

# The Environmental Practitioner

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*Photo: Rebecca McIntyre*

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## Editorial

The articles in this newsletter remind me that the world of the environmental practitioner is not as bleak as it may at times appear. Fellow practitioners across Australia and New Zealand are working on interesting projects and making a difference in Australia and overseas, in both paid and voluntary capacities. This newsletter showcases members of EIANZ continuing to be active on committees, organising events, setting standards for practice and sharing their thoughts and ideas with each other, whether on technical matters or on a more personal level.

So thanks to everyone who has contributed to this newsletter and provided a reminder that good practice environment management continues to be important. The EIANZ continues to play a crucial role, both in supporting environmental practitioners in their work, and advocating for sound environmental practice that promotes sustainable development. The need for this has perhaps never been stronger.

Within the EIANZ, recent changes to the governance structures promise to bring a more streamlined approach to the way that the Institute operates, and should free up resources to focus on more strategic matters relating to sound environmental practice as well as growing and supporting our membership base. EIANZ also continues to be engaged in key policy areas such as management of the Great Barrier Reef and assessment and approval arrangements under the *Environment Protection and Biodiversity Conservation Act 1999*. EIANZ continues to provide cost effective ways for professionals to maintain professional development activities, through forums and seminars as well as through involvement in committees, policy formulation and other initiatives of EIANZ.

Initiatives such as the Steps Program will provide a new and exciting way to engage with young professionals both within and outside EIANZ. New specialisation areas are being developed within the CEnvP program and these will also cement EIANZ's role in setting standards for practice. The annual conference is also almost upon us and will once again provide a focal point for discourse on professional practice as well as networking opportunities.

These are exciting times for members and it is encouraging to see so many stepping up to the plate. Contact your Chapter and Divisional committees for more information on what's going on in each Chapter and Division, or if you have a special interest in climate change, impact assessment or ecology, you can also contact the chairs of these special interest sections. I look forward to meeting more of you at various EIANZ events.

*Claire Gronow FEIANZ, CEnvP*



## From the President

### A new era for the EIANZ

Jon Womersley, FEIANZ

*President, Environment Institute of Australia and New Zealand*

The EIANZ has taken another step forward on its strategic journey to becoming the professional association of choice for environmental practitioners.

On Wednesday 17 September 2014 the EIANZ held a Special General Meeting of Members in Melbourne to vote on proposed new Rules of Association that included a change to existing governance arrangements. Members voted in favour, resulting in:

- The Institute Rules of Association being brought into alignment with the legal requirements of the *Associations Incorporation Reform Act 2012* (Vic)
- Establishment of an elected Board of seven (7) members, with an Advisory Council that brings together NZ Chapter, Divisional Presidents or Representatives and SIS Chairs\*
- An election process that can be conducted electronically, is transparent and fair, and is managed by a Returning Officer
- A requirement that there be formal consultation between the Board and the Advisory Council about key decisions
- Provision for transparency of decision making and records of meetings, through the publication to members of minutes of meetings.

\* The members of the current Executive Committee will become the interim members of the Board, in order to provide a smooth and cost effective transition to the new governance arrangements, with the election of the Board occurring at the normal time prior to the Annual General Meeting in October 2015.

I would like to take this opportunity to sincerely thank the Councillors, Executive Committee and key Members of the Institute that have invested significant voluntary time and effort in making sure that the new arrangements are robust and sustainable. [Further information](#) is available on the EIANZ website.

It is now time to turn our efforts to other elements of our strategic journey. In the coming months one of the key tasks for the Board and the Advisory Council will be growing the membership of the Institute. Each and every one of us has a role to play in this. We all know environmental practitioners whom we can encourage to belong to the Institute. Here is my 'elevator pitch':

- Have you thought about being recognised as a professional environmental practitioner?
- Membership of the Environment Institute of Australia and New Zealand gives that recognition.
- It provides opportunities for you to participate in networking events, and develop your professional knowledge and skills at member rates.
- You get regular information about good practice environmental management, and can help influence local and national environmental policy and practice.
- You can use the post-nominal MEIANZ to give quick recognition of your status to others, and through the Institute's Certified Environmental Practitioner Scheme you can become a Certified Environmental Practitioner (CEnvP).
- At [www.eianz.org](http://www.eianz.org) you can lodge an electronic application.
- Make an investment in yourself today, and be recognised as a professional environmental practitioner.

What is your 'elevator pitch' to attract a new member? Share it with us at [office@eianz.org](mailto:office@eianz.org)




# EIANZ Annual Conference

30 - 31 October

Hotel Grand Chancellor - Hobart



Four weeks until the EIANZ annual conference kicks off. Be part of:

-  A diverse and thought-provoking array of speakers from across Australia and New Zealand [View program](#)
-  A [one day field trip](#) visiting the Institute for Marine and Antarctic Studies and MONA, to hear about the Derwent River Estuary Program and more
-  The Gala Dinner and Merit Awards at the Tasmanian Museum and Art Gallery, and experience a taste of Tasmania as renowned chef Karen Goodwin-Roberts showcases Tasmania's premium produce - locally sourced, seasonal, fresh food that has been grown in a safe manner, fished or farmed using sustainable practices. [Register here](#)

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## News, Views, Articles and Updates

### Relocation only option for Solomon Islands Provincial Capital

*Dr Philip Haines, MEIANZ with Ms Shannon McGuire*

#### Summary

In response to the overshadowing risk of tsunami events and the emerging challenges associated with sea level rise, a community on the small coral atoll of Taro Island, in the Solomon Islands, is choosing to relocate their homes and lives to higher ground on the adjacent mainland. While relocation of villages under threat from natural hazards is not new in the Pacific, this is the first time a provincial capital will attempt to relocate because of climate change and other coastal risks.

Working in collaboration with the Australian Government's Pacific-Australia Climate Change Science and Adaptation Planning programme, environmental consultancy BMT WBM (BMT) partnered with Buckley Vann town planners and the School of Civil Engineering at the University of Queensland to develop an Integrated Climate Change Adaptation Plan for Taro Island and the surrounding area of Choiseul Bay. The adaptation plan includes a detailed program of works for relocation of the Taro Island community to the adjacent mainland, along with a masterplan for the new town and a comprehensive planning scheme to regulate future development.

The adaptation plan utilised the outcomes of extensive consultation carried out with local communities, relevant stakeholders and government authorities, at both provincial and national level. There is near unanimous support for the relocation plan by the Taro Island community and authorities. Recent evacuations of the island in response

to local tsunami warnings have helped to heighten awareness on the vulnerability of the existing town.

As the relocation process will require major infrastructure investment, authorities will look to the support of international donors in order to safely transition the Taro Island community to higher ground. Recognising relocation of the community will take 20 years or more, the climate change adaptation plan developed by BMT also outlines a range of 'stop gap' measures to help reduce damage and loss of life if major events occur in the interim. This includes preparation of a tsunami emergency response plan and structural reinforcement of some critical assets.



#### Location

Choiseul Bay is at the northern end of Choiseul Island, within the Choiseul Province, Solomon Islands, approximately 500km north-west of Honiara, and only 50 km from neighbouring Bougainville Island (Papua New

Guinea). Taro Island, located within Choiseul Bay, is the provincial capital, with a land area of 0.4km<sup>2</sup>. It has a resident population of approximately 900, and provides essential services (e.g. transport access, supplies, referral hospital, education, government administration) for the broader province with a population of approximately 26,000.

Continued growth of Taro Island is no longer possible as all available land on the island is utilised. Development has extended to neighbouring Supiza Island, however this is equally low-lying and vulnerable to coastal hazards.

Land on the adjacent mainland was acquired in 2011 from customary landowners by the Solomon Islands Government, on behalf of the Choiseul Provincial Government (CPG). This land, with a combined area of 4.7km<sup>2</sup>, will be the site of the proposed relocation for the provincial capital.

### **Community Perspectives**

Preparation of the climate change adaptation plan and the design and layout of the new township incorporated extensive and meaningful consultation with local communities of Choiseul Bay, as well as stakeholders, interest groups and relevant authorities, including national and provincial governments. The consultation team consisted of environmental scientists, town planners and engineers with considerable experience in indigenous engagement. Some members of the team could understand and speak Pidgin, which was important in engendering trust and rapport with the community and the team included both males and females.

The engagement found that the community were very supportive of the relocation to the mainland. The community understood the risks associated with tsunami, and could see the impacts that future sea level rise will have on their way of life. More than 300 people participated in the engagement activities. The Premier of Choiseul Province, the Honourable Jackson Kiloe, praised the consultation undertaken for the project:

"The way the project was carried out, the extensive and responsive community engagement and the training of national and provincial government officers as part of the project handover, has increased our resilience and engendered support for future adaptation actions. The project followed the ways of our traditions, - talking with people, listening to people and reflecting the desires of the people."

### **Hazards and Risks**

Choiseul Bay communities are exposed to a range of natural coastal hazards, including tsunami, coastal storms and shoreline erosion. Mean sea levels around the Solomon Islands are currently rising at a rate of 7 – 8 mm/yr, which is about 3 times the global average. With further sea level rise, the risks associated with coastal hazards will intensify.

Tsunami represents the biggest risk to the Choiseul Bay communities. Seven tsunamis have been recorded in the area since 1950, the biggest occurred in April 2007, which devastated many coastal villages in Western and Choiseul Provinces. Computer modelling shows that all infrastructure, housing and services on Taro Island and other low-lying areas around Choiseul Bay are at risk of tsunamis. For present day conditions, a 1 in 100 year tsunami (causing a 3 metre wave surge) would inundate about 95% of the island, leaving just 2 hectares of flood free land for emergency refuge. By 2090, however, virtually no land would be available for refuge. The only viable option for the long-term safety of the community is relocation of the entire population to a safer site on the mainland.

### **The Plan to Relocate**

Planning for the relocation of the capital from Taro Island to the mainland presented some interesting challenges including consideration of what this means culturally and socially to a community so closely linked to the sea. Also a challenge was designing a new provincial capital that is 'split' across two non-contiguous areas, with implications for a range of services and infrastructure, such as power and water.

Relocation of the provincial capital to the mainland has been on the agenda for a number of years given the lack of available land on Taro Island for future growth. The technical assessment undertaken as part of the climate change adaptation plan highlighted the vulnerability of Taro Island to coastal hazards and climate change, and provides further justification for relocation of the capital to the mainland.

The adaptation plan provides a masterplan for the new provincial capital as a means of guiding appropriate future development, land use and town layout. Computer modelling and hazard mapping informed the layout of the new town, with development set back from coastal areas to avoid future impacts of tsunami and sea level rise. The community and stakeholders were also involved in the process of masterplan development. Overall, the community desires a modern 'green and clean' town that is safe from natural hazards and is well connected to the rest of the province by land and sea. Importantly, improving resilience to climate change is enshrined across all levels of the local planning scheme, from the community's vision to the strategic plan, and to more detailed landuse zoning maps and development controls.

Ground survey and an environmental assessment of the new township development are required initially to progress the relocation. Then, subject to available funding, it is expected most provincial services on Taro Island will start relocating to the mainland before 2030.

### Interim Measures

As the relocation process will take years to decades to be completed, the climate change adaptation plan also outlines a range of short term measures by which the community may adapt to existing risks as well as future climate change. This includes preparing a tsunami emergency response plan, raising and reinforcing critical assets, and replanting shorelines.

Provisions are also included in the draft local planning scheme that has been prepared for the adaptation plan to ensure that any ongoing development on Taro and Supizae Islands are appropriately designed

and located to minimise damage by tsunamis. This essentially means any new development must be 'higher and stronger'.



### What happens next?

The comprehensive Choiseul Bay Integrated Climate Change Adaptation Plan maps a route for the local authorities to improve community resilience in the short and long term. The Plan effectively integrates indigenous knowledge with scientific, planning and engineering data to derive a solution that will ultimately benefit the local community, the broader province, and the whole Solomon Islands nation.

Ongoing assistance by international funding partners is now essential to maintain the momentum and interest in the relocation project. The significance of this pilot project on the international stage cannot be understated as relocation may emerge as the only viable option for many other coastal communities throughout the Pacific Island nations, and elsewhere across the world, that are facing the impacts of future climate change and sea level rise in particular. ■



## Cultural intolerance: Environmental management in a development context

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*Gordon Young, MEIANZ*

In 2012-2013 I had the privilege of securing a placement with the Australian Youth Ambassadors for Development program. This program is designed to send young people between 18 and 31 to other nations, place them with host organisations and enable them to build capacity in communities for improved development outcomes.

Based on my experience as an environmental practitioner and member of the EIANZ, I was placed as an Environmental Education Officer in the remote Indonesian city of Kendari. This city is found at the south-eastern tip of the island Sulawesi, and while it has a population of around 400,000 people, is remarkably remote in that there are virtually no other population centres in the region. The primary industries of the region are mining, forestry, fishing and small-plot farming. The development of mining in the region in the last decade has caused significant urban development in Kendari.

The environmental issues facing the region were obvious from the second I stepped off the plane.

To call the waste management system slipshod is to compliment it – concrete pits, usually found only on major roads and right next to large open gutters, are the only place for residents to dump rubbish. Being a tropical environment, and the majority of this waste being organic, the odours are intense and attract many rats. Leachate from these pits escapes constantly into the open gutters, which then drain into rivers and the Kendari Bay. These pits are emptied approximately once a week (and are usually overflowing by this time) and given that the vast majority of residents live in hilly neighbourhoods off these main roads, most of their waste is disposed of via rivers and other nearby valleys.

As a result, Kendari Bay itself suffers from very poor water quality, often grey in colour and always with hard waste floating on the surface. The

water outside of this bay is surprisingly clear thanks to the brisk currents through the archipelago, but the impact of Kendari's waste management can still be seen hundreds of kilometres away – despite numerous boat trips, I did not see one area of coast without significant plastic waste deposited at the high water line.

While the vegetation in the region is remarkably robust, often reclaiming unused land within six months, the land-use practices in Kendari are highly destructive. Space for housing is cleared simply by removing the side of any features in the way, leaving sheer cliffs of coral rock and earth that occasionally collapse onto the new houses during the wet season. Vegetation is clear-felled, drainage is unaddressed, providing ideal conditions for mosquitos to breed – the area is prone to Dengue Fever, though not Malaria.

Electricity for the region is produced via diesel generation, which while substantially less carbon-intensive than Australia's brown coal generation, is not ideally maintained. This results in frequent brown-outs as well as considerable emissions to the atmosphere.

Fresh water is abundantly available via rainfall and rivers, but due to the waste management issues described these sources are often contaminated – tap water is supplied intermittently to houses, but is not fit for drinking. While many residential water tanks exist they are generally used to store non-potable water for cleaning, bathing and (once boiled) cooking. Potable water is supplied almost exclusively through purchased bottles, which while cheap (5000 Rupiah/50 cents AUS for 10 Litres), this is massively expensive compared to Australia, where potable water is available 24/7 via tap for approximately \$2.50 for 1000 litres. As such the average resident in Kendari (a developing nation with an abundance of rainwater) pays 20 times more for potable water than a Victorian (a developed nation that recently suffered a 10 year drought).



All of these issues are very much 'first wave environmentalism' in nature, in that they involve direct environmental damage from an obvious source. For example:

- Water pollution is caused by people throwing waste into the rivers and ocean.
- Landslides and deforestation are caused by poorly planned land-use and clearance methods.
- Residents' health is damaged by poor hygiene at waste sites, attracting vermin and mosquitos.

As an environmental practitioner used to distinctly decentralised, strategic 'third-wave' environmental issues such as climate change, the problem Kendari faced were seemed extremely easy to identify and develop solutions for:

- Provide waste pick-up services to households and run educational campaigns to prevent dumping in waterways.
- Introduce filtration to tap water supplies and ensure consistent supply to increase access to potable water.
- Introduce strategic land planning to ensure new developments are safe, properly serviced and preserve natural areas.

However during my integration into the local community, learning about the culture, language and customs of the region, it began to become apparent that these simple solutions would not be effective – in fact many of them had already been introduced and failed.

The idea of waste pick-up from homes for example, was in fact the current policy of the provincial government; however the contractors providing this service simply did not do it, finding it substantially cheaper and easier to only service the large concrete pits along the major roads once a week. Clean-up initiatives to remove litter and educate people about not dumping rubbish in rivers had been conducted with some success – but after a short period people reverted to their normal practices. And while everyone was aware about the risk of landslide from poor land management practices, such occurrences were seen as an

inherent risk of living on newer, cheaper residential land. Preventing the problem was not considered, and the process needed to prevent it was unclear even if it was.

It became clear that these problems did not exist in isolation. Rather they were the product of far greater sociological, economic, political and cultural factors – factors which would and had undermined any purely technical solution to these issues.

Perhaps the greatest factor preventing effective action was corruption. This may appear self-evident given the waste collection situation, but this is not the sort of corruption we are familiar with in western nations. Indonesia has a culture focussed heavily on relationships; the first priority in any dealings must be the relationship between the parties involved.



**Gordon Young with local children**

While this results in incredibly strong communities that look after each other, some of the side effects are less than ideal. Corruption in Indonesia is not the usual 'money-in-a-suitcase' or insider trading that we are used to, but rather largely a result of this cultural emphasis on relationships; from employment through to elections, there is no question that relationships take precedence over any form of merit.

This in turn leads to extreme nepotism and poor performance in the public service being the norm rather than the exception. If merit isn't relevant in getting the job, why would performance be relevant to keeping it? The waste management contractors get away with doing only about 10% of their contracted role because their competence was not what got them the contract – their relationship with those who employed them did. Similarly, there is no incentive to supply potable tap water to the public, because significant business interests are already invested in supplying bottled water instead. Potable tap water would damage these interests, upsetting relationships, and so it will not happen.

As a result, an environmental practitioner who seeks to improve something as straight-forward as proper waste disposal must take these cultural factors into account for any chance of success. Without a comprehensive understanding of *why* these issues exist in the first place it is impossible to resolve them, and any efforts to do so may actually worsen the situation, wasting time resources and good will.

This need for understanding is only further highlighted by the fact that many of the local people I talked to about these issues, would outright lie to me about the severity of the problem and who was responsible for it. They did this both to protect their relationships with the guilty parties, and to preserve their relationship with *me* – as a westerner and a guest, my approval was important, and if they thought any information would displease me, they would keep it from me. The wording and attitude of my inquiries was therefore extremely important to ensure no blame was implied; only by building trust with these communities was it possible to understand the source of their immediately problems, and only through that understanding was it possible to formulate solutions.

Ultimately my time in Indonesia was successful because we addressed both the practical environmental issues, but also the cultural/economic/political factors that underlay them. Rather than criticising the government for their performance, we promoted environmental and waste management as a positive thing to the community, making it something that the government was interested in being involved in. Through a series of large film-screening events throughout the neighbourhood of Kendari, we were able to make improving the waste management of the region something that the government *wanted* to be involved in; by involving them in these events and we able to capitalise on the importance of relationships to promote better practices and norms.

With the ongoing economic boom in Asia and rapid development that has followed it, environmental management in developing nations is extremely important for Practitioners and the EIANZ to be involved in. But while the practical problems in these nations may appear obvious, it is critical to remember that they rarely exist in isolation; only through a strong understanding of the factors that caused these issues in the first place can we hope to help resolve them. ■

## Special Interest Section for Impact Assessment releases new guidelines

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The Special Interest Sector for Impact Assessment (SIS-IA) is developing resources that will support effective implementation of IA. The documents below have been prepared by experienced IA practitioners within the SIS-IA to provide guidance on good practice in IA. While they have been written to apply generally in Australia and New Zealand, IA practitioners should also consider the specific requirements of the jurisdiction within which they operate.

### Guidelines for impact assessment

These guidelines describe the general principles which should govern and guide the IA process and the practices that should be followed at each stage of the IA process:

- Screening – to determine the appropriate form of IA for a project, in particular whether it justifies the preparation and publication of a formal environmental impact statement (EIS) or similar public document.
- Scoping – to determine the environmental issues relevant to a project and the points in the decision-making process when these issues need to be addressed.
- Technical analysis and assessment – in terms of understanding the environmental effects (adverse and beneficial) of a proposal, comparing options for achieving the proposals objectives, and identifying mitigation measures or offsets for adverse impacts.
- Reporting and stakeholder involvement – commonly through an EIS or similar document for government agency and community response, although other forms of consultation may also be implemented, including measures implemented outside the statutory review process.
- Independent review – review of the EIS or other public document and agency/ community responses by the authority responsible for administering the statutory review process.

These guidelines are aimed at all environmental practitioners involved in IA, in particular, those relatively new to the process as well as proponents and others who are involved or anticipate being involved in IA.

### **Good Practice Statements on Environmental and Social Impact Assessment**

This set of 25 good practice statements was prepared by a committee of IA practitioners in the South-East Queensland Division of EIANZ. They are aimed at more experienced IA practitioners and set out the characteristics of good practice IA so that it:

- achieves its purpose

- assists with orderly development
- rigorously evaluates impacts
- achieves desired performance outcomes.

The committee also looked at opportunities for reform of IA in Queensland. Again, many of the issues considered also appear to be applicable to other jurisdictions. The full set of reports is available on the [EIANZ website here](#).

### **EIANZ Position Statement – Incorporating environmental considerations into development projects**

A draft position statement on this topic was endorsed by the SIS-IA and forwarded to the EIANZ Policy and Practice Standing Committee for consideration. It is expected this draft statement will be released for comment shortly.

### **Next Steps**

The SIS-IA is now contemplating priorities for developing guidelines on more specific components of IA. Suggestions and feedback can be directed to the Chair of the SIS-IA, Lachlan Wilkinson [la@eianz.org](mailto:la@eianz.org). ■

## **NSW Land Access Review**

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*Justine Toohey, MEIANZ, Keypoint Law*

As most environmental practitioners are aware, a significant issue facing the resources sector, and those land owners impacted by mining and exploration, is access to privately owned land. The statutory regime for access varies from state to state however the underlying principle is that holders of exploration and mining rights have an entitlement to access land to exercise those rights. Conversely, private land owners impacted by mining and exploration activities are entitled to be compensated for any negative impacts they suffer as a result.

A particular cause of complaint for all sides in New South Wales over recent years has been the statutory scheme of arbitration of land access for exploration, which is triggered when an explorer and land owner cannot reach agreement on the terms of access. The scheme has been the subject of a recent independent review by Bret Walker SC (Walker Review), with all 31 recommendations from the review accepted by the New South Wales Government.

The Walker Review looked at the land access arbitration processes under the *Mining Act 1992* (NSW) and the *Petroleum (Onshore) Act 1991* (NSW) and made recommendations in response to 13 specific questions about the effectiveness of current arrangements. Thirty one recommendations were made out of the review relating in particular to:

- Improving confidence in the system through measures such as transparency, accountability and consistency in appointment of arbitrators, requirements for arbitrators to have minimum qualifications and undertake ongoing professional development, and public disclosure of interests and qualifications of arbitrators.
- Information being made available to the public through guidance policies issued by the relevant government department, public registers of employment and financial dealings of arbitrators, and publication of arbitrated decisions and agreements.
- More evenly distributing the costs of participating in the process by requiring explorers to pay the costs of land owners up to capped amounts.
- Improving certainty by limiting the process to 3 months with fixed stages and timeframes such as: the explorer providing a draft access agreement up front which includes a conclusive baseline report of conditions on the property (often referred to as a dilapidation report); the land owner identifying significant improvements with a process in place to resolve any disputes about these improvements; and a clearly defined process to reach an arbitrated outcome if agreement cannot be reached.

The requirement for a *conclusive* baseline report may have particular implications for environmental practitioners in the future, depending on how it is implemented by government. This is because the Walker Review finds that while comprehensive environmental monitoring such as that contemplated by the NSW Government's Aquifer Interference Policy should not be provided for in baseline reports, environmental baselines could be included and those baselines could in the future be deemed to be conclusive evidence of the condition of the land and of relevant environmental factors prior to exploration occurring. Baseline or dilapidation reports could therefore provide an invaluable source of data relevant to determining the impacts of exploration activities in an area.

The clear intent of the recommendations is to introduce certainty and confidence into a system which is often maligned by all sides. The Government has responded positively to all of the recommendations in the Walker Review with policy and legislative commitments and estimated timeframes for completion. The Government's response and the Walker Review are available [here](#).

While the Walker Review is limited to exploration activities in New South Wales, environmental practitioners should recognise the underlying principles of confidence, transparency and consistency as generally relevant to most dealings with land owners in any jurisdiction. Practitioners involved in mediation and arbitration of land access arrangements as independent experts or consultants will be particularly interested in both the recommendations and the Government's response, and whether the process of implementation actually results in a system which has the confidence of all sides. ■



## Topsoil, seed bank management and revegetation of the right of way following the laying of gas pipelines

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*Peter Wilkinson MEIANZ*

Globally there are a projected 100,000km of pipelines on the drawing board or currently being constructed. More than half of the new pipelines are in climatically temperate countries, many of which are first world where environmental issues are important. Many developing countries also have strong environmental ethics for instance, Botswana.

Topsoil and seed bank management is critically important for rehabilitation and re-vegetation. There are a number of factors which influence success in achieving the desired outcome. Meticulous planning cannot be over emphasised. It is important to know what outcome is planned for each section of the right of way (RoW) before clearing begins, be it restoring the vegetation passively by allowing the seed bank to germinate or actively re-seeding / re-planting with temporary cover crops, native plants or pasture.

### Top soil management

If the seed bank in the top soil is to be retained, care must be taken to ensure it remains viable. Removing the organic horizon, where most of the seed resides and storing separately and respreading over the RoW is often suggested. Technically this is difficult to do being a relatively small amount of material. Seeds of most species need to be incorporated into soil to allow germination and so mixing the organic layer with the topsoil causes few problems.

The amount of soil to remove and store depends on the depth of the top soil and whether there are sodic or acid sulphate soils (ASS), pollution or contamination below. If some 300 mm of topsoil are able to be removed,

this will provide a suitable seedbed at reinstatement. Often this is not the case. Care must be taken not to mix sodic soil with top soil as a high soluble salt content can inhibit seed germination due to toxicity or by osmosis, preventing seeds from imbibing water.



**Kalahari Daisy - Photo: P. Wilkinson**

Most seeds are better preserved in a dry and cool environment. This is provided by mixing the organic layer into the top soil when constructing the soil stockpiles. In cool temperate climates, the soil stock pile insulates seeds preventing chill-death when ambient air temperatures in winter can get to – 45°C and below.

The height of the stock pile is a much debated point with limitations to height based on concerns that the seed will be composted in an anaerobic environment. In tropical and warmer regions, such as found in Australia, due to year round activity of soil fauna and flora (microbes), the amount of organic matter in the soil is very low, often below 1%. Hence

little composting occurs in the tropical soil stockpile. In temperate regions organic matter is often much higher and hence a low soil stock pile which remains aerobic may be beneficial in summer while in winter composting is arrested by the cold.

### **Planning and preparation**

Pre-clearance soil sampling is critically important to determine soil texture and classification, soil pH, exchangeable sodium percent (ESP), presence of ASS, depth of topsoil and a top soil fertility profile.

These data allow decisions on the depth of top soil to be moved, height of soil stockpile, erosion and sediment control measures and programs to mitigate issues such as dispersive (high ESP) soils and ASS. Together with a pre-clearance floral map, decisions can be made on what vegetation to restore, a weed management program and, of critical importance, to obtain stake holder approval.

Plans to mitigate acid sulphate and dispersive soils must be made. Acid sulphate soils are often found in littoral situations and are best left alone. If this is not possible they need to be neutralised with lime and/or isolated.

High ESP soils are dispersive and, if not treated, are vulnerable to erosion. Mitigation often involves the addition of calcium in the form of calcitic lime (calcium carbonate) or Gypsum (calcium sulphate). Lime increases the pH of the soil while gypsum has a neutral soil reaction. Hence in situations, often found in Australia, where the pH is high, gypsum should be used. Lime should only be applied to acid soils as it decreases in solubility with increasing alkalinity. Since, at best, gypsum and lime are sparingly soluble, micro-fine formats of each mixed thoroughly with the soil to be treated, maximises efficacy.

Australian agricultural soils are frequently low in sulphur and the application of gypsum is used to add sulphur and calcium and it contributes to soil friability. However the amount of gypsum used to ameliorate soils for this purpose is a quantum less than that used to mitigate dispersive soils. Usually the requirement to add sulphur to soils from an agronomic perspective is one to a few hundred kilograms per

hectare while that used to correct dispersive soils typically is from 5 to 25 tonnes per hectare. If adequate care has been taken not to expose dispersive soils when removing the top soil, then the gypsum or lime would normally only need be mixed with material used to backfill the trench and not the rest of the RoW.

Once the pipe has been laid and backfilled, erosion and sediment control measures must be placed. Rain is the enemy of erosion and sediment measures, but the best friend of re-vegetation. Hence season and weather permitting, the sooner rehabilitation and re-vegetation can occur the better.

It is necessary to alleviate compaction where it has occurred. The soil data should indicate which soils are prone to compaction. If in doubt, testing after the pipe laying operation can be done to determine if action is needed to break the compaction pans prior to replacing the top soil.

The tines on graders and dozers are angled so that they tend to pull up clods. The use of a disc harrow to break up these clods often results in a very fine powdery dust, known colloquially as "bulldust". This causes dust pollution and is difficult to seed. Additionally it often forms an impermeable crust when drying out after light rains. An implement such as a para plough is angled horizontally and downwards and is designed not to bring up clods if the soil conditions are right. Use of this or a similar implement should be considered but a rougher seed bed is often better than bulldust.

### **Re-vegetation**

The top soil is replaced and, if it had been possible to remove 300mm, this in itself will provide a reasonable seed bed for re-vegetation. If natural re-vegetation is the chosen option then only rain and weed management may be required.

If a cover crop is to be sown, options include jap millet, wheat or barley. Oats are able to naturalise and hence should be avoided. Populations can be dropped when resources such as soil moisture are lacking. Often,

at low populations, the roots of these cereals will spread into the gaps and be effective at reducing erosion.

In Australia, if a pasture is to be established, then using an Australian native would be an environmentally friendly choice. However the requirement to use native seeds of provenance in regions where there is no supplier of such seeds, ironically can result in selecting the alternative choice which is to establish an exotic species such as buffel or Rhodes grass. The inclusion of desirable pasture species such as legumes may be futile if selective broad leaved herbicides to control weeds such as *Parthenium* are to be used.

A robust multi-row seeding machine able to travel over rough surfaces is ideal. If there is a long enough run with the same seed mix along the RoW, seeding by an aircraft is effective but a further operation to incorporate the seed may be needed if sufficient rain does not follow. Smaller seeds may have to be pelleted. Pellets may simply be an inert clay or may include fertilisers, insecticides, or herbicides. Livestock withholding periods may apply with some of these pesticides.

### Seed dormancy and germination

Seed viability, survival and dormancy break is controlled by a number of species specific factors. Seeds of some bush fire dependent, pioneer species remain dormant but viable for a great many years before receiving a precise signal to germinate.

Signals for germination, vary between species. For most species moisture and soil temperature are the principal factors which stimulate seed germination. Soil texture, structure, vegetation and aspect affect availability of water, gases and solutes and depth of light penetration. Light is important for many seeds including a large number of weeds. Gaseous factors such as oxygen, carbon dioxide and ethylene play roles in signalling germination. Gases may be produced by the seeds themselves or from external sources such as neighbouring soil flora, the breakdown of organic matter or may permeate into the soil from the atmosphere.

Soil pH affects solubility and availability of both organic and inorganic compounds in the soil. Many organic compounds affect germination and stimulate soil microbes, mycorrhiza and locally affect physical and chemical properties of the soil which influence germination.

The major inorganic compound to initiate seed germination is Nitrate. Seed germination is controlled by a balance between Abscissic Acid (ABA) (which inhibits germination) and Gibberellic Acid (GA), (which initiates germination). Nitrate tips the balance towards GA and hence stimulates germination. Nitrate is of endogenous or exogenous origin. Endogenous sources are derived from the mother plant and are in the seed itself. Exogenous occur naturally from the break-down of organic material or unnaturally from the application of fertilisers. Australian native plants often have a lower requirement for Nitrate and hence adding fertiliser may favour exotics, often weeds.

Seeds of many plants indigenous to Australia and to Africa only germinate after a bush fire has passed through. The germination signal common to many of these species are karrikinolides which are derived from smoke. These may be used to stimulate germination-stubborn seeds of some species by applying "smoke water". It is impractical to use this extensively over the whole RoW but they have been used successfully in re-vegetation programs in Western Australia.



**Lioness and lion cubs encountered during site visit to Botswana**





Botswanan campsite - Photo: P. Wilkinson



The author at Tropic of Capricorn in Botswana, wisely staying close to his ute

## Conclusion

Detailed planning before any pipeline project commences is necessary for a successful outcome. Even with the best intentions, weather can play havoc, so plan for the worst and hope for the best. The above are general comments and thoughts based on experience in a number of countries, with reinstatement, rehabilitation and re-vegetation of future pipelines in mind.

An example of this is a projected gas pipeline to Orapa, in Botswana where a 90-megawatt dual-fuel power station has been built. Currently it consumes between 17,000 and 35,000 litres of diesel an hour making the electricity very costly. It is hoped to convert the fuel feeding the turbines from diesel to Coal Bed Methane to reduce the cost and plans are afoot to build a gas pipeline connecting to gas fields some distance away.

The author recently conducted a scoping visit to Botswana in regards to the environmental aspects of this pipeline. These photos illustrate the conditions one can expect and wildlife that may be encountered while doing a pre-construction flora and fauna inspection.

**Disclaimer:** This article is of general interest only, does not constitute advice and should not be referenced. ■



## First CEnvP Intake for Contaminated Land Specialists Announced

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Certification of professionals and practitioners through a process of peer and Board assessment provides assurance to the community, employers, clients and professional associates of the credentials and ability of an environmental professional. Maintaining high quality professional output by environmental practitioners has positive environmental and social outcomes, and also offers economic gains by enhancing sector competitiveness.

The Certified Environmental Practitioner (CEnvP) Scheme was established in 2004 as an initiative of EIANZ. The Scheme, which operates under an independent Board, aims to ensure that competent and ethical environmental professionals are provided professional recognition and also held accountable for their work. This is central to all CEnvPs and the EIANZ Code of Ethics and Professional Conduct, which clearly outlines their responsibilities to clients, employers, the community and the environment itself. CEnvP is Australasia's first certification scheme for general environmental practice, and one of the first in the world. There are currently over 550 CEnvPs across Australia and New Zealand, who enjoy a range of benefits including improved recognition from employers, clients, government and other stakeholders, as well as increased professional opportunities through tenders and job specifications seeking environmental practitioners with CEnvP status.

In 2010, CEnvP launched two specialist certification categories for practitioners in Ecology and Impact Assessment, and a third specialist category for Climate Change was included in mid-2014. The CEnvP scheme will now be launching a new specialised certification for Contaminated Site practitioners. The first intake for Contaminated Land Assessment (CLA) specialist applications is anticipated for mid-November 2014, following the formal launch of the CLA specialist certification at the 2014 EIANZ Annual Conference in Hobart (30-31 October).

To become a CLA Specialist CEnvP, a practitioner must meet the minimum criteria of an environment-related degree; ten years of experience in CLA practice; three referees prepared to vouch for the practitioner's knowledge and experience; a signed statement of ethical conduct; commitment to a minimum of 100 points (roughly 50 hours) of continued professional development in each two year period; and additional supporting evidence of claim including at least two written referee reports. The application process includes assessment of the applicant's suitability by a panel of industry peers.

The EIANZ has been scoping and drafting the CLA Specialist CEnvP Scheme for contaminated sites experts over the past two years in collaboration with the Waste Management Institute New Zealand (WasteMINZ), which also houses a specialist contaminated site group. WasteMINZ has proposed that the EIANZ help develop and host a specialist category for contaminated sites within the CEnvP scheme, resulting in the development of a strategy paper for the implementation of such a new specialist certification. The strategy paper has been widely circulated by the EIANZ, WasteMINZ and through industry, professional bodies and government, in particular state government departments responsible for contaminated land matters. The CEnvP Board has also convened a meeting of industry and other interested stakeholders to discuss the establishment of a CLA Specialist certification scheme.

The CLA Specialist CEnvP Scheme is expected to be a valuable instrument in the implementation of the recommendations made in the 2013 amendment to the National Environment Protection (Assessment of Site Contamination) Measure within Australia, as well as in meeting the requirements of the National Environmental Standard for Assessing and Managing Contaminants in Soil for the Protection of Human Health<sup>1</sup> that came into force in January 2012 in New Zealand.

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<sup>1</sup> Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil for the Protection of Human Health) Regulations 2011, New Zealand Government.

The EIANZ has established a Special Interest Section (SIS) for Contaminated Sites to help develop the knowledge base, competency framework and rules for the CLA Specialist CEnvP Scheme. Interested stakeholders are invited to participate in the work of the new SIS.

It has been a long road to get to this point and the EIANZ and WasteMINZ are very pleased that the scheme will be up and running by November 2014, ready to take applications from suitable practitioners. EIANZ will keep its members updated and would like to thank everyone for the contributions they have made throughout the consultation processes.

For further details on how to apply for CEnvP or the Specialist Certification programs, please visit [www.CEnvP.org/apply](http://www.CEnvP.org/apply). ■

## Recently Released ISO standards related to environmental management

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Stan Rodgers, MEIANZ

### ISO TC207 Environmental Management

TC207/SC1 has issued ISO CD 14004 *Environmental management system — General guidelines on principles systems and support techniques* for comment and these will be discussed at the next meeting of WG6 in South Africa in early October 2014.

TC207/SC1 has issued ISO Draft International Standard (DIS) 14001 *Environmental management systems – Requirements with guidance for use* with comments closing in November 2014. Standards Australia Committee QR11 will meet in Sydney on the 12-13 November to prepare national comments.

TC207/SC4 has issued ISO CD 14034 *Environmental management—Environmental technology verification (ETV)*. The standard specifies principles and requirements, and provides guidance for those managing

and conducting verification activities. Comment will be considered at the next meeting of SC4 in South Korea in October 2014.

TC207/SC5 has published a new standard entitled ISO 14046 *Environmental management – Water footprint – Principles, requirements and guidelines* that are intended to provide decision makers in industry, government and non-governmental organizations with a means to estimate the potential impact of water use and pollution, based on a life-cycle assessment.

TC207/SC5 has recommended for publication ISO TS 14072 *Life cycle assessment -- Requirements and guidelines for Organizational Life Cycle Assessment* and ISO 14071 *Life cycle assessment -- Critical review processes and reviewer competencies -- Additional requirements and guidelines to ISO 14044:2006*, was published in May 2014.

TC207/WG9 has issued for ISO CD 14055-1 *Guidelines for establishing good practice for combating land degradation and desertification - Part 1 Good practice for comment* which will be considered at the next meeting of WG9 in Mexico in October 2014.

### ISO TC248 Sustainability criteria for bioenergy

TC248 will issue ISO DIS 13065 – *Sustainability criteria for bioenergy* for a three month comment period in August 2014. The Standard defines principles, criteria and indicators (PCIs) for the assessment of sustainability. It covers all facets of sustainability relevant to bioenergy, including environmental, social and economic aspects.

### ISO TC268 Sustainable Communities

ISO TC268 has now produced three standards relating to SMART infrastructure and metrics and has issued ISO Committee Draft (CD) 37101 *Sustainable development and resilience of communities — Management system — General principles and requirements* the comments on which will be considered at its next meeting in France in mid-September 2014.

### ISO PC283 Occupational health and safety management systems

ISO PC283 has issued for comment ISO CD 45001 *Occupational health and safety management systems – Requirements with guidelines for use*.

This standard is intended to replace OHSAS 18001 and subject to Standards Australia Committee SF1's recommendation may replace AS4801. The standard is a "sister" standard to ISO 14001 dealing with occupational health and safety. Comments are due to be considered at the next meeting of PC 283 in Africa in early December 2014.

Should you require further information please contact the Institute where your query will be passed on to our representative on the National Committees that deal with these standards. Copies of standards and drafts may be purchased from Standards Australia on 0292376000 or through their website [www.standards.org.au](http://www.standards.org.au). ■

## **Draft Long Term Sustainability Plan for the Great Barrier Reef**

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The Queensland and Australian governments have released a draft Long Term Sustainability Plan for the Great Barrier Reef (GBR), "an overarching framework for protecting and managing the Great Barrier Reef from 2015 to 2050".

Key impacts identified in the plan as requiring ongoing management are impacts from climate change, poor water quality from land-based run off, impacts from coastal development and some fishing activities. The plan also draws on the results of the 2014 Outlook Report, which presented a sobering picture of ongoing decline, in spite of management efforts.

The long term sustainability plan identifies outcomes and sets objectives and targets in management areas of water quality, ecosystem health, biodiversity, heritage, community benefits and economic benefits. Encouragingly, the plan contains a large number of actions to be implemented by the Australian and Queensland Governments.

The plan also refers to the need for strengthened partnerships between the community, industry and government. Environmental practitioners will have a critical role to play, both in terms of supporting the implementation of the plan, and ensuring that other activities occur in accordance with the objective and targets of the plan. Practitioners undertaking any sort of activity in the Great Barrier Reef World Heritage Area and associated catchment are strongly encouraged to review the long term sustainability plan and (a) ensure consistency with the objectives and targets and (b) identify synergies for implementation.

Comments are due on 27 October 2014. Please contact Claire Gronow ([cgronow@ashenv.com](mailto:cgronow@ashenv.com)) if you wish to participate in preparing comments on behalf of EIANZ. ■

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## Upcoming events

The climate is changing and the fabric of our societies, our buildings, our infrastructure and the supply chains that sustain us need to be adapted in response to changing weather patterns.

In response, the EIANZ has developed a national climate change adaptation professional development program delivering practical, hands on skills and knowledge at the postgraduate level.

Originally developed by the NSW Division in 2010, learning to adapt has engaged more than 500 professionals from a variety of disciplines and become a valuable part of professional capacity building for climate change adaptation.

Learning to Adapt is a short course format, post graduate training program designed to upskill environment and sustainability professionals on climate change adaptation. It is run over three separate full days of intensive collaborative learning. The program is designed by experienced sustainability educators, engaging participants in case studies presented by recognised expert guest speakers in climate change adaptation. Participants apply their learning by working together to deliver group projects.

Modules covered over the three days are:

- Applying the science of climate change impacts
- Assessing and managing climate change risks
- Applying and communicating climate change adaptation policy and standards.

[Register here](#). For all enquires contact [info@sustainably.net.au](mailto:info@sustainably.net.au)



**Sydney:** 22 October, 19 November and 10 December 2014  
**Brisbane:** 11 March, 22 April and 13 May 2015  
**Melbourne:** 18 March, 29 April and 20 May 2015

## Conference

*Institute of Foresters of Australia and New Zealand Institute of Forestry*



Interested in forest management, fire management or landscape level decision making? Want to contribute to discussions about the role of forests and foresters in international development, catchment management or innovation and certification in forest products and supply chains? Have any ideas for urban forestry, forest restoration, landcare, agroforestry or conservation of forest biodiversity?

Submit an abstract to the Institute of Foresters of Australia and the New Zealand Institute of Forestry 2015 conference.

The conference brings together over 300 forest managers and related professional from across the Asia Pacific region.

Foresters provide the professional capacity to manage trees across public and private ownerships. We plan to explore ways to manage across the forest estate to meet community objectives. This requires new thinking about forest management. We want you to have your say.

Abstracts due 31 October 2014, on any of the following themes:

- Forests in international development
- Indigenous land management
- Commercial forestry – aligning customers and supply chain
- Forest fire management
- Integrating forests and agriculture
- Water and catchment management
- Wood products and the built environment
- Urban forestry
- Innovation in forest management and wood products
- Climate resilient landscapes
- Conserving forest biodiversity across the landscape.

SUBMIT, EDIT OR ADD AN  
**ABSTRACT**

Details on requirements for abstract submission are available at:  
<http://www.forestryconference.org.au/submit/submit-an-abstract>.

## Sydney Industrial Ecology Network

The Sydney region offers an opportunity to tap into more than 2.5 million square metres of office fit out material that is currently made redundant each year, including metal and timber desks, chairs, partitions and computer equipment. Working with office churn has the potential to return 3,000 to 4,000 tonnes of metals, timber, glass and plastics to the productive economy each year.

Another opportunity currently being realised is the reuse and reprocessing of one-way timber pallets at distribution centres. Often the distribution centres have limited time and space to adequately sort pallets and implement recovery solutions. The Sydney Industrial Ecology Network is about connecting the people that can collect the pallets for reuse and reprocessing and ensuring a viable and ongoing commercial relationship is established.



Photo: Sarah Bray - Edge  
Environment

More information:

[Industrial ecology grants](#)  
[Sydney Industrial Ecology Network](#)

If you have a by-product that you think could be reprocessed, whether it be into a new product or energy; or if you have a need for a particular resource into your production processes, get in touch with the [Industrial Ecology Facilitators](#) in your region.

## EIANZ Steps Program



The [Steps Program](#) is the EIANZ professional development program for early career environmental practitioners.

Aligned with the Institute's mission to lead excellence in environmental practice, the Steps Program plays an integral role in building the knowledge and skills of environmental professionals, providing a pathway to skilled and ethical practice and potential certification.

2014/15 sees the commencement of the Steps Program Foundation Year. Thank you to the many Members who have invested significant volunteer time designing and developing the initiative over many years.

### Registrations now open.

[Communication and Consultation](#)

[Professional Writing](#)

[Environmental Risk & Impact Assessment](#)

Hobart: 29 October 2014

Melbourne: 17 November 2014

Perth: 8 December 2014

Eight events have been scheduled across Australia and New Zealand for 2014-15. Each event consists of a full day face-to-face interactive workshop. Participants will receive practical take home toolkits to support the application of learning outcomes beyond the workshop. Events have been designed to meet competencies described in the [EIANZ Proficiencies Map for Environmental Practitioners](#).

Additional events will be run where there is sufficient demand. [Register your interest](#) in attending an event in your capital city or if you would like to participate in online adaptations of the modules.

Contact the Central Office Team for more information Tel. +61 3 8803 6150 or email [info@eianz.org](mailto:info@eianz.org)

## Event Report

Professional development events are a cornerstone of EIANZ's contribution to achieving the highest standards of environmental practice. [Click here](#) for information on upcoming events. Interested in organising an event or want more information on professional development opportunities? [Contact](#) your local Chapter or Division.

### Mitigation Mythbusters

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*23 July 2014, South East Queensland Division*

Mitigation Mythbusters explored the real life effectiveness of a range of mitigation measures commonly included in environmental impact studies (EIS). The forum was inspired by ongoing concerns about the use of standardised mitigation measures in EIS recommendations, with little regard for the effectiveness in avoiding or reducing impacts of individual projects.

Ben Starr of O2 Environment and Engineering discussed erosion and sediment control and emphasised the need for site specific approaches, definitions of "best practice", and overall effectiveness of erosion and sediment control measures in preventing sediment in runoff.

Kerry Westall, former environmental manager on the Airport Link project provided a case study of the struggles that arose when the likely efficacy of noise and dust management measures in the EIS was over-estimated. Kerry's example also highlighted issues occurring when approval conditions are not clear, and how this can become highly contentious in a contractual setting.

Dr Martine Maron from University of Queensland critiqued the fundamental theoretical basis of biodiversity offsets, including the difficulties of establishing a baseline from which to calculate offset requirements.

Finally, Marcus Koolen of Perfect Earth reviewed the trials and tribulations associated with revegetation and pointed out what can be reasonably achieved.

A spirited discussion ensued where environmental impact assessment practitioners considered how to address these issues in EIS documentation, given that a formulaic approach to EIS preparation has become quite entrenched. The forum was a sell-out, with over 60 practitioners from consulting, industry and government backgrounds. Thanks to Arup for providing the venue and high quality snacks to fuel the post-forum discussion and networking.







# Upskill in Life Cycle Assessment

Life Cycle Assessment is the most comprehensive method to assess the environmental impacts of products and assets throughout their lifetime and a must have skill for sustainability professionals.

## Course details

Brought to you by the Green Building Council of Australia and Edge Environment, this specialised training course focuses on LCA and sustainable building.

The course is delivered over four modules, each tailored to a different aspect of sustainable building.



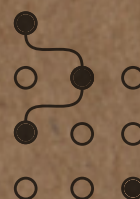
**LCA &  
Sustainability**  
Introductory Module



**Product  
Transparency &  
Sustainability**



**Building &  
Asset Life Cycle  
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**Sustainable  
Procurement  
& Strategy**



**BOOK ALL  
FOUR MODULES  
AND SAVE**

**Where:** Sydney or webinar available for interstate participants.

**When:** September/November 2014.

Book at [www.gbca.org.au](http://www.gbca.org.au)  
or email us at [education@gbca.org.au](mailto:education@gbca.org.au)



green building council australia



edge environment



# Wildlife Schools 2014

*Practical ecology training courses, delivered by experts*



Wildlife Schools are specialist training courses for environmental practitioners who need to develop their skills in the survey, identification and management of our flora and fauna.

At our courses there is an emphasis on time spent in the field, offering a rare opportunity to visit habitats and gain practical experience.

Course conveners Dr Frank Lemckert and Dr Rod Kavanagh have a wealth of knowledge to share, with additional presentations and demonstrations from other recognised experts with decades of experience.

- Learn from and be guided by recognised experts in Australian wildlife
- Experience habitats and a wide range of species first hand
- Build your confidence in practical ecology
- Gain a better understanding of biodiversity and environmental assessment
- See how environmental compliance is practically applied in the field

## REGISTRATION NOW OPEN

### General Survey and Identification Training Course

27-29 October, Crommelin Field Station, Pearl Beach NSW - 67.5 CPD points

#### Registration enquiries:

Deretta Brown  
0488 774 107  
dbrown@niche-eh.com

#### General course enquiries:

Dr Frank Lemckert  
0425 249 026  
flemckert@niche-eh.com

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[www.wildlifeschools.com.au](http://www.wildlifeschools.com.au)

## Member Snapshots



### Petra Lundgren

**Qualifications:** Ph.D. Molecular Ecology (M.Sc. Marine Zoology),

**What do you do?** Since February 2014 I have worked as an independent consultant in the areas of research and policy advice; science communication; marine and terrestrial field work; and the conceptualisation, data collection, analyses and reporting of conservation genetics projects.

My contracts have included a range of exciting projects, the first being expert

input and support to the finalisation of the Great Barrier Reef Strategic Assessment report, guiding the future management of the Great Barrier Reef world heritage area. I have supported development of a successful research proposal for the Queensland Accelerate partnership grant, authored a white paper on the use of genetic and genomic tools in marine park management, conducted marine fauna surveys, deployed underwater monitoring equipment, taken water samples around minor dredging projects, and analysed genotypic data for population structure assessments to inform future management strategies in the Kimberly world heritage area in response to cane toad invasion.

**How did you get there?** My interest in tropical marine ecosystems brought me to Australia and the University of Queensland in the early 1990s. Since then I have moved between research and management as I am interested in the interface between the two, namely in the application of scientific knowledge and understanding to “on the ground” management efforts. With cuts to the public sector in early 2014, I decided to take a leap

of faith and create my ideal job establishing myself as an independent consultant with a focus on the interface between science and management.

**What are the best aspects of your work?** As an independent consultant I am finally able to live in the scientific and management worlds simultaneously, and so far am finding it very rewarding. I also appreciate the variability and outcome oriented aspects of contract type work, where I can be in an office considering implications of the EPBC Act on permission systems for Marine Park management one day, and analyse genetic data of splendid tree frogs the next.

**What inspired you to become an environmental practitioner?** It runs in the family, both my parents work in similar fields. Hence, I never really gave other alternatives much thought. I honestly can't picture myself doing anything that is not somewhat linked to environmental management, practice or study.

**What is your biggest environmental concern?** Our inability to successfully communicate the benefits and the necessity of making more environmentally sound decisions, and to put resources and efforts into developing smart solutions (green energy, better cars, improved infrastructure, condensed urbanisation to allow better public transport alternatives and so on). Media and influential lobby groups have been very successful in driving home the message that living green means reducing our standard of living. The list of green energy alternatives is both impressive and exciting yet there is not enough investment in making greener alternatives attractive to your average person. I honestly think that developing smarter technology rather than using less is a very viable alternative.

**How and why did you get involved in EIANZ?** I was impressed by the rigour of the statements put out by the Institute and several of my ex colleagues at the Great Barrier Reef Marine Park are involved and always speak highly



of the Institute. Also, as an independent consultant I need to make sure I am visible and in touch with a wide range of peers and potential collaborators and contractors. EIANZ is an obvious place for such networks and contacts to be established. ■



## Kirsten Leggett

**Qualifications:** BSc, Graduate Diploma of Environmental Management (Honours)

**What do you do?** I am the Environment Manager at Hobart International Airport, having previously worked as an environmental consultant for ten years with a global engineering firm. Hobart Airport provides a diverse range of environmental issues to sink my teeth into, from contaminated sites, water quality testing and analysis through to the management and monitoring of threatened species and vegetation communities. As the airport is

located on Commonwealth land, there are regulatory reporting requirements throughout the year, which combined with field work keeps me busy. The environment at the airport is complex, with onsite operations and activities that have the potential to cause environmental harm. Working at the airport has introduced me to the national airport environmental community, a network of practitioners facing similar issues in balancing the needs of airport operations and the physical environment.

**How did you get there?** I began my career as a Catchment Planner (Environmental) for Hobart City Council on completion of my Honours Thesis. I spent four years in this role preparing catchment environmental management plans, monitoring water quality in urban rivulets and facilitating stormwater education for primary schools. During this time I also worked on research projects for the management and improvement of urban stormwater.

I moved into environmental consulting where I had numerous opportunities to expand and professionally develop. I spent ten years working with the company commencing as the resident ecologist before taking on a team leader role managing environmental specialists including environmental engineers, archaeologists, geotechnical specialists and ecologists. During this time I became a skilled and efficient project manager, EMS specialist and lead consultant for stakeholder engagement. I also managed key projects for the Hobart airport, gaining considerable knowledge of the environment and issues to manage. From here, I moved to work at the airport, building on that knowledge and further enhancing my management skills.

**What are the best aspects of your work?** I love the fact that I can integrate my skills across the airport business, from operational aspects through to general routine maintenance and key projects. This enables me to share my knowledge of environmental values to the wider airport community while building on my existing knowledge and sense of ownership for my working environment.

**What inspired you to become an environmental practitioner?** I have always had a love of the environment, and growing up in Tasmania certainly played a key role. I have adventured into the great outdoors from a very young age, so working in this field is like second nature. I have been able to combine a very successful career with a personal passion and for that I am very grateful. It is rewarding to be able to make a difference in a professional way through increasing people's awareness of environmental issues, particularly those associated with development.

**What is your biggest environmental concern?** My biggest environmental concern would have to be the pressures humanity places on our natural environment, from all aspects and from a global perspective. Whether it is the pressure from global warming, deforestation or the mining of our natural resources, these activities all place an enormous pressure on the finite balance of the global environment. I dread the day when my children and future grandchildren will not be able to experience the wonder of the Great Barrier Reef or when we see endangered species slip



into extinction because of unsustainable pressures placed on the environment. To play some part in trying to improve this is my contribution to this field.

## Faye Woodward celebrates 14 Years on NSW Committee

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EIANZ NSW Division extends their thanks to Faye Woodward who is stepping down from the committee after 14 years. Faye has served the NSW Committee as:

- Secretary for 9 years (2000-2009)
- NSW Councillor for 4 years (2009-2013)
- General committee member this past year.

Faye received the 2012 Mary Lou Morris Award in recognition of her exceptional service to the Institute, at a Divisional level. The growth and success of the Division since 2000 would not have been possible without Faye's unpaid and untiring contribution – attending Divisional Committee meetings, recording discussions and preparing minutes, being an active contributor to discussions, generating interesting ideas for events, guest speakers and importantly delivering these events.

Recently, Faye has been a strong supporter of regional members, organising successful events in Wagga Wagga and Bathurst, volunteering her time to facilitate and attend.

As Chair of the organising committee for the 2012 EIANZ conference in Sydney, Faye invested 18 months leading delivery of Institute's flagship event. The conference was extremely well received, had a high participation rate and produced a significant surplus for the Institute and the NSW Division, enabling the Division to take on bigger and more ambitious, high-calibre events with greater financial security.

These contributions have all been provided on a voluntary basis, and with an exceptionally positive, can do, attitude. ■



**Faye Woodward at the 2014 NSW Division AGM - Photo: Sarah Bray**



**DON'T MISS THIS OPPORTUNITY TO APPLY FOR CENVP STATUS AND BE RECOGNISED!**

## **NEXT CEnvP APPLICATION CLOSING DATE FRIDAY 6 MARCH 2015**

Certified through a process of peer and Board assessment, Certification can provide a greater level of assurance to the community, employers, clients and professional associates of the credentials and peer recognition of an environmental professional.

Maintaining high quality professional outputs of practitioners not only has positive environmental and social results, but may offer economic gains by enhancing sector competitiveness.

The CEnvP Scheme was established in 2004 as an initiative of EIANZ. It is Australasia's first certification scheme for general environmental practice, and one of the first in the world.

There are almost 600 CEnvPs across Australia and New Zealand (as at Sept 2014).

We encourage suitably qualified practitioners to participate in this important initiative for the environment profession.

**For more information about certification criteria and the application process, please visit [www.CEnvP.org/apply](http://www.CEnvP.org/apply).**

**Australia: 03 9001 6948  
New Zealand: 03 741 3102  
[info@cenvp.org](mailto:info@cenvp.org)**

*CEnvP – an initiative of the Environment Institute of Australia and New Zealand  
Building the Environment Profession in Australia & New Zealand*

The Board of the Certified Environmental Practitioner Scheme (CEnvP) encourage suitably qualified practitioners to participate in this important initiative for the environment profession. To qualify for CEnvP, you will need:

- An environment-related degree;
- 5 years of relevant environmental experience over the past 10 years;
- 3 referees prepared to vouch for your skills, performance and professional conduct;
- A signed statement of ethical conduct;
- Commitment to continued professional development through a minimum of 100 points every two years;
- Additional supporting evidence of claim including at least 2 Referee reports.

An assessment interview conducted by a certification panel completes the process.

EIANZ Members and Fellows receive significant discounts on application and annual certification fees.

### **SPECIALIST CERTIFICATION**

***CEnvP (Ecology Specialist)    CEnvP (IA Specialist)  
CEnvP (CC Specialist)    CEnvP (CLA Specialist)***

CEnvPs Specialist Certification Programs give recognition to professionals who have high levels of expertise and ethical standards in specialist areas of practice such as Ecology, Environmental Impact Assessment and Climate Change, and soon Contaminated Land Assessment (launching Oct 2014... more details soon).

*Current CEnvPs should visit the 'Current CEnvP' section of the website for details on how to apply for Specialist Certification as the requirements are slightly different.*

For further details on how to apply for CEnvP or the Specialist Certification programs, please visit [www.CEnvP.org/apply](http://www.CEnvP.org/apply).

*Photo by Ian Wiseman, CEnvP. Mt Hutt, NZ.*

[www.CEnvP.org/apply](http://www.CEnvP.org/apply)

## New members July-September 2014:

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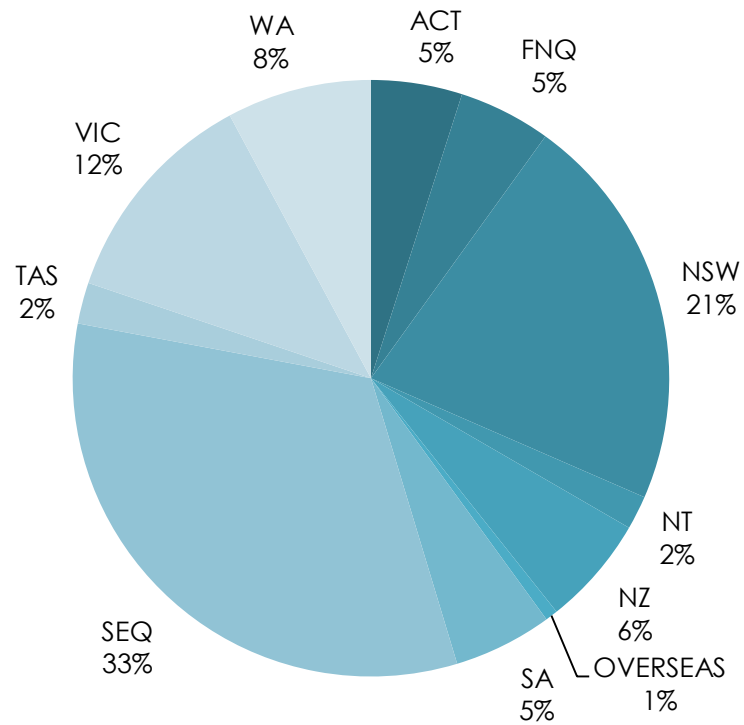
Welcome to:

• Melita Milner	ACT	• Michael Nicholls	NSW	• Fleur Tiernan	NZ	• Troy Lawrence	SEQ
• Andrew Palmer-Brodie	ACT	• Vanessa Organo	NSW	• Tracy Walsh	NZ	• Taurai Masvingise	SEQ
• Jon Bloxsom	FNQ	• Paul Paciullo	NSW	• Gareth Williams	NZ	• Adrianna Poutsma	SEQ
• Wayne Pagel	FNQ	• Neil Phillips	NSW	• Jessica Crosthwaite	SA	• Semone Rainer	SEQ
• Nicholas Toon	FNQ	• Jay Stricker	NSW	• Bridgette Douady	SA	• Martin Rose	SEQ
• Kester Boardman	NSW	• Justine Toohey	NSW	• Jason Thomann	SA	• Martin Singleton	SEQ
• Charlotte Cherry	NSW	• Glen Ewers	NT	• Michelle Abranches Seito	SEQ	• Tegan Smith	SEQ
• Bradley Coates	NSW	• Kerrie Perkins	NT	• Fiona Allen	SEQ	• Kat Spruth	SEQ
• Eckhard Ferber	NSW	• Raymond Chang	NZ	• Ghaza Amirimejad	SEQ	• Kirsten Leggett	TAS
• Kelly Gillen	NSW	• Andrew Congalton	NZ	• Mark Barnett	SEQ	• Ed Parker	TAS
• Tom Keatley	NSW	• Tess Drewitt	NZ	• Kellie Charlesworth	SEQ	• Jude Westrup	VIC
• Kelly Lee	NSW	• Kylie Hall	NZ	• Louis Cheng	SEQ	• Purusha Boelling	WA
• Kurtis Lindsay	NSW	• Kristy Jones	NZ	• Justin Cutajar	SEQ	• Godknows Jakwa	WA
• Claire McQueeney	NSW	• Giles Learman	NZ	• Kate Every	SEQ	• Kate Philp	WA
• Scott Mitchell	NSW	• Sarah Lindberg	NZ	• Nicholas Gabriel	SEQ	• Tamasin Simon	WA
• Helen Monks	NSW	• Christina McPherson	NZ	• Rebecca Gruenfeld	SEQ	• Peter Zafiropoulos	WA
• Bess Murphy	NSW	• Heather Penny	NZ	• Brigette Hodson	SEQ	• Nicole Zago	WA
		• Ghida Sinawi	NZ	• Andrew Humpherys	SEQ		

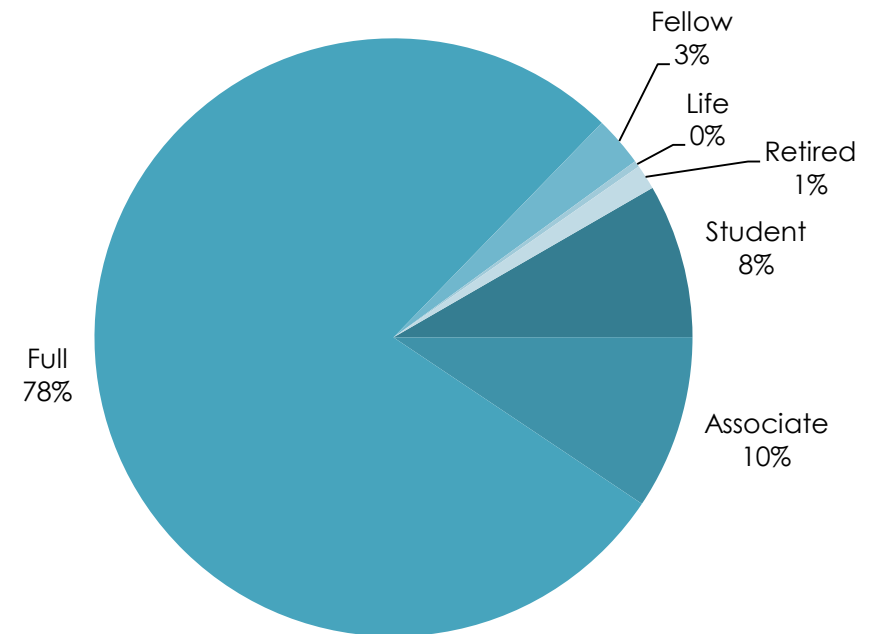
## Member Statistics

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**Membership by Chapter and Division**



**Membership by Category**





# Professional Indemnity Insurance for Members of the EIANZ



## CAN YOU AFFORD NOT TO GET A QUOTE FROM THE PROFESSIONAL INDEMNITY FACILITY?

At Marsh, we understand the Environmental Industry is unique. Marsh has developed a specific tailored Professional Indemnity Facility that recognises and understands the needs of the members of the EIANZ.

Some of the key features of this facility are:

- A tailored insurance product in respect of premiums, deductibles, endorsements and exclusions
- A streamlined application form
- An effective administration process that promptly deals with enquires, renewals and claims through a experienced team
- A facility which is able to provide cover to the majority of EIANZ Members.
- Premium Funding is available, enabling monthly instalments (conditions apply)

In your role, as an  
environmental  
professional, the  
need for insurance  
protection has  
never been more  
important

Our privacy statement can be obtained from our website at [www.marsh.com.au](http://www.marsh.com.au)

If you would like to receive a quote through the Professional Indemnity Facility or for further information call:  
Rachel Grima | P: +61 3 9603 2760 | F: +61 3 9603 2753 | [Rachel.Grima@marsh.com](mailto:Rachel.Grima@marsh.com)  
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