

ECA WA News

Autumn Edition 2018



Save the date

**ECA WA
AGM 2018**

15 August

Photo courtesy of .Bernie Masters

In this edition

- 1 From the President
- 3 The strategic assessment of the Perth-Peel regions
- 7 Meet Stephen Dawson MLC, Minister for Environment
- 9 Rock oysters on the scholarship menu
- 11 Worlds collide: Finding the balance in EIA flora and vegetation surveys
- 13 ECA plays active role in industry and stakeholder representation
- 14 ECA now on Instagram
- 15 ECA member accreditation of services
- 16 A Day in the Field: Seed collecting
- 17 Are echidnas hot or cold?
- 20 YECA 2017-18 wrap up
- 21 Events

From the President

Welcome to the Autumn 2018 edition of the ECA WA News.

Your ECA News

This newsletter has been published since 2012, although in past years we have run multiple editions which ranged from two and up to three annually. The committee decided in 2017 to focus this to a single annual edition, which going forward we now aim to publish in May each year. Any member can submit content. So to, for that matter, can any individual or organisation who provides content that is deemed to be informative and of interest to the ECA membership. We ask you to keep this in mind going forward, as the more content the merrier. Early in the calendar year is the best time to contact the committee with either actual content or ideas for consideration and feedback. We also welcome relevant paid

ECA WA Committee

PRESIDENT - Jason Hick

Jason.Hick@emergeassociates.com.au

VICE PRESIDENT, COMMITTEES & REPRESENTATION - Jamie Shaw

jamie.shaw@aecom.com

SECRETARY - Phil Whittle

phil.whittle@hydrobiology.biz

TREASURER - Mat Brook

mathew.brook@ghd.com.au

MEMBERSHIP - Stuart Halse

stuart.halse@bennelongia.com.au

STAKEHOLDERS & SUBMISSIONS

- Tim Mitchell

mitchelltr@cdmsmith.com

EVENTS - Laura Stevens

laurastevens@360environmental.com.au

COMMUNICATIONS - Damian Grose

damian.grose@tranen.com.au

Kelli McCreery

kelli@onetreobotanical.com.au

Lisa Adams

lisa.adams@ecoaus.com.au

ADMINISTRATION - Bec James

admin@eca.org.au

The ECA WA committee meets monthly. Please contact committee members or Bec James if you would like to raise anything for discussion.

Editorial contributions welcome

The next editorial deadline for ECA News will be advised in the Weekly Email updates. Please email contributions to ECA News Editor, Jo Thierfelder at

editorecanews@eca.org.au

ECA News is a periodical publication of the Environmental Consultants Association (WA) Inc. It aims to inform members on the activities of the ECA and its members, events and training, and developments in the environmental industry. The views and opinions expressed in ECA WA News are those of the article authors and do not necessarily reflect those of the ECA WA.

advertising / sponsorship opportunities, and more invited content from relevant external stakeholders to broaden the newsletter content base.

Looking back

It has been a big year for ECA since the last edition of the newsletter, and in particular there has been a noticeably busier start to the year for many members. Some of the key ECA activities since the last newsletter have included:

- The highly successful EIA practitioner's course held last November.
- The signing of the Department of Water and Environmental Regulation (DWER) / ECA Partnering Memorandum of Understanding (MOU).
- The ECA Christmas Drinks held in December at Elizabeth Quay.
- The ECA New Years' Breakfast in February, now well established at Beaumonde on the Point.
- The DWER one stop shop seminar held with event partners Lavan Legal and DWER.
- Ongoing refinement and updating to the functioning of the ECA website, including specialist services categories now given preference in database searches.
- The acceptance of a number of new personal and corporate memberships.

Looking forward

For the remainder of 2018 and beyond, we are currently planning for:

- A PFAS seminar on 29 May.
- The joint ECA/EIANZ flora and vegetation symposium in June.
- An offsets symposium likely to be run later in the year.
- The potential for a 2018 EIA practitioner's course later in the year.
- Development of an environmental planning practitioners course (focusing on the referral and assessment of planning schemes and scheme amendments) for late 2018 or early 2019.
- A number of other seminars and events which would progress into 2019.

The ECA Committee

The success of all ECA activities is driven by the voluntary time contributions made by members and, in particular, the ECA committee. The committee is re-formed each year at the AGM and any full member can nominate themselves for a committee role. We have had a few minor changes in the ECA committee over the past 12 months and have also recently put some consideration into structuring and streamlining the activities of the committee. The current committee members and their specific areas of focus are:

- **Jamie Shaw** (AECOM) - Vice President and external representation activities coordinator
- **Phil Whittle** (Hydrobiology) - Secretary
- **Mat Brook** (GHD) - Treasurer
- **Tim Mitchell** (CDM Smith) - external stakeholder engagement and submissions coordinator
- **Stuart Halse** (Bennelongia) membership assessments / review coordinator
- **Laura Stevens** (Strategen) - events coordinator
- **Damian Grose** (Tranen) - communications coordinator (including social media)
- **Kelli McCreery** (One Tree Botanical) - flora and vegetation symposium and submissions
- **Lisa Adams** (EcoLogical) has recently joined the committee and we expect she will coordinate membership promotion.

The committee is also very ably assisted by **Rebecca James**, who has provided executive / administrative assistance to the ECA for 13 years and is extremely valuable in terms of her retained ECA corporate knowledge. In addition, **Nick Everleigh** assists with membership assessments / review and former president and life member **Ian LeProvost** is never too far away. He assists with a range of ongoing items including some external representation and is also the lead on the offsets symposium.

We expect the ECA key initiatives and area for focus over the next 12 months will primarily be:

- focusing on membership promotion and growth
- ensuring we maintain a high degree of communication to the membership
- seeking opportunities to promote our members to industry and provide a range of other tangible membership benefits
- coordinating a range of key interest and networking events
- engagement with key external stakeholders to raise the profile and influence of ECA for the benefit of the membership

Lastly, the 2018 AGM is already booked in for the evening of **15 August**. Please put this date into your diary and consider attending with your colleagues. We have had reasonably sound attendance at the past two AGM events, and this year are looking to make some refinements to the agenda to maximise the networking opportunities. We look forward to seeing you there.

Jason Hick
ECA President

The strategic assessment of the Perth-Peel regions

By Jason Hick, ECA President

Many members might be aware of the recent announcement by the State Government to suspend work on the Strategic Assessment of the Perth and Peel Regions (SAPPR) "until a critical review of the ongoing costs, risks and benefits for Western Australia is completed and can be considered by Government." With the recent release of the sub-regional planning frameworks that have been endorsed by the State Government, this may have been a bit of a surprise to some, given the interrelatedness of the two initiatives.

As background, section 146(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) allows the Commonwealth Minister

A key opportunity provided by the SAPPR was to consider impact avoidance at a regional scale, consider cumulative impacts, and ideally achieve strategic conservation outcomes not possible using a project-by-project assessment approach.

for the Environment to agree in writing with a person responsible for the adoption or implementation of a policy, plan or program that an assessment be made of the impacts of actions under the policy, plan or program on a matter protected by a provision of part 3 of the EPBC Act. This is often referred to generally as an 'EPBC Act strategic assessment'. The intended end outcome of an EPBC Act strategic assessment is for the endorsement of a Matters of National Environmental Significance (MNES) Plan for the area in question and for the Minister to approve an action, or a class of actions, in accordance with the endorsed MNES Plan. This would consequently mean that approved actions or classes of actions would not need further approval under the EPBC Act.

In this case, the SAPPR is an EPBC Act strategic assessment of what commenced as the Western Australian Planning Commission's (WAPC) *Directions 2031 and beyond – metropolitan planning beyond the horizon* (WAPC 2010) and has ended up as *Perth and Peel @ 3.5 million* (WAPC 2018). The broad intention was to assess and approve a number of 'classes of action' associated with the implementation of *Perth and Peel @ 3.5 million*, and in particular, the spatial plans (AKA 'sub-regional frameworks') associated with this.

The SAPPR (also now referred to as the *Green Growth Plan for Perth and Peel @ 3.5 Million* or just GGP) formally commenced back in 2010 with the preparation and release of draft terms of reference for the assessment by the State Government, which was approved by the Commonwealth Minister for Environment in May 2012. The intended purpose of the [SAPPR](#) was to:

- Significantly reduce the need for project-by-project assessment under the EPBC Act in the Perth and Peel regions and streamline related processes under the EP Act.
- Deliver an effective long term and strategic response to key environmental issues in the Perth and Peel regions, for example, Carnaby's Cockatoo and water quality in the Peel-Harvey estuary.
- Provide greater certainty to industry as to which areas can be developed and what the obligations will be in terms of avoidance, mitigation and offsets.
- Provide greater certainty in terms of long term land supply to meet the needs of a city of 3.5 million.

As many members would appreciate, a key opportunity provided by the SAPPR was to consider impact avoidance at a regional scale, consider cumulative impacts, and ideally achieve strategic conservation outcomes not possible using a project-by-project assessment approach. This is also situated in a region known for its environmental and biodiversity values, and the extent to which this has been under threat by incremental development. It's also



Photo taken by Kelli McCreery at Charles Gardner Nature Reserve, WA.

been subject to increasing community concerns and expectations in regards to biodiversity conservation outcomes.

As the SAPPR progressed, the State Government formed a Stakeholder Reference Group, for which the ECA was a key stakeholder, and met on 13 occasions between November 2012 and September 2015. The assessment was a substantial undertaking and focused on the Perth and Peel regions (as defined by the extent of the statutory region schemes), and five separate classes of action (urban and industrial, rural residential, infrastructure, basic raw materials, and pine harvesting).

This assessment process culminated with the release of the draft *Perth and Peel Green Growth Plan for 3.5 million* in December 2015. As a key stakeholder and representative on the SRG, the ECA prepared a submission on the draft documentation. The key points raised in this submission were:

- Acknowledging the enormity of task and complexity that the draft Green Growth Plan represented, and strongly concurring with the need for the initiative.
- Being generally supportive of the draft GGP as presented, and while there were areas that would need refinement and improvement through the finalisation process, we believed that the draft Green Growth Plan could be refined into a workable environmental approvals initiative.
- The need for a thorough review of the entire documentation package in order to correct, simplify, refine and better integrate it, and to ensure clarity with the most important information.
- The need for additional detail and more consideration (via better integration into the assessment and resultant documentation) in regards to:

The ECA received the notice of the suspension of the SAPPR on 6 April. Work has been suspended until a critical review of the ongoing costs, risks and benefits is completed and can be considered by government.

- Consideration of various land use planning alternatives, including the 'do nothing' scenario.
- Scientific supporting information and assessment, particularly in relation to Carnaby's black cockatoo, water quality impact assessment for the Peel-Yalgorup system, and the status and viability of various species and communities to then inform additional impact avoidance criteria.
- The offsets framework, and how this had been considered and compiled relative to the predicted impacts.
- The need for the proposed impact avoidance approach (i.e. broad commitments) to be more specific in order to better inform the future decision-making processes (i.e. specific criteria for the relevant Commonwealth and State matters) and to provide more certainty of the likely outcomes for industry and the community.
- The need for clear implementation guidelines so that there was absolute certainty as to how the GGP would be implemented, and all stakeholders identified, and their roles, responsibilities and accountabilities clearly defined.
- The need for the GGP to be progressed with a strong focus on the specific on-ground environmental outcomes to be achieved, and particularly, the most environmentally appropriate and resource efficient methods of doing so, which was not entirely evident in the documentation released. Outcomes from implementation need to be routinely and systematically monitored, audited and reported in a fully transparent manner for the lifetime of the implementation process.

We understand that the State Government GGP team that was being led by the Department of Premier and Cabinet (DPC), received approximately 700 submissions on the draft GGP documentation and was working through these with a view to understanding how the documentation could be finalised. During this there had been a change in Government, and then the release of the final *Perth and Peel @ 3.5 million* (WAPC 2018) documentation. This documentation refers to the SAPPR/GGP as being a key part of its future implementation.

Given the recent announcement, the ECA is unaware as to what the intended pathway or future is for the SAPPR. It is informally understood that the State Government is intending to formalise a review process. The ECA received the notice of the suspension of the SAPPR on 6 April, and it simply stated that "in the coming months, an independent review will consult across governments, and with

industry, local governments and non-government organisation.”

We are now approaching the State Government for an update to this and will inform members of any information we receive. We welcome any opportunity to continue to consult with the State Government on this initiative. We ideally look to provide our insights as impact assessment and technical professionals to ensure that any progress of the SAPPR will result in sound environmental impact assessment and management outcomes, particularly given the opportunities that a strategic approach offers across the Perth and Peel regions.



Photo taken by Kelli McCreery at Kings Park - Banksia ashbyi.



Meet Stephen Dawson MLC, Minister for Environment

Delve behind the LinkedIn profile and get to know the movers and shakers in your industry. ECA News presents “Give me 5”, a regular segment that asks five slightly more personal questions of its interviewees.

Background

Stephen was born in Ireland and first came to Australia in 1986 on a family holiday.

He studied to be a French and Drama teacher at Edith Cowan University where he joined the Labor party at the University orientation day.

Stephen was elected to represent the Mining & Pastoral Region at the 2013 state election. He served as Shadow Parliamentary Secretary for the Kimberley, Pilbara, Gascoyne and Goldfields-Esperance regions before being promoted to the position of Shadow Minister for Mental Health; Disability Services and Child Protection in September 2013.

Stephen has been a Chief of Staff to a number of Government Ministers in Western Australia and Victoria.

“The community is very activated [on environmental issues] and particularly motivated to put pen to paper on issues that matter now and for future generations.”

- Environment Minister,
Stephen Dawson

1. What's your favourite childhood memory of the natural world?

As a child, my family and I visited Australia from Ireland. We spent seven weeks travelling through the outback of Western Australia. As we journeyed through The Wheatbelt, The Goldfields and The Southwest, I was amazed at the landscape and the colours. It was very different from my hometown of Dublin!

2. You've said publicly that when you took office you didn't have specific skills in the environment portfolio. What did you bring to the job?

Although I never held the shadow environment portfolio, I had in the past held positions as a policy advisor and a chief of staff to environment ministers both here in Western Australia and Victoria. These previous roles certainly gave me more than just a base-level understanding of current issues and pressure points in the portfolio.

3. During your time as Environment Minister, what are the key environmental issues being raised by the community with your office?

Our office hears regularly from constituents who are concerned about waste, recycling and plastic bags. The expansion of our National Parks system is also something we hear regularly about. I receive a great deal of correspondence into my ministerial office about environmental issues. The community is very activated in this space and particularly motivated to put pen to paper on issues that matter now and for future generations.

4. The Green Growth Plan for Perth and Peel, a significant body of work being progressed by the State Government, was recently put on hold pending an independent review. Can you give any insights into this?

The State Government has decided to suspend work on the Strategic Assessment of the Perth and Peel Regions (SAPPR) until a critical review of the ongoing costs, risks and benefits for Western Australia is completed and can be considered by government. The SAPPR project presents many policy, legal and financial challenges which have been proving difficult to resolve, amongst the competing priorities of the government. As a result a re-evaluation of the project is the responsible step forward.

5. What has been the hardest decision you have needed to make so far in relation to the Environment portfolio?

I make decisions on a daily basis where I know some members of the community will be unhappy with certain elements of the decision. As Minister for Environment, the challenge is weighing up the environmental, social and economic aspects of proposals. A decision not to mine the Helena Aurora range in the Yilgarn is an example of this.



The proud researcher, Andrew Bossie, with one set of single and double layer collectors.

Tropical rock oysters on the scholarship menu

By Andrew Bossie, UWA master's student

Andrew Bossie is the winner of the 2018 ECA Ray Hart Memorial Award and his research project on tropical rock oysters has the potential to dramatically boost the local commercial market for the lucrative product.

Since March last year I have been working on an incredibly exciting piece of research as part of a Master's degree in Marine Biology at the University of Western Australia. In partnership with the Kimberley Marine Research Station, I have been

helping to create a baseline ecological data set on tropical rock oyster species, which are native to the intertidal zones of the state's north.

This data set is being created to help kick start an indigenous led industry with the potential to be a new player in the commercial edible oyster market.

Tropical rock oysters are currently underutilised as a food resource in Australia. However, along with our research there are three other projects in various stages of development around the country. The race is on to develop successful techniques.

While projects in the Northern Territory and Queensland are rearing juvenile tropical oysters via hatchery methods, we believe that the pristine,

I feel extremely privileged to have been awarded the ECA Ray Hart Memorial Scholarship. It will allow me to return to the study site at Cygnet Bay in June and move the research into the next phase.

disease-free waters of the Kimberley are primed for natural juvenile collection. This is the essence of my project.

I am looking at the preferences of tropical oyster spat (when larvae cement themselves to a hard material and metamorphose). Thus far I have shown that spat is chemically cued by high levels of natural calcium. Importantly, the data also show that spat can be collected in commercial quantities by some materials. Competition between other intertidal invertebrates, such as barnacles and limpets, has been detailed as well.

I feel extremely privileged to have been awarded the Environmental Consultants Association Ray Hart Memorial Scholarship. It will allow me to return to the study site at Cygnet Bay in June with the purpose of moving the research into the next phase. We will be looking in more depth at spat collection and the ability to grow juveniles towards maturity. We also hope to submit the preliminary research for publishing later in the year.

My working thesis title is: *Strong calcium preference of Saccostrea spp. recruits in Cygnet Bay, Western Australia and implications for a fledgling tropical rock oyster industry.*

What is the ECA Ray Hart Memorial Award?

The ECA Ray Hart Memorial Award was created in 2004 to perpetuate the memory of Dr Ray Hart who was a graduate of UWA and the founding President of the Environmental Consultants Association (WA) Inc (ECA).

An initial sum of \$40,000 was donated to The University to establish a fund to provide an award in memory of Ray who worked as a consultant ecologist and environmental scientist. Dr Hart's work covered all aspects of flora, vegetation and fauna ecology and his focus was always to achieve sound environmental management through the integration of environmental principles in projects. The ECA maintains a strong interest in supporting this award.

Selection is based on a set of criteria developed to reflect some of the principles Ray felt were important in maintaining and developing the skills and ethos necessary for management of the Australian bush that was both his work and his passion.

[Click here](#) for more information about the scholarship.

Worlds collide: Finding the balance in EIA flora and vegetation surveys

By Kelli McCreery, ECA Committee member

The role of providing botanical information to the Environmental Impact Assessment (EIA) process can be a challenging one.

EIA botany is where worlds collide. The work has a basis in science but maintaining scientific rigour within a commercial environment can be difficult. The state's legal and regulatory frameworks attempt to counterbalance this. However, as our laws are open to interpretation, there is no certainty about how they will work in practice.

Competing interests will naturally lead to a different reading of the law and desired outcomes. EIA studies are expensive, so from a commercial perspective, proponents often focus on the letter of the law, testing boundaries and trying to minimise the amount of information they provide. The other end of the EIA spectrum tends to focus

on the spirit of the law, which is fundamentally about environmental protection. This can lead to criticism of the quality and scope of information supplied in the EIA process. The middle ground is occupied by an under-resourced regulatory environment. And it is within this conflicted system that the EIA botanist is required to perform their role.

Navigating the technical challenges

Flora and vegetation are two separate but related disciplines, each with their own complexities to navigate.

The flora of Western Australia (WA) is poorly known. More than 1,200 (approximately 10%) of our known flora species have not yet been named and described, which means that little to no information exists for them. New species are regularly being discovered. We live in one of the most species-rich regions on the planet where the sheer volume of species presents a challenge.

Botanists are burdened by an unrealistic expectation that they should know every flora



Photo taken by Kelli McCreery at Kings Park - *Verticordia* sp.

Contextual
bioregional
data in useful
formats is
essential if EIA
botanists are
to complete
meaningful
botanical
assessments.

species by sight. However, botanists do need to know how to go through a process to identify flora, which is a time-consuming process that often clashes with budgets and timelines.

At least the idea of a 'species' is broadly understood. Conversely, vegetation is poorly understood, and this has implications for how well it is assessed in EIA. Like flora, vegetation is similarly diverse. However, it is also more complex and less well known. There has been a state species database for flora since 1998 (Florabase) but there is still no plot database for vegetation.

What is phytosociology?

Plant taxonomy is widely recognised but how many have heard of phytosociology? This is the science upon which vegetation assessments in EIA are based. It is perhaps better known as the plot-based or Detailed Survey (EPA, 2016). The Detailed Survey requires botanists to complete regional significance assessments of vegetation using phytosociological methods. However, in the absence of a state plot database, this is rarely possible.

Contextual bioregional data in useful formats is essential if EIA botanists are to complete meaningful botanical assessments.

You get what you pay for

Resourcing has declined for the biological sciences generally and with it the view that expert knowledge is being devalued. Resourcing can be a problem on a personal level for the EIA botanist. Equipment, support and mentoring can be thin on the ground and budgets are often unrealistic. The job involves long hours in difficult conditions away from home and is mentally and physically demanding. As a result, careers are frequently short, often ending just as EIA botanists are gaining competency.

What does all this mean for our ability to provide quality information to enable informed decision-making in EIA? What should we be aiming for in the long term?

The first step is starting a conversation.

Flora and Vegetation in Environmental Impact Assessment Symposium

With this in mind, these issues and more will be discussed at an upcoming Flora and Vegetation in EIA Symposium. The ECA in partnership with the Environmental Institute of Australia and New Zealand (WA) (EIANZ) is bringing together a diverse range of practitioners, government representatives, industry and non-government organisations to explore the flora and vegetation survey approaches used to inform EIA in Western Australia.



This two-day program aims to promote information sharing, clarify government expectations, host a technical discussion on baseline survey methods for EIA and discuss the challenges ahead.

- Date: 21-22 June 2018
- Day 1: 8:00am – 5:00pm
- Day 2: 8:00am – 5:00pm
- Sundowner: 5:00pm – 7:00pm
- Location: Ellis Room, Bendat Basketball Centre, 201 Underwood Ave, Floreat
- Cost: \$300 – ECA/EIANZ members
\$400 – Non-members
\$120 – Students/Government/NGO

[Click here](#) for more information and to register.

ECA plays active role in industry and stakeholder representation

By Jamie Shaw, ECA Committee

The ECA continues to represent its members with ongoing active participation in a number of industry and stakeholder reference groups. Thanks to our members who actively represent the Association within these groups.

Earlier this year, the ECA responded to a request by Department of Water and Environmental Regulation (DWER) to provide feedback on the EPA Policy and Guideline review. We took the opportunity to congratulate the EPA on its efforts thus far and provided some constructive feedback on where we feel some improvements could be made.

Last August, we provided feedback to the WA Biodiversity Science Institute (WABSI) during the

Follow [eca_wa](#)
on Instagram
for spectacular
nature
photography
of our wild and
beautiful State.

early stages of development of what is now the Index for Biodiversity Surveys for Assessment (IBSA). We are pleased to note that a number of our recommendations have been incorporated into the scheme when it was launched earlier this month.

We have also taken measures recently to reaffirm our strong relationship with DWER through the re-signing of our [Memorandum of Understanding](#). The MoU recognises the shared interests of DWER and the ECA and establishes a commitment for open dialogue between the two organisations. Visit our website to find out more about [ECA representation](#).

ECA Photo Competition entries now on Instagram

The ECA encourages its members to submit photographs for the annual photo competition through the website at [Annual Photograph Competition](#).

With our new Instagram account now established, we will be working to better showcase these entries throughout the year. Search for [eca_wa](#) and follow us to enjoy all the stunning photographs our members take while out and about working across this incredibly diverse State.

A pretty little mussel but it's not welcome in Australia! It's an Asian green mussel, [Perna viridis](#), a marine pest species targeted in pre-arrival inspections of ships entering Australian waters.

Photo courtesy of Bernie Masters.



ECA member accreditation of services

One of the ECA's goals is to increase professionalism among environmental consultants. It uses a number of mechanisms by which to achieve this including running courses, workshops and seminars. The ECA has also instituted a members' code of ethics and an accreditation process, which identifies members as competent or holding a specialist capacity to deliver particular services. The accreditation process helps proponents find an appropriate and competent consultant to undertake environmental work on their behalf.

Full ECA members are already accredited as competent and most choose to list the main services they offer. A small number of consultants have also taken the opportunity to be accredited as having specialist capacity to deliver in their core service areas, a move the ECA strongly encourages. Consulting firms that are corporate members will soon be unable to list services on the ECA register unless they have a staff member who is an accredited specialist in that service.

Consultants can apply through the ECA website for membership with competency or specialist capacity in one or more services. We are investigating various ways to simplify the application process and review the criteria for competency.

Key points to consider for accreditation

1. Consultants should apply only for services that constitute a significant proportion of the work they do, or in the case of rarely requested services, they should be an established provider of the service. As a general guide, consultants should seek to be accredited as competent in no more than three service areas. The ECA recognises that a few service areas may include multiple services, such as Environmental Impact Assessment and Approvals, Land Use Planning, and Environmental Management Plans. The key

point is to be selective about the services requested and not to request everything.

2. One project will ideally be used as evidence of experience in only one service area. It cannot be used to support a service that was not among their major contributions to the project. However, it is acceptable for their major contribution to be a small part of a large project as may often be the case with Stakeholder Consultation.
3. It is important that the work selected as evidence of experience has a high level of professionalism with technical excellence and good management outcomes where appropriate.
4. Project Management involves the management of multiple stakeholders and disciplines to run the entire environmental aspect of a development project. Managing the work done under a particular service area, such as Terrestrial Flora / Vegetation, is not evidence of Project Management experience.
5. The Data Management and Analysis and Remote Sensing / GIS Analysis service category was designated for the consultants and consulting firms that offer this service full-time. While Data Management and Analysis and Remote Sensing / GIS Analysis may be required when doing Marine Ecology (Flora and Fauna), for example, a consultant should not seek to be listed as competent in these services based on this experience. Similarly, some consultants offer Stakeholder Consultation as a full-time service and consultants who undertake some consultation as part of doing Environmental Impact Assessment and Approvals, for example, should not seek to use this as evidence of Stakeholder Consultation capacity.

As a final point, the ECA recognises that the service capacity criteria currently in place are tighter than applied historically. Many members who applied to be accredited for services several years ago are

What better environment could you hope to collect seed in than in the unique, undisturbed vegetation of the scarp with sweeping views over the city?

listed for services they could not sustain in a current application. The ECA is looking to address this issue over the next year. For more information visit [Specialist Services](#) on the ECA website.

A Day in the Field: Seed collecting

By Damian Grose, ECA Committee

It's not every day you are allowed to collect seeds from a national park. For obvious reasons, national parks are well protected, and therefore anyone entering them to take the protected resources needs to have strong justification for doing so.

We were lucky enough this summer to be asked by the Friends of Upper Lesmurdie Falls to both train and assist them in collecting seed for their ongoing rehabilitation efforts around the Lesmurdie Falls National Park. What better environment could you hope to collect seed in than in the unique, undisturbed vegetation of the scarp with sweeping views over the city?

Flora licensing is dependent on two factors: the type of collection and the location. The collection types are split into two categories:

1. Commercial - there is an exchange of money or goods / services
2. Non-commercial - research and volunteer services

Lesmurdie reconnaissance





Source locations are split into three categories:

1. Private land
2. Crown land - state forest, unallocated crown land, local reserves, etc.
3. Conservation estate - conservation reserves, national parks, regional parks, etc (anything that is directly managed by the Department of Biodiversity Conservation and Attractions [DBCA]).

There are therefore six combinations of licensing possibilities. Based on the type and source location of this project, a Regulation 4 Authority (Reg 4) was required by DBCA. As part of this process, we also had to apply for Commercial Purposes Licenses (CPL) that relate specifically to the Reg 4, despite already having current CPL's.

For a Reg 4 to be approved, a project plan is required detailing:

- the specifics of the species to be targeted and likely quantities
- source area
- intended use
- solid justification for why collections should be permitted

Our project was approved based on the reasoning that as it was for rehabilitation efforts within the national park, protection of genetics is a primary concern, and the commercial elements of the project were for training and assisting the cause. It took two months for the approvals to come

through, which is the fastest turnaround time we have experienced. The next fastest Reg 4 application I had previously experienced took more than four months to receive (something to keep in mind if you're faced with a similar situation).

All approvals were granted by mid-January and collections commenced immediately. Four visits were staged throughout the balance of the main seed collection period which is typically October to March for the majority of species. The first visit was mainly reconnaissance to learn the distribution of species across the site, assess seed production, and build up the knowledge base for the site. This helped us set up for a targeted collection at appropriate times for the balance of the time available.

Given the delayed start, we were happy to recover 46 of the target 122 species (38%). The Friends group with their new training were able to recover several more. The balance will be targeted in coming seasons by both Tranen personnel and the now trained Friends group volunteers.

Are echidnas hot or cold?

By Dr Justine Barker

I recently completed my PhD at Curtin University, examining the physiology and behaviour of short-beaked echidnas in Western Australia. One of the most interesting findings from my research was that echidnas are not as primitive in their physiology as once thought, and are in fact very well adapted. The primitive phylogenetic position of the short-beaked echidna has resulted in much debate about their physiology, in particular, their body temperature. It is widely known that echidnas have a low basal body temperature, which is attributed to their phylogeny, low basal metabolic rate (BMR), and low energy lifestyle. Their considerable thermolability, however, has been central to many debates over the years. Early studies concluded that short-beaked echidnas were unable to regulate their body temperature, and the wide variation in body temperature shown in the laboratory was a reflection of their primitive physiology. Through laboratory and field experiments, I concluded that this is not the case.

Echidnas are not as primitive in their physiology as once thought and are, in fact, very well adapted.

They are, in fact, precise thermos-regulators that utilise torpor for energy conservation.

Short-beaked echidnas living in the eastern states of Australia utilise torpor and hibernation over the colder months to escape unfavourable conditions. These echidnas reduce their body temperature to $<10^{\circ}\text{C}$ for several months at a time, and display the 'typical mammalian' pattern of hibernation, where the long hibernation season is interrupted by periodic arousals. However, hibernation has not been documented for Western Australian short-beaked echidnas. I studied free-ranging echidnas over the course of one year, continuously recording body temperature, environmental temperature and location. There was no evidence of true hibernation, however torpor was common. Daily torpor is an important survival strategy for many small mammals when weather conditions are unfavourable or resources are scarce, as it reduces metabolic rate and thus energetic expenses significantly.

It has been well documented that echidnas in many areas of Australia (e.g. Melbourne, Queensland, Southern Alps) utilise daily torpor as an energy conservation strategy. There is a strong nycthemeral body temperature cycle evident for short-beaked echidnas, where body temperature is reduced during inactivity to reduce thermoregulatory costs. Dr Chris Clemente and Dr Christine Cooper used accelerometers to more closely examine the activity patterns of echidnas and their impact on the ecosystem. This thermolability varied considerably between seasons, with a variation of 2.6°C in winter and only 1.2°C in summer. The minimum body temperature recorded for short-beaked echidnas during daily torpor was 11.1°C , which occurred during winter when ambient temperatures were low. The body temperature of short-beaked echidnas in Western Australia was lower than that recorded for echidnas in the Southern Alps and Queensland, both during active and rest phases. This is likely due to the higher ambient temperatures experienced by echidnas in Western Australia, which means they need to have a larger 'buffer' zone between normothermia and hyperthermia, to reduce the risk of overheating.

While echidnas in Western Australia do not display the same deep, prolonged hibernation as those in the eastern states, they do utilise multi-day torpor at the coldest times of the year. On average, echidnas entered multi-day torpor eight times throughout the year (during winter and spring) and the bouts lasted on average 4.5 days. The lowest body temperature reached was 10.57°C , but mean minimum body temperature was 13.7°C . This is a reduction of 15°C , from a normothermic body temperature of 28.7°C , which considerably reduces energy expenditure. Multi-day torpor ceases when the ambient temperature increases to a level that makes prolonged torpor unviable. Western Australian echidnas are somewhat opportunistic in their use of multi-day torpor in response to environmental requirements, while echidnas in the Eastern



states are seasonal hibernators that appear to rely strongly on seasonal cues to trigger entry into hibernation. Short-beaked echidnas in Western Australia are therefore somewhat unique in their physiological adaptations, and genetic studies into the comparison of sub-species would be insightful, to help determine just how different the sub-species are.

Echidnas utilise torpor and hibernation to escape cold ambient temperatures, however, their ability to withstand high ambient temperatures has been debated. It was long thought that echidnas could not defend their body temperature at ambient temperatures above 35°C, and temperatures above 40°C were lethal. More recently, Brice et al. (2002) found that temperatures in hollow logs that echidnas use for shelter in summer regularly reached 40°C. The maximum environmental temperature (recorded by an iButton covered attached to the echidnas back) in my study was 59.52°C, which is well above the previously reported lethal ambient temperature. This value includes radiative heat, and is a good indicator of

the environmental temperature experienced by the echidna. These data clearly demonstrate that echidnas can survive extended periods of time at very high ambient temperatures while maintaining their body temperature within a tolerable range. Their ability to tolerate such conditions also suggests that echidnas do in fact physiologically control their body temperature, and do not solely rely on behavioural adaptations to escape the heat, as previously suggested.

Short-beaked echidnas have a combination of 'primitive' and derived physiological traits, and are effective thermos-regulators that are very well adapted to a low energy lifestyle. Their plastic physiology, combined with their excellent defence strategies mean they are still abundant in an ever-changing habitat and are the most widespread native mammal in Australia.

References from the author are available on request.

Advertise with
ECA News
and reach a
niche, tailored
audience of
more than
400 industry
professionals.

YECA 2017-18 wrap up

By Andreas Biddiscombe, YECA Committee

It's been a busy and fulfilling 12 months for YECA. After closing out 2017 with a near sell-out quiz night and a networking drinks event for the ECA's EIA Practitioners Course, YECA kicked off 2018 with a social lawn bowls night at the Perth Bowling Club. It was a fun and social way to get the year started and we are looking forward to carrying that momentum into the future.

What is YECA?

The committee was established in 2013 and is made up of a friendly bunch of Perth's newer environmental consultants who are supported by the greater ECA community. Our aim is to bring together younger environmental consultants, new to the industry, to network and socialise with others in their field and ideally learn a little along the way.

The committee welcomed two new members in 2017: Laura Fisher, a Graduate Environmental Scientist at AECOM, and Andreas Biddiscombe, an Environmental Consultant at Emerge Associates. Laura and Andreas are great additions to the YECA community who bring new perspectives and enthusiasm to the committee.



YECA's new committee members: Andreas Biddiscombe and Laura Fisher.

Career Nights

After the success of the four career nights run in 2016-17, YECA is now planning to convene similar events in 2018. Previous topics centred on biological services, water, approvals and contaminated sites. Upcoming events will focus on similar popular topics but will cover different angles and invite new speakers. Details will be released in the near future.

The events the YECA committee organises are initiated by our members, so we need your feedback. If there is a particular topic or



The YECA lawn bowls night kicked off the social calendar in relaxed style.

event that you would like us to cover, please let us know via email at yeca.committee@gmail.com or engage with us on [Facebook](#) and [LinkedIn](#).

ECA Events

Flora and Vegetation in Environmental Impact Assessment Symposium - 21-22 June

The ECA in partnership with the Environmental Institute of Australia and New Zealand (WA) (EIANZ) is bringing together a diverse range of practitioners, government representatives, industry and non-government organisations to explore the flora and vegetation survey approaches used to inform EIA in Western Australia.

[Click here](#) for more information and to register.

PFAS Presentation - 29 May

PFAS appears to be rapidly evolving into one of the most concerning contaminants of our time. Across Australia, it is the subject of intense scrutiny by the regulators and is fast gaining the attention of industry and the public. On the east coast, it has been the subject of much media interest.

The ECA has arranged a panel of speakers to highlight what you need to know, from a legal, regulatory, sampling and remediation perspective. Hear from leaders in the contaminated sites industry, and then take advantage of a Q&A session, facilitated by Tony Van Merwyk, followed by networking drinks at Herbert Smith Freehills' premises.

[Click here](#) for more information or to register.

Non-ECA Events

Revegetating the Regions: RIAWA conference - 6-7 September

The Revegetation Industry Association of WA annual conference will be held on 6-7 September in Mandurah this year in line with the theme: Revegetating the Regions. The Association will also be showcasing presentations from our Revegetation Award finalists.

We are currently seeking abstracts. Keep a lookout for the final program and registrations shortly. For more information visit www.riawa.com.au