

47 Our Place

MAGAZINE



Flying High with School of the Air at Corella Creek

LORENA WALKER / PASSING ON TRADITIONAL BIOLOGICAL KNOWLEDGE / WORKING ON COUNTRY: ENABLING TECHNOLOGY
REMOTE QUEENSLAND COMMUNITIES GET SAVVY WITH POWER
BUSH TECHS: PLANNING ENERGY SERVICES IN YOUR REMOTE COMMUNITY / SOLAR POWER AS PART OF YOUR ENERGY SERVICE

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**COVER PHOTO: Edwina Davey
and Phoenix King waiting for
the school siren to ring!**

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WARNING:
This magazine contains images of
Indigenous and non-Indigenous
people. Caution should be exercised
while reading this magazine, as some
images may be of deceased persons.

news

Manymak Energy Efficiency Project

The Centre for Appropriate (CAT) is part of a consortium delivering the Manymak Energy Efficiency Project in East Arnhem Land. The project aims to support up to 620 households in six communities to make informed choices about energy use and spend. This project is funded through the Australian Government's Low Income Energy Efficiency Program (LIEEP), and CAT is one of five partners working to achieve the project objectives.

The project's core objectives include:

- Clarifying barriers to the efficient use of energy by low income Indigenous households in Galiwin'ku, Gapuwiyak, Milingimbi, Yirrkala, Gunyangara and Ramingining.
- Developing and trialling best practice engagement and technology approaches to address identified barriers to energy efficiency.
- Evaluating measurable household energy efficiency improvement in

- participating households.
- Presenting a best practice model for achieving improved energy efficiency with low income families in remote Indigenous communities.

CAT has two full time community engagement officers embedded in the Project Team to focus on training and mentoring teams of local Yolngu Energy Efficiency Workers in each community to carry out household education and engagement.

In conjunction with CAT Projects Pty Ltd, CAT will also contribute to the project by delivering 250 in-home energy displays (the Bushlight Energy Efficiency Box or 'BEEbox') designed specifically for remote communities. The user friendly interface of the BEEbox supports residents to make informed choices through tracking energy use and expenditure in real time.

In contributing to this project, CAT is drawing on our decade of achievement through the Bushlight Program. The depth of learning about the interface between people and technology, and specifically energy efficiency in remote Indigenous communities is of great value to the Manymak Energy Efficiency Project.

CAT's consortium partners are Power and Water / Indigenous Essential Services Pty Ltd (lead agency), East Arnhem Regional Council, NT Department of Housing and Charles Darwin University.



Participants in the Rural Operations Course.

Training for Tangentyere Municipal Works Team

It has been a busy six months for the CAT Training Team delivering the Rural Operations Course in partnership with Tangentyere RJCP. The Program was developed to provide a set of skills to RJCP participants that directly relate to work activities identified on Town camps. The program was also delivered to existing staff of Tangentyere's Municipal Works Team as a means of professional development. Due to the large number of participants, training was delivered in two workshops and focused on on-the-job skills development. The Program had good outcomes with some participants attaining new skill and others building on their knowledge and receiving formal qualifications for their skills.



The rewards of working

Peter Skinner comes from Arlparra in the Utopia Homelands region of the Northern Territory. For the past twelve months Peter has been employed by CAT as a trade assistant on the Utopia Homelands project and since then on upgrades to a community facility – House 10 – at Arlparra. Having a job has enabled Peter to plan for and achieve many goals, including working for his community and family. One large goal Peter set himself was to save money to buy a car. The photo shows Peter proudly showing off his new ute.





Lorena Walker

If you come across an opportunity, take it, as it may never come again'. This is the motto Lorena Walker lives by. Growing up in a large family in Alice Springs, Lorena's biggest inspiration was her Nana who always told her to remain positive and never give up. She admits that she wasn't confident that she would finish year twelve. However thanks to the support of the AIEW (Aboriginal and Islander Education Workers) at Alice Springs High School and her family, she did so.

After completing year twelve, Lorena didn't do anything for a year. She had not an idea of what she wanted to do as a career. It wasn't until one of her aunties encouraged her to apply for a dental assistant traineeship at Flynn Drive medical centre, that her working life began. Lorena liked the idea of working whilst gaining a Certificate III in Dental Assisting and decided to apply. Lorena was delighted when she found out she had the job.

So began a six year career journey where Lorena undertook on-the-job training and successfully gained her qualification within sixteen months of starting. The independence, self-sufficiency and confidence that an income gave Lorena was life-changing. She was able to fund herself without relying on anyone. It was in this role that Lorena learnt the importance of oral hygiene, especially in regards to Indigenous Health. One of Lorena's favourite aspects of her role as a Dental Assistant was the opportunity to travel to remote communities every couple of months to undertake

dental work. It was also a great opportunity to educate the young children on the importance of maintaining good oral hygiene as Indigenous children have one of the poorest oral hygiene standards in the world. The biggest highlight for Lorena working as a Dental Assistant was the opportunity to be part of the national campaign — 'Health Heros'. Lorena thought that this would be a great way for her to encourage Indigenous people to take care of their teeth and to consider career opportunities in the health industry. For Lorena, a special moment was watching the Health Heros adverts on TV with her nieces and nephews. They became very excited when she appeared on TV and still look up to her as a role model. Lorena also spent some time working at the Central Australia Aboriginal Congress Dental Clinic.

After six years working in the Dental industry, Lorena decided she wanted to try something different and saw an ad on TV about joining the Navy. Lorena thought that she would take the opportunity and apply for the Navy, as this would offer her new skills and a chance to move from Alice Springs and experience life in Melbourne. Though a great opportunity and learning experience, her time in the Navy was tough. Lorena missed her family and suffered homesickness. Lorena decided that moving back home to be with her family would be the best for her. Lorena cites her experience in the Navy as a positive learning curve.

In 2012 after being unemployed for about two months, Lorena saw an ad in the paper for a Radio Broadcaster/Journalist with CAAMA (Central

“

If you come across an opportunity, take it, as it may never come again.”

Australian Aboriginal Media Association). Lorena had always been interested in music. She also had strong respect for CAAMA for its engagement with Indigenous people so Lorena decided that she would apply. Again the opportunity to gain a qualification whilst working appealed to Lorena. Lorena was successful with the traineeship and says her first week was ‘very intense, exciting and fun. Getting on the radio, interviewing people, doing edits and cuts, just getting out of your comfort zone, I loved it.’ Asked whether she was shame about speaking on the radio, Lorena admits that she was not. She felt that participation in the Aboriginal Islander Aspiration Program when at High School had given her confidence with public speaking and engaging with different people.

Lorena’s most memorable part of working at CAAMA came in 2013 when a once in a life time opportunity to travel to America to represent CAAMA and Indigenous Australians at the Native American Journalist Association Conference came up. Lorena met Native American Journalists from Hopi and other communities around Phoenix. She got to visit a number of different radio stations and was surprised to see that some radio stations still used egg cartons to sound proof the studios. Lorena was also fortunate enough to visit a number of Native American communities, eat traditional food and witness ceremonies. Lorena saw a number of similarities with Native Americans and Indigenous Australians. Whilst in America, Lorena got to visit the Grand Canyon, Tuscon Arizona and Northern Arizona. Lorena never thought that she would get the opportunity to travel overseas and believes this opportunity gave her the travel bug. ‘It was great coming home and telling the family all about the trip. Just to experience something different was a life changing opportunity and made me more aware of other people’s cultures and just how big the world is’. Another highlight of her position at CAAMA is the opportunity to frequently travel out to remote communities to engage with people on radio broadcasting and media. ‘It’s on CAAMA that they will hear news on what’s happening with things going on in Australia, you know like the political stuff, issues that are going to affect them, CAAMA is really important to the Indigenous community.’

Fast forward to 2014, Lorena has completed her Certificate II in Radio Broadcasting and now undertaking a Certificate III in Radio Broadcasting. She has her own music show called ‘Friday Night Party Show’, where you can hear her play old school Hip Hop and RnB such as TLC Tupac, Naughty By Nature and much more. She co-produces the popular ‘Women’s Business’ show, mentors the school based trainee and has had the opportunity to interview famous people such as Cathy Freeman, Obie Trice and Bone Thugs N Harmony. Lorena is confident that she has found her dream career, describing working at CAAMA as her ‘calling’. She is passionate about being a voice for Indigenous people and conveys this through her radio shows. ◊



Established in 1980, the Central Australian Aboriginal Media Association initially offered an hour program on a commercial Alice Springs Radio station at 10pm on Sundays. In 1984, CAAMA received a broadcasting licence, becoming the first Aboriginal group to have one and began operating 8KIN FM radio in 1985. CAAMA regularly presented programs in Western, Central and Eastern Arrernte, Pitjantjatjara, Warlpiri, Warramangu, Kaytej, Luritja, and English. Broadcasting in Remote Aboriginal Communities Services (RIBS) provides radio broadcasts to several remote Aboriginal communities in their own language, including Papunya, Ntaria, Ltyentye Apurte, and Areyonga. The RIBS project also offers training in broadcasting to residents of the communities. CAAMA Radio has become the benchmark in Australian Indigenous broadcasting. Programs are now broadcast across the country via satellite to an audience of 620,000.

They are also web-streamed to a world-wide audience via www.caama.com.au/radio.

The CAAMA group also includes CAAMA Productions, which sets to represent Indigenous people, culture and language in film and television. CAAMA Music is a record label which produces 90% of its recordings in Indigenous languages.

CAAMA also offers school based and full time traineeships in radio broadcasting. Successful CAAMA Indigenous trainees include Rachael Perkins (AFI award winning Writer/Director) and Warwick Thornton (Director/Cinematographer, winner of Berlin Film Festival).



Passing on Traditional Biological New technologies

The Northern Territory boasts some of Australia's most beautiful natural places and unique, least disturbed environments in the world. Indigenous communities across the Top End are custodians to the wealth of Traditional Biological Knowledge (TBK) of the region. Glenn Wightman has been working with communities across the Top End and the Kimberley for over 30 years, recording and passing on TBK. He is Australia's leading ethnobiologist. In 2009, Glenn was awarded a prestigious Churchill Fellowship and travelled to the United States and United Kingdom to speak to other ethnobiologists and find out about their experiences of recording and passing on this knowledge. What he found is that there are innovative ways of using new technologies and media to help capture this knowledge, while at the same time bringing together generations of old and young Indigenous people.

Why Traditional Biological Knowledge Matters

In many parts of the world, great swathes of TBK have been lost or severely depleted. The industrial revolution,

colonisation and rapid changes in technology have separated many communities from land stewardship, species preservation and environmental conservation. Resulting losses of knowledge have had profound impacts on social, biological, cultural and heritage outcomes for all people, but especially for future generations of the knowledge custodians

The last few decades have seen an increasing interest in TBK by academics, governments, natural resource managers and the commercial sector. To understand TBK, a multidisciplinary approach is required, where approaches from both anthropology and biology are important. TBK is important for helping us inform sustainable development and resource management. TBK is now used in a variety of agricultural applications including; permaculture, water management, soil conservation, fire management, botanical medicines, heirloom grains and vegetables and handicrafts. TBK also

has enormous intrinsic cultural and heritage value for current and future generations of Indigenous people. TBK also provides many cultural and economic opportunities for knowledge custodians and has critically important social benefits.

The Australian Context

Australia is fortunate to have a wealth of living TBK in Indigenous communities throughout the Top End, Kimberley and elsewhere.

Glenn responds to requests from different language groups and works with elderly Aboriginal people to record TBK which is under threat. He has worked with people from more than 50 language groups across the Top End and the Kimberley.

Australia is currently experiencing a massive extinction phase of TBK. As elders die, oral traditions fade and habitats and lifestyles inevitably change. Glenn says 'we are talking about languages that won't be spoken in five years' time, that are literally dying out ... and so the food knowledge will also be lost'.

What is Traditional Biological Knowledge?

Traditional Biological Knowledge (or Traditional Ecological/Environmental Knowledge) refers to the knowledge, innovations and practices of Indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, and forestry .

www.ser.org/iprn/traditional-ecological-knowledge

OPPOSITE PAGE: Nikipini Dalak, Glenn Wightman and Lily Bennett recording Dalabon plant knowledge at Wugularr (Photo DLRM).

BELOW: Jaru children watching Glenn Wightman entering knowledge for the Jaru plants and animals book on a computer (Photo DLRM).

Knowledge

and lessons from international practice

BY MARTEENA MCKENZIE

Although Glenn originally trained as a botanist his work now encompasses recordings of TBK on animals too. '... everyone we worked with wanted to record animal knowledge as well as plant knowledge. When you are talking about plants, animals always come into the conversation all the time and you can't not talk about animals. I listened to the old people and tried to learn as much as I could about animals and then we started to record knowledge about animals'.

Through his work, Glenn has published a large number of books on TBK from Northern Australia. The books are published in accordance with the wishes of the elders, who are the senior authors and copyright owners, and are primarily aimed at Aboriginal people within the relevant communities. They are also bought by others, usually tourists interested in traditional culture.





Above: Glenn Wightman (right) at entrance to Indian Pueblo Cultural Centre, New Mexico, USA during Churchill Fellowship (Photo Glynis Abbott).

Opposite page: Ivy Robertson, Charmia Samuels, Bessie Doonday and Glenn Wightman recording Walmajarri biocultural knowledge at the Paruku Indigenous Protected Area (Photo Tanya Vernes).

Knowledge re-invigoration in action:

The case of the Maori cloak at the Centre for Economic Botany, Kew, London

A Maori cloak was donated to the Centre for Economic Botany in the 1800s. It came from the South Island of New Zealand and sat unexamined for 200 years. Recently, the piece was the subject of a textile conservation Masters Research project.

Researchers found that the knowledge associated with the plant used to manufacture the cloak had been forgotten and had become extinct. They subsequently worked with local Maori knowledge custodians to re-introduce the knowledge of how the plant is used so that it can again become part of the living culture and plant traditions of local Maori people.

The case of the Maori cloak is a wonderful example of how collections to sustain and reinvigorate knowledge and traditions.

International Experiences — new media and intergenerational cooperation

In other parts of the world much living TBK has been lost. During his travels in the United States and the United Kingdom, Glenn met with a variety of organisations working to redress widespread and significant losses of TBK. Organisations are trying to re-create biological knowledge from old books, unpublished manuscripts and museum collections of artefacts. In communities where TBK has been lost from living memory any recordings of TBK are incredibly valuable.

Conventional mechanisms of recording TBK involve field work with trained scientists and elderly Indigenous people. Their knowledge of plants, animals and their associations are recorded with pen and paper, and perhaps audio for later transcription. Some international organisations now employ a range of novel approaches to ensure knowledge is transferred to current and future generations in the most useful and beneficial ways possible. In particular, new media technologies have opened the door to exciting opportunities for collecting and passing on TBK.

Collecting, Transmitting and Using Traditional Biological Knowledge

Recording technologies now allow accurate recording of nuanced conversations in the field and provide exciting opportunities for collecting and transmitting TBK. Digital audio recorders, digital cameras, smart phones and iPads are now small and affordable enough to easily transport to the field. Interactive tools such as touch screen technologies, talking books and community based radio broadcasts have also been used in the US, and allow for full community participation in knowledge recording and promotion. Video is also used to record knowledge and instructional videos have also worked well overseas, where files can be edited quickly and posted on YouTube for instant, free and easy access.

A significant benefit of using new technologies is that they facilitate knowledge transfer between generations. Web-based information management systems now provide the opportunity to collate a variety of data in easily accessible ways. Approaches using new media also lend themselves to a two-way exchange of information, where younger generations acquire biological knowledge and older generations learn about new media. Some organisations are taking the bridging of generations a step further and employ apprentice (youth) and teacher (elder) partnerships, where long term mentoring in traditional knowledge occurs.

International Indigenous communities and organisations also transmit and promote TBK in



“ A significant benefit of using new technologies is that they facilitate knowledge transfer between generations ”

different ways. In some parts of the US, traditional names are used for roads, locations, new organisations and even for naming children. Children’s books are also produced which are based on traditional narratives involving plants and animals. Much work has been done internationally on developing programs and curriculum for school children to learn about TBK, including nature-based learning, ‘culture camps’, school gardens with local native foods, printed and audio-visual resources produced specifically for children about TBK. There are also programs where elders make regular visits to schools to teach and promote TBK.

Re-invigorating Lost Knowledge

In some communities, fragments of TBK are rediscovered in old books, manuscripts or recordings. These pieces of evidence are used to help re-invigorate endangered or lost knowledge by experimentation and ‘connecting the dots’. For example, in California the actual demonstration of food preparations by elders who remember the preparation method is one technique for re-invigorating knowledge. Also, for implements and tools shown in photographs that are no longer actively made, then simple trial and error is used to make the tools and see how they work.

Traditional Biological Knowledge is a hidden treasure in communities. As elderly keepers of this

knowledge get older, it is becoming more important than ever to record TBK for future generations. International experiences of recording and passing on TBK show us new ways of using multimedia to record and transmit TBK in innovative ways. Involving young people in the transmission of TBK helps them to increase their knowledge and bridge the gaps between generations. As technologies improve and become more readily available, the future of innovative methods of recording and passing on ancient knowledge is exciting ☺

RECENT BOOKS BY GLENN WIGHTMAN & LOCAL TRADITIONAL OWNERS

Jaminjung, Ngaliwurru and Nungali plants and animals, Aboriginal flora and fauna knowledge from the Bradshaw and Judbarra / Gregory National Park area, north Australia. Jointly published with Diwurruwurru-jaru Aboriginal Corporation / Mimi Aboriginal Art & Craft. 2011.

Mangarrayi and Yangman plants and animals, Aboriginal biocultural knowledge from Elsey and the Roper River, north Australia. Jointly published with Diwurruwurru-jaru Aboriginal Corporation / Mimi Aboriginal Art & Craft. 2011.

Bilinarra, Gurindji and Malngin plants and animals Aboriginal knowledge of flora and fauna from Judbarra / Gregory National Park, Nijburru, Kalkarindji and Daguragu, northern Australia. Jointly published with Diwurruwurru-jaru Aboriginal Corporation / Mimi Aboriginal Art & Craft. 2012

Dalabon (Ngalkbon/Dangbon) plants and animals Aboriginal biocultural knowledge from southern Arnhem Land, north Australia. Jointly published with Mimi Aboriginal Art & Craft. 2012.

Walmajarri plants and animals, Aboriginal biocultural knowledge from the Paruku Indigenous Protected Area, southern Kimberley, Australia. Published jointly with Paruku IPA and WWF-Australia. 2013.

Ngan’gi (Ngan’gikurunggurr and Ngen’giwumirri) plants and animals Aboriginal biocultural knowledge from the Daly River area, north Australia. Jointly published with Merrepen Arts, Culture and Language Aboriginal Corporation 2014.



LEFT TO RIGHT: Owen, Jacko, Phil, Eugene, and Gerard with the CAT designed fire trailer.



Working on country: enabling technologies

In May of this year Karajarri Traditional Owners declared an Indigenous Protected Area across their country to manage biodiversity hotspots and protect some of the Kimberley’s most vulnerable and threatened species.

Karajarri country covers 24,797 square kilometres extending from the sandy beaches, tidal creeks and reef systems of 80 Mile Beach and Gourdon Bay, inland towards the vast arid country, wetlands and dunes of the Great Sandy Desert. It is home to many rare animal species such as the nationally endangered Bilby, Marsupial Mole and

Northern Quoll as well as turtles, migratory birds and reptiles.

Senior Karajarri Ranger Jessica Bangu said the declaration of the Indigenous Protected Area promoted Aboriginal leadership and would ensure Traditional Owners were at the forefront of managing their country.

‘Indigenous Protected Areas let us look after and protect our country, the way our old people want us too. It provides the right cultural match as having an IPA is not just about looking after the environment but making sure our people, our culture and our heritage is strong as well,’ she said.

‘It makes us proud to have this IPA. It is recognition of the hard work we have done over the years to make this happen. The best way to keep our culture strong is by being out on country and telling stories, hunting and speaking language. Our IPA will enable us to do more of this,’ she said.



“ Many residents of these Karajarri communities play important roles in enhancing cultural and environmental knowledge of this special Country, promoting the stewardship of their natural capital whilst performing essential ecosystem services through their work with the Karajarri Ranger Program. ”



TOP: Filling the knapsacks from the fire trailer.

ABOVE: Bushlight Energy System at Wanamulyandong.

Indigenous Protected Areas are an initiative of the Australian Government, and Karajarri Traditional Owners worked with the Kimberley Land Council, The Nature Conservancy and Pew Charitable Trusts to develop the Healthy Country Management Plan which sets out the long-term conservation targets and strategies for the management of the IPA. The Karajarri Rangers are responsible for implementing the plan under the guidance of a cultural advisory committee.

Karajarri Traditional Owners have taken a staged approach to the IPA and will look to declare a sea country IPA into the future with the support and assistance of other agencies and interested parties. The Karajarri IPA will become one of eight IPA's in the Kimberley which together cover more than 90,000 sq km across the region.

CAT's energy services support work on Country

The Karajarri people were recognized as the Traditional Owners of their country and granted Native Title in September 2004. Between 2004 and 2006 CAT worked with residents of the Karajarri

communities of Kitty's Well, Yandarina, and Wanamulyandong to implement Bushlight renewable energy systems, including training in troubleshooting and ongoing system maintenance.

The amenity offered by reliable 24 hour power has supported efforts to live and work on Country.

After a full day's work undertaking planned burns, the Rangers value the availability of power for refrigeration and lighting back at the base. This enables them to recharge equipment, cook dinner and prepare for the next day. Many residents of the Karajarri communities play important roles in enhancing cultural and environmental knowledge of this special Country, promoting the stewardship of their natural capital whilst performing essential ecosystem services through their work with the Karajarri Ranger Program.

Karajarri Rangers and the CAT Fire Trailer

The CAT Fire Trailer has been designed to meet the fire-fighting needs of residents of Australia's remote communities, pastoral properties and Ranger stations. It is designed to carry up to 1000L of water to very remote locations and either draw or pump through the use of a powerful Yanmar diesel pump.





ABOVE: Community access phone at the Ranger base.

Outlining the work plan.

The CAT Fire Trailer is one of the tools the Karajarri Rangers use to implement their annual proscribed burning program. The burning program is a cornerstone of the Karajarri Healthy Country Management Plan and a vital landscape service which achieves significant reductions in carbon emissions annually.

Karajarri Ranger Coordinator Rhys Swain says ‘we love the storage, the space between the toolbox and the tank is perfect for storing drums of fuel and water and it’s got heaps of places to put equipment. Importantly the big rails make it really safe also’. The rugged build quality strikes a chord with the Rangers as it means less breakdowns — an important element in saving time and money during the implementation of an intensive workplan. Gary Lienert from the Kimberley Training Institute works with the Rangers to use fire to manage country and says ‘the best thing about the CAT fire trailer is that it’s purpose built, nothing’s there that shouldn’t be there and it’s well balanced’.

Like any product CAT designs, the CAT Fire Trailer is informed by those who use it most. Much of the invaluable and considered feedback provided by the Kimberley Land Council Ranger groups will be incorporated into improving the design into the future. This includes the provision of a domestic tap for washing hands, a shroud to keep dust out of the drip torches, and a bar on which the Rangers can hang knapsacks whilst travelling between burns.

Bidyadanga CAT Community access telephones

CAT’s community access phones evolved when people experiencing humbug when a phone was placed inside their house asked for the phone to be mounted outside. CAT designed the prototype, which was a shell or armour that housed a standard Telstra phone. CAT simplified the spare parts and repair logistics and accommodated a pre-paid card system to avoid coin blockages and the need for frequent emptying. CAT then worked with Telstra, the Australian Government and community organisations to refine the phone design and install some 250 in communities across central and Northern Australia. CAT Community Access telephones provide a valuable communication tool in the community. These phones, such as the one at the Karajarri Ranger base in Bidyadanga, are maintained by CAT staff twice a year. ☺

REFERENCES:

The Karajarri Rangers are available for fee for service work on Country
For more on the Karajarri Rangers visit www.klc.org.au,
call 08 91940100 / 08 91924680
or pop into the Karajarri Traditional Lands Association Office
in Bidyadanga.

For more on the Indigenous Protected Areas program visit:
www.klc.org.au

Powersavvy kids get excited about reading their schools's power meter and seeing what they've saved.



Remote Queensland Communities Get Savvy with Power

‘Powersavvy’ is an innovative energy efficiency program that began operating in remote communities in Queensland in 2010. Ergon Energy worked with the Queensland government and a team of experts to roll out this community-wide education and technology program.

With a strong focus on local employment and community engagement, the powersavvy program was a great success. Now residents, schools, community stores and council buildings are enjoying energy savings.

Ergon Energy owns and operates 34 isolated power stations which provide electricity to approximately 12,000 people in communities across the Torres Strait Islands, Cape York Peninsula and far western Queensland. Most of these communities rely on diesel fuel for electricity generation. The cost of providing a reliable and high quality supply of electricity is much greater than for other parts of the state. However, remote customers pay the same price for power they

use regardless of their location, which leaves a big gap which is covered by government subsidy.

There are also environmental consequences of diesel power supply. In 2008–09, diesel generation in these regions resulted in approximately 75,000 tonnes of greenhouse gas emissions through the burning of approximately 28 million litres of fuel, or more than 11 Olympic size pools. That’s a lot of diesel in anyone’s language. And the logistics of simply keeping such fuel sources supplied in isolated locations was among the many challenges for Ergon.

Like many communities across Australia, energy consumption is increasing in remote communities in Queensland. This increases costs for both customers



IBIS Store, Douglas Street Thursday Island

The Islanders Board of Industry and Service (IBIS), operates community supermarkets throughout the Torres Strait Islands and at Bamaga in the Northern Peninsula Area of Queensland.

IBIS agreed to participate in powersavvy to reduce energy consumption in both of its Thursday Island stores. An energy audit found many opportunities to improve energy efficiency, particularly in refrigeration which is IBIS' main energy use. This also happens to be an important part of the business—ensuring customers have access to fresh, refrigerated produce in the tropics.

IBIS' power bills for the Douglas Street store after the work was completed showed an estimated annual reduction of 234,248 kWh (26 per cent), a saving of \$46,000 and 58.5 tonnes of greenhouse gases. This is equivalent to saving the power consumption for 29 Queensland households and is a tremendous positive outcome for both IBIS and Ergon Energy.

and Ergon. Remote communities also face household budget pressures for food, fuel and other goods and services. Rising demand means ongoing delivery of expensive upgrades to isolated power stations. Rising energy consumption also means environmental impacts from more diesel use.

Saving power makes sense for residents, for Ergon and for the government which provides subsidies for diesel. With the help of a \$5 million grant from the Queensland government, the powersavvy pilot program was launched.

In the Beginning

In 2010 the powersavvy pilot program began in the remote communities on Thursday and Horn Islands in the Torres Strait and five communities on the Northern Peninsula Area of Cape York Peninsula; Seisia, New Mapoon, Bamaga, Umagico and Injinoo.

In order to achieve the best energy savings possible, the powersavvy program took a four-part approach.

Working with local residents:

An important part of the success of the program was employment of local Aboriginal and Torres Strait Islander people to work in their own communities. Five 'field officers' were employed to carry out in-home energy consultations with local residents. These involved offering every home in target areas the opportunity to talk in local language about how they could save energy and spend less on power. The focus of the consultations was helping people identify ways they could cut their power use without impacting on lifestyle and committing to a Home Energy Action Plan. Residents were given information about their own energy usage, the power consumption of various household appliances and ways to reduce their energy use.



Ergon Energy recruited the Centre for Appropriate Technology (Bushlight) to provide expert input into the community engagement strategy and education component of the project. A selection of education materials were developed for local communities and included stickers, reminders, posters and booklets. Education resources had high visual appeal and were popular with local communities.

Working with schools:

A curriculum-based program was developed for local schools to reinforce energy-saving behaviours. This part of the program was delivered by local teachers and environmental education specialist Biff Barford. In each school, a group of students developed an energy-saving plan and encouraged their fellow students to practice good energy sense. The schools program was a great success and as Mr Barford states 'children are fantastic ambassadors for energy efficiency, and are keen to take what they learn and put it into practice at home'. Families who participated in the home energy consultations also reported enthusiastic support from their younger members who had latched onto the energy saving message at school.

Working with businesses:

Businesses are often the highest users of energy in remote communities, especially local stores which use a lot of power for refrigeration and air-conditioning. Professional energy audits were undertaken with a range of local business to help identify energy efficiency goals. These detailed energy audits looked at how energy was being used and identified ways to improve consumption patterns. Changes were then made in both behaviours and the introduction of energy efficient equipment and technology.

Working with government and developers:

To ensure a community-wide approach to energy efficiency, powersavvy also worked with government departments and developers. This helped ensure new buildings and facilities planned for construction were as energy efficient as possible.

Star of the Sea Home for the Aged, Thursday Island

Star of the Sea on Thursday Island provides full-time hostel accommodation and acute care services for 40 residents. When the powersavvy team conducted an energy audit of Star of the Sea, a range of possible energy efficiency improvements were identified. Air conditioning is an important use of energy in the Home- it ensures residents and staff are comfortable and safe in their indoor environment.

Powersavvy recommended a variety of measures to help the home cut its power bills, and these were adopted in full. Since implementing the recommended measures, Star of the Sea has reduced its annual electricity consumption by an estimated 34 per cent. This equates to 130,000 kWh. It will save the home around \$20,000 a year and reduce annual greenhouse gas emissions by 32.5 tonnes.

From little savings, big savings grew

The powersavvy pilot program was a great success for residents, business, Ergon Energy and the Queensland Government. Over the course of five months, field officers worked with more than 200 households on Horn and Thursday Islands and in the Northern Peninsula Area. Residents embraced the energy efficiency ideas and made big changes in the way they used power. Residents now understood the different energy use of various appliances and how to manage them to save money on power. One resident even reported that after she learnt how much power her clothes dryer used she started charging all her family members \$20 every time they wanted to use it, 'they soon stopped bothering to ask!', she said.

Local businesses saved power too. More than 60 commercial and government businesses were quickly recruited and actively participated in commercial energy consultations. 'We have helped businesses identify areas in their operations and systems where they could save, on average, 20% of their power bill by changing the way they run things', reports Ergon Energy's Russ Rowbotham. 'By installing new equipment that would pay for itself within a year or two and then continue to save money ever after, the program will deliver a lasting effect,' Russ said.

Based on the success of the pilot program, in 2011 powersavvy was expanded to the remaining islands of the Torres Strait and communities on Cape York Peninsula. In 2012 and 2013, it was then funded and rolled out into isolated communities in the Gulf of Carpentaria, Palm Island and Central Queensland. Teams also returned to the Torres Strait and Northern Peninsula Area to assist in sustaining the power savings achieved in communities and building relationships with councils, businesses and government stakeholders.



Above: NPA College Bamaga Secondary students check the freezer's temperature as part of their school energy audit.

Top left: Injinoo Primary kids use a power meter to check energy usage.

What's next for powersavvy?

Now that most remote communities in Queensland have had access to the powersavvy program, it is scaling back. The program is currently run by the Isolated Systems team at Ergon, which also operates all the isolated power system across regional Queensland.

The new manager of the scaled-back program is Russ Rowbotham. Russ says 'it is a nice fit that powersavvy has come under this team, because it is our hope that the lessons learnt through this program will become 'business as usual' for these communities'. The final energy conservation work will be completed in 2014, and the next phase of the program is using the insights from remote customers to continue appropriate energy efficiency education. Ergon is also maintaining the relationships developed through the program to better meet the needs of energy customers in remote communities.

Powersavvy is a unique program which will leave a lasting legacy. It was the first broad scale energy efficiency program to operate in large remote Indigenous communities. Taking a holistic approach to community engagement, business and government departments helped achieve energy savings across the board. The lessons learned from the powersavvy program will go on to inform future initiatives in remote communities in other parts of Australia ◊



The Race begins! Students made and creatively decorated their hobby horses for the 'Corella Creek Race' on Melbourne Cup Day.

Flying High with School of the

In a very remote community in the Northern Territory, there are a group of students using the latest information technology to access Alice Springs School of the Air and achieve excellent outcomes at school.

Corella Creek is a small, vibrant outstation community around 1000km North East of Alice Springs and 300km from Tennant Creek. It is located in the Barkly Region, which is renowned for its huge cattle stations and lush grazing lands. The community has a population of around 150 people and a thriving community-run enterprise employing adults in the local cattle industry.

Many larger remote Indigenous communities in the Northern Territory have established schools with live-in or visiting teachers. But in 2008 the Corella Creek community decided that this model wasn't working and they chose another way. Traditional Owners began negotiations with the Northern Territory Government to bring Alice Springs School of the Air to the community. In 2009, the new school system commenced in the community, first with transition class (five year olds) and in each subsequent year a new grade was brought on board. There are now students in all year levels up to grade nine.

The Alice Springs School of the Air was the first one of its kind in the world. The idea came about in 1944 when Adelaide Miethke, a member of the Council of the Flying Doctor service of South Australia, suggested using the new two way radio technology to give educational talks to children in the Outback. The idea took off and the School of The Air was established

in 1951, broadcasting out of Alice Springs. By 2005, there were more than sixteen schools of the air located around Australia, a network covering more than 1.5 million square kilometres. Currently, Tasmania and the Australian Capital Territory are the only states who do not have a School of the Air. As well as teaching children who live in geographically isolated areas, these schools also reach children who are travelling around Australia, who can't, for medical or other reasons, attend a conventional school and even children living overseas who wish to have an Australian education. The Alice Springs School of the Air currently runs programs in a handful of remote Indigenous communities in the Centre, including Yulara, Mulga Bore, Bonya and Arlparra. Forty per cent of the students attending School of the Air are Indigenous and half of these students are from Corella Creek.

The world-class technology used by the School of the Air program helps the Corella Creek children access an engaging and exciting school experience. As well as teachers based in Alice Springs, there are two teachers who live in the community and one local resident is employed as an assistant teacher. The school has around 25 school children ranging in age from preschool to year nine. There was a small school building already established in the community, which has now been equipped with specialist technology.



Air at Corella Creek

ABOVE: Shanika Finlay in the Corella Creek School garden where students have fun learning to grow and harvest vegetables.

TOP LEFT: Kostya Green showing the turtle he caught in Borroloola to his classmates.

The community has a satellite dish and associated computer equipment that allows the reception of data, audio and visual feeds from the Alice Springs studio and the transmission of audio and data back to an interactive distance learning studio. This allows the students to see and hear their teachers in real time as well as being able to speak and be heard by other students in the virtual class.

The school uses a software program known as REACT (Remote Education And Conferencing Tool), a Northern Territory developed piece of software designed specifically for distance education. In the dedicated technology room there is a bank of eight laptops and a large screen TV, which is used for whole-school activities. Lessons are delivered in a variety of formats: one-on-one, small group or whole school lessons. Although some Northern Territory schools are bilingual, Corella Creek Traditional Owners have requested that all teaching be delivered in English in their school.

Through the Alice Springs School of the Air program, Corella Creek students have the opportunity to engage in a wide array of subjects. Individual literacy and numeracy lessons are held daily for all students, and through this contact they build up good relationships with their teachers in town. During the rest of the school day, students participate in other classroom activities and cycle in-and-out of computer-based lessons. Depending on what year level the students are, their classes may include maths, English, science, history or geography. School of the Air employs a specialist art teacher and each Friday all students participate in 'Whole School Art', which is a favourite subject for the Corella Creek children. The school also provides a nutrition program for all

middle years students (years seven to nine), and classes on physical education, ukulele, keyboard and other musical instruments, Japanese language and even hip-hop dance! The schooling outcomes for Corella Creek students are excellent, including attendance rates exceeding 90%.

The success of the School of the Air program at Corella Creek is a testament to the commitment of Traditional Owners to education and a clear vision of how school would operate in their community. The technology enabled approach allows small numbers of students of all ages to work at age appropriate levels, collaborate with peers across the Territory and transition easily into senior education at Boarding schools in Alice Springs and beyond.

In recent times the small community of Corella Creek has gone from strength to strength. In 2009 they formed a mustering and land management company (MTP) and began contract mustering across a number of pastoral stations in the area. This work led to further contract opportunities managing weeds like parkinsonia and prickly acacia on nearby stations. More recently they won a three year contract to monitor fish with the Department of Land Resource Management providing jobs for five women in the community. Their vision of staying on country, working on country and ensuring their kids get an education is important. Their efforts and successes provide food for thought for the opportunities that could be tapped by Outstations and Homelands across remote Australia ☺

For more information see: Alice Springs School of the Air: www.assoa.nt.edu.au

Thinking outside the container



Refurbished shipping container accommodation at Urremerne.

Over the past year, the residents of Urremerne have been working with CAT to plan and design affordable housing for their community.

Urremerne community is located around 100km south of Alice Springs. It is the homeland of a number of Aboriginal families who wanted a place to stay when visiting their country. The community approached CAT to assist. Given budget limitations and the need to ensure the infrastructure was affordable and easily managed and maintained by the residents themselves, it was decided that two converted lockable shipping containers would be the best accommodation solution. An effective consultation and design process led to a design appropriate to community need and incorporating unique features to enhance comfort and sustainability.

The shelters are based on an outdoor living model and contained three key structural components; an insulated refurbished lockable shipping container, two large timber decks, and an 11 metre overarching shade structure. A large, easy to clean paved outdoor area also adds to the amenity of the homes. Outside, there are stainless steel sinks with a grease trap connected to an absorption trench. A 5000L water tank is connected to a guttering

system on the roof to provide plenty of fresh rainwater for drinking and washing. To help with local food production, wicking garden beds were also installed. These CAT-designed beds are low-maintenance with plant watering arrangements that ensure vegetables are kept watered during periods when residents are working elsewhere.

The residents were central to all aspects of decision-making in this project, including siting the buildings on the community and building orientation. To keep within project budgets, second-hand containers were purchased and refurbished by the CAT Enterprise.

The CAT Enterprise designs and fabricates products and undertakes property services as a means to provide employment and career development for local Aboriginal people. Two shelters have now been completed at a cost of around \$90 000 each. The project was funded using Northern Territory Parks and Wildlife Rent Money from the Ewaninga Rock Carvings Conservation Reserve and was administered through the Central Land Council.

The residents are pleased with the final product. They now have a safe and custom-designed home which suits their preference for outdoor living whilst on the outstation ◊



Bountiful Harvests at Ulpanyali

Lizzy Pearce and Arnold Clyne installing a wicking bed at Ulpanyali.

Ulpanyali residents have been busy working with CAT staff to build productive new garden beds in their community 460km south west of Alice Springs.

Given the high cost of food and difficulty in sourcing fresh produce, Traditional Owners decided to install self-contained wicking garden beds in their community to produce food.

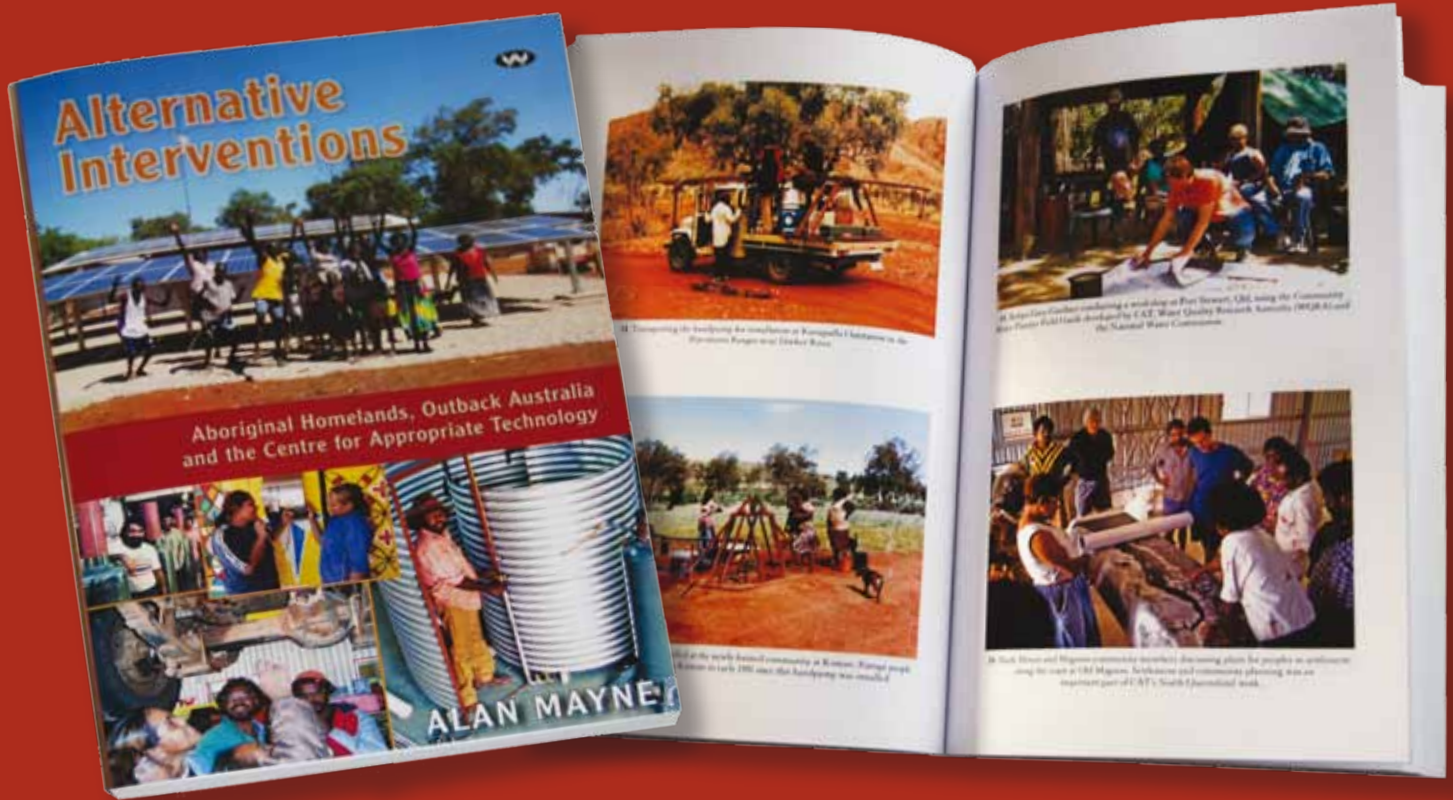
In desert communities in central Australia it is very difficult to get a vegie garden to grow well. Several years ago, the team at CAT developed a raised garden bed designed for remote communities located in arid environments. The CAT wicking bed has two main parts: the bottom half is a contained reservoir filled with gravel and water, and the top half is filled with soil, plants and mulch. This works like a soak in a river, watering plants from below rather than from the top. The soil acts like a sponge moving the water upwards to the plant roots — this process is called ‘wicking’.

The garden beds are very low maintenance and

extremely water efficient. They can be placed neatly close to people’s homes and outdoor cooking area. They are also built to sit higher off the ground so old people and people with bad backs can garden comfortably. The raised height also helps stop rabbits and deters dogs from eating and digging around it for food, which keeps the growing area more hygienic too. All sorts of vegetables, fruits and flowers will grow well in the wicking beds.

Over the course of three days, CAT staff worked with residents of Ulpanyali to install two wicking beds in the community. Everyone got involved with the installation, and received training on how to look after the beds and what plants grow best in them. Now that they are filled with mulch and soil, the residents are planting them out and looking forward to eating their own fresh produce.

This project was funded with rent money from Uluru Kata Tjuta National Park and administered through the Central Land Council ◊



ALTERNATIVE INTERVENTIONS

Aboriginal Homelands, Outback Australia and the Centre for Appropriate Technology

By Alan Mayne

It is clear that it is the human dimension of science and technology about which the least is known. Bruce Walker CEO of CAT

Not all interventions in Aboriginal Australia are inspired by external agents, politics or ideology. Some interventions arise from simple, pragmatic responses to community needs where people and their aspirations are central.

Historian Alan Mayne unravels a story of people, place and relationships. At once both personal and intensely political, this is a journey of ideas into action; intervention through innovation.

In 2010, thirty years after an initial start up grant of \$40,000 , an Aboriginal owned science and technology organisation (CAT) was operating with an annual turnover in excess of \$20 million and a staff of 130 providing technical services to over 500 remote Aboriginal communities spread across the northern half of Australia. An institution linking people with technology, sustaining livelihoods on country.

'This remarkable story of persistence and purpose should be told as an inspiration to all concerned with the development of appropriate technologies to meet new challenges in human societies. It encourages optimism about the future of Aboriginal people in a climate of uncertainty.'

**Professor Basil Hetzel AC, former Chancellor University of South Australia
and Emeritus Professor University of Adelaide**

from CAT, Wakefield Press and selected retailers. \$24.95