire vineyard floor. In May 2007 we opened our environmentally responsible eco-cellar door under the towering candlebark gums, sharing our passion for wine, nature and the environment with visitors. We have built a number of sustainable

### TIMETABLE

9:30	Bus pick up from InterContinental Adelaide North Tce to Sinclair Gully- Adelaide Hills
9:45	Leave InterContinental
10:15	Arrive at Sinclair Gully Winery- Adelaide Hills- 288 Colonial Drive Norton Summit SA 5136
10:30-11:30	Wine and wildflower walk with environmental sustainability talk along the way
12:00-1:30	Lunch (grazing table or paella with caterer)
1:45-3:30	Wine tasting and Grenache barrel tasting with a sustainable vineyard and wine making talk
3:45	Bus pick to return back to Adelaide City
4:15-4:30	Arrival back at InterContinental Adelaide North Tce



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## FIELD TRIP 3 | AEROMETREX

A tour of the newly opened expressway as an example of the Resource Management Act process in New Zealand.

Aerometrex and City of a Onkaparinga joint tour - Aerometrix will show case their new 'holographic table', as well as other RPAS, aerial photography, and survey technology capability; and with assistance from one of their clients, City of Onkaparinga, they will demonstrate how their technology is used in practice. In this case, the compilation of imagery to monitor erosion of some of City of Onkaparinga's 37 km coastline, which you'll visit, to enable necessary decision-making for conservation, preventative and remedial works.

### TIMETABLE

9:00	Bus pick up from InterContinental Adelaide North Tce to Aerometrex- 51-53 Glynburn Road Glynde
9:15	Leave InterContinental
9:45	Arrive at Aerometrex- 51-53 Glynburn Road Glynde- Ellie Zoghi- 8362 9911
10:00-11:30	Start "Presentation" of 3D data of Coastal Erosion SA
11:45-12:45	Depart Aerometrex
1:00-3:30	View of Erosion & Lunch at Star of Greece- 1 Esplanade, Port Willunga SA- 8557 7420
3:45	Bus pick to return back to Adelaide City
4:45-5:00	Arrival back at InterContinental Adelaide North Tce







# **SOCIAL FUNCTIONS**

## **WELCOME DRINKS**

**Adelaide Convention Centre | Foyer AB, Level 1 | 5.30-7.30**

Kick off the conference with Welcome Drinks at the Adelaide Convention Centre. It's a lovely way to start your conference and get to know your fellow attendees in a relaxed, informal atmosphere.

## **GALA DINNER**

**Adelaide State Library | Mortlock Chamber | 7.00**

Join us in the Mortlock Chamber, in Adelaide's historic State Library for a celebration of EIANZ award winners, recognise EIANZ Life Members and Fellows & networking opportunities with a diverse range of professionals. Attendees will have the opportunity to hear from scientist, explorer and environmental advocate Tim Jarvis AM.

# ASSOCIATED EVENTS

## STUDENTS & EARLY CAREERS CONGRESS

The EIANZ invites you to the Students and Early Careers Congress on Wednesday 6 November in Adelaide. The Congress will feature presentations from young researchers as well as some of Australia and New Zealand's leading environmental specialists.

Participants will hear about the future direction of the environment profession, gain insights into the working life of young environmental professionals, and develop professional skills through interactive workshops. It is designed to help young professionals gain an edge in an increasingly competitive workplace through providing the workplace skills and contacts you don't necessarily get through university studies.

### What's included

Presentations from young professionals on what they do, and their hot tips for others entering the profession

Presentations from more experienced professionals sharing their work experiences and providing their outlook for the environment sector, as well as opportunities for students and those in the early stages of their career

Professional development workshops providing useful learnings about everything from CVs and interview skills to networking

Lunch, morning and afternoon tea

### Who should attend?

The Congress has been developed of part and full time students enrolled in environment related degrees as well as practitioners who are new to the environment sector (<5 years experience), of all ages and specialisations.

The 2019 EIANZ Student and Early Careers Congress will feature presentations from young researchers who are at the beginning of their career in the environment, and leading industry professionals who have years of experience in their field. Hear about how these professionals broke into their field, what they do, and what tips they have for bright minds looking to do the same. The congress will also feature interactive workshops from experts who know exactly what employers look for in CV's and interviews. Here is a selection of the speakers you can expect to hear from on the day.

### Details:

<b>Location:</b>	The Joinery 111 Franklin Street, Adelaide
<b>Time:</b>	8:30 AM - 4:30 PM
<b>Cost:</b>	\$40 - EIANZ members, \$80 - Non-members



# ASSOCIATED EVENTS

## STUDENTS & EARLY CAREERS CONGRESS | SPEAKERS



**Gill Peacey | Manager, Volunteer Support Programs - Department of Environment and Water**

### *Job Application Speaker*

Growing up in an active outdoors family in NZ surrounded by national parks, Gill took the natural step of going to university and becoming a Park Ranger, working in several remote locations in New Zealand before a move to NSW then South Australian parks, often dealing with the challenges that came with being the first female Ranger in the workplace.

After branching out into roles teaching Aboriginal Land Management with TAFESA, and managing Work Health and Safety, and Training and Development programs with the Department of Planning, Transport and Infrastructure, Gill moved into a legislation and policy role developing the Natural Resources Management Bill, before managing Commonwealth and State grant funding programs. More recently she's been managing State-wide volunteer and partnership programs and the Department of Environment



**Dana Miles | District Officer – Adelaide & Mount Lofty Ranges Natural Resource Management Board**

### *Early Careers Speaker*

My name is Dana Miles and I have known since I was 5 years old that my passion would be working in the environmental field. Well, let's just say, I wasn't calling it the environment at 5- but I knew I wanted to protect all the native plants and animals! In 2004 I completed a Bachelor of Environmental Management at Flinders Uni and after work -experience and a traineeship and more study at TAFE I narrowed down my interest to native flora and weed management as I want to protect our precious remnant vegetation. I then spent a few years on-ground working for various landscape and conservation companies doing the hard yards- still not yet in my dream job, but it gave me the opportunity to be in the outdoors and hone my plant ID skills.

When I was 24 I finally landed my dream job with the Adelaide & Mount Lofty Ranges Natural Resource Management Board as a District Officer. 10 years on, and I'm still here as it is a position where I'm working with leading environmental professionals on a range of projects. I have learnt my strength is community connection and engagement and I enjoy leading the McLaren Vale Biodiversity Project community group; a group who are increasing in number and are leading the way in community ownership to solve local environmental issues. My role in the field is to provide technical advice on a range of environmental issues such as pest plant and animal management, watercourse restoration, predatory arthropods, microbat interactions, working with the viticulture industry & other NRM professionals on a "Wildlife for Wine project" and revegetation at different scales. No day is ever the same and I love how my roles is to educate

# ASSOCIATED EVENTS



**Dr Ashley Kingsborough | Principal Policy Officer - River Murray Policy and Strategy**

***Environmental Professionals Speaker***

Dr Ashley Kingsborough is a chartered environmental engineer who has worked on Water Resource Management and Climate Change Adaptation projects in Australia, the UK, South-East Asia and the Pacific. He has experience in the private sector, government and academia and is interested in addressing complex resource management problems.

Ashley is currently working as a Principal Policy Officer in the Water and River Murray Division of the Department for Environment and Water in South Australia. His responsibilities include policy and strategy development in relation to River Murray Water Markets.



**Rachel Maas | Social Impact Assessment Specialist**

***Environmental Professionals Speaker***

Rachel is a Social Impact Assessment (SIA) practitioner with 20 years' experience working in Australia and New Zealand. This includes SIAs for land and marine based infrastructure, resource developments and an aquaculture project. These projects have provided the opportunity for Rachel to work with people living in urban, rural and remote environments and with people from a range of socio-economic and cultural backgrounds.

Rachel develops SIA methodologies that encourage stakeholder participation while meeting proponent and legislative requirements. She promotes innovative approaches to SIA, finding more engaging ways to consult with SIA stakeholders and present the findings of an SIA. Rachel has a Bachelor Degree in Australian Environmental Studies, a Post Graduate Diploma in Social Impact Assessment and a Masters in Evaluation. Rachel is a Certified Environmental Practitioner, Impact Assessment Specialist.



# ASSOCIATED EVENTS

## CLIMATE CHANGE FORUM

Is your health and/or wealth at risk? Who is at most risk of heat stress? Is your future income at risk, whether it sits in a superannuation fund or in a farm or city-based business? What sectors of the economy are most at risk? What does science tell us about these various risks? What can we do about these risks, particularly at a practical level?

Where in Australia and New Zealand are the people and industries likely to be adversely affected as the climate changes? What does the Actuaries Index show? How is the insurance industry going to react if we neglect scientific advice on where we build and how we build? Where does the law stand on property rights and the environment? On water rights? On climate change in general? What can be done here in Australia and New Zealand to mitigate and/or adapt to climate change?

These and many similar questions are being asked around dining room tables, at BBQs, in coffee shops, in pubs, in doctors' surgeries, in the board rooms of the major industries – wherever we gather and turn our minds to extreme heat events, severe droughts and floods, and attempt to guess the state of the world our children and grandchildren will have to live in.

This forum has been organised by environmental practitioners who in their day-to-day work are asked the above questions. The practitioners running this conference are members of a specialist Climate Change group of the Environment Institute of Australia and New Zealand (EIANZ)."

### SPEAKERS:

<b>Rade Musulin (of Finity)</b>	on behalf of the Actuaries Institute
<b>Dr Justine Bell-James</b>	Law School University of Queensland
<b>Tom Davies</b>	on behalf of the Insurance Council
<b>Dr Justin Peter</b>	Science to Services Branch, Bureau of Meteorology
<b>Dr Lynn Riggs</b>	Motu Economic and Public Policy Research
<b>Catherine Leining</b>	Doctors for the Environment Australia
<b>Associate Professor Nick Wickham</b>	ABARES
<b>Dr Neal Hughes</b>	EIANZ Members - \$100, Non-members - \$150, EIANZ Student Members - \$20

### Details:

<b>Location:</b>	Flinders University 182 Victoria Square, Adelaide
<b>Time:</b>	8:30 AM - 4:30 PM
<b>Cost:</b>	EIANZ Members - \$100, Non-members - \$150, EIANZ Student Members - \$20

# ABSTRACTS & BIOGRAPHIES

## BRIAN JENKINS



### Biography

Bryan is a sustainability strategist. He is currently Chairman of the Eastern Region Alliance Water Board and is an adjunct Professor at the University of Adelaide. Previously he was Professor, Strategic Water Management at the Waterways Centre for Freshwater Management, a joint centre of the University of Canterbury and Lincoln University. Prior to this appointment he was chief executive of Environment Canterbury for more than seven years. Environment Canterbury is the regional council for Canterbury whose responsibilities include natural resource management. He was responsible for the introduction of collaborative governance concepts to the regional council including the development of the Canterbury Water Management Strategy. Before coming to Canterbury, he was chief executive of the Department of Environmental Protection in Western Australia for seven years. Prior to that, he had more than 20 years' experience in environmental management consulting throughout Australia, South East Asia, India and China. He has a PhD in environmental planning from Stanford University, a masters and first class honours degrees in civil engineering from Adelaide University and a master of administration from Monash University. He is the President of the Environment Institute of Australia and New Zealand.

### Presentation: Managing to Limits is Not Enough

The concept of managing within environmental limits underpins the original concept of environmental impact assessment and environmental management. The intent has been to define an environmental bottom line that must not be compromised. There are environmental standards that have been set to facilitate management to maintain environmental quality and sustainable ecosystems. However current experience with implementing the "managing to limits" concept is showing significant challenges in relation to achieving sustainable outcomes. These challenges are considered in the context of setting nutrient load limits for managing agricultural intensification in the Hurunui Catchment in New Zealand to prevent unacceptable algal blooms in the rivers. The analysis shows that managing to limits is not enough. This is because of load uncertainties, inaccuracies in load estimation, natural variability, multiple variables affecting outcomes, contributions from legacy issues as well as current activities, lag times, unresolved cause-effect relationships, and difficulties in enforcing limits that lack certainty. Furthermore, with multiple geographical scales, many potential points of intervention, and multiple actors, an integrated strategy is needed with agreed accountabilities to achieve sustainable outcomes. The paper puts forward a systems-based approach using nested adaptive systems (rather than just managing to limits) and collaborative governance (rather than regulatory compliance) for the management of algal blooms in rivers. This involves defining the adaptive cycles at the catchment and riverbed scale that relate agricultural intensification to algal blooms, defining the potential failure pathways leading to sustained blooms, and identifying management interventions for the phases of the adaptive cycles at both the catchment and riverbed scales.



# ABSTRACTS & BIOGRAPHIES

## THOMAS SIMONSON



### Biography

Thomas Simonson moved from the US to New Zealand in August 2014 to join LGNZ as a Principal Advisor. He has been a portfolio manager and advocate in the areas of climate change, housing, roading and transport and local government funding. He also has considerable experience in working in the private sector with more than a decade of experience in land planning and development and five years as a consultant to the US federal government in land and environmental planning. Tom has Masters Degrees from California Polytechnic State University – San Luis Obispo in City and Regional Planning and the London School of Economics in International Housing, Monash University. He is the President of the Environment Institute of Australia and New Zealand.

### Presentation: Vulnerable: the quantum of local government infrastructure exposed to sea level rise

Local Government New Zealand (LGNZ) released a report on 31 January 2019 measuring the replacement value of local government-owned infrastructure exposed to sea level rise. The report details the type, quantity and replacement value of assets at intervals of MHWS+0.5, 1, 1.5 and 3.0 metres using LiDAR and DEM analysis. Data is drawn from a survey of 62 of New Zealand's coastal councils, with a 97 per cent response rate. This is the first time that a coordinated national analysis - exclusive to local government owned infrastructure exposed to the effects of sea level rise - has been performed. LGNZ's study finds that the greatest amount of vulnerability is in three waters infrastructure (storm, sanitary and drinking) followed by roading and buildings/facilities. In total, more than \$14 billion of local government owned assets are exposed at a 3.0-metre increment of sea level rise. LGNZ will use the empirical evidence gathered to create greater clarity about the quantity, cost and location of local government infrastructure to premise discussions with central government, businesses and private property owners about how to address impending impacts. Additionally, LGNZ intends to assist councils to fill identified knowledge gaps and set in place a process and procedure for future analysis to deliver greater precision in long-term adaptive asset and investment planning. Importantly, LGNZ's report outlines a number of recommendations for stakeholders to better align with each other to ensure long-term resilience of essential infrastructure. At its core, this analysis is about turning a challenge into an opportunity. Local Government New Zealand (LGNZ) is governed by a National Council, made up of 15 elected members from throughout New Zealand. Its purpose is to deliver our sector's Vision: "Local democracy powering community and national success." LGNZ represents the national interests of councils in New Zealand and leads best practice in the local government sector. It provides advocacy and policy services, business support, advice and training to our members to assist them to build successful communities throughout New Zealand. The report can be found at: <http://www.lgnz.co.nz/our-work/publications/vulnerable-the-quantum-of-local-government-infrastructure-exposed-to-sea-level-rise>

# ABSTRACTS & BIOGRAPHIES

## MARTIN WARD



### Biography

Martin Ward is mostly retired after almost 4 decades involvement in many aspects of impact assessment in New Zealand, Australia and the wider Pacific region (Fiji, Samoa, Papua New Guinea, and Brunei). Trained as a geologist and qualified as a mining engineer, he came over from the dark side in 1974 when he joined New Zealand's first environmental agency, the Commission for the Environment. He describes himself as a methodologist but has a good understanding and empathy with environmental, sustainability and health and wellbeing issues. He is an effective trainer and mentor and has contributed to University courses and formal training programmes in four New Zealand Universities, Ministries of Health in New Zealand, Samoa and South Australia, and for the government of Brunei. Over his career Martin has led and/or participated in teams that have:

- conducted Audits of Environmental Impact Reports on behalf of the Government of New Zealand in the coastal development, petroleum, mining and electricity generating sectors.
- undertaken field investigations and literature studies for Environmental Impact Reports for Government and corporate clients in the oil and gas, geothermal energy, mining and forestry sectors.
- undertaken independent Environmental Assessment and/or Peer Reviews of post-EIA Environmental Management Programmes for a range of clients and projects throughout New Zealand.

The report can be found at: <http://www.lgnz.co.nz/our-work/publications/vulnerable-the-quantum-of-local-government-infrastructure-exposed-to-sea-level-rise>

### Presentation: A 'new' assessment methodology termed "Integrated Assessment"

A 'new' impact assessment methodology termed "Integrated Assessment" has been applied to good effect over a number of years across a range of plans and projects principally in Canterbury, New Zealand where it has gained sufficient acceptance, professional following and practitioner familiarity to warrant wider use elsewhere. A comprehensive Guide to Integrated Assessment has been prepared, reviewed and now presented at this Conference that describes the methodology and sets out the steps to undertake it successfully. The guide is for use by policy makers, planners and impact assessment specialists seeking to improve the quality of proposals. As a prospective tool, Integrated Assessment tests whether a draft proposal aligns with its stated objectives and clearly identifies where changes are needed to achieve them. When used in a planning process it also delivers a strong consultation opportunity with affected communities and stakeholders. For planners It is designed to inform development of plans and policies through early iterations. It uses multi-criteria assessment but importantly with all criteria being of equal weight. Assessment criteria are developed from the aims and objectives of the draft policy, plan or project subject to the Integrated Assessment. A novel and critical part of the process is the setting of bottom lines or safe minima, and top lines or aspirational positions, for each individual assessment criterion. These important boundary positions assist those developing the proposal to assess what further work is needed (or not) to achieve the objectives of the draft proposal. Although it is based on the sustainability appraisal, and has a clear four pillar approach as the foundation, Integrated Assessment has been used as a generic label which makes it clearer that it is an adaptable framework

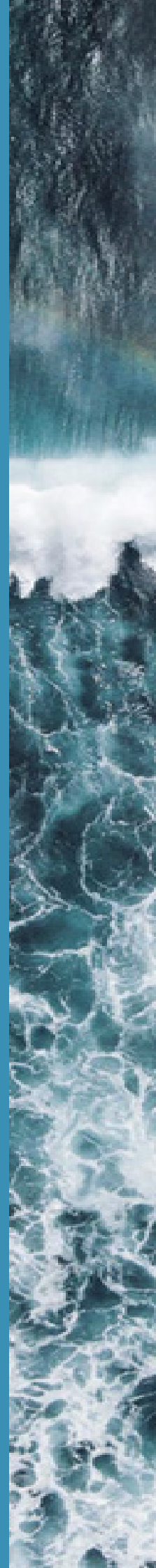


# ABSTRACTS & BIOGRAPHIES

## MARTIN WARD

### **Presentation II: Why use Integrated Assessment - the importance of collaborative relationships**

Why use Integrated Assessment – importance of collaborative relationships Integrated Assessment (IA) as a method has been applied for over 10 years gaining practitioner familiarity and acceptance. IA introduces a way of tactically working to develop an agreed view to improve outcomes and clearly identify where changes are needed to proposals as they are being prepared. This talk focuses on how the formal consultative method brings together sectors, community and professional silos to an assessment practice using the four pillars of sustainability. IA is designed to mix people who have diverse and potentially opposing views, to compel them to listen and work toward a shared agreement they collectively are willing to support. Importantly IA is held in an environment that is respectful and open and allows for a range of disciplines including communities who may not commonly have a loud voice or be consulted well within planning processes. The voices of indigenous and culturally marginalised groups, for example, can have a place at the table and be heard. This a big step forward on most consultation processes and makes community consultation a reality. IA can give communities confidence and help with understanding constraints government agencies face in managing complex policy planning processes. Trust is forged among agencies and with communities that work to build capital needed to deliver complex plans. This talk will outline the importance of relationships, explain how it is the right thing to do, to hear the voice of others and to agree an outcome using examples of IA from New Zealand. When used early, second or third assessments can be applied to following iterations to further refine the draft proposal. IA is also an audit tool to score with the community who worked with plan makers as delivered five or ten years out. This gives a long term purpose.



# ABSTRACTS & BIOGRAPHIES

## JULIAN HOWARD



### BIOGRAPHY

Julian manages the GHD environment, planning and stakeholder engagement teams in South Australia. He is a certified environmental practitioner - (CenvP) Site Contamination Specialist (SC) and a skilled project and client manager with over 13 years of government and industry experience. He has had diverse involvement in a variety of complex site assessment and remediation projects for government and private sector clients including Defence, oil, gas and energy companies. Julian has completed numerous detailed risk assessment/detailed site investigations under the South Australian, New South Wales (including ACT) and Western Australian site contamination audit systems allowing for either site divestment or remediation to proceed.

Julian has managed the assessment of various green and brown field sites, including industrial sites such as steel mills, gas works, timber mills, railway yards, ports, Defence sites, airports and petroleum storage and distribution facilities in Northern Territory, Queensland, New South Wales, Western Australia, Australian Capital Territory and South Australia. He has also managed and provided technical input in the assessment, design and implementation of permanent and semipermanent in situ remediation systems, including principal contractor management. He has extensive experience in preparing and submitting development applications, liaising with stakeholders and regulatory bodies, engaging subcontractors and ensuring a high level of safety is maintained on site to the standards of the regulator, his employer and the client. His areas of expertise include; project management, contaminated land investigation and remediation, remediation planning and implementation, contaminant fate, principal contractor management and acid sulfate soil investigations.

### **Presentation: PFAS in the community: A South Australian case study of observed effects and the spectrum of responses**

GHD has undertaken a number of PFAS investigations in South Australia which have resulted in significant media exposure and involved detailed stakeholder engagement. This presentation will provide: a summary of the investigations undertaken by GHD in the vicinity of the Adelaide Airport, Parafield Airport and Largs North Fire Station; how these investigations differed in the context of site contamination and risk; and what factors influenced the response by different stakeholders. By looking at the human aspects of these investigations in the South Australian landscape the presentation will explore how each study's findings were accepted by stakeholders and which factors contributed to their different responses.

# ABSTRACTS & BIOGRAPHIES

## STEPHEN HOLMES



### Biography

Stephen is a Director of Holmes Dyer, an experienced and agile national consultancy offering strategic leadership and expert advice to secure bespoke sustainable outcomes in the use, design, development, delivery and governance of land, cities and communities. Stephen joined business partner Helen Dyer in 2016 to establish Holmes Dyer, after identifying a gap in the market for this combination of skills and experience.

Stephen is committed to the delivery of quality planning and development solutions which exceed the expectations of clients. He has been responsible for major strategic planning initiatives at both a policy and practical level, including major urban release strategies and new community planning. Stephen has extensive experience in the leading of large multi-disciplinary consulting teams and is involved in strategic development facilitation work for major projects, providing specialist planning advice for major retail, commercial, industrial, residential, tourism and infrastructure developments.

He has a long history of broad hectare and infill residential and industrial design experience, having designed innumerable estates throughout Australia and South East Asia, from developments involving thousands of allotments to minor infill sites of only a few lots.

Stephen has contributed significantly to the development of the State's planning policy in a range of areas, and is a specialist in retail centres policy and in the undertaking of retail demand assessments and floorspace appraisals.

### Presentation: SCEED Communities



# ABSTRACTS & BIOGRAPHIES

## RACHEL MAAS



### Biography

Rachel is a social scientist, specialising in social impact assessment with formal qualifications and over 20 years of experience. Rachel is a Certified Environmental Practitioner, Impact Assessment Specialist and is one of the co-convenors of the EIANZ Impact Assessment Specialist Interest Section, SIA Working Group. Rachel has undertaken social impact assessment for land and marine infrastructure, resource development and urban development projects across Australia and New Zealand. She has worked with urban, regional, rural and remote communities. Rachel has worked for Just Add Lime since 2015. Prior to joining Just Add Lime, Rachel worked for Bandanna Energy, Peabody Energy and Macarthur Coal in various roles, all with a focus on project approval and stakeholder and community engagement. Prior to working directly for resource development companies, Rachel was GHD's first dedicated Social Impact Assessment practitioner.

### **Presentation: Starting SIA field work before significant project decisions are made, learnings from case studies in Australia and New Zealand**

The importance of engaging with potentially impacted communities early in the project development process was a key discussion point at the recent EIANZ and IAIA conferences. Social Impact Assessment (SIA) was identified as one of the ways this early engagement could be undertaken. However, SIAs are usually commissioned within a legislative environmental approval framework. They are one of a suite of technical assessments for an EIS/AEE and the field work doesn't usually begin until after the environmental approval process has commenced. And because significant project decisions (such as the location of infrastructure) need to be made so an environmental assessment process can be undertaken, the ability of SIA to assist in the engagement of impacted communities is restricted. By seeing SIA with 'fresh eyes' and allowing fieldwork to occur prior to significant project decisions being made, it can assist in delivering the benefits of early engagement to both the proponent and the potentially impacted community. This paper sets out two case studies of when this occurred. The first case study is a proposed bauxite mine on western Cape York, Queensland which would impact on Wik and Wik Waya and the residents of Aurukun. The second is a proposed roading project north of Auckland, New Zealand which would impact on a variety of communities and industries. For both case studies, the paper will present the context that allowed the SIA field work to occur before significant project decisions had been made, the SIA research methods and tools, examples of collected data and how it was used in project decision making. The paper will conclude with lessons learnt from undertaking SIA fieldwork prior to significant project decisions being made.

# ABSTRACTS & BIOGRAPHIES

## LEO DRYNAN



### Biography

Leo Drynan is a highly experienced environmental economist who focuses on the quantification of economic costs and benefits in data scarce environments. Working across Asia-Pacific, Leo produces robust economic and financial models to demonstrate project viability and support understanding of environmental values and decision making. With a background in social and environmental impact assessment, Leo provides socio-economic impact assessment and distribution analyses to show, not only how a particular initiative directly performs, but also how associated indirect and induced impacts may flow through to the local communities and the environment.

### **Presentation: Water, water, everywhere, nor any drop to drink – Namoi Region Water for the Future Strategy**

The Namoi Region is one of the most productive agricultural regions in NSW, with significant agricultural water demand across groundwater, regulated and unregulated water sources. These water sources support a wide array of ecosystems and habitats. At the same time, a number of urban centres within the region are forecast to grow rapidly and are looking for ways in which to maximise the use of urban water to support economic growth. Namoi Unlimited (the Joint Organisation capturing Gunnedah, Gwydir, Liverpool Plains, Tamworth and Walcha Councils) commissioned a Water for the Future Strategy to identify a regional approach to addressing the challenges and opportunities afforded by water resources to the development of the region. The project undertook a review of the available information on water availability, reliability and its connection with the economic productivity of the region, looking at both rural and urban areas. Overlaid with this data review was a review of planned growth and likely trends (urban and rural) areas, to understand the potential change in water demand moving forward. The above information culminated in a baseline against which a Strength, Weaknesses, Opportunities and Threats analysis was undertaken across the Namoi JO. A unique spatial approach was undertaken, using Water Availability and Water Reliability metrics and mapping, to demonstrate the strength and weakness of water resources. These metrics utilised water usage, entitlement, restriction and security data and were ultimately combined into an overarching Water Strength index. This index allowed for ready visualisation of water resource strengths and weaknesses across the region. This strength mapping was then overlaid and compared with agricultural and economic activity to identify areas of opportunity where current usage and/or supply could be improved to support regional development. The findings were then synthesised into a series of prioritised actions to support regional economic development.

# ABSTRACTS & BIOGRAPHIES

## JANE MUNDAY



### Biography

Jane Munday is a community engagement and social impact assessment practitioner based in Darwin, NT. She is a PhD Candidate at the Northern Institute of Charles Darwin University researching a model of social and cultural impact assessment that delivers socially, culturally, economically and ecologically sustainable development in the context of the 'develop the North' agenda.

### Presentation: Assessing significance: The value of values

Contested land use is delaying extractive projects in Australia, with reputation and political risk for proponents and angst for affected communities. In rejecting projects, Land Courts are highlighting local context and the social dimensions of projects such as sense of place and psychosocial impacts (eg Rocky Hill 2019). This presents a threat and an opportunity for social impact assessment. The threat is the risk of legal challenges to assessment studies that fail to reflect community values and concerns. The opportunity is drawing on the insights of values, through people due diligence, to inform 'tough choices' (Gregory 2012) on the appropriate type, pace and scale of development and level of assessment for projects. For proponents, giving greater weight to community values in early feasibility studies would provide an early warning signal of community acceptance of projects at a point when projects are most open to amendment or abandonment. This paper presents a model that incorporates a futures-oriented focus on social, cultural, economic and ecological sustainability. It draws on Little & Krannich's community organisation model (1988) and the NSW Social Impact Assessment Guidelines (DPE, 2017) that suggests consideration of community sensitivity to change when assessing significance. The model considers categorisation of values as social, cultural, ecological and economic. It then outlines the types of values affected by development: from sentimental or home values to changes in societal values, as people worry about climate change and the future of our planet. It suggests grounded approaches are needed to determine the strength and diversity of community values, aspirations, resilience and sensitivity to change (McGuigan 2015). This requires participatory (Buchan 2003), deliberative (Parkins & Mitchell 2015; Parsons, et al. 2018) and narrative methodologies that take account of a broad range of value sets (Coakes & Fenton 2001) in cross-cultural environments (Lane et al. 1990).





# ABSTRACTS & BIOGRAPHIES

## SOPHIE ST JOHN



### Biography

Sophie St John (nee Cowie) is a terrestrial ecologist with an MBA. She leads the Environment Team at Cardno in Brisbane, and is attempting to disrupt the environment discipline with the use of cutting-edge innovations that benefit people, projects and the environment. Sophie has worked across industries, states/ territories, and overseas to deliver both small and large-scale projects. She believes that only through engagement with people, and by working in diverse teams, can we really harness the power of innovative to ensure a more resilient future.

### Presentation: Conserving an Endangered Urban Species – The Power and Pitfalls of Data

When a hard-to-pronounce, little-known, urban, endangered flora species was discovered unexpectedly occupying an urban area along the Brisbane River many questions arose.

*Lilaeopsis brisbanica* was first described in 1997 and at that time was known only from a few select locations along the Brisbane River. In 2011, floods ravaged Brisbane, silt and sediment deposited on the banks of the River covered known populations of *L. brisbanica*, and a search by the Queensland Herbarium at the time supposed our beloved protagonist all but lost.

Eight years later enters me, my ecologists, a trusty quadrat, and a potential plan for works within proximity to the River. How was the legislator to respond when presented with a proposal which would be located proximate to this species which was recently presumed near-lost? How were we to ensure the preservation of this heroic herb which had survived despite all odds?

This is a story of thinking outside of the square, questioning the historic data and collecting your own, getting your feet wet, your boots muddy and open-sourcing your data for the better of the environment.

Whilst data is near endless in our hyper-connected world, we are often presented with imperfect information. We use this information to make decisions that affect the world around us with implications for policy, projects, people and environments. This case-study will use publically available, open-sourced data to explore the power of questioning, and provide an example of how with a little bit of creativity regulators, proponents and consultants can use innovation for conservation.

# ABSTRACTS & BIOGRAPHIES

## PRATIK SOLANKI



### Biography

Pratik is an associate environmental engineer with 12 years of experience in environmental assessment, management and environmental compliance auditing. Pratik spent early part of his career as an environmental representative on major road and bridge construction projects and has first-hand knowledge and experience in managing environmental issues. Pratik's recent experience is in water and wastewater infrastructure project providing technical leadership and managing team of environmental professionals. Pratik has worked at all stages of the project i.e. planning, design and construction. Pratik also has experience in assessment and management of cultural heritage matters relating to construction projects. Pratik is a certified principal environmental auditor and has experience in environmental auditing of projects and is also a certified associate occupational health & safety management systems auditor.

### Presentation: How alliance contracting can benefit environmental outcomes

Logan Water Alliance (2009-2015) and Logan Water Infrastructure Alliance (2015- current) were established to support Logan City Council to deliver the city's water and wastewater infrastructure. The alliance is a public private sector enterprise involving Council and engineering services providers Downer, Cardno and WSP. It provides asset management, planning, design and construction services under one roof and offers opportunities to collaborate, innovate and deliver outstanding environmental outcomes. This paper will discuss how environmental impact assessment (planning stage), approvals (design stage) and compliance management (construction stage) are delivered under the alliance model. It will also highlight key environmental projects and outcomes delivered by the alliance including:

- Cedar Grove Wastewater Treatment Plant (WWTP) – A world class WWTP under construction which will use membrane bioreactor technology and constructed wetlands to meet the strictest environmental licence in Queensland. An on-site solar farm will contribute energy for WWTP operations and the previously cleared site will be revegetated over time, including the Logan River banks.
- Round Mountain water quality project – An Australia's first solution which harnesses the power of sun and salt to manage drinking water quality in a remote location. The project combines solar power, battery storage and electro-chlorination technologies to provide sustainable, high quality water for residents.
- Offsets management – An adaptive approach to onsite and offsite rehabilitation and offsets planting including a strategic approach to meeting legislative requirements by rehabilitating a single 13.2 ha site.
- GIS information management – Combining GIS information in one database for efficient environmental assessment of projects.
- Community tree planting days – The alliance has delivered five tree planting days involving residents and community groups, with at least 6,000 trees planted.
- Renewal projects – An asset management framework in which asset condition drives decisions on whether to renew or replace assets; minimising resource use, waste and cost.

# ABSTRACTS & BIOGRAPHIES

## KARL ROSEN



### Biography

Karl is a professional environmental scientist with 20 years of experience in environmental impact assessment (EIA) and environmental planning in both public and private sectors. He is a Technical Director in GHD's Environment Team responsible for leading EIAs for a variety of industry sectors. He has experience throughout the environmental impact assessment process including design stage planning input, delivery stage impact assessment, engineering interface, policy review, auditing and regulatory compliance. His experience includes preparation and project management of more than 200 individual ESIAs to meet both local and international regulations including the IFC guidelines and Equator Principles. He has also been responsible for leading the environment and sustainability stream for major new infrastructure developments and has experience throughout the procurement and delivery stages for numerous projects throughout Australia. Recent high profile approvals projects includes leading the preparation of Environmental Impact Statements for the Port Kembla Gas Terminal, the Springvale Water Treatment Project and the Western Sydney Airport.

### Presentation: Port Kembla Gas Terminal - accelerated approvals

Australian Industrial Energy (AIE) propose to develop the Port Kembla Gas Terminal involving a liquefied natural gas (LNG) import terminal at Port Kembla in NSW. LNG will be sourced from worldwide suppliers and transported by LNG carriers to the terminal for regasification and input into the NSW gas network. The project will provide a simple, flexible solution to meet predicted gas shortages and will be of considerable economic benefit to both the Illawarra region and NSW. The LNG import terminal represents a completely new industry for the State, which meant there were no precedents for assessment within the NSW regulatory framework. This required detailed engagement with government authorities and interpretation of the project in the context of applicable state and Commonwealth legislation. The project was declared critical state significant infrastructure (CSSI) by the Minister for Planning. This is the highest level of assessment in NSW and provides for a more streamlined assessment approach and scrutiny from government regulators. Delivery of an Environmental Impact Statement to a compressed timeline was considered a key requirement for the project. Consent is required to provide regulatory certainty to secure gas contracts and address gas shortages in the market. Timeframes were further restricted by limitations to public exhibition during the Christmas holiday period and the government entering caretaker mode in the lead up to the state elections. A CSSI approval process typically requires 6 to 12 months for EIS preparation. A robust and technically sound EIS was delivered within three months of receipt of the assessment requirements for the project and approval was obtained within 10 months of commencement of the approval process. This paper explores the challenges and opportunities of undertaking an accelerated approvals program for a new industry in NSW.



# ABSTRACTS & BIOGRAPHIES

## MAT PEEL



### Biography

Mat Peel Mat is Australasian Environment Lead at Arup and has extensive experience in leading environmental advisory services for major infrastructure projects. His strengths lie in understanding the project context and the myriad of stakeholder and community interests to develop effective solutions. To achieve this, he provides clear vision and focuses on the quality of relationships needed to get challenging things done. Mat engages with a variety of project stakeholders particularly Commonwealth and State regulators, construction contractors, and the community, to ensure projects are successfully delivered to meet environmental outcomes and within project budget and schedule. Leah Howell Leah has a passion for renewable energy and has been involved in the planning, assessment and transaction of several solar farm, wind farm and pumped hydro energy storage projects. Leah's work is driven by her interest in sustainable development and climate change mitigation, and she is always focused on achieving the best solutions in terms of social, environmental and economic outcomes. Leah has successfully lead multidisciplinary teams to deliver a range of project documents and has a proven ability to communicate effectively with clients, regulatory agencies and a range of public and community stakeholders.

### **Presentation: Seawater pumped hydro as an energy storage solution for our renewable energy future - Lessons learned from the Cultana Pumped Hydro Energy Scheme**

Seawater pumped hydro is the innovative application of existing technology to meet the largest challenge of the National Energy Market; integration of intermittent renewable energy sources into the generation mix, while ensuring energy reliability, affordability and sustainability. The variable nature of current renewable energy supply means that it is not always available when required and there are also times where there is an excess of supply. There is a critical need to solve this constraint over the long term, as the ageing coal-fired fleet is progressively replaced with new sources of energy. With sufficient storage, renewable energy supply can be made "firm" and become, in combination with storage, dispatchable. EnergyAustralia, along with development partner Arup, is proposing to build and operate a Pumped Hydro Energy Storage project approximately 10 km south-west of Port Augusta, with the provision of supplying up to 225 MW of dispatchable electricity for around eight hours during peak demand. The proposal presents a grid scale energy storage solution – innovatively using existing seawater pumped hydro technology that allows energy to be stored in the gravitational potential of water - to address the market need for energy firming to support the growth of renewables. Here, members of the project team reflect on lessons learned from the development of the Cultana Pumped Hydro Energy Scheme. This will include the unique application of technology, the energy market challenge, site selection, pre-feasibility and feasibility phases, impact assessment and statutory approval.



# ABSTRACTS & BIOGRAPHIES

## PIP MARKS



### Biography

Pip Marks has over 20 years professional experience in the fields of energy and water efficiency, waste management, environmental management, natural disaster reduction and emergency management. She has worked in policy and program areas of ACT and Australian Governments, as an environmental consultant, and as Eco-efficiency coordinator for the Motor Trades Association of the ACT. She left her last position as CSIRO Sustainable Energy and Water Manager in 2014 and now spends her time blogging at [sustainabilitysoapbox.com](http://sustainabilitysoapbox.com) and exploring how we can use engaging stories to promote and educate readers about environmental and social issues. Since 2016, Pip has travelled extensively in India, compiling information for a novel about sustainable tourism and lessons that we can learn, especially in terms of water and energy resilience, traditional practices and sustainable consumption. She has also been on the judging panel for the Banksia Sustainability Awards since 2015.

### Presentation: Learning from the past is not a given

Four vignettes from India highlighting the benefits of: making groundwater and water pollution visible; absorbing water wisdom from the past; and challenging present assumptions. These stories of water resilience and exploitation provide both lessons and warnings for all countries with increasing populations and limited water supplies. A family conducting tours at an ancient city with a sophisticated water management system and the world's oldest sewerage system, while living in a home with no water or sewerage connection or rainwater storage. A village at the edge of the desert relearning traditional water management techniques while nearby farmers create indigo blue lakes on their land for short term gain. A city in South India where foaming lakes catch on fire, even a few mm of rain can flood middle class suburbs and disrupt traffic, and the water mafia controls water distribution. The hunt for a heritage-listed stepwell on the outskirts of Delhi that ends at an open defecation site.



# ABSTRACTS & BIOGRAPHIES

## ELIZABETH HARVEY



### **Biography:**

Elizabeth Harvey is a Senior Associate in the Resources and Energy practice at HopgoodGanim Lawyers. She advises on all aspects of resources and energy law, including native title, cultural heritage and environmental obligations. Her experience includes advising clients in relation to oil and gas, mining, and renewable energy projects, including in relation to regulatory approvals, the acquisition or sale of resources projects, services agreements, land access agreements, and environmental rehabilitation obligations.

### **Presentation: Yes to H2: Environmental approvals for developing an Australian hydrogen industry**

The use of hydrogen as a fuel and the development of an Australian hydrogen industry is a rare area of energy and climate policy that has been embraced by both sides of politics. Australia has the opportunity for producing “green” or renewable hydrogen for export with low or zero emissions, using electrolysis powered by wind or solar to split water into hydrogen and oxygen. Alternatively, hydrogen can be produced from coal or methane through combustion and thermal decomposition reactions, but carbon capture and storage technologies are then needed to offset the emissions. This presentation will look at the policy development for Australia’s hydrogen industry, through the Council of Australian Governments (COAG) Energy Council’s Hydrogen Working Group and the national hydrogen strategy. It will focus on the existing legal frameworks and what regulatory reform may be required, including the environmental approvals for the production, storage and transport of hydrogen.



# ABSTRACTS & BIOGRAPHIES

## MITCHELL ROSS



### **Biography:**

Mitchell Ross recently completed Masters of Marine Biology and Ecology at James Cook with his research focusing on assessing the strategic nature of SEA. He developed a unique, empirically grounded criteria to assess the strategic nature of Strategic Assessments completed under the Environment Biodiversity Protection Act (1999).

### **Presentation: Just how 'strategic' are Strategic Environmental Assessments?**

Best practice strategic environmental assessment (SEA) is increasingly seen as a transformative process which promotes sustainability rather than a technical EIA-like process simply applied to policies plans and programmes (PPPs). It has been suggested in the literature that SEA is not automatically strategic because it is applied to processes (PPPs) which have a strategic nature; rather, it is the way in which the assessment actually takes place. This study investigates these discussions surrounding strategy and proposes best practice components of strategic SEA based on commonly occurring ideas in the literature. Criteria to specifically assess the strategic nature of SEA is then developed. Unlike other literature which assess the effectiveness or efficiency of SEA; this research focuses solely on the strategic nature of SEA. The developed criteria were used to assess completed Australian Strategic Assessments (SAs) under the EPBC Act (1999). The criteria proved successful in assessing the strategic nature of the SAs and identified areas for improvement of the Australian SEA system. We suggest that the criteria be used to assess SEAs outside of Australia as it may also prove useful for improving strategic components of SEA processes on global scale.

# ABSTRACTS & BIOGRAPHIES

## MEGAN JONES

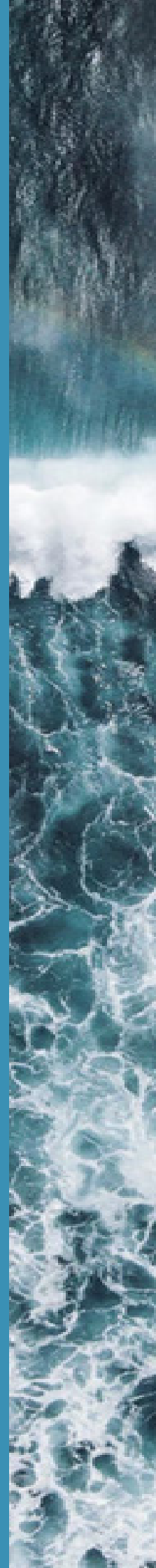


### Biography

Megan is a PhD student from Edith Cowan University in Western Australia. Her research focuses on the effectiveness of environmental impact assessment (EIA), in particular exploring stakeholder expectations of the EIA process since its inception. With an aim to answer the research question – how much can be expected from the EIA process? This research is guided by a number of key questions, primarily: 1. To what extent are stakeholder expectations of the EIA process currently understood? 2. What are stakeholder expectations of EIA? 3. How have differing stakeholder expectations affected how the EIA is undertaken in WA? 4. How might EIA better incorporate stakeholder expectations going forward? Her earlier Masters of Science in Environmental Science research focused on organisational learning with a thesis was entitled 'Exploring the role of EIA in organisational learning and transformation'. Prior to undertaking further study Megan worked in a variety of environmental advisory roles within private industry, state and local government and not-for-profit organisations for a period of 10 years.

### **Presentation: How understanding stakeholder expectations can assist environmental impact assessment (EIA) remain resilient into the future.**

Environmental impact assessment (EIA) is first and foremost a process for identifying the future consequences of a current or proposed action. Arguably, key to EIA's resilience as a tool over the last 50 years has been its adaptability; proven in its application in over 200 jurisdictions worldwide. The resilience of an EIA system is its ability to withstand a major disruption within acceptable degradation parameters and to recover within an acceptable time. The WA EIA system has remained resilient since its introduction in the early 1970s, primarily through the evolution of procedural requirements (such as recent substantial changes to EIA Administrative Procedures and accompanying guidance material), rather than legislative reform. EIA's resilience going forward will largely depend on those engaged in the process. It is important to recognise stakeholder knowledge and engagement in issues intersecting with EIA has also steadily evolved since EIA was introduced in WA. This presentation reflects on explicit research on stakeholder expectations in relation to a controversial linear infrastructure project in WA (known as 'Roe 8'), which resulted in a major disruption to WA system. It outlines the framework for determining stakeholder expectations focusing on four key expectation types: procedural, substantive, transactive and legitimacy and expectation levels: meta, macro and micro. This presentation then discusses future application of this framework to minimise major disruption to WA system in the future for ongoing system resilience.



# ABSTRACTS & BIOGRAPHIES

## ERIK LOCK



### Biography

Erik Lock is a Principal Mining Assessment Officer with the South Australian Department for Energy and Mining. Erik's main role is to ensure major metalliferous mines in SA operate within robust and transparent environmental regulatory frameworks

### Presentation: Learnings on regulatory transparency for the South Australian minerals and energy sector

The SA Department for Energy and Mining has progressively applied transparency measures to build stakeholder trust in decision making for mining and petroleum developments. Perception risks associated with uranium mining and community response to mines proposed near communities and on agricultural land have been key to increased transparency. Since the 1990's, transparency measures have included publishing information on regulatory processes, approved operational programs and compliance reports, and increasing public participation in mining and petroleum developments. Provisions for public release of application decisions, approval conditions, approved operational programs and compliance reports were legislated in 2011. From 2014 further transparency has been applied to major mine applications with significant public interest by publishing public submission and assessment reports. The first two assessments undertaken this way, the Hillside Copper Mine and Central Eyre Iron Project provided invaluable learnings on how to ensure open and transparent decision making. Assessment reports have also been recently publicly released for an underground coal gasification project near Leigh Creek. This paper looks at the evolution of regulatory transparency in SA's mining and petroleum sector, and explores challenges and opportunities presented by increased transparency.



# ABSTRACTS & BIOGRAPHIES

## STUART PHINN



### Biography

Stuart Phinn is a professor of Geography at the University of Queensland where he teaches remote sensing and directs the Remote Sensing Research Centre ([www.rsrc.org.au](http://www.rsrc.org.au)), which includes programs to support government agencies across Australia (Joint Remote Sensing Research Program [www.jrsrp.org.au](http://www.jrsrp.org.au)), research to industry (CRC SmartSAT, [smartsatcrc.com](http://smartsatcrc.com)) and enabling coordination across all government, industry and research groups collecting and using EO data (Earth Observation Australia [www.eoa.org.au](http://www.eoa.org.au)). He received his PhD from the University of California – Santa Barbara/San Diego State University in 1997. He was the founding director of Australia's Terrestrial Ecosystem Research Network and its Associate Science Director. His research and teaching interests are in using airborne and satellite data sets for measuring and monitoring environmental changes and publishing/sharing ecosystem data. This work is done in collaboration with other environmental scientists, government environmental management agencies, NGO's and private companies. He publishes extensively with his collaborators, and currently has 200 papers in refereed international journals, 1 book, an on-line textbook, and 12 book chapters. A large part of this work also involves training the next generation of scientists and managers who effectively use remote sensing, and has graduated 48 PhD students. A growing part of this work now focuses on national coordination of Earth observation activities and the collection, publishing and sharing of ecosystem data.

### Presentation: Why use Integrated Assessment - the importance of collaborative relationships

Why use Integrated Assessment – importance of collaborative relationships Integrated Assessment (IA) as a method has been applied for over 10 years gaining practitioner familiarity and acceptance. IA introduces a way of tactically working to develop an agreed view to improve outcomes and clearly identify where changes are needed to proposals as they are being prepared. This talk focuses on how the formal consultative method brings together sectors, community and professional silos to an assessment practice using the four pillars of sustainability. IA is designed to mix people who have diverse and potentially opposing views, to compel them to listen and work toward a shared agreement they collectively are willing to support. Importantly IA is held in an environment that is respectful and open and allows for a range of disciplines including communities who may not commonly have a loud voice or be consulted well within planning processes. The voices of indigenous and culturally marginalised groups, for example, can have a place at the table and be heard. This is a big step forward on most consultation processes and makes community consultation a reality. IA can give communities confidence and help with understanding constraints government agencies face in managing complex policy planning processes. Trust is forged among agencies and with communities that work to build capital needed to deliver complex plans. This talk will outline the importance of relationships, explain how it is the right thing to do, to hear the voice of others and to agree an outcome using examples of IA from New Zealand. When used early, second or third assessments can be applied to following iterations to further refine the draft proposal. IA is also an audit tool to score with the community who worked with plan makers as delivered five or ten years out. This gives a long term purpose.

# ABSTRACTS & BIOGRAPHIES

## ALAN CHENOWETH



### Biography:

Alan Chenoweth BAgSc GDLA MURP FAILA FEIANZ FAIH FPLA MPIA is a Senior Consultant to Cardno, a Registered Landscape Architect and Certified Environmental Practitioner, with over 40 years experience in consultancy, public service, research and teaching. This has covered plant sciences, environmental impacts, visual assessment, park and recreation planning, landscape design, conservation and land development, community consultation, and generally the integration of ecological and amenity studies with town planning. With qualifications in agricultural science, landscape architecture and planning, a Churchill Fellowship in social housing and past service on the Queensland Board for Urban Places, Alan brings a balanced and multi-disciplinary approach to land use, urban design and development issues. He has acted as expert witness (mainly ecology and visual amenity) in more than 200 Court Appeals, and has won several planning awards for innovative approaches to 'green planning'. Alan served on the Certification Board of the Environment Institute of Australia and New Zealand (EIANZ) from 2004-19 including 4 years as Chair, is a Fellow of four professional institutes and has served on the Management Committee of Environmental Defenders Office (Qld). He is currently undertaking PhD research at Griffith University into the ethics of professional environmental practice.

### Presentation: Reconstructing the concept of professionalism

The concept of professionalism is changing and is under threat, but remains essential for a society where expertise is need to address complex issues. The defining characteristics of professionalism include practitioner autonomy in decision-making and occupational control. However these were reduced under 'managerialism' (a response to tensions between practitioners and employing organisations), and its successor, the hybrid managers of professional teams. The environment profession differs from 'single occupation' professions, and multi-disciplinary teams are common, so has adapted readily to being 'managed'. Decisions involving professional judgments from a wide range of specialists are often negotiated. However the relationships between professionals, managers and employing organisations need to be reviewed, because the concept of professionalism can be subverted and 'colonised'. Management has adopted the discourse of professionalism (vocational motivation, dedicated service, accountability, self-management, continuing education, high status and salaries) to regulate practitioners, while restricting professional judgement, autonomous decisions and occupational control. Some professions such as medicine have retained control of their own professionalisation ('from below') but others have had professionalisation imposed 'from above', such that autonomy is reduced by standardisation of procedures, organisational objectives and accountability protocols, with reduced scope for professional judgment and discretionary decision-making. Professions which are drawn into this subservient role report greater stress among hybrid managers, as well as risking confusion regarding their professional judgment. Environmental practitioners form a diverse and rapidly growing profession, still in the early days of its professionalisation, so is capable of largely determining its own path forward regarding individual practitioner decision-making or 'capture' by managerialism. A simple practitioner-client relationship does not provide an appropriate model for the future, given the multidisciplinary team approaches necessary to address complex environmental interactions. However EIANZ is well-placed to develop a model of professionalism better suited to the 21st century, combining an effective professional institute, a clear but adaptable code of ethics, and a widely-accepted certification scheme with support from regulatory agencies.

# ABSTRACTS & BIOGRAPHIES

## GORDON YOUNG



### **Biography:**

Gordon Young is the principal of Ethiological Consulting, offering extensive expertise in professional ethics, decision-making methodologies, codes of conduct, accountability mechanisms, and conflict resolution. He has 13 years of experience in the environmental management sector, including 5 years on the EIANZ's Victorian Branch Committee and a deployment to regional Indonesia with the Australian Volunteers for International Development Program. He currently lectures with RMIT University's School of Architecture and Design, and has most recently submitted a book for publication with McFarland Press, entitled *Power and the Professional*, offering cutting edge research into the topic of organisational power dynamics.

### **Presentation: Effective management of toxic work environments:**

In an ideal world, environmental practitioners could focus on their work without the distraction of office politics, financial interests, or the risks of coercion by interested parties. However the reality of the profession is often very different from this, and while practitioners develop their own skills to manage these realities, occasionally a work culture can emerge that is too toxic to navigate alone. This workshop will provide a variety of professional ethics tools and applied examples to illustrate how such situations emerge, and the services available to Institute members to help them resolve these problems.



# ABSTRACTS & BIOGRAPHIES

## ZSUZSA BANHALMI-ZAKAR



### Biography

Zsuzsa is a lecturer in the College of Science and Engineering at James Cook University. She is an environmental scientist, with professional experience in environmental assessment and management. Her research interests include how to improve Strategic Environmental Assessment (SEA) practices and the potential for private sector organisations to benefit from SEA. Zsuzsa is an active member of the International Association for Impact Assessment and was a member of the Organising Committee for IAIA19 in Brisbane.

### **Presentation: Improving the Australian Strategic Assessment Process: Lessons from domestic and international SEA experts**

The independent review of the EPBC Act, which is due to begin later this year may be a once in a decade opportunity to influence and improve the Commonwealth's Strategic Assessment (SA) process. In May this year, EIANZ hosted the International Association for Impact Assessment's Annual Conference in Brisbane, which brought together over 850 delegates from 77 countries. The EIANZ's SEA Working Group, which is part of the IA Special Interest Section, decided to take advantage of the congregation of global Strategic Environmental Assessment experts at the conference and invited them to a post-conference workshop. The purpose of the workshop was to share Australian experiences with SA, and extract learning experiences from domestic and international delegates. The lively discussions and reflections on local and overseas practices resulted in a number of 'lessons' about SEA that the Working Group seeks to use to focus its efforts on improve SA (SEA) practice in Australia. This presentation represents the first time the SEA Working Group shares the outcome of the workshop with the wider audience of EIA practitioners. The presentation also gives participants the opportunity to share their own views on the future role of SA (SEA) in Australia and provide feedback on the proposed activities of the SEA Working Group.

# ABSTRACTS & BIOGRAPHIES

## DANIELA VON RABENAU



### Biography

Daniela von Rabenau, Director, Gea Environmental Pty Ltd (MES; BSc) Daniela has 15 years of experience in environmental and sustainability management primarily for the infrastructure and resources sectors. In 2015, she founded the boutique consultancy Gea Environmental Pty Ltd, whose mission is to provide outstanding compliance and sustainability solutions. Julian Fyfe, Technical Manager for Infrastructure, Parkes Shire Council (PhD; BEng; BA) Julian Fyfe aims at sustainability from a wealth of technical knowledge having obtained a PhD from UTS and working for the Institute for Sustainable Futures, UTS. Julian is the Technical Manager for the Parkes Water Infrastructure Renewal Project and strives to achieve sustainability outcomes for the Parkes community. Jason Myers, Project Manager, Major Projects Office, Parkes Shire Council (BEng; Grad Dip PM) Jason has over 25 years of experience throughout Australasia and the UK in the provision of strategic operational planning, business, commercial and project management. Jason specialises in strategic business analysis for heavy engineering and transport infrastructure projects, government operations, property developments and the deployment of utility networks.

### Presentation: Sustainability Accreditation & Innovation - A Case Study

Sustainability ratings encourage positive environmental, social, economic and governance outcomes in infrastructure delivery. The pathway to achieving a sustainability rating forces creative thinking and enables innovation to be rewarded. The Infrastructure Sustainability Council of Australia (ISCA) is the leading body for infrastructure sustainability ratings in Australia and will be the example of sustainability accreditation discussed here. Innovation is a category featuring in the current ISCA rating. Innovation initiatives beyond 'business as usual' are rewarded, can be based on technology or process and must be shown to be a world, country or state 'first'. The Parkes Water Infrastructure Renewal Project is a multiple environmental award-winning project being undertaken by Parkes Shire Council in Parkes, NSW. The Project includes a new water treatment plant, sewage treatment plant, advanced water recycling facility and recycled water distribution line. Parkes Shire Council has sought to be leaders in their region by planning for sustainable outcomes and undertaking a voluntary Infrastructure Sustainability rating. The undertaking of a sustainability rating has encouraged several innovations on the Project including but not limited to the process design for the sewage and water treatment plants, approaches to project procurement and use of sustainable materials. In summary, this paper explores through a case study the potential role of sustainability ratings in fostering innovations in the design and construction of infrastructure projects.

# ABSTRACTS & BIOGRAPHIES

## LINDI BOWEN



### Biography

Lindi Bowen has been working with Lake Macquarie City Council in waste management for the past six years. She has nearly thirty years experience in environmental management in the private sector and all levels of Government in waste management, sustainability, cleaner production, environmental licensing, contaminated land, radiation control and visual impact assessment, and has a degree in environmental science and landscape architecture.

### Presentation: Resource Recovery Innovation in a Regional City

In order to capture resources for recovery, the product distribution network has to be matched by an equal resource recovery collection network. Captured resources must also be returned to resource recovery processors. Regional areas have two challenges greater than capital cities: they are often far from the capital-city-based resource recovery processors; and regions have a less dense population, which increases the distances and associated transport costs for collection networks. Lake Macquarie City Council, working with the Hunter Region Councils, State Government, national programs, Extended Producer programs and with others in the region, together are innovating to identify and implement a diversity of waste resource capture and regional processing systems, incrementally increasing diversion of wastes from landfill to resource recovery. In the past year, this has included programs to regionally process and reuse glass fines as sand, and capture and process food wastes for soil improvement organics. Lake Macquarie City is a regional lakeside city of 76,000 households, nestled between Newcastle and the Central Coast, within the Hunter Valley and ninety minutes north of Sydney. The Council has engaged opportunities offered by the NSW State Government, nationally available programs, Extended Producer programs and others in the region to capture waste resources. The Council is also engaged in business innovation incubation including running Maker events, installing internet connection gateways and a renting spaces in a business co-work hub, to grow local businesses, including potentially in the resource recovery space. The third innovation in Lake Macquarie City is the Council's engagement with creating an internet-connected Smart City through which public place bin collection services are to be trialled.



# ABSTRACTS & BIOGRAPHIES

## ROBERT QUIGLEY



### Biography

Robert Quigley is an impact assessment consultant who writes, teaches and undertakes impact assessments across NZ and Australia. He specialises in health; integrated; sustainability; and social impact assessment approaches.

### Presentation: Lessons learned from the early use of an Integrated Assessment tool in Adelaide

The Integrated Assessment Guide is being launched at this EIANZ conference. One of the earliest uses of the Integrated Assessment Tool was undertaken here in Adelaide as part of a wider Health in All Policies programme,. The Integrated Assessment Tool systematically considered health and wellbeing, commercial imperatives, sustainability and community amenity within a local government planning process. This paper describes the lessons learned from using the tool on a Development Plan Amendment (seeking to re-develop eight city blocks, the Castle Plaza site) in Marion City, Adelaide. The team undertaking the assessment involved developers, planners, bankers, and local and state government agencies to advance the interests of all parties. The authors will reflect on lessons learned, discuss the wider benefits that arise from such collaborative working, and discuss consequent and future actions.

# ABSTRACTS & BIOGRAPHIES

## AROHA SPRINKS & MOIRA POUTAMA



### Biography

Moira Poutama and Dr Aroha Spinks are of Ngāti Raukawa, Ngāti Tukorehe, Ngāti Wehi Wehi descent working as kairangahau (iwi researchers) from the rohe (region). In their roles they coordinated and led engagement with landowners and investigated the adaptation options involved in the Deep South National Science Challenge funded, Vision Mātauranga research project – 'Planning for climate change impacts on Māori coastal ecosystems and economies'. It follows on from Phase 1 of this research, entitled – 'Adaptation strategies to address climate change impacts on coastal Māori communities'. As kaupapa Māori researchers and consultants for Huia Te Taiāo Ltd they are dedicated to uplifting whānau, hapū, iwi (families, sub-tribes, tribes) and their environmental aspirations for now and into the future. Naku te rourou nau te rourou ka ora ai te iwi Refers to the cooperation and combination of people and resources required to succeed.

### **Presentation: Developing coastal zone transition action plans to mitigate climate change impacts using mātauranga Māori (Māori traditional knowledge), science and ecological economics**

The Horowhenua coastline between the Ōhau and Waikawa Rivers is a culturally significant ancestral landscape to Ngāti Tukorehe and Ngāti Wehi Wehi. Five Māori-owned land blocks were supported by a collaborative interdisciplinary research team to co-develop transition action plans to mitigate future climate change impacts. The research team explored three whānau (family) determined land use adaptations: 1) the use of harakeke (NZ flax) as a means of cultural enrichment and income generation from production of harakeke-sourced products; 2) riparian planting activities to increase the abundance of taonga (treasured species) such as tuna (eels) and īnanga (whitebait); and 3) construction of sustainable papakāinga (housing). This presentation will highlight the importance of mātauranga Māori (Māori traditional knowledge), tikanga (cultural practices) and the kaupapa (values) that enhanced this cross-cultural research project. Supported by the latest climate change science, geomorphology and ecological economics our research team aided whānau to assess risks and trade-offs between alternative land use options that address climate change impacts for their rohe (region). This project was organised around hui (meetings), wānanga (workshops), hīkoi (walking talking discussions) and a public exhibition. The creative expressions in exhibitions have been an intrinsic element of disseminating mātauranga Māori and science to local Māori communities and the general public. These methods were used as ways of co-producing and increasing awareness to respond, adapt and manage future potential climate change impacts. Rangatiratanga (self-determination) and inter-generational kaitiakitanga (stewardship) were critical in ensuring success. Whatungarongaro te tangata, toitū te whenua As man disappears from sight, the land remains

# ABSTRACTS & BIOGRAPHIES

## JANE KITSON



### Biography

Ngāi Tahu (Ōraka-Aparima and Awarua Rūnanga). Ecologist and environmental scientist with research interests in freshwater, mahinga kai and cultural monitoring. Director of Kitson Consulting Ltd an environmental consultancy that links values and science to support mana whenua in their environmental management aspirations and needs.

### **Presentation: Murihiku Cultural Water Classification system: a tool to empower whānau management of freshwater cultural uses.**

Freshwater management in New Zealand is complex, with many competing drivers and a complex legislative framework. This situation creates a challenging, time-consuming, and at times, overwhelming process for whānau. The challenging environment is exacerbated by each agency focusing on its own legislation with whānau having to fit their values in rather than their interests and aspirations being at the core of the management framework with agencies

*What can be done to empower mātauranga Māori in freshwater management and and improve decision-making and outcomes for whanau?*

The Murihiku (southern South Island) case study of the Ngā Kete o te Wānanga: Mātauranga Māori, Science & Freshwater Management research programme examined this quandary via the development of a 'Murihiku Cultural Water Classification System' to establish baselines and standards on waters for different cultural uses.

The Murihiku Cultural Water Classification System was developed around the cultural uses of Wai Tuna (eels), Wai Pounamu (greenstone) and Wai Noho (seasonal camping places). Cultural uses are central to the identity of Ngai Tahu ki Murihiku whānau and are embedded in its landscape, values, beliefs and practices. This presentation will illustrate the development of this management framework for these cultural uses, and how the research has already been used and implemented by mana whenua.





# ABSTRACTS & BIOGRAPHIES

## PATRICK MAIDEN



### Biography

Patrick is an aquatic ecologist with 20 years' experience conducting research and consultancy projects involving the ecology, flows and environmental chemistry of inland waterways. Patrick's career started with technical research roles with the Cooperative Research Centre for Freshwater Ecology, and then shifted to private consultancy firms, working in the water and environment sectors. Patrick has held team leadership positions in aquatic sciences. Prior to his current role as GHD's Gippsland Manager, Patrick held a Technical Services Leadership role for Aquatic Sciences, providing leadership and vision for the technical development of aquatic scientists within GHD across Australia, Asia-Pacific and Europe/Middle East. Patrick is also GHD's Reconciliation Champion in Victoria, inspired by social justice and a desire for an inclusive community. Patrick lives in a conservation covenanted property in the Dandenong Ranges, and shares a fascination of the lyrebirds and frogs with his three amazing girls.

### Presentation: Taking our people to the 2nd Horizon - Building technical resilience in ecologist

Professional and Technical Services firms are adapting their businesses in response to the technological and social changes affecting all industries. But what does innovation and disruption mean to ecologists? How are we placed to respond to the gig economy and big data? The stereotypical professional ecologist has a passion for work in the field, with a deep personal connection to flora, fauna and the systems of the natural world. And yet the role of the future professional ecologist may not require the same 'hands on' work, and so are our field ecologists themselves heading for a place in the Museum of Natural History? This presentation will provide examples of how a professional services organisation plans for future workforce requirements, and recognising the technical succession required, encourage a growth mindset and support skills development to build resilience and relevance in our people. These examples consider the impacts of digital technology, next generation genetic sequencing, social procurement and democratised data sourcing.

# ABSTRACTS & BIOGRAPHIES

## STUART WATERS



### Biography

Stuart Waters is Managing Director of Twyfords, a firm specialising in coaching and training those needing to work better together to tackle complex technical and environmental problems. Having supported leaders and managers to work better together over many years, Stuart believes that the challenges facing the environment sector will only be solved by genuine collaboration among all interested parties. He also knows that collaboration is hard to do and has made it his personal mission to build the world's capability to work together on complex problems. Stuart has supported a number of award-winning projects. These include sea level rise adaptation planning at Lake Macquarie City Council, and a collaborative approach to catchment management in the Vasse-Wonnerup Wetlands in WA. He recently presented to the UN in Bangkok on collaboration and the SDGs. A co-author of two books Stuart trains and coaches collaboration with clients across Australia and New Zealand.

### Presentation: Do We Have What it Takes to be Innovative Environmental Managers?

Environmental management is a big challenge, for which innovation is essential. Making progress on complex environmental problems requires a new and different set of skills, habits and mindsets. Most critical for innovation is the ability to collaborate effectively across levels of government, interests, and technical disciplines. Yet as important as collaboration is to innovation in environmental management there is little agreement on what collaboration is or how to do it effectively. Most tellingly, there is little acknowledgment of the hard truth at the heart of collaborative practice; that true collaboration on complex problems is difficult. Collaboration is not about having meetings, but about relationships, values, fears and human vulnerabilities. Learning how to collaborate means learning how to be uncomfortable. Authentic collaboration requires leaders and managers to go beyond their content expertise and to think and act differently. It is a paradigm shift for environmental managers, without which we put at risk our efforts to find new ways, to build resilience and to leave business as usual behind. What is needed is both a process map to guide collaborative efforts and a long-term commitment to capability building to help leaders, teams, project managers and communities build their 'collaborative muscles'. Only in this way will we all be able to walk the collaborative talk. This paper makes a clear connection between the complexities of environmental management and the critical role of collaboration in thinking and acting differently. Drawing on a number of examples it presents a collaborative pathway and challenges environmental managers to build their collaborative literacy and the skills and mindset needed to unleash the power of collaboration to meet our need for new ways of working.

# ABSTRACTS & BIOGRAPHIES

## HELEN ROSS



### Biography

Prof. Helen Ross, best known to EIANZ as the Managing Co-editor of the Australasian Journal of Environmental Management, has been working on resilience from various angles for 15 years. She combines the social-ecological systems with psychology perspectives on resilience, towards building new theory and insights to support practice in environmental management and community development. She manages social sciences in the School of Agriculture and Food Sciences, The University of Queensland, where she is responsible for rural development. Besides resilience, her fields of interest include integrated management of social, economic and environment, regional development through participatory processes, community-based environmental management and co-management. She is a Fellow of the Environment Institute of Australia and New Zealand.

### Presentation: Framing resilience to promote innovation

Thinking about resilience has emerged in several distinct fields, each with their own bodies of theory, informed by empirical research and observation. Obviously these widely differing perspectives are closely related with the 'problems' different scholars and practitioners have been concerned with: ecosystems, psychologically thriving individuals or communities, coping with disasters, engineered structures that cope under stresses, and agile businesses. Each way of thinking has strengths, and notable omissions. Each has different prescriptions about how to build resilience, or – more cautiously – the related idea of adaptive capacity. Linkages across these perspectives remains limited so far, yet much mutual learning is possible. How can these synergies be explored, to offer environmental policy makers and practitioners new ways of thinking about promoting sustainability in the complex-adaptive-systems world where shocks, stresses (and disasters) should be expected? This paper will provide background for a session on theme 5 - Environmental awareness and management with innovation. It will canvas the ways resilience is considered in the fields of social-ecological systems, mental health and human development, engineering and built environment, business, and disaster management. Key ideas these fields can learn from each other include systems perspectives, working from strengths rather than overdue emphasis on redressing weaknesses, taking a multi-level view, building capacity for agency and self-organising, and collaborative adaptive management. Most crucially, how can different framings lead to innovation in constructive intervention?

# ABSTRACTS & BIOGRAPHIES

## JESSICA BERRY



### Biography

Jessica is an environmental professional and project manager with over 12 years' experience in the environmental management and sustainability fields in Australia and the UK. Jessica's previous work includes extensive experience in compliance, approvals, environmental management and sustainability for transport and linear infrastructure including railways, airports and ports. Jessica has held roles with Australian Rail Track Corporation, Sydney Ports Corporation and Portsmouth City Council before commencing a consultancy career with pitt&sherry. Jessica has a proven track record in delivery of environmental projects and has led multidisciplinary teams on a range of projects and worked across various legislative frameworks including NSW, Qld, Vic and SA as well as the United Kingdom. Most recently, she has been the Project Manager for numerous Environmental Impact Statements for renewable energy projects in NSW.

### Presentation: Key Environmental Issues and Community Concerns for Large Scale Renewables Projects – Now and in the Future

According to the NSW Department of Planning and Environment, as at August 2018 there was around 14,000MW of projects with investment value of around \$18 billion progressing through the NSW planning system. The majority of these are wind and solar projects. Having prepared numerous environmental impact assessments for large scale renewable energy projects in Qld, NSW and Tasmania we have developed an in depth understanding of the key environmental issues and community concerns associated with these large-scale renewables projects as well as opportunities for innovation and best practice. We are drawing on this knowledge and understanding to map out the potential risks and opportunities for future renewable energy projects in Australia. How do we take the lessons learnt around environmental assessment for the current renewables boom into best practice for future innovations.



# ABSTRACTS & BIOGRAPHIES

## JEN SCOTT & LUCY BAND



### Biography

Jen Scott is an engagement specialist with a background in planning and twelve years' experience working within the infrastructure industry (mainly within the transport) across Australia and New Zealand. Jen is currently working with the NZ Transport Agency based in Auckland and has spent the past year leading the development of a best practice communication and engagement approach for consistency across the country for the Transport Agency.

### Biography

Lucy Band is a social impact and engagement specialist. She is currently an Associate Director at Urbis, a leading international urban development consultancy. Lucy has worked with communities in Australia and the UK to deliver planning and development outcomes that provide strong public benefit. Lucy and Jen are the founders of an online research platform -conscious city projects.

### Presentation: A culture of calm – a new policy perspective on quiet spaces in cities

The noise level of cities is on the rise. As urbanisation and the 24 economy create more dense, intense and demanding urban settings, experiencing a quiet space at any time of day or night is becoming increasingly rare. Traditional spaces for rest and restoration are being challenged – our homes, open space, national parks, churches and libraries are subject to increasing background noise from transport, construction, commercial activities, flight paths, drones and other technology. But the issue of noise is not just an urban nuisance, the World Health Organisation recognises noise as one of the top environmental hazards to both our physical and mental health. It can disturb sleep, cause cardiovascular effects, reduce performance and provoke annoyance responses and changes in social behaviour. So, the issue of silence is not just a preference but should be a global planning and policy priority. Noise pollution is typically approached from the perspective of acceptable limits. But there is a policy gap in urban planning that actively provide spaces that don't just meet acceptable noise limits but cultivate and value quiet. This paper will compare international positions on silence and how different cultures value and embed this quality in the urban environment. It will present emerging findings from our research on 'silence in cities' and make a case for shift in policy from noise mitigation to promoting and preserving a culture of calm. It will present innovative ideas from across the world, from Helsinki's Kamppi Chapel of Silence, Auckland's Fukuoka Garden to the value of extended periods of silence in Aboriginal and Torres Strait Islander cultures.

# ABSTRACTS & BIOGRAPHIES

## STEVE SKULL



### Biography

Steve is the Queensland Regional Manager of Alluvium and draws on a 20 year career in natural resource management complimented by formal business management qualifications. His work for state agencies spans program and project management in water resource management and planning, environmental regulation, nature conservation, as well as experience with a wide range of industries including mining and major infrastructure providers. In the local government context Steve has been responsible for the development, delivery and evaluation of environmental policies and programs covering waterway management, climate change, biodiversity, peak oil and sustainability. He has led the delivery of significant projects for clients in the consulting space that have involved policy makers, regulators, industry and environmental stakeholder groups. He is widely recognised for his ability to bring project teams together and deliver pragmatic solutions for complex issues. Throughout his career Steve's work has been recognised by a number of prestigious environmental awards including the International River Foundation's National Riverprize.

### Presentation: Building resilience as part of the Qld Coastal Hazard Adaptation Strategy proc

Over the last 3 years more than 30 coastal Councils in Queensland have commenced the development of a Coastal Hazard Adaptation Strategy to reduce the impact of coastal hazards on coastlines and communities. Coastal hazards include open coast erosion, storm tide inundation, and long-term expansion of tidal areas due to sea level rise. This strategic planning has been initiated and funded by the State Government and Local Government Association of Queensland (LGAQ) through the QCoast2100 program. Each Council is undertaking a program of technical assessments to define coastal hazard areas at the regional scale (erosion and storm tide modelling), and developing a strategy to mitigate coastal hazard risk through a range of adaptation actions. Importantly, the 12 month process of developing a strategy includes a strong focus on building partnerships with a range of stakeholders, and specifically the local communities. Each Council's journey is different, and this presentation draws on the experiences of Douglas Shire Council, Burdekin Shire Council, Sunshine Coast Council and Brisbane City Council. These experiences highlight the important role of working with communities to define the values and character of the landscape, the importance of working together through the process of adapting to a changing climate. The project's ultimate aim is to collaboratively build resilience into Queensland's coastal communities.

# ABSTRACTS & BIOGRAPHIES

## TIM WALKER



### Biography

Tim Walker is the National Environment and Sustainability Operations Manager for McConnell Dowell. He has 10 years' construction environmental management experience across a broad-range of infrastructure projects (buildings, tunnels, bridges, wharfs, roads and railways) in South Australia and Victoria. Tim graduated from Flinders University with a Bachelor of Environmental Science in 2004 and spent his first 12 months after university working in the contaminated land consultancy environment in South Australia. He then worked in the QLD and SA resources sector for 4 years as an Environment and Community Advisor. Tim has 15 years of diverse environment and sustainability experience across various industries, in all states of Australia. Tim is particularly experienced in the mitigation of construction environmental impacts and developing best practice solutions to overcome these challenges.

### **Presentation: From tunnels to bridges and railways to wharfs – 10 years' of innovative environmental management in a creative construction environment**

This presentation focuses on best practice environmental management during the construction of large infrastructure projects across Australia. It is based on the experience gained by an environmental practitioner working for a large construction company for 10 years. Design and construction environmental management with innovation in the areas of tunnels, bridges, wharfs, pipelines, roads and rail will be the focus of the discussion and how a Creative Construction Company builds resilience into these. The Company, McConnell Dowell, won the Australian Construction Achievement Award (ACAA) in 2017, and again in 2019. The prestigious award recognises the best construction projects, delivered by the nation's best construction companies. Environmental Management through innovative design and construction on these two environmentally sensitive projects will be discussed. Integrating sustainability into construction and the Infrastructure Sustainability Council of Australia's (ISCA) Infrastructure Rating (IS) scheme is helping to drive a change in culture through awareness, innovation and resilience. McConnell Dowell's experience in implementing ISCA and outcomes achieved will be presented.

# ABSTRACTS & BIOGRAPHIES

## TOM HOLDEN



### Biography

Tom joined Open Lines in May 2017. He has over 15 years experience across the government, non-government and private sectors in environmental impact assessment, policy development and law reform, and program implementation. Tom has experience developing and implementing strategic assessments and more broadly in environmental impact assessment. At the Victorian Department of Environment, Land, Water and Planning (DELWP), Tom helped prepare the Biodiversity Conservation Strategy for the Melbourne Strategic Assessment that established a \$1 billion conservation and offsets program, and helped implement the program. As a senior consultant at Kellogg Brown and Root, Tom prepared environmental impact assessments for major infrastructure projects across NSW. Tom also has considerable policy experience. Tom played a lead role in policy development and legislative reforms to Victoria's primary biodiversity law, the Flora and Fauna Guarantee Act 1988 while at DELWP. Tom also worked at the NSW Environmental Defenders Office (EDO) where he established the science program and a pro-bono register of science experts to assist the EDO, helped run court cases on public interest matters, and led law reform projects on biodiversity laws. Tom has working knowledge of Commonwealth, NSW and Victorian environmental, planning and biodiversity laws and policies.

### Presentation: Implementing strategic assessments – some lessons learned

Strategic assessments of large-scale urban development programs are increasingly being used across Australia as an alternative approach to site-scale approvals in meeting biodiversity laws. Strategic assessments promise much in theory. They provide significant opportunities to:

- improve biodiversity outcomes through landscape scale strategic conservation
- encourage biodiversity to be considered early and strategically in planning processes
- provide upfront planning certainty to proponents and government
- save developers time and money
- streamline approval processes

Some have generated substantial funds for conservation. The Melbourne Strategic Assessment has generated an unprecedented \$1 billion for an ambitious conservation program across outer Melbourne, including large scale restoration of native grasslands. But are strategic assessments meeting expectations and delivering what they promise? The answer depends to a large extent on how effectively they are implemented. Good implementation is important in the success of any program, but it is particularly challenging with strategic assessments because of the size and complexity of the programs and the long time frames over which they are implemented. In this presentation, we:

- explain what implementation is
- take stock of progress in implementing some major strategic assessments to date
- identify the key elements of implementation
- discuss some common implementation issues using examples
- provide some thoughts on lessons learned and basics to get right

The presentation draws on examples and our experience in the development and implementation of several major strategic assessments, including the Melbourne, Perth and Peel, Molonglo and Sydney Growth Centres programs.



# ABSTRACTS & BIOGRAPHIES

## MELISSA NURSEY-BRAY



### Biography

Melissa's research investigates the connection between people and the environment and focusses on how to engage communities to be part of environmental decision making, particularly in the context of climate change and biodiversity protection. She has worked with Indigenous, ports, local government and fishing communities on a range of projects. These projects have examined how conflict, social and cultural values, knowledge, social learning and perceptions affect how people become involved in or help drive environmental sustainability. Her most recent work explores how different communities can adapt to and become resilient in the face of climate change. This has included developing adaptation strategies for Indigenous peoples, looking at how urban areas can be 'greened' and the ways in which fisheries can be made more resilient and responsive to climate threats.

### Presentation: Governance and caring for country: Implications for understandings of resilience

Indigenous peoples in Australia are at the forefront of and initiating innovative models of environmental management; from Indigenous protected areas to co-management. Of late, they have turned to development of various programs to address the challenge of climate change. Set against these initiatives is a literature replete (still) with discursive assertions of Indigenous peoples being 'vulnerable', or 'disadvantaged'. These frames context Indigenous peoples as 'lacking' and needing help, and locate them within dominant characterisations of them as 'local' and 'remote/regional': effectively delimiting the terms of engagement for Indigenous peoples in wider decision making and governance structures that nonetheless affect their own well being and country. This paper explores the ways in which Indigenous agency is expressed in contemporary environmental management regimes, as well as Indigenous led caring for country initiatives. It concludes with reflections on the implications for ongoing collaborative governance and specifically how 'resilience' as a term is conceived of and understood by Indigenous people at the heart of these programs.

# ABSTRACTS & BIOGRAPHIES

## BRAD WILLIAMS



### Biography

Mr Brad Williams – BSc(Hons), PGrad Dip OHS Program Director – Flinders Sites Closure, Flinders Power, Australia Director – Eyre Advisory Services, Australia Working in a range of industry sectors over the past 18 years, including power generation, public utilities, manufacturing and heavy industry, Brad has strong operational leadership experience. Brad was most recently employed as Program Director for Flinders Site Closure, responsible for overseeing the unprecedented closure, demolition and rehabilitation of the former Northern and Playford Power Stations at Port Augusta, and the open-cut coal mine at Leigh Creek. Brad previously held senior health, safety, environment and community roles with Alinta Energy, Clipsal Australia, Thames Water (London) and Pasmenco. His management approach is underpinned by his experience in organisational leadership and culture and the significant impact this can have on outcomes. With an Honours Bachelor of Science and a Postgraduate Diploma in OHS, Brad is currently expanding his educational qualifications by completing a part-time MBA. Brad is a Graduate of the Australian Institute of Company Directors and a member of the Australian Institute of Mining and Metallurgists (AusIMM). Brad is a co-owner and Director of the newly created firm Eyre Advisory Services, formed to assist industry who are embarking on similarly complex and multi-faceted closure programs.

### Presentation: Resilient and Innovative Leadership - Lessons Learnt During the Closure of the Flinders Power Business

In June 2015, the Alinta Energy Board announced the closure of the South Australian Flinders Power business, comprising the Leigh Creek Coal Mine, the Northern and Playford Power Stations located at Port Augusta, the 260km interconnecting railway line and the 'company town' of Leigh Creek. The announcement was preceded by a brief period of internal planning. Coal mining operations ceased in November 2015 with the last day of power generation on 9 May 2016. This brought to an end 62 years of coal-fired power generation at Port Augusta, and 75 years of intensive operations at Leigh Creek coal mine. The swift decision to close, followed by a short operations shutdown period, presented significant operational, technical, social, commercial and regulatory challenges for Management. An extensive risk review process identified immediate priorities, strategic planning defined unique workstreams and stakeholder mapping defined the key internal and external parties who required a bespoke focus. A tight project completion goal meant that closure planning and execution occurred concurrently. Snowden (2010) describes the difference between four different types of challenges, being: - A simple challenge – where the relationship between cause and effect is obvious, requiring a best practice response (sense – categorize – respond); - A complicated challenge – where there is a known answer however it requires some investigation or the application of expert knowledge (sense – analyze – respond); - A complex challenge – where there is not currently a known answer and the relationship between cause and effect can only be perceived in retrospect. This is emergent practice requiring an adaptive approach (probe – sense – respond); and - A chaotic challenge – where there is no relationship between cause and effect at a systems level, requiring novel practice (act – sense – respond). Closure work requires all four types of responses to the multiple challenges that arise. The practical application of resilient and innovative leadership to the complex challenges of closure forms the basis of this paper.

# ABSTRACTS & BIOGRAPHIES

## DAVID HINCHLEY



### Biography

David Hinchley works with The Nature Conservancy as North Australia Program Manager, with a primary focus on supporting Indigenous land management across the tropical savanna landscape of Northern Australia. He has previously worked with TNC as Director of Palau Country program. He has a wide range of international experience in community-based resource management, particularly in Nepal, Uganda, Papua New Guinea and Palau and has worked on forest and natural resource management on public and private lands in Tasmania, NSW and Queensland. He has a degree in forestry from Australian National University and a Masters in Natural Resource Management from New England University.

### Presentation: Proactive Indigenous community-based impact assessment

Large-scale natural resource development projects profoundly transform environments, communities, cultures and economies. Impact Assessments play a critical role in limiting impacts to both the environment and the communities, but often have limited consideration of social and cultural values. Free, prior and informed consent (FPIC), as recognised in the UN Declaration on the Rights of Indigenous Peoples, requires that consent is sought in advance of any authorisation or commencement of development proposals. However, Indigenous communities are often faced with the need to react to development proposals, and in most cases do not have the adequate time, resources and capacity to assess development impacts on natural, cultural and social community values. Overcoming the separation of environmental and social impact assessment, we outline a model that incorporates biodiversity and cultural/social values into a development planning process, using the Nyikina Mangala Native Title Determination area in the Kimberley region of Western Australia, and discuss challenges to the process and applicability to other regions. This case study demonstrates how social and cultural values can be organized and analyzed spatially to support mitigation planning, and how this information, in the hands of Indigenous communities, provides capacity to proactively assess development proposals and negotiate mitigation measures, following the mitigation hierarchy.

# ABSTRACTS & BIOGRAPHIES

## DAVID COLE



### Biography

David Cole is an Adelaide-based lawyer who has worked in the environment profession for some four decades, initially as an environmental consultant and for the last three decades as a practising environmental lawyer. He has extensive experience in environmental impact assessment both as a manager of environmental impact assessments and as a legal adviser to organisations preparing different forms of environmental impact documentation.

Over many years David has worked for both the private and public sectors as an educator and adviser in the area of environmental compliance and enforcement, his work taking him throughout Indonesia and to the South Pacific.

David has taught environmental law and related subjects at Adelaide University, the University of South Australia and Flinders University.

For the last several years he has advised Environmental Projects, the South Australian consultant preparing the EIS for a seaport proposed at Smith Bay on the north coast of Kangaroo Island.

### **Presentation: A Balancing Act – Ships and Biosecurity Risk: Ballast Water Management and the Law**



# ABSTRACTS & BIOGRAPHIES

## LYNN RIGGS



### Biography

Lynn Riggs joined Motu as a Fellow in July 2018 after working for the US government for 20 years. Lynn most recently worked for the US Commodity Futures Trading Commission, the primary regulator of swaps and futures markets. Prior to that, she worked at the US Bureau of the Census and the US Centers for Disease Control and Prevention. She also taught health economics and microeconomics as an adjunct professor at DePaul University in Chicago. Lynn has worked extensively with large, confidential data sets in the US, including the US Longitudinal Business Database (LBD) and other firm-level data. Her research interests are in labour, health, education, and financial economics. Lynn received her PhD from the University of Wisconsin-Milwaukee.

### Presentation: Potential Social Impacts of Land-use Changes 2020-2050

This paper analyses the socioeconomic characteristics of areas across New Zealand that are most likely to be subject to land-use change between 2020 and 2050 as a result of climate change policy to better understand the potential implications of climate policy targeting agricultural greenhouse gases for rural communities. The analysis has three components: 1) to forecast land-use changes under different scenarios using the Land Use in Rural New Zealand (LURNZ) model, 2) to report the current socioeconomic characteristics of the areas where land-use changes are predicted in order to better understand those areas most likely to be affected, and 3) to estimate the potential changes in employment given the forecast land-use changes in these areas. For the first component, we estimate land use in 25x25 hectare blocks in New Zealand in 2020 and again in 2050. We then analyse those areas that change land use over this time period. The base scenario assumes a climate policy where both agricultural emissions and carbon sequestration are exposed to a carbon price. A second scenario deviates from the base scenario by assuming a climate policy where agriculture is assumed to face no costs for its greenhouse gas emissions, but forest owners receive a reward for carbon sequestration. A third scenario deviates from the base scenario by assuming that there are no changes to horticultural land use. Using the results from the LURNZ model, we then describe socioeconomic characteristics (e.g., employment, income, Māori land ownership, deprivation level, and ethnicity) of areas that are expected to undergo land-use change. This provides a picture of the communities that are most likely to face the effects of land-use change in the future. Furthermore, we examine the likely employment changes in those sectors and regions where land-use is expected.

# ABSTRACTS & BIOGRAPHIES

## LYNN RIGGS

### **Presentation II: Trends in Household Consumption and Carbon Emissions**

Using data about the production supply chain and household consumption, we estimate carbon emissions for New Zealand households at three periods in time – 2006, 2012, and 2015. Using this unique data set, we can then disentangle changes in emissions related to changing technologies in the production supply chain from changes related to household consumption pattern. Using consumption rather than production, we can form a picture of what a household's emission profile looks like. By illustrating the relative contributions of different sources of emissions, the results can assist households in identifying the effective ways that they can reduce their emissions. The methodology follows the same structure developed by Romanos et al. (2014), Allan et al. (2015), and most recently Allan and Kerr (2015, 2016). The data used is a combination of publicly available data produced by Ministry of Business, Innovation, and Employment, Stats New Zealand, and the Ministry for the Environment, as well as data from the Household Economic Survey that is not publicly available, but maintained by Stats New Zealand. Specifically, we use production emissions to calculate emissions per dollar of consumption for each industry, and map this to Household Expenditure Survey expenditure amounts. We also use these emission amounts in a simple tool for users to generate an average emission profile for their household based on their annual expenditure and composition (i.e. number of adults and children).



# ABSTRACTS & BIOGRAPHIES

## BALLANDA SACK



### Biography

Ballanda is Special Counsel at Beatty Legal. Beatty Legal is a boutique law firm based in Sydney specialising in Environmental and Planning Law. Ballanda has acted for applicants and objectors in planning appeals relating to heritage matters, advised federal agencies on heritage adaption issues and is currently acting (pro bono) for Aboriginal applicants seeking protection of significant places and objects under the Aboriginal and Torres Strait Islander Heritage Protection Act 1984. Beatty Legal is the exclusive legal co-sponsor of the forthcoming triennial General Assembly of the International Council on Monuments and Sites (ICOMOS) in Sydney in October 2020. This will be the first time the General Assembly of this pre-eminent global heritage body will have meet in Australia

### Presentation: Can the law recognise, value and protect Aboriginal cultural heritage landscapes?

The stated object of most heritage laws in Australia is to identify and conserve "significant heritage" from threats posed by competing land uses (e.g. development) or environmental factors. This requires an understanding of what constitutes "heritage" and on what basis it merits conservation. These basic principles are relatively uncontroversial when applied to the identification and assessment of heritage buildings and discrete objects. However, legal definitions of "heritage" and heritage valuation methodologies have largely been ineffectual at conserving Aboriginal cultural heritage. Despite the more inclusive concepts of heritage embodied in the Burra Charter and the Indigenous Cultural Heritage Practice Note, the law has historically tended to limit Aboriginal cultural heritage to discrete sites/objects or items considered to be of high archaeological/scientific value. In doing so, the law has failed to recognise the "cultural" dimension of Aboriginal cultural heritage. This paper examines recent steps legislators and the Court are taking towards recognising and/or providing a methodology for valuing Aboriginal cultural heritage landscapes and acknowledging the intertwined nature of heritage places, cultural traditions and their context within the landscape.

# ABSTRACTS & BIOGRAPHIES

## ANNA-KATE GOODALL



### Biography

Having completed a BSc majoring in Zoology from Otago University I worked with Thermo Fisher Scientific in a protein separation unit, this led to my interests being more focused on our environmental impacts. I enrolled with Lincoln University as a masters student studying natural resource management and ecological engineering with a focus on the implementation of green infrastructure in the viticulture industry. It is my belief that green infrastructure provides many opportunities in the agriculture sector especially regarding increasing biodiversity and ecological service. With this being said I look forward to presenting this research.

### **Presentation: From tunnels to bridges and railways to wharfs – 10 years' of innovative environmental management in a creative construction environment**

Viticulture in many cases is a monocultural, production based cropping system. This results in a loss of biodiversity, ecosystem services and resiliency within the agricultural system. Green infrastructure provides an opportunity for viticulturists to gain ecosystem services and increase biodiversity within their farming systems to reduce the impacts of this monocultural system. However, despite there being many studies on green infrastructure and the ecosystem services it can provide there is a lack of literature on the enablers and barriers for the implementation of green infrastructure in vineyards. This research project aims to address this gap with four main research questions; What green infrastructure is planted in vineyards and vineyard/wineries and where is it located? What private and public ecosystem services and disservices does the green infrastructure provide? What are the enablers and barriers for planting green infrastructure in vineyards? And finally, how might the amount of green infrastructure, and its associated services be increased in wine grape vineyards and vineyard/wineries? These questions are asked with the aim to meet the following objectives; To describe the status of green infrastructure within vineyards. To identify and evaluate the enablers and barriers for the implementation of green infrastructure within vineyards and vineyard wineries. And finally, to identify and discuss the implications of this research for improving the performance and implementation of green infrastructure in the vineyard. To meet these objectives 20 vineyard owners and vineyard managers will be interviewed from the Waipara Valley, New Zealand. These interviews will use a semi-structured interviewing technique along with field observations of the existing green infrastructure in each vineyard. In achieving these objectives this research project hopes that the findings will assist in the use green infrastructure in vineyards to become standard practice within the industry.





# ABSTRACTS & BIOGRAPHIES

## CARA PARSONS & STEPHEN COLLOM



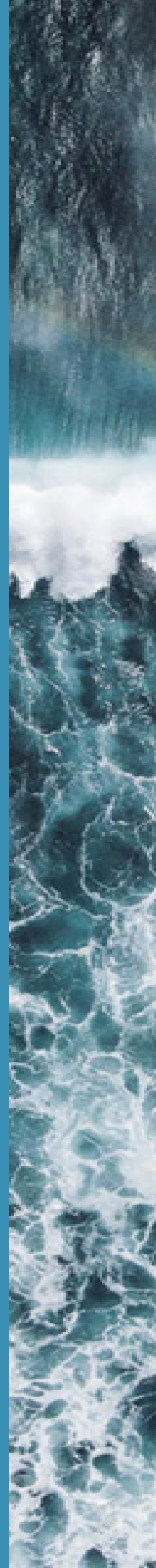
### Biography

Cara Parsons BSc (Hons). Having completed Honours, Cara aims to move into the wildlife ecology profession. Cara is interested in wildlife conservation, finding solutions for declining wildlife habitat and populations, and the ecological interactions between mammals and their chosen habitats. Cara's background is in veterinary nursing, and she has spent many years volunteering in wildlife rescue, nursing and care.

Stephen Collom started his career as an arborist 15 years ago in the UK and has since taken his passion for trees and wildlife to South East Queensland Australia where he has pioneered the largest carved hollow creation program to date working with local Governments, likeminded arborists and leading ecologists to increase understanding and the value of biodiversity in the urban environment.

### **Presentation: From Tunnels To Bridges And Railways To Wharfs – 10 Years' Of Innovative Environmental Management In A Creative Construction Environment.**

With sprawling urbanisation causing significant decline of old-growth forests in subtropical Eastern Australia, there is a devastating loss of vital habitat for native wildlife. As eucalypt trees take over 150 years to develop hollows naturally, there is an urgent need for effective alternatives in areas lacking in natural hollows. Plywood nest boxes are frequently installed, but now a new option is being developed - the carving of hollows into trees using chain-saws. This investigation sought patterns in hollow use by different fauna groups, as well as assessing efficiency of carved hollows in enhancing habitat value. Occupancy data of 177 hollows, collected through inspections by Habi-Tec, were collated with broad vegetation and tree characteristics, as well as geographic factors, such as nearest regional ecosystem classification and proximity to wildlife corridor. To compare thermal microclimates between carved hollows and plywood nest boxes, temperature loggers were deployed inside eight pairs of such cavities. Ultimately, wherever the hollows were being installed, they were being utilised, with a maximum uptake of 95% in urban areas. The most prolific use of carved hollows was by lorikeets in 65 hollows, followed by petaurid gliders in 42 hollows. In terms of microclimates, carved hollows consistently experienced lower maximum temperatures and less daily thermal fluctuation. These results indicate the ability for carved hollows to better mimic natural hollows than nest boxes, and thus provide a more effective offset option in suitable trees. However, the priority should always be to preserve old-growth trees containing the optimal wildlife habitat of natural hollows



# ABSTRACTS & BIOGRAPHIES

## FIONA GAINSFORD



### Biography

Fiona Gainsford is a CEnvP- IA and FEIANZ. She has spent 25 years working in environmental impact assessment, including substantial roles consulting directly to government agencies and industry in NSW. Fiona enjoys working with a diverse range of people, jumping silos, and providing a flexible approach to environmental compliance.

### Presentation: The forgotten people - improving environmental outcomes through asset management

Has the focus of infrastructure project management shifted to the Construction phase? Politicians want to be “shovel ready”, Ministers want everything to be “announce-able” and construction firms are spruiking their project management awards at glossy industry dinners on LinkedIn. Sounds like another episode of “Utopia”? This presentation will look at the other side of the infrastructure equation – the Operational phase. In particular, the focus will be on the people working in asset management who are often some of most marginalised workers, but yet are responsible for maintaining properties. These people are the front line in environmental management but are often untrained and are not aware that their actions can cause pollution, destruction of heritage assets, native vegetation loss or increase bushfire threat. Case studies will be presented covering a wide range of environmental aspects, drawn from a large government infrastructure asset provider. Techniques to train and engage people in asset management, with a focus on environmental protection and legislative compliance, will draw upon the case studies presented. The presentation will also examine whether a carrot or a stick approach works best to improve environmental performance, and occupational health and safety issues will also be considered.

# ABSTRACTS & BIOGRAPHIES

## ANNA LUKASIEWICZ



### Biography

Dr Anna Lukasiewicz is a justice researcher with an interdisciplinary background in the social sciences and a keen interest in how human societies interact with nature. Since coming to ANU, Anna has focused on justice research in natural resource management and is expanding this focus to natural hazards and disaster justice. She is working on developing the Social Justice Framework for environmental decision-making. Her research includes projects on resilience to natural disasters, the social aspects of environmental water stakeholder advisory groups, climate change adaptation at a catchment level, and the last three decades of water reform in Australia. Anna has a PhD from Charles Sturt University in Natural Resource Management, a Masters in Social Science (International Development) from RMIT and a Bachelor of International Studies from the Flinders University of South Australia.

### Presentation: How does justice fit into resilience in disaster management?

Resilience is the current buzzword within disaster management. In terms of disaster management, it has many definitions, but is generally described as “the ability of a system to respond to a threat or hazard,” and is connected to capacity, or the ability to recover. Much of the debate in disaster management is on how to promote resilience, especially at the individual, local and community level. Issues of justice, equity or fairness are sometimes mixed into resilience discourses but not in a very structured or detailed way. In fact, most criticisms of the resilience concept point out that it obscures, ignores and therefore perpetuates existing power imbalances and inequalities within the community. A useful analogy of resilience is to think of it as a race of hurdles – life throws hurdles at you (an individual or a group) and resilience is essentially about overcoming those hurdles. A key difference between disaster resilience and disaster justice is that disaster justice focuses on asking ‘where are these hurdles coming from?’, and ‘why are some groups facing specific hurdles that others do not?’ These are questions about inequality and power relations within a community that resilience is criticised for masking or actively ignoring. In this presentation, I outline the relatively well known concept of disaster resilience and the very new idea of disaster justice and offer some examples of how a focus on disaster justice can vastly improve the conceptualisation of resilience.



# ABSTRACTS & BIOGRAPHIES

## CLAUDIA BALDWIN



### Biography

Claudia Baldwin, BA, MA (UW, Canada), PhD (UQ), Associate Professor teaches Regional and Urban Planning at University of the Sunshine Coast. Her research interests focus around engaging communities for change - she has a social science and environmental planning background. She specialises in using participatory and visual methods to research institutional and social-environmental change on topics as diverse as water allocation, coastal planning, rural and regional land use, and climate change adaptation. Her book, *Integrated Water Planning: Achieving Sustainable Outcomes* (2014) is based around the need for appropriate evidenced-based water planning in developed and developing countries.

### Presentation: Building and assessing community resilience

Globally, agencies and governments state they want to achieve community resilience. Many interpret this as preparing communities in advance for emergencies; others conceive of resilience in terms of capacity permeating through an entire community so that individuals, neighbourhoods, and indeed entire communities have 'agency' and can cope with the range of future changes. Some focus entirely on social characteristics and processes, others focus on the environment-community interaction (social-ecological system). While there is considerable work available on what resilience constitutes, there is relatively little (especially outside the disaster management literature) on how to build resilience or its companion, adaptive capacity. This paper taps into multi-disciplinary understanding to outline ways of building community resilience which involves iterative processes in which an evaluation framework is crucial from the start. The paper suggests preliminary dimensions that could be used to assess the process and outcomes of resilience-building.

### Presentation II: Using green infrastructure to adapt to heatwaves

With an alarming increase in the frequency and severity of heat waves in cities across the world, greening infrastructure is one solution to mediating impacts on urban residents. Green infrastructure (GI) includes multi-functional green spaces and interventions strategically placed for multiple benefits. GI includes permeable vegetated surfaces as well as green roofs and walls in private spaces; and green alleys, parks, community gardens and urban wetlands in public spaces. Not only can these mediate heat effects in urban areas but provide stress relief and promote physical activity with resulting health benefits. The challenges in implementing GI are discussed in the talk.



# ABSTRACTS & BIOGRAPHIES

## ANU VIJAYAN



### Biography

Anu Vijayan is a second year Master of Research student at Macquarie University. She has a bachelors degree in Zoology and a postgraduate degree in Conservation Biology. Anu is passionate about the environment and her love for nature prompted her to swerve from a decade long career in visual effects which included creating webs for the amazing spiderman to creating better habitats for real world spiders.

### Presentation: Statistical modelling to support natural asset management

Native Australian vegetation cover has declined considerably since pre-European era. Urbanisation, invasive species, fragmentation, changing fire regimes and climate change have all played a significant role in not just the changing vegetation cover but also the community structure. This study aims to look at how different plant community types in Central coast LGA has changed over time. Using statistical analysis, I derived the key drivers of change and their relative significance. Analysis of existing vegetation maps show that ten plant community types have been cleared by more than 70% (i.e. less than 30% of their original extent remains). While most of the highly cleared plant community types are also threatened ecological communities, two are not currently listed. This study conducted a time series analysis of Vegetation clearance index and Normalized Difference Vegetation Index (NDVI) to identify the change in vegetation since the 1970s. I am using these vegetation indices to look at the condition of existing vegetation communities to the north and south of Central Coast council. Understanding the existing range of threatened plant communities will help in better management strategies in the face of climate change. Using statistical modelling of the key drivers of vegetation change, this study intends to provide decision support for natural asset management of the council bushlands.

# ABSTRACTS & BIOGRAPHIES

## JADE WIKAIRA (TE WHANAU-A-APANUI, NGĀTI TŪWHARETOA, NGĀPUHI)



### Biography

Jade is a passionate strategic planning practitioner who has worked in the resource management and environment policy areas for the last 15 years. Jade now runs her own consulting business Wikaira Consulting Ltd and is based in Wellington, Aotearoa New Zealand. She has extensive experience in connecting iwi, hapū and their mātauranga Māori with technical skills in the planning sector. Previously, Jade also held a role advising the Minister of Maori Affairs on environmental resource management and Maori community development matters. Jade is particularly interested in making planning practice more accessible to her people and to ensure planning practice reflects a Māori cultural competencies and indigenous approaches.

### Presentation: Cultural Impact Assessments: The intention and reality

We know cultural impact assessments are methods that enable the consideration of Māori cultural values, knowledge and perspectives in resource management settings. They describe historical associations and traditions. They provide a platform for kaitiaki describe aspirations and to state their views on protection, restoration and sustainability.

Critical questions arise in the application of cultural assessments and the values and knowledge contained within them and include:

- How do cultural impact assessments measure up to the expectations and aspirations of iwi and hapū?
- How well are cultural impact assessments understood and integrated into planning applications?
- How do planning practitioners build the necessary relationships with iwi and hapū now and into the future?

This presentation will explore the application of cultural impact assessments in a range of planning settings.

# ABSTRACTS & BIOGRAPHIES

## CAROLYN CAMERON



### **Presentation: Improving Australian Strategic Assessment Process: lessons from Domestic & International SEA experts**

The independent review of the EPBC Act, which is due to begin later this year may be a once in a decade opportunity to influence and improve the Commonwealth's Strategic Assessment (SA) process. In May this year, EIANZ hosted the International Association for Impact Assessment's Annual Conference in Brisbane, which brought together over 850 delegates from 77 countries. The EIANZ's SEA Working Group, which is part of the IA Special Interest Section, decided to take advantage of the congregation of global Strategic Environmental Assessment experts at the conference and invited them to a post-conference workshop. The purpose of the workshop was to share Australian experiences with SA, and extract learning experiences from domestic and international delegates. The lively discussions and reflections on local and overseas practices resulted in a number of 'lessons' about SEA that the Working Group seeks to use to focus its efforts on improve SA (SEA) practice in Australia. This presentation represents the first time the SEA Working Group shares the outcome of the workshop with the wider audience of EIA practitioners. The presentation also gives participants the opportunity to share their own views on the future role of SA (SEA) in Australia and provide feedback on the proposed activities of the SEA Working Group.

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## SUZANNE ORME



### Biography

I have a passion for sustainable business as a key driver of progress towards a flourishing future for all. If you are struggling to set the right social and environmental ambitions for your company, I've got the experience, knowledge and tools to guide you on your journey. By aligning and prioritising company efforts with the Global Goals (SDG), you'll engage and excite key audiences such as staff, customers and investors, build long-term value and thrive into the future.

### Presentation: Introducing the Future-Fit Business Benchmark V2



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