

## NOISY LOVERS — JEWIES



**Black Jewfish are the largest and most powerful fish to inhabit the bays and creeks around Broome and yet we know very little about them.**

Studies in the NT and Queensland have found that Jewies are one of those peculiar fish that aggregate in massive numbers only at one time of the year and launch into a spawning frenzy of epic proportions.

Most of the time Jewies are spread far and wide, patrolling the creeks and estuaries at high tide and then congregating in the deeper holes at low tide. Throughout the dry season they feast on fish and crabs and build up layers of belly fat in preparation for the approaching mass spawning. By September the females' ovaries are going into overdrive, growing millions of eggs in anticipation of that critical time around December, when they come together for the biggest party of the year. Jewies talk to each other by making grunting noises produced by their swim bladder, and these grunts travel a long way underwater. Maybe this is how they know the party is about to begin, and they head for that predetermined spot for the spawning to follow.

Aggregation sites are permanent palaces of love for Jewfish. Usually they are found in a depression in the seabed, not noteworthy to us but super-important for a Jewie. Hundreds of big Jewies will gather into a tight school, grunting furiously, psyching each other up for the explosion of activity to follow. Spawning erupts in a turning, twisting mass of huge fish releasing a storm of eggs and sperm. The bottom mud gets whipped up and becomes a large brown stain on the green ocean, clearly marking the furious activity occurring under the waves. Once their sexual energy is spent and the frenzy dies down, some Jewies hang around while others, with energy left

to burn, will head long distances to other aggregations to join in the next frenzy. This behaviour ensures that Jewies form one large, genetically homogenous population.

Spawning aggregations are the easiest place to catch a fish. In Cape York the Injinoo community has been fishing the same aggregation for over 50 years. Unfortunately, it became overfished and the one-and-a-half-metre monsters vanished, leaving little pubescent teenagers to try to keep the party going. Traditional owners placed a two-year ban on Jewie fishing to try to recover stocks. So far it hasn't worked too well. Around Darwin, Jewies are classified as overfished — the aggregation sites are well known and haven't received any protection. Luckily, Jewies are the fastest growing inshore fish, reaching 60cm in year one and 90cm by year two. Stocks can recover quickly if enough big fish reach the spawning aggregations and are left alone.

In Western Australia we have a strict bag limit of two Jewies per person, and yet they are increasingly hard to find. Maybe this is because Jewies don't release well and most die when caught from further than 10 metres. A large spawning site exists in a particular hole on the other side of Roebuck Bay. Luckily, most local fishos are unaware of its existence — but for how long? In the upcoming Roebuck Bay Marine Park, a sanctuary zone could be created in that area. Then the noisy, crazy love-party of the Jewie would continue unhindered and help to sustain stocks of a truly remarkable fish.



## REPORT FROM **THE CHAIR**

Hello all –

I shouldn't be surprised that the deadlines for my reports creep up on me with such regularity. Our editor Pat Lowe tirelessly ensures that four newsletters are produced each year, a great feat considering that this happens amidst churning out her own books (for the latest on termites, see [http://www.backroompress.com.au/book\\_\\_termites.html](http://www.backroompress.com.au/book__termites.html)), working on presentations for writers festivals (the next, in London in May, along with Don Watson, Peter Carey and many others <http://ausnzfestival.com/>), advocating for too many things to name here and providing tea and good conversation to a seemingly endless stream of visitors from everywhere. To Pat, yet another 'many thanks' to add to the many EK has given you over the years.

Recently EK Director Martin Pritchard and I attended a meeting in Perth of environment NGOs who are working in the Kimberley, which included two national groups and the Conservation Council of WA. The purpose of the gathering was, in part, to share and exchange information on the activities of each of the organisations as well as their expectations and plans over the longer term. At the end of the two days, we agreed that there would be many benefits from having regular contact. The convenor was the Australian office of Pew, a US-based philanthropic foundation, whose work here "aims to secure protection for areas of high conservation value in the Outback and effective management of adjacent areas that is compatible with the whole landscape" (<http://www.pewtrusts.org/en/projects/outback-australia>). Over the past two years, EK has collaborated with Pew in advocating for the creation of marine parks along the Kimberley coast and protection for the Fitzroy River. The meeting reinforced the importance of this fruitful relationship.

I am very pleased to report that the 2014 Christmas raffle was a sell-out. The proceeds are crucial in our efforts to become more self-sufficient and sustainable. Elsewhere in this issue we've thanked everyone for buying tickets and supporting us as they could; here I'd like to acknowledge Tessa Mossop's deft and capable coordination and the efforts of all those who sold tickets on our behalf.

On a balmy January afternoon, we drew the 13 winners at Matso's cafe in Broome. In case you missed it, these were: A. Thomas (Broome); A. Cone (NSW); K. Keeley & S. Watson (Broome); S. Wooltorton (Broome); B.J. Lourey (VIC); J., R. & B. Phillips (Broome); A. Mardling (Broome); B. Kimberley (Greater WA); G. Beckton (NSW); H. Grace (VIC); and, P. Montea (VIC). And many thanks to those who then donated their prize money to us!

Lastly, I would like to welcome Lu Beames back to the office after time away on maternity leave. It is, for me, one of the clearest measures of organisational health that we continue to retain a strong team of marvellous, professional and committed people.

Until my next deadline, best wishes,

Kate



## **EK Christmas Raffle**

### **– thank you!**

EK would like to send the biggest thank you to everyone who participated in last year's Christmas raffle and a big congratulations to the 13 lucky winners from across the country.

With your support we raised close to \$10,000 for the work of Environs Kimberley in 2015!



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### **ACKNOWLEDGEMENTS**

*Newsletter design:* Robyn Wells, Michael Dawson  
*Original logo:* Rose Cox  
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### **LETTERS TO THE EDITOR**

Environs Kimberley welcomes letters to the Editor. We accept comment and criticism, and print all letters that are not obscene, offensive or libellous. If you have a bone to pick, pick it with us.



thanks for helping us to  
protect the Kimberley  
environment

# DIRECTOR'S REPORT

## Water threat

The WA Government's 'Draft Regional Planning & Infrastructure Framework' has a very interesting map buried at the back of the summary document:

([http://www.planning.wa.gov.au/dop\\_pub\\_pdf/Kimberley\\_RPIF\\_draft.pdf](http://www.planning.wa.gov.au/dop_pub_pdf/Kimberley_RPIF_draft.pdf)). Most people haven't seen it. I highly recommended having a look if you're interested in the future of our region.

The 'vision' it portrays is startling. Petroleum resources (oil and gas fracking) for the southern Kimberley overlaid with some mining. Mining for the central and north Kimberley with a couple of small patches for conservation. Irrigation for the West Kimberley inland from around Barred Creek, all the way across Roebuck Plains to Sandfire.

Since the draft document was published in 2014, the Government has pushed hard for irrigation in the Fitzroy Valley. \$14 million of taxpayer funding is earmarked for the 'Water for Food' project. The State Minister for Water, Nationals MP Mia Davies, has on several occasions said that the volume of water up here is mind-boggling and that it needs to be harnessed for irrigation.

All this without any significant studies into groundwater availability, cost/benefit analysis, soil studies, environmental studies, land-use planning or market investigations. Moreover, the economics of irrigation can be marginal. Graham Laitt of the Milne Agri group, who co-owns the Liveringa pastoral lease with Gina Rinehart, has said '...generally it is not profitable to fatten cattle in North-west feedlots and Liveringa has run extensive trials.'

The water resources of the Kimberley, especially the Fitzroy Valley, have not faced as much pressure as this from irrigation since Colin's Canal died in a ditch 9 or so years ago. This, at a time when the engagement of local people in water planning processes has greatly diminished with changing government priorities.

Only a few years ago we had more reason to be optimistic about the future of the waterways of the Kimberley. The National Water Initiative was setting the pace for water reforms across Australia, with community participation in water planning and management, Indigenous rights to water and environmental protections all central planks in the process. In WA, the Department of Water (DoW) was actively engaging with the regional community in water planning through such initiatives as the Kimberley Water forum in 2008 (<http://www.water.wa.gov.au/PublicationStore/first/95832.pdf>). DoW's consultative approach culminated in the draft Regional Water Plan of the Kimberley, released in 2010 (<http://www.water.wa.gov.au/Future+water/Resource+management/Regional+water+planning/Kimberley+regional+water+plan/default.aspx>). The region's first community-based catchment group, the Fitzroy River Catchment Management Group (FitzCAM), included water managers, landowners, traditional owners, river scientists, recreational fishers, agencies and community members. They came together to exchange ideas and put together a plan for the management of the catchment. Today, these efforts have been superseded by processes that are elevating the interests and influence of big water users.

We are keen to make sure that Kimberley wetlands, rivers and bush-food-rich savannah are not destroyed by large-scale irrigated agriculture, which has failed consistently around the world. In the meantime, rather than spending vast amounts of funding on damaging, marginal irrigation projects, why not invest in resurrecting market gardens, which used to be common in communities across the Kimberley, so that we don't have to rely on food trucked from Perth, and people can be in charge of their own food security?



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*More tips to improve the sustainability of our daily lives without too much effort.*

## In Praise of Glass

I was dismayed to discover recently that the apple cider vinegar I had been buying for years in glass bottles is now being sold in plastic ones. At home I decanted the contents from the new bottle to the old glass one. This small act of rebellion gratified my aesthetic sense, but the empty and unwanted plastic bottle offended my environmentalist conscience and did nothing to discourage the producers from switching to plastic, so the next time I needed vinegar I changed to a dearer brand in glass. That'll show them.

When I was growing up, most fluids, and many other things besides, came in glass containers. Oh, the early-morning clanking of milk bottles in crates as they were delivered to our doorsteps! The thrilling grate of metal against glass as the sweet-shop owner unscrewed the lid of one of the big jars of colourful boiled sweets lined up on his shelves! A couple of ounces would be served in a twist of paper.

Ah, the fearful crash on the bathroom tiles as a bottle of shampoo met its end in a splatter of glass splinters and pink goo...

Bathrooms aside, glass is a beautiful material — transparent, hygienic, easily cleaned and, barring accidents, long-lived. Even when it shatters, it may endanger bare feet but it doesn't break down into toxic nurdles and enter our food chain, as plastic does. Fragments of glass on the beach are soon abraded into harmless pebbles and eventually return to the sand they came from. They don't choke turtles or smother dolphins, as plastic can. Neither do parent albatross feed them to their starving chicks, as they do plastic bottle tops, disposable cigarette lighters, ball-point pens and the like.

Plastic packages crammed into the bottom of the fridge are not beautiful. Plastic bags keep bread from drying out and leaves from wilting, but otherwise they are a reproach to the user. Health food shops sell a whole array of dry foods in bulk and in paper bags — whole or ground grains, germs, pulses, dried fruit and those alarming products that only health fanatics know about. You can go in with your glass container and get it filled on the spot, or buy a paper bag-full. Even supermarkets offer some items in bulk, but serve them in those ubiquitous plastic takeaway boxes, anathema to the true environmentalist (though most of us have a few of them stashed away for re-use).

I make it a rule not to throw out empty glass jars, even into the recycling bin. I clean them and stow them in a box until I find a use for them or someone more industrious than I puts out a call for jars. I am usually recompensed with a sample of home-made chutney or marmalade.

I was delighted to learn recently that at long last New South Wales has joined the ACT and South Australia in introducing a Cash for Containers scheme. Victoria, despite its environmental consciousness, its sustainability push and green buildings, has declined to follow suit. As for benighted Western Australia...

# RUMINATING WITH MAD COW



## GOING TO MARS

A group in the Netherlands calling itself Mars One has put out a call for volunteers to travel on a one-way ticket to the Red Planet. The idea is for four people to take the first seven-month, 225-million-kilometre journey, land on Mars and attempt to set up the beginnings of a colony. I assume that others will follow. There will be no way of returning to Earth — ever. More than 200,000 people have applied. What motivates them?

As greatly attached as I am to *terra firma*, I can see any number of reasons for wanting to escape Earth right now. For one thing, it's getting mightily overcrowded — overcrowded with people, that is, but with ever-diminishing numbers of other species apart from camp-followers of *Homo sapiens* such as pigeons, rats, cats and cockroaches. For another, it seems to be getting more dangerous, and on Mars you are unlikely to become the victim of a terrorist attack — but what if one of your three fellow travellers turns out to be a psychopathic sex fiend or, worse, has bad personal hygiene?

There won't be any knighthoods on Mars, and once you've left Earth forever you probably won't care much about earthly honours of any sort, however brave people consider you back home. Apart from anything else, who are you going to impress with your gong and on what occasions would you wear it?

Travelling to another town is bad enough, and I always spend the hours before departure in a sweat of anxiety as to whether I've remembered to pack everything, even though I know I can buy anything vital I forget from a shop. Imagine packing your bags for the rest of your life. And how much food and water could you take? How would you make a cup of tea on Mars?

Exiling oneself to another planet does seem extreme, even to escape the madness that is Australian politics. Surely you could go to Bhutan instead, with its famous Gross National Happiness Commission, or somewhere peaceful and sensible like that? But Bhutan, in the Himalayas, is under threat from the effects of climate change: melting glaciers resulting in floods and avalanches, just for a start. And Bhutan seems to be doing all it can to combat climate change — a carbon neutral economy; still 72% of the country covered by forest and a commitment in the Constitution never to go below 60%; a ban on logging; a simple lifestyle, and so forth. Bhutan might be a lovely place to escape to, but the place to be if you want to help the Bhutanese to survive is here, where you might have some chance of influencing the blockheads still devoted to digging up fossil fuels.

People going to Mars are clearly not concerned about climate change. Their launch rocket alone will put a king's ransom-worth of emissions into the atmosphere, although once they leave the earth behind that will be someone else's problem.



## MARKET STALL

# EK Market Stall is back for 2015!

From Easter EK will be back at the Saturday Broome Courthouse Markets! Please drop in and say hi and check out our range of information, books, T-shirts and other goodies.

We are looking for new people to help out on the stall. This is a great way to enjoy the markets, meet new people, and support the work of EK at the same time!

Volunteers are needed for short shifts, either on the stall or assisting with set-up and pack-down and driving the market trailer.

Anyone can help out and training will be provided. This is an enjoyable and rewarding way to help protect this beautiful place that we live in. Please let us know if you would like to be involved — we would really appreciate your support!

**For information, or to help out, please contact**

**Tess on (08) 9192 1922 or**

**[admin@enviro Kimberley.org.au](mailto:admin@enviro Kimberley.org.au)**

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# In the Heart of the Kimberley. . .

Di Morrissey

There are some places in this world that just grab you by the throat and the heart the minute you arrive. . . For me it's the Kimberley.

I lived in many amazing and beautiful places outside Australia before I set foot in the Kimberley. I had, finally, travelled around my own country, realising you have to leave a place to truly appreciate it. But nothing prepared me for the emotional onslaught of the Kimberley.

Some places have spectacular scenery like the Kimberley - the Horizontal Waterfall, the Mitchell Plateau with its magnificent falls and pools, the sweep of the Broome coastline, Cape Leveque, Gantheaume Point, the sense of the past remaining in luggers, pearling masters' bungalows and missions, tiny magical Beagle Bay church, hidden fishing spots and time-out hideaways shared by locals, the pearl farms. Blood-red rocks and sand, enormous blue skies, clear water where whales breach and, embedded in rocks, the footprints of dinosaurs, while in the wilderness the imprint of ancient hands and art remains hidden in sacred shelters and caves.

These were places I first visited without the tread of tourists or shadow of mining operations. But what made it seem so different from anywhere else, is - the Kimberley has a heart.

And somehow, even a visitor briefly passing through instinctively understands this land is precious and needs to be preserved as it is.

Corporate rape, short-term greed, decisions made by those who have never set foot in the Kimberley, misguided or deliberate lies that things will 'come back' or not be harmed in the gouging of mines and fracking of water, are not to be accepted or believed.

As in the Kimberley, all over Australia pockets of resistance and rage are raising voices at decisions made by corporations and politicians, supposedly in our interests, as small nibbles and massive bites chew into a peaceful valley, a small town, a quiet suburb, agricultural land, a pristine waterway or coastline.

It is time to call a halt. To pause and think far into the future. Which land dies and which is saved? Whose home is destroyed, whose health must suffer, what community will fracture, while money is at the core of decisions? Vested interests as against those who care deeply about Australia's future, and talk of food security, poisoned land and water, the monetary and environmental cost of our energy, is a debate that's moving hearts and minds to action.

And as we examine our lives, our future, do we not feel a sense of despair, of shame, of helplessness over selfishness, the shallowness of what Australia has become?

It was in the Kimberley that I realised what is really important in this world. In its still untouched wilderness, its significant sites, one glimpses the past and is awed and calmed.

The knowledge that this has survived and will, hopefully, remain as it is for our children's children's children, that with all the destruction, the anger, the evil happening in other places, the presence of this intact, magnificent sprawl of secrets and beauty gives one peace and hope.

This is why I embrace the work of Environs Kimberley, to know that in some small way, I too, can help keep the Kimberley, the planet's last great wilderness, preserved forever.

# STOP PRESS



## Saving our marine life

If you have been reading Jason Fowler's columns on the sex lives of crabs and fish, you will know all about the value of Marine Sanctuaries within Marine Parks. While there are restrictions on some activities within Marine Parks, most of them are open to recreational fishers - which is why we need sanctuaries, where fish can swim unmolested, grow big and multiply, so replenishing fish stocks in the wider sea.

On the evening of March 14, Pew Charitable Trusts and EK hosted a special cinematic event at the Broome Visitor Centre. 'The Sea and Me' is a documentary film commissioned by Pew, showing underwater footage of coral reefs and the many fish species they support, in sanctuaries such as those off Ningaloo and the Great Barrier Reef. Talking to camera are people who make their living from the ocean - fishers, tourism operators and guides, a marine scientist - who have seen the benefits of marine sanctuaries to their localities.

The showing was preceded by socializing over complimentary drinks and finger food served by glamorous mermaids, some resembling EK staff members. Nick Linton, General Manager of the Visitor Centre, was an engaging MC. Our very own Jason Fowler gave a short presentation after the film, explaining where small sanctuaries already exist in the Kimberley and where we would like to see additional ones, and Tim Nicol from Pew talked about Pew's campaign for marine parks and sanctuaries, and pointed out the magnificent poster Pew has produced. Following filming, the revelry continued until bed-time.

Sincere thanks to Tim Nicol and Michelle Grady of Pew, to the EK staff and friends who served the drinks and food, and to Nick Linton and staff for allowing us to use the Visitor Centre and for participating so wholeheartedly in this event.

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## CONGRATULATIONS!

To Karla and Steve on the birth of their daughter as we were going to press!



Carla amongst a patch of *Merremia*

## MONSOON CALLING

**The wet season delivers thundering, swirling clouds and dumps rain to a thirsty landscape, lasting just long enough to leave us hanging out for more.**

Life is rejuvenated and bursts from every nook and cranny. Lifeless-looking deciduous vine thicket plants (such as *Grewia brevifolia*, *Mallotus nesophila* and *Flueggea virosa*) sprout new leaves and blossom, every shade of green colliding when viewed from sand dune peaks. Dormant seeds just below the surface forge through their casings and the soil, into the light. The rain has not discriminated and breathes life into native and weedy plants alike. It fills gullies and depressions that become fully-functioning lakes, dams and wetlands once again. New growth and fresh water awaken all manner of creatures great and small, who bask in the abundance of the season. Frogs, snakes, lizards and insects proliferate, feasting off one another.



Robbie with a bouquet of *Neem*, *Merremia* & *Blue Pea* seedlings

The monsoonal rains also called to the SKIPA mob. They ventured out in the early months of the year to tame the weeds sprouting in their own backyards, down the garden path, the drains and roadsides, weaving into Minyirr Park. At the SKIPA site, the softened sandy soil made an ideal medium from which to rip the miniature *Merremia* and *Siratro* seedlings, and even nasty *Neem* saplings. The SKIPA mob took time to meander through Minyirr, with Broome and Beyond under arm, identifying plants and discussing what flowers and fruit belonged to which vine thicket inhabitants. Deciphering plants by observing their form and leaves and comparing flowers, we learnt from one another and the environment that engulfed us. After all the weeding, walking and talking, we made use of the soaked soil, revegetating the SKIPA site with vine thicket plants including *Cable Beach Gum* (*Corymbia paractia*), *Gubinge* (*Terminalia ferdinandiana*) and *Dune Wattle* (*Acacia bivenosa*).

We wouldn't be SKIPA if we hadn't satisfied our interest in Kimberley animals. We took the rainy season as a fine opportunity to venture beyond the deafening sound of green tree frogs in our own backyards, to discover a diversity of amphibians procreating under moonlight. On the drive out to a nearby wetland, we observed Frogger-like carnage on the busy roads of town that separated horny frogs from their watery love dens. Led by SKIPA's very own Dr. Steve, we fossicked by way of sound around a recently filled dam auditorium. Under the starry sky, we finished the evening having found seven species of frog: *Giant Burrowing Frog* (*Cyclorana australis*), *Roth's Tree Frog* (*Litoria rothii*), *Brown Tree Frog* (*Litoria rubella*), *Green Tree Frog* (*Litoria caerulea*), *Ornate Burrowing Frog* (*Platyplectrum ornatum*), *Derby Toadlet or Gungan* (*Uperoleia aspera*), and *Mole Toadlet or Gungan* (*Uperoleia talpa*). Frogs everywhere! We were well satisfied with our newly acquired skills in listening to, stalking then spotlighting tiny creatures that echoed lusty and loud.

The call of the wet continues as the land drinks up the rain and the world around us flourishes. It's a wonderful time to be outside.

SKIPA is an enthusiastic group of Broome-based naturalists who meet weekly to undertake a variety of activities such as nursery work, cultivating Kimberley plant species and landcare (working on the invasive species at Minyirr Park), as well as regular field trips. Everyone is welcome to join.

If you would like to become a member email [skipas@environskimberley.org.au](mailto:skipas@environskimberley.org.au) or phone Environs Kimberley.

SKIPA receives funding through Community Environment Grant (Federal Government), a DPaW Community Grant and is supported by Environs Kimberley through Kimberley Nature Project, which is funded by Rangelands NRM and Targeted Area Grant (Federal Government)

# SHOREBIRD MIGRATION NEWS



Between mid-March and early May, most of the Kimberley's migratory shorebirds will depart for Northern Hemisphere breeding grounds. Their mass departures in the late afternoon can be a spectacular sight and Broome Bird Observatory (BBO) staff invite you to join them in Roebuck Bay to witness this incredible natural event. Visitors are welcome on any dates during the departure period, but are especially encouraged to participate in 'public migration watch' events, scheduled for Saturday 11th & Sunday 12th April 2015. Meet at BBO at 3.30pm.

For many species the coastal wetlands of China are the first stop on their long journey. There they need to fatten up for the onward flight north. I have previously relayed stories from the visiting Broome researchers of feeding grounds being transformed into building sites from one year to the next. A recent article, "Rethinking China's new Great Wall" (Science 21 November 2014: 912-914), offers some insights into why this is happening and what must be done. Following is a synopsis of the main points:

The length of enclosed/reclaimed coastal wetlands in China now exceeds that of the famous 'Great Wall', covering 60% of the length of the mainland's coastline!

It may appear that China's central government has taken measures to conserve the coastal wetlands. Plans have been made, national nature reserves established and 14 coastal wetlands designated as Wetlands of International Importance (Ramsar sites). However, these wetlands are managed by multiple agencies, which results in conflicts and overlapping functions. Relevant laws and regulations offer inadequate protection – in practice, wetland destruction carries no or negligible penalties. Environmental impact assessments focus on the potential loss of fisheries, environmental pollution, and other direct effects on people, but largely ignore the loss of biodiversity or associated ecosystem services.

Since China's reform in the late 1970s, GDP growth has been the main criterion for assessing the achievements of local governments; hence, local officials favour projects that result in immediate and direct economic benefits. Although the central government has recently proposed adding environmental

performance to the assessment criteria, the effectiveness of such a proposed change remains to be seen.

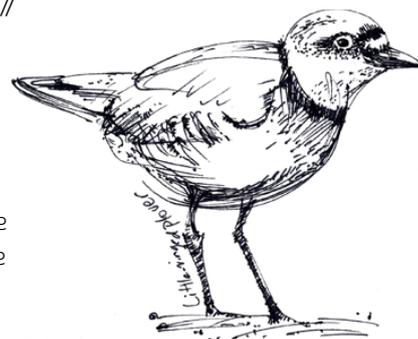
Any of this relevant to Australian conservation issues? Wetlands? Marine reserves? Fracking? Dinosaur footprints? Methinks yes! The article's authors make four recommendations for China, all of which resonate:

1. Legislation to set a mandatory minimum area for coastal wetlands at both national and local levels. This should be based on comprehensive research to clarify the importance, sensitivity, and vulnerability of each region and to answer the questions of where, when, and how much can be enclosed without damaging the integrity of the coastal wetland system.
2. An effective national agency to plan projects and coordinate the functions and responsibilities among the many government agencies responsible for wetland management. Strict environmental impact assessments must be performed, in which cumulative ecological impacts of multiple reclamations are considered.
3. Establishment of mechanisms for government authorities to be accountable for ecological losses.
4. Outreach and education about ecosystem services and sustainable development to raise public awareness and compliance for conserving coastal wetlands.

In 2015, despite increased competition on the coastal wetlands that remain, let us hope that Kimberley shorebirds reach their breeding grounds in good enough condition to breed. Check out the reports on <http://globalflywaynetwork.com.au/bohai-bay/bohai-bay-fieldwork-journal/>

Minimising disturbance to birds fattening up here is one way you can contribute to their success.

Jan Lewis



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## Nyul Nyul Frog Search

Steve Reynolds, Kimberley Nature Project

Recently I took part in a wet season frog survey in Nyul Nyul country. The survey idea was spawned through a conversation at a water conference between Nyul Nyul Ranger Preston Cox and frog expert Renée Catullo of CSIRO (previously at ANU) about a potential new frog species on the Dampier Peninsula.

KLC Biodiversity Officer Scott van Barneveld arranged the trip, the Nyul Nyul Rangers hosted and provided local and logistical support, and the team included myself, and frog experts Paul Doughty (WA Museum) and Renée Catullo.

We were on a search for amphibians, mainly for burrowing frogs, in particular species of the genus *Uperoleia*. These frogs are small (generally 2-3 cm long), brown and grey, fairly nondescript, and difficult to identify by their appearance. Known as 'toadlets' or 'gungans' (a fair indication of their call) or 'Upes', they call after heavy rain inundates their breeding areas in swamps and around the edges of lagoons. You listen for the calls. As with birds, if you know the call, you can usually identify the species.

We arrived at Beagle Bay in the early evening to the sight of torches emerging from the swamp; the Nyul Nyul Rangers had already been out searching. We made our way to the swamp, but on the first night the frogs were fairly quiet, as there hadn't been much rain in the preceding week. We observed Rocket Frogs (*Litoria nasuta*) and baby Giant Burrowing Frogs (*Cyclorana australis*), but only found two Upes in several hours. On our return to the Ranger station we found a Green Tree Frog (*Litoria caerulea*) in the loo.

Like other burrowing frogs in northern Australia, the Upes spend the dry season underground, and emerge in the wet. They usually wait a while to start calling, and may not really get going until January or even February, depending on the wet season. Because they respond to recent rainfall, there is a brief window of opportunity for finding these frogs. On the second night we had a shower in the late afternoon and drizzle in the early evening — good weather for frogs. When we drove out to the main road to check the locations we had earmarked during the day, we wound down the windows and were rewarded with the sound of a loud chorus.

The next stage was to try to locate individual males (only the males call), and get recordings. We do this by triangulation, whereby several observers surround a particular calling frog, then all point with their torches where they think the frog is. Where the beams cross, there should be a frog. Even when you know which clump of grass or sedge the frog is under, it still requires a bit of searching on hands and knees with a torch to locate the individual. The mud is grey, the frog is grey, the frog is small, the night is dark — you get the picture.

After a late night in the wetlands, we collected three species of *Uperoleia*, and obtained some sound recordings. One of these (*Derby Toadlet Uperoleia aspera*) was not known to occur in the northern Dampier Peninsula; we call this a range extension. Another is the potential new species, which will need to be confirmed back in the lab through analysis of call recordings and genetic samples. After placing the samples in a phylogenetic tree, scientists will decide whether the frog is sufficiently different to be a distinct species, so watch this space.

Local biodiversity surveys are important because we need to know what is in an area before we can conserve it. With this survey we have described the range of species in a small area, but there may be other species in other parts of the Dampier Peninsula and the Kimberley. Several frog species previously unknown to science have been described in the past decade, and there may be more.

Thanks to the persistence and enthusiasm of the Rangers, we have managed to document one more aspect of the biodiversity of Nyul Nyul country.



Australian Government



Top: Nyul Nyul Rangers & Renée Catullo

Centre: Upe talpa amplex

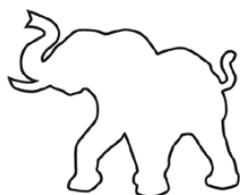
Bottom: Frog surveying

Rangelands NRM  
Western Australia



This project is managed by Environs Kimberley, through funding from the Australian Government and Rangelands NRM

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# 2015 Kimberley Regional Weed Forum

Ilse Pickerd, *Kimberley Nature Project*

## On February 27, weed managers from across the Kimberley met to talk about weeds.

The 2015 Kimberley Regional Weeds Forum was organised by Environs Kimberley, Department of Agriculture and Food WA, Rangelands NRM, Ord Land & Water, Kimberley Land Council, Department of Parks and Wildlife and the West Kimberley Rubber Vine Eradication Program. The forum was to discuss regional weed priorities and strategies, map regional weed distributions and consider Kimberley database options, and to share and raise awareness of resources and legislation. We had a great turn-out of over 60 participants!

The day was jam-packed, beginning with updates from organisations from all over the Kimberley. Many participants travelled long distances to attend. Linda Anderson from the Pilbara Mesquite Management Committee (PMMC), Judy Fisher from the IUCN working group on Indigenous communities and invasive species, and Greg Keighery from DPaW Science and Conservation Division, all jumped on planes to present. Judy Fisher attended the World Parks Congress late last year and reported that invasive plants and animals are the biggest threat to protected areas around the globe. Linda Andersen described the PMMC's impressive effort to engage all land managers in the Pilbara region to work collaboratively and achieve big results. Her advice was to stay dedicated, keep good people, remain flexible, use alliances, and communicate your story.

A 'Mapping Regional Weed Distribution' session was facilitated by Kay Bailey from the Department of Agriculture and Food, WA. Kay had gathered Kimberley data into one map, so we could identify gaps. She explained that mapping was important to show the extent of weed infestations, to see patterns in weed distribution, to assist project planning, to provide a record of change, and as a reporting tool (e.g. for funding bodies). Bruce Webber from CSIRO in Perth told us that a state-wide,

accessible database was being created by DPaW and CSIRO. It was agreed that the Kimberley needs a coordinated database system that can be accessed and contributed to by weed managers.

There was heated discussion during the day. The section on Weed Prioritisation raised questions around classification. Participants voted the 'Top 5' weeds of concern in the Kimberley to be:

1. Neem (*Azadirachta indica*)
2. Rubber Vine (*Cryptostegia grandiflora*)
3. Stinking passionflower (*Passiflora foetida*)
4. Grader Grass (*Themeda quadrivalvis*)
5. Rubber Bush (*Calotropis procera* and *C. gigantea*).

Many organisations have their own priority lists; the consensus was that these lists could help determine sub-regional priorities for management. Judy Fisher reported that IUCN prioritises weeds on a landscape, not species, level, looking at significant areas such as water and river systems, wetlands, oceans, aquifers and around protected places. Other organisations prioritise weeds by achievability with limited resources. National weed priorities are not particularly relevant to the Kimberley. Florabase, a useful online tool, lists only weeds classified as naturalised or established. Greg Keighery cautioned that prioritisation can simplify the problem and reduce weed lists. Jess O'Brien from Kimberley Land Council raised awareness of game changing fire regime weeds such as gamba grass and grader grass. Kylie Weatherall from Environs Kimberley pointed out some of the iproducts that can be used to educate various sectors of the community on weeds.

We had great feedback from the day, particularly how valuable it was to hear what's going on across the region, which groups are doing what, where and how. Many stakeholders had no idea that much work was being done in the Kimberley. We need to better promote our weed management activities at local and national levels. The Forum recognised the shortage of resources, and the need for weed managers to communicate results to decision-makers at all levels. We look forward to being part of a network.



Kylie Weatherall from Environs Kimberley presenting on the Kimberley Nature Project at the 2015 Kimberley Regional Weeds Forum, image: Malcolm Lindsay.

# the wonders of seagrass

photos: Julia Rau



Above: *Black-ringed Mangrove snake feeding on a juvenile Spotted Gurnard. Photo: Kevin Smith*  
Left: *Bonnie Tregenza from DPaW undertaking seed monitoring*

## It's official — Seagrass meadows can save the planet!

Believe it or not, seagrass meadows have now been scientifically proven to store significantly more carbon than land-based forests. That's right, when compared side by side, a square kilometre of healthy seagrass meadows can withhold more than twice the amount of carbon as land-based forests and are now recognised as being of utmost importance in the desperate fight against runaway global warming. Recent studies have shown that seagrass meadows can store up to 83,000 metric tonnes of carbon per square kilometre, mostly in the soils below them. In comparison, a typical land forest stores around 30,000 metric tonnes per square kilometre, mostly as wood. It's mind-blowing to think that those patches of vegetation sitting meekly on our ocean floors doing their thing are having a more positive impact on global temperatures than the massive and imposing forests that can tower above us.

The research, conducted at Oyster Harbour in Albany Western Australia by scientists at the University of Western Australia's Ocean Institute, have discovered that seagrass meadows not only create layers of carbon dioxide on our ocean sea floors, they also act as a protective barrier. Whereas forests store carbon mainly in woody material, seagrass meadows have the ability to prevent the ancient and massive carbon deposits layered below them from escaping to the atmosphere.

This ability of seagrass to punch way above their weight in containing carbon and stopping it from entering the atmosphere has given the work we do at Broome Community Seagrass Monitoring Project an extra fillip. By getting the word out there I am sure that current and future volunteers will appreciate the extra importance of the monitoring work we do.

While the scientists conducting the research have demonstrated that the loss of seagrass meadows allows for stored carbon in the soil to enter the atmosphere, they have also been able to show that seagrass revegetation can significantly mitigate this problem. Long-term restoration of the Albany seagrass meadows, heavily damaged in the 1960–1980's, has been highly successful and points the way to a potentially very positive outcome on a global scale. Here in Broome's Roebuck Bay we still have relatively intact seagrass meadows, so we really need to continue monitoring their health and protect them so as to guarantee their survival.

The Broome Community Seagrass Monitoring Program is funded by Coastwest and the Kimberley Ports Authority, co-managed by Environs Kimberley and the Department of Parks and Wildlife and supported by Seagrass Watch.

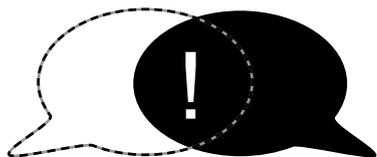
*"I loved the fact that you guys were so happy to help us learn and showed my daughter and me things we would never have noticed. You guys were great at making us feel welcome and gave my daughter a great experience."*

**Ruth Amos – Broome Seagrass Volunteer**

# Fracking in the Canning Basin

Martin Pritchard

Two mining industry analysts recently commented on the viability of shale and tight gas production (done by fracking) in the Canning Basin – the geological formation that underlies the southern Kimberley, including Broome.



The conclusions they came to were different but not in conflict.

The first analyst said that fracking was not going to be economically viable because of the heavy costs of establishing production facilities in such a remote location with virtually no infrastructure. The costs of getting the gas to market through an expensive pipeline to Port Hedland don't help the cause. The other analyst said that it would only be possible to produce gas if conventional gas (gas that doesn't need to be fracked) was found along with viable shale or tight gas. Many exploratory wells have been drilled in the Canning Basin and such a combination hasn't been found as yet.

So what does this mean for companies hoping to frack the Kimberley? Given the global oil price crash, it doesn't seem that production is likely to happen soon. However, what these companies can't do is leave the gas fields here. For many, their whole value is centred on the fracking of the Canning Basin. They will cling on for as long as they can, hoping that one day the oil price will recover and make fracking viable.

The fracking industry is in its infancy and we don't yet understand its inherent problems. We are now seeing evidence of pollution with virtually every new paper published but, as an industry analyst recently said, 'Oilmen will never stop looking, that's the nature of the beast...'

In the meantime we will continue to monitor the industry's problems from around the globe, as well as keep a very close eye on proposed operations here.

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## NEEMS TO GO!

Allan Wedderburn

Having obsessive-compulsive disorder (OCD) is an advantage when dealing with the Neem tree. You start with the removal of one and before you know it, it's become a passion. Don't be shy - try pulling out one seedling, roots and all. Then encourage a friend to do the same. Before you know it you'll be harnessing your OCD tendencies for good use!

Although the Neem is a lovely shady tree, it very quickly takes over and strangles surrounding native vegetation. Unlike in WA, in the NT the Neem is a declared weed.

Recently I set up a Facebook page called Neems to go – Kimberley. It's an open forum with practical information about how and when to remove Neems, and links to great articles about the positive and negative aspects of the tree.

In Kununurra, for the past two years we've held a De-Neem De Kimberley D Day to raise awareness and to pull a few trees out. In 2015, on 7 March, a small cohort of supporters, including school students in Halls Creek, got in and did their bit. This proved very therapeutic!

Removing Neems is a bit like dealing with cane toads – we may not be able to eradicate them, but we may be able to manage the problem effectively. We need you to do your bit. Just remove one!

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