PEOPLE WORKING WITH TECHNOLOGY IN REMOTE COMMUNITIES

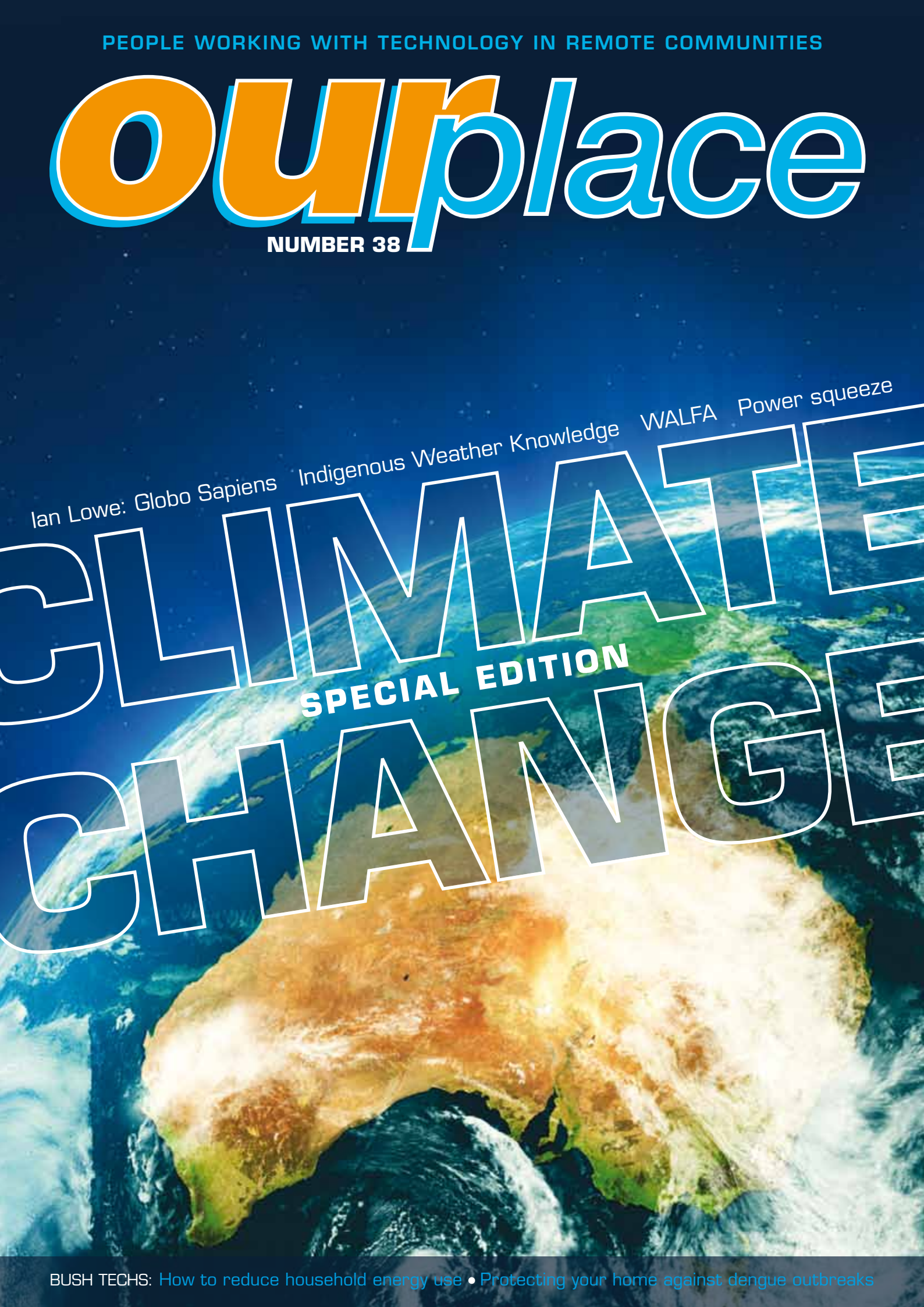
ourplace

NUMBER 38

Ian Lowe: Globo Sapiens Indigenous Weather Knowledge WALFA Power squeeze

CLIMATE CHANGE

SPECIAL EDITION



BUSH TECHS: How to reduce household energy use • Protecting your home against dengue outbreaks

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contents

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Opinions expressed in Our Place are those of the authors and not necessarily those of the CAT Board or staff.

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

Our Place Number 38, November 2010

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SPECIAL EDITION:

CLIMATE CHANGE

The climate change debate in Australia, raises a number of challenges and opportunities for Indigenous communities out bush. In this special edition, OurPlace Magazine takes a look at major issues of importance to remote Indigenous communities.

ISSUES
affecting remote Indigenous communities

1. INDIGENOUS PEOPLE ARE MORE VULNERABLE

Existing social and economic disadvantage exacerbates many remote Indigenous communities' vulnerability to climate change. Those Indigenous people with low incomes, low education levels and poor health are the most vulnerable.

2. ADAPTIVE CAPACITY

Adaptation plans need to be region-specific. Adaptation strategies must address needs in remote communities like:

- Infrastructure upgrades.
- Education programs about climate change for children and adults.
- Low-tech emergency response plans that work in the event of natural disasters. For example, if a cyclone is going to hit Maningrida again, and the phones go out, what is the back-up plan?
- Biodiversity programs that focus on restitution and conservation.

3. A LACK OF BASIC UNDERSTANDING ON THE SCIENCE OF CLIMATE CHANGE OUT BUSH

Aboriginal people do not necessarily know the basic 'science' of climate change and what it is all about. When you're living out bush, there is very little information available on climate change that is accessible and easily understood. Aboriginal people want to understand how climate change might impact their access and rights to lands, waters, infrastructure and buildings. They also want to understand the effects of government policies that are under consideration.

4. NO SHORT-CUTS OR PRE-PACKAGED SOLUTIONS

A 'one size fits all' approach to reducing vulnerability will not work. Before resilience and adaptation strategies are put in place, Indigenous communities should be fully consulted and engaged in decisions affecting their communities.

OPPORTUNITIES
for remote Indigenous communities

1. CARBON ABATEMENT

This growing area involves schemes that are employing Aboriginal rangers to back-burn savannah. Mining and Energy firms fund these programs as a way to offset their carbon emissions. This is a positive livelihood option, allowing Aboriginal people to live and work on country.

2. BIODIVERSITY CONSERVATION

Indigenous people can look at restoring ecosystems like estuaries, river inlets and wetlands. This can become an economic opportunity.

3. INDIGENOUS KNOWLEDGE CORPORATION

A climate change clearinghouse could be developed in partnership with Indigenous Institutions. It could help scientists and Indigenous communities interact, allowing for community-based initiatives, where knowledge and experience relating to climate change is shared and applied.

4. FOCUS ON LANDSCAPE HEALTH

Expanding ranger or land-management programs is one way to propel this forward. Focus could be on managing invasive species, monitoring environmental change / temperature fluctuations and revegetating degraded land. Trade in bush-foods could also be developed further. □

ACKNOWLEDGEMENT: Information in this section has been drawn from : Green D, S Jackson and J Morrison, 2009, Risks from Climate Change to Indigenous Communities in the tropical North of Australia. Department of Climate Change: Canberra

Becoming Globo Sapiens

Ian Lowe is President of the Australian Conservation Foundation, Professor of Science, Technology and Society and former Head of the School of Science at Griffith University, and an adjunct professor at Sunshine Coast and Flinders Universities. In 1996 he was chairperson of the advisory council producing the first national report on the state of Australia's environment. He is a patron of Sustainable Population Australia. One of his principal interests is the way policy decisions influence use of science and technology, especially in the fields of energy and environment. In May this year Ian was in Alice for the 30 year anniversary dinner of the Arid Lands Environment Centre. CAT caught up with him to find out more about what he thinks on a number of issues to do with climate change and livelihood impacts for Indigenous people.

INTERVIEW BY HUJJAT NADARAJAH

CAT: You've described how when you grew up in Australia, it was one of the most equal nations in the world. Now we rank third in the list of the most unequal countries in the entire OECD. Can you comment on issues that are increasing the disparity between Indigenous and non-Indigenous people in Australia?

IAN LOWE: Australia is becoming steadily less equal for two principal reasons, both consequences of the enthusiastic adoption of one simplistic approach to economics. Globalisation is depressing wages in labour-intensive activities to compete with poorer countries while inflating managerial and other professional salaries to compete in a world labour market, so the disparity of incomes is widening. At the same time, the public provision of essential services like education, health care and transport is being reduced in favour of a private-provider model, which inevitably means that those on lower incomes are less likely to have access to quality services. Indigenous people suffer these disadvantages, as they are for historic reasons less likely on average to be in well-paid employment. They additionally suffer the cultural consequences of mostly being removed from their land, the foundation of their society and culture. So we see a large gap in life expectancy and other measures of well-being, with few signs of improvement.

CAT: When it comes to energy use, a consequence of climate change is rising fossil fuel (oil, coal and gas) prices. You've shared how the entire world's energy use for a whole year is only about double the solar energy hitting Australia in one summer day! How can Australia take on this opportunity and become a solar / renewable energy world player?

IAN LOWE: Australia has abundant solar energy resources and we have been very inventive in finding effective ways to use that energy. We still make relatively little use even of the most cost-effective application: solar domestic hot water makes economic sense almost everywhere in mainland Australia. We have a few pilot-scale solar electricity installations and many houses have installed rooftop PV systems, but there is no national commitment to solar energy. Some backward States are even still seriously considering new coal-fired power stations! Solar thermal electricity with molten salt storage dramatically increases the energy supplied and smooths out fluctuations in both supply and demand. Feasibility studies suggest we could be getting all or almost all our power from a mix of renewables within twenty years. That would be a responsible approach to climate change.

At the same time, increasing numbers of people don't have clean water, sanitation or adequate nutrition. If civilisation is to survive, we need to recognise there are limits: limits to the rate of using renewable resources like water, forests, fisheries and agricultural land as well as limits to the total scale of non-renewable resources like oil and metallic minerals. Our civilisation will only survive if we can find ways to live within those limits. So we need to recognise the global implications of our resource use and emphasise quality of life rather than seeing consumption as an end in itself. In other words, we need new values of ecological sensitivity, identification with the human family and emphasising the quality of life.

CAT: You've stated how a challenge we face is to turn energy more efficiently into the services we want. We want hot showers and cold drinks. We want to cook our food, wash our clothes and move around. Most technology we use is wasteful. How do we use energy, while making these processes more efficient?

IAN LOWE: People don't want energy, they want to be able to cook their food, wash their clothes, see after sunset, move about effortlessly and use electronic equipment. Several studies have shown we could live at the current level of material comfort using much less energy, simply by turning energy more efficiently into the services we require. As one specific example, the progress from the first incandescent light bulbs to modern bulbs, then fluorescent tubes, then compact fluorescents and most recently LEDs has at each step significantly reduced the amount of electrical energy needed to supply a given amount of light. The modern LED uses about 10 per cent of the energy needed by 1990s light bulbs. Efficiency improvement is the key to a sustainable future. It is the only feasible way of giving all humans such essential services as clean water and sanitation within the capacity of natural systems to process our wastes.

CAT: You've stated how new technology and improved efficiency are crucial, but they won't achieve a sustainable future unless we also embrace new values. You talk about replacing values of individualism, consumerism and domination of nature with human solidarity, ecological sensitivity and quality of life. Why are these values better for us?

IAN LOWE: The old values of individualism, consumerism and domination of nature have allowed a small minority of the human population to live in unprecedented comfort. But we are now seeing the consequences of the human demands exceeding sustainable levels; species loss and climate change are the most serious examples.

CAT: You describe how we should aim to become Globo sapiens, wise global citizens. This involves moral responsibility to other species and to future generations. What kinds of responsibility should we consider acting on?

IAN LOWE: Most ethical systems are based on the Golden Rule, treating others as we would want them to treat us. The idea of Globo sapiens extends this principle so that we are also mindful of the impacts of our choices on other species and future generations. So we should not be recklessly changing the global climate, which will effect all other species and future generations, by using coal to produce electricity because it is cheap. We should not be squandering limited oil by driving alone in air-conditioned comfort when our petroleum use will deprive future generations of lubricants and civil aviation. One of the delegates to the 2009 Copenhagen climate change conference even proposed a Climate Tribunal, like the International Court of Justice, to deal with those who have wilfully imposed climate change on future generations. □

NEWS

Jarrabinna (Bennett's Tree Kangaroo).
Photo by Sandra Lloyd/ Source: Wikimedia Commons

Jarrabinna Forest Project

By Andre Grant

CAT Queensland has just completed field work on a project with the Kuku Nyungkal Rangers in the Daintree near Cooktown. CAT assisted the Rangers to access funding from the Queensland State Government to engage an ecologist to work with them to search for the elusive and rare Bennett's Tree Kangaroo (Jarrabinna) and establish a management plan for it's habitat. Rangers spent ten days working closely with consultants, CSIRO and James Cook University students, local surveyor Bob Peevor and respected ecologists Charlie and Lewis Roberts.

The team spent time trapping, night spotting, recording bat calls, bird calls, collecting samples and training.

An objective of this project is to create an entirely new classification of rainforest ecosystem in the World Heritage Area — The Jarrabinna forest.

NAILSMA'S Joe Ross addresses the climate change forum.

Six months into NT Government's 'Greening the Territory' policy

On Monday, October 25 at the Desert Knowledge Precinct, Alice Springs, the Northern Territory Government held a public forum to discuss the implementation of its Climate Change Policy known as 'Greening the Territory'.

Joe Ross from North Australian Indigenous Land and Sea Managers Alliance (NAILSMA) spoke on the need to adopt a five-year plan for Indigenous communities in the Territory that would identify climate change opportunities and risks for Indigenous people, incorporate traditional knowledge, set-up innovative funding mechanisms and produce social benefits for those involved. He advocated a strength-based intercultural approach where Indigenous and non-Indigenous people could bring their strengths to the table in order to influence the policy platforms being created. 'We have to build the strategic instruments so we have maximum effect, like the WALFAs [Western Arnhem Land Fire Abatement project] of the world,' he said.

Following this, a panel of key stakeholders including: Power and Water, NT Department of Chief Minister, CSIRO, Arid Land Environment Centre, Climate Action Group, Alice Solar City and Centrefarm raised a number of issues for policy consideration, while commenting on questions from the public. The NT Department of the Chief Minister high-lighted emphasis on reducing costs and risks and the need to work on legislation that would fix a price on carbon and set up a carbon-trading scheme. CSIRO shared how for Aboriginal people living out bush, there needs to be more understanding on the basic science of climate change and how it affects them. Other issues flagged included the need to develop aspirational town-planning structures for towns like Alice Springs and more research & development emphasis from large-scale carbon emitters (like the power station) on renewable energy sources readily available in Central Australia such as geothermal energy.

The NT Government announced the next forum on this climate change policy will be held one year from now.

Next generation speaks about Aboriginal culture and conservation

INTERVIEW BY HUJJAT NADARAJAH

Jessie Bartlett Nungarrayi likes to say, 'you've only got one life, so do heaps of things'. And she does. She works as an apprentice zoo-keeper, she acts in films, she accompanies scientists on endangered species research out bush and she's travelled overseas to contribute to debate on what Indigenous people are doing to fix up their own communities. Jessie advocates the need for further knowledge sharing between the scientific community and Indigenous people in order to conserve cultural heritage and native animal and plant species on country.

From animal love to career path:

Tell us about yourself?

My name is Jessie Bartlett Nungarrayi. I'm 24 years old from Alice Springs but I grew up in Kintore. My people are Pintupi from central Australia. I've been into animals pretty much all my life through my family. Doing field trips with my family, we always worked with scientists out bush, assisting them with tracking and trapping. I was always interested in working with animals closely. I'd always say that I'd work at the Desert Park one day.

Tell us about your work as an apprentice zoo-keeper?

My apprenticeship is on zoo-keeping of captive animals at the Alice Springs Desert Park. We learn from zoo-keepers about husbandry, animal feeding, cleaning and handling. We learn about nutrition and diets and what is suitable to each animal. We provide the animals with a lot of native fruits and seeds. We also deal with the public and answer their questions.

Besides your work, you are quite busy on a number of other projects. One of them was an Aboriginal film, *The Lore of Love*. Why did you get involved?

My family has been involved in a lot of films. They're into making wildlife documentaries too. This film project [Lore of Love] was something that I didn't want to do. I was a shy 18-year-old when it came up and I thought this would be a shame-job. Love was something that we didn't speak a lot about in our culture. This film encourages other people out there to embrace their culture and talk about it more. I'm glad I made it because it has all my Nanas in it and one of them has passed away so it's a good memory.

Doing field-work

What work have you done out bush?

Out bush with the scientists, we did trapping, tracking and monitoring of the Great Desert Skink [a large burrowing lizard] and the Bilby [a long-nosed rat]. The Bilby is a mammal — it's sort of like our Easter Bunny. They're funny-looking animals. We were learning where these animals live and about their habitats. The Bilby and the Great Desert Skink are endangered. At the Desert Park, we've gone out and looked at the effects of feral animals. Scientists and Indigenous people work together to try and figure out how to get rid of feral animals.

The old people knew the animals, where to find them and how to track them. They're the only ones that have that knowledge. Scientists don't know how to track. So accessing the local peoples' knowledge of tracking has helped scientists. Utilising local Indigenous Knowledge has given scientists a good understanding of animal habitats and the threats to those habitats. Scientists benefit a lot from Indigenous Knowledge and Indigenous people benefit from having the help from scientists. So yeah, it works both ways.

Jessie looking after some of her animals like these Thorny Devil lizards.

What kind of technology helps you in your job? How does it help?

The biggest thing I've seen is the GPS. It's really good. When I worked on the Great Desert Skinks project, we would find different burrows where the lizards were, get different GPS coordinates and put this on a map. Seeing it on paper where everything is, we'd figure out okay this is where they are and ask why are they here? What eco system benefits are there?

You recently attended the 12th International Congress of Ethnobiology in Canada. What did you learn?

This conference was about Indigenous people from all over the globe coming together and sharing the good and bad things that are happening in their communities and towns; what they'd like to do about it and how they'd like to fix it. When I went over there I was looking for how people over there engage their young people and get them interested and involved in their culture. Some had set up youth camps where they would ask the kids to film their own material on something about their family or their culture and share this on a website they designed themselves. I'd like to come up with more ways that engage people and show people that cultural knowledge is being lost. Cultural knowledge like music, songs, dance, language, plants, animals and tracking should be preserved. We should get up and start learning it before the elders are gone.

Climate change on country

Is climate change having an effect out bush? Are people aware of it?

I don't know if they know about global warming and if its happening? Living here in Alice, I've noticed things have changed. One day in winter, we'll have a really hot day, then it'll go back really cold, so I think people can see the change. In terms of wildlife, things are flowering really early. I've got a fig-tree in my house and the leaves fell off a month ago. It should have fell in April. The figs are still on it. The birds are eating them. Definitely you can see that something has changed. One effect I've seen with animals is the increase in feral cats we have had here. This has brought down a number of our native animal populations.

What are the changes happening on country? How is the land affected?

These days people don't know how to harvest fruits and plants properly. You can see how a lot of these plants are disappearing. The old people used to go out and learn how to burn country because they wanted the bush flowers and fruits to come up for the next season — they planned it ahead. These people are old now. Half of them are gone. Some of them can't do it. I don't see the young people taking on the role of land managers or land custodians. I'd like to meet more young people out there and somehow work together.

Final reflections:

What can you share for others who are considering contributing towards social transformation?

I'd like to see myself as a role model for other Aboriginal young people. A role-model is someone who never gives up. To be seen as someone that goes for what they believe in.

I don't want to be a nobody or give up too early. I think that working here has benefitted me a lot. It has given me opportunities outside of work, recognition and my family see me as a role-model.

My advice is don't give up on what you want to be. Work hard. There are things out there that are better. New things. Its not just Alice, there's things outside. You've only got one life, so do heaps of things. Don't restrict yourselves to one thing. Stay grounded. Be positive about everything that you do. If you have a bad day, just get up the next day and go for it again. □

Meteorology + Indigenous Weather Knowledge = www.bom.gov.au/iwk

A map of the communities involved in the project, from the Indigenous Weather Knowledge (IWK) webpage

BY JOHN MCBRIDE, GLENN COOK, AND HARVEY STERN

The IWK (Indigenous Weather Knowledge) website produced by the Bureau of Meteorology recognizes the knowledge of weather and climate developed by generations of Australia's Indigenous communities. >

Last month, two scientists from the Bureau of Meteorology travelled out to country to talk with elders about Indigenous knowledge of seasons: the cold season, the hot season, and the wet season.

We stood under a Boab tree, next to a billabong, and gave a talk to the mob explaining what climate change is. The elders showed us the plants that were gathered in each season. We were told stories about the animals, when they were hunted and how they were killed. And we were told about the different types of sugarbag that could be gathered and the time of year when the goannas have a lot of fat around the neck.

We were in the Eastern Kimberley, in Miriwoong country. The trip was organised by the Indigenous Community Water Facilitator project through the Kimberley Land Council. Funding came from several agencies including NT National Parks, Mirima Dawang Woorlab-Gerring Language and Culture Centre, Ord Enhancement Scheme, the Bureau of Meteorology, Kimberley Land Council and the North Australian Indigenous Land and Sea Management Alliance (NAILSMA). We were collecting material for a Miriwoong Indigenous calendar to go on the internet on the Bureau of Meteorology website.

You find this by going to the normal web page of the Bureau of Meteorology and looking for 'Indigenous Weather Knowledge' under the 'About Meteorology' heading along the right hand side. Say a member of the Australian public wants to know whether it will rain today, or what the average temperature is at the place where they live, they go to the Bureau of Meteorology website, www.bom.gov.au/iwk. By placing the Indigenous weather knowledge on our website, the Bureau of Meteorology is saying that we place value on this knowledge.

The primary purpose of the project is to recognise the knowledge of weather and climate developed over countless generations by Australia's Indigenous communities.

Historically the project was a partnership between the Bureau and ATSIC and a number of university departments. These partnerships have finished and the website is now run by the Bureau itself. It is a partnership between us and the Indigenous communities that choose to share their knowledge. Being a government department, we want to ensure we do everything correctly. We have a strict rule that before the knowledge appears on our site, it has approval from the community of elders responsible for that country.

So far, we have seven communities involved, and we are in discussion with several more. If any communities reading this would like to use the Bureau website to share their knowledge, please contact us at iwk@bom.gov.au, or simply call the authors of this article at the Bureau of Meteorology Office in Melbourne. Currently the dots on our Australia map lead to seasonal calendars for that community. We would be happy to host other types of information as well, such as stories about weather and climate, dreaming stories and stories about seasonal fire management. If the flowering of plants or arrivals of birds are indicators of the beginning of a season, the communities could measure these every year to start a record of possible climate change. □

How the Communities became involved:

JAWOYN	We obtained the information from a published book. We phoned the community. After discussion the Jawoyn Association Aboriginal Corporation gave written permission
YANYUWA	Same as Jawoyn. Written permission came from a senior law person of the Yanyuwah.
WALABUNNBA	This one arrived in our office on the fax machine. The community was told about it by the Jawoyn community.
WARDAMAN	Conversations in the ATSIC office in Darwin led to the community sending the information to us.
BRAMBUK	Our Bureau officer requested permission to put instruments on Brambuk land. In the discussions he invited the community to participate in the project.
YAWURU	The Bureau technical officer located in Broome talked with the community over a period of years.
DHARAWAL	Fran Bodkin of the Dharwal Traditional Knowledge Owners and Descendents Circle contacted us.

Bureau of Meteorology staff giving the talk on climate change (copyright: Mirima Dawang Woorlab-gerring, Language and Culture Centre).

Australian Government
Bureau of Meteorology

Indigenous Weather Knowledge

Yurluurrp - cold weather

April to September

"The Wantangka gradually goes away and Yurluurrp (cold weather) is coming.

The winter time foods include the Bush Tomato which is eaten when it is ripe and is bright yellow in colour. When it is dry it turns brown and can still be eaten. The dried yakatjirri can be ground and mixed with water to make a roll which is placed under the sun until dry. This roll can be stored.

We use the coolamon to carry the food around and for storage.

Bush Potato or Yarla is one of the main bush foods eaten on its own. It is cooked under the hot earth by placing the potato in the sand with hot coals on top.

The potato comes from a small shrub. We know when to dig for the potato because there are cracks on the earth along the root system leading to the potato. Sometimes the potato is shallow whilst other times it may be two metres into the ground.

The women go out to collect the yarla and use digging sticks, firstly to jab or hit the earth with the digging sticks listening for the hollow sound. If it is a hollow sound then they dig at that point to find the yarla.

During the colder months the kangaroo and goanna fatten up and they are best to eat at this time.

Throughout the year we notice two particular star constellations moving across the sky, they include The Seven Sisters and the Milky Way. We also feel the changing direction of the winds.

Knowledge about the weather is not secret business. You don't have to be a traditional owner of country to speak about the weather - it is the same as your culture: just everyday knowledge."

Lana, Rachel, Pansy, Trisha and Lindy, family members of the Walya Altjerre Aboriginal Corporation sharing cultural knowledge

Description of the Walabunnba Yurluurp Season (from the IWK webpage)

THE GREAT POWER SQUEEZE

HOW TO ADDRESS RISING ENERGY COSTS IN REMOTE COMMUNITIES

Across Australia the price of power is on the rise. Regional and remote communities are particularly vulnerable to these increases. Improving energy efficiency is a simple, low cost way of reducing energy costs and lowering greenhouse gas emissions. **BY MARTEENA MCKENZIE**

Power prices are rising across the country and the trend is set to continue. With rising power prices and more energy-intensive appliances, families are feeling the squeeze of high electricity bills. For people living out bush, high energy costs are especially difficult to cope with. Those in regional and remote areas tend to earn less then city people, and there are many costs associated with remote living — long distances to centres, high fuel bills and food that is expensive which needs to be transported a long way.

Research shows that low income households spend a larger proportion of their available income on essential services (food, electricity, fuel) than higher income households[1]. This factor is compounded for people living remotely from service centres.

Remote Indigenous communities are particularly vulnerable to rising household energy prices. Usually people living in these communities are low or fixed income earners, and they face a number of unique challenges which lead to high electricity prices. Most Indigenous communities are located in regions of extreme heat and humidity, meaning that cooling costs are high for much of the year. Also, most housing in Indigenous communities is public or state-owned, which may not have been designed or fitted-out in an energy efficient manner or maintained to a high standard. The high proportion of rental homes also means that residents have limited control over structural changes to improve efficiency. In addition, overcrowding is common in many remote communities, further driving up power bills.

Rising household energy use also impacts on Australia's greenhouse gas emissions and contribution to climate change. Many remote communities in Australia are not part of the conventional electricity grid network. Depending on their size and remoteness, these communities may be powered by a series of diesel generators. Diesel is a non-renewable resource that emits greenhouse gas emissions when it is burned to make electricity. Diesel is also bulky and transported by truck over long distances, which adds to the expense and emissions.

Improving energy efficiency is recognised as the quickest, cheapest and most effective way of reducing power bills, cutting greenhouse gas emissions and addressing climate change. The Intergovernmental Panel on Climate Change (IPCC) states that improved energy efficiency can contribute up to half of the world's potential emission reductions by 2020[2]. Energy efficiency simply means using less energy to provide the same level of energy services. Household energy efficiency has a neutral or negative cost impact for households because the cost of implementing measures is recouped within the lifetime of most products. These reductions are achievable with existing approaches and readily-available technologies.

Household energy efficiency can be achieved in two main ways: people changing their behaviour, or changing technology in the house — appliances, fittings and fixtures. If residents are able to make changes in both of these realms, then they will notice a drop in their power bills. Some examples of behavioural and technology changes are outlined below.

Behaviour Changes

- Switching off appliances at the wall
- Using air-conditioners only when necessary, or choosing fans instead
- Closing doors and windows when air-con is running
- Choosing to use small cooking appliances rather than the large electric stove

Technology Changes

- Replacing old, inefficient appliances.
- Replacing old light bulbs with new CFLs.
- Installing shade structures on the sunny side of the house.
- Repairing and blocking gaps surrounding doors and windows.

In 2009, Bushlight, a business unit of the Centre for Appropriate Technology, developed a new program aimed at reducing energy use (and costs) in Indigenous community households. The Bushlight Energy Efficiency Program:

- Uses a **train-the-trainer** approach, where a small core of local Aboriginal and Torres Strait Islander people are trained and employed full-time as energy field officers to undertake household energy consultations in the communities.
- Adopts a **systematic approach to community engagement**, where householders are offered a free energy consultation at a time of their choosing
- Is centred on a household education process, which is tailored to the needs of the individual households and supported by a range of **targeted educational resources.**
- Includes **demonstration and retrofit components**, where field officers demonstrate energy efficient behaviours and install some low-cost energy saving technologies such as low-flow shower heads and compact fluorescent light (CFL) bulbs.

For more information about energy efficiency or the new Bushlight Energy Efficiency Program, please contact: enquiries@bushlight.org.au □

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Paid to burn tropical savannas:

a two-toolkit approach to greenhouse emissions reduction

BY JEREMY RUSSELL-SMITH

Five years ago, the Western Arnhem Land Fire Management program emerged in the Top-End, NT. An energy company, Aboriginal Traditional Owners and partner organisations teamed up to figure out how to set up an ecologically and economically sustainable fire management program.

In many regions of northern Australia fire risk is poorly managed, resulting in extensive wildfires. On average greater than 350,000 square km (~20%) of Australia's 1.9 million square km tropical savannas, or six times the size of Tasmania, are affected by fire each year, mostly in the latter part (typically September to November) of the seven month dry season when severe fire-weather conditions prevail. A major challenge is to develop economically and ecologically sustainable fire management initiatives which address chronic limited infrastructure and resourcing issues, and an attendant very sparse population base. A particular challenge involves the engagement of, and developing employment opportunities for, remote Aboriginal communities. Over half the north Australian population outside of regional centres is Indigenous, with this component growing much faster than the non-Indigenous population.

What is WALFA?

The Western Arnhem Land Fire Abatement (WALFA) project has provided a novel illustration of how such a sustainable program might be developed. Through re-introduction of regional fire management incorporating traditional Aboriginal knowledge, contemporary best-practice and western science, WALFA implements a strategic burning program focused on the early-mid dry season which aims to deliver:

- significant greenhouse gas emissions abatement under a commercial offset arrangement to a major energy corporate
- biodiversity benefits
- regional employment benefits.

WALFA has had singular success in meeting all its targets since inception of the program in 2005.

A two toolkit approach

The WALFA project grew out of an approach from the Jawoyn Association in the mid-1990s to the Northern Territory's rural fire management agency, Bushfires NT (then Bushfires Council), to assist traditional land owners deal with significant fire management problems in south-western Arnhem Land. With funding assistance from the Commonwealth's Natural Heritage Trust, the project was expanded to include around 28,000 km^2 of western Arnhem Land, incorporating mostly rugged, biodiversity and culturally-rich sandstone country immediately to the east of Kakadu and Nitmiluk National Parks. At the first major project meeting held at Manmoyi Outstation in 1996, senior traditional owners set out their aspirations that WALFA should address. These included being answerable to cultural management requirements including cross-generational knowledge transfer, assisting with local employment opportunities and, perhaps even more fundamentally, providing traditional owners, many of whom had never had opportunities to see their country, with means to access their traditional country 'estates'. It was agreed that the project would be developed as 'two toolkit' approach — building on both traditional knowledge and western management approaches.

From around 2000 the project gained significant momentum with the involvement of the Tropical Savannas Cooperative Research Centre, particularly through the undertaking of a research program aimed at refining the then Australian Greenhouse Office's (now Department of Climate Change and Energy Efficiency) savanna burning greenhouse gas emissions accounting methodology. That work demonstrated that strategic fire management, such as traditionally practiced, focusing on the early-mid dry season, could not only reduce the annual extent of wildfires, but significantly reduce the amount of greenhouse gas emissions produced in any one year. In 2005 WALFA achieved substantial commercial backing through the signing of a formal 17 year contractual arrangement with Darwin Liqufied Natural Gas Pty Ltd (DLNG, a subsidiary of ConocoPhillips), to partly offset DLNG's greenhouse gas emissions from its Darwin Harbour plant. Substantial funding support is being provided also through the Commonwealth's developing Working-on-Country Indigenous ranger program. In 2007 the project was awarded the inaugural Eureka Award prize for Innovative Solutions to Climate Change. Over the period 2005-2009, the project has abated 776,000 tonnes CO_2-e, more than 50% greater than required under the DLNG contract.

Project Expansion:

On the back of the success of WALFA, the North Australian Indigenous Land & Sea Management Alliance (NAILSMA) and its regional partners (Balkanu Cape York Development Corporation, Carpentaria Land Council, Northern Land Council, Kimberley Land Council) are implementing an ongoing program to extend savanna burning projects to other fire-prone tropical savanna regions. That program, funded to date through the Commonwealth Department of Environment, Water, Heritage & the Arts (DEWHA) and Department of Climate Change and Energy Efficiency (DCCEE), aims to establish regional savanna burning projects across at least 200,000 km^2 of mostly Indigenous owned or managed lands in western Cape York, around the Gulf of Carpenteria from Borroloola (NT) to Burketown (QLD), central Arnhem Land, and the north Kimberley.

Future developments:

In the current absence of a formal price on carbon, in the first instance it is intended that these projects will be developed for commercial implementation in the voluntary carbon market — that is, under similar arrangements as for WALFA. In the future, however, it is anticipated that all these projects will be able to take advantage of offset opportunities under a formal Australian Emissions Trading Scheme — for example, savanna burning would have been eligible as one of few agreed activities (along with plantation forestry) under the ill-fated Carbon Pollution Reduction Scheme. Savanna burning has many benefits for fire-prone northern Australia, including as a greenhouse gas abatement activity. □

FURTHER READING:

Russell-Smith J, Whitehead P, Cooke P editors (2009) Culture, ecology and economy of savanna fire management in northern Australia: rekindling the Wurrk tradition. CSIRO Publications, Melbourne.

Indigenous Pacific Islanders taking on climate change

The Indigenous peoples of the Pacific Island countries face very real and serious challenges posed by a changing climate. In Melanesia, around 80% of people live in 'rural' areas and rely mostly on subsistence farming, hunting and fishing. Climate change threatens the security of food supplies, and coastal villages are threatened by sea level rise. **BY ROBBIE HENDERSON**

Clan leaders from a remote village in West New Britain Province PNG participate in a RAP workshop to identify needs, concerns, aspirations and knowledge gaps around climate change and 'carbon trading.' Photo by Jess Abrahams.

The contribution made by Indigenous Pacific peoples to CO_2 emissions through burning of fossil fuels is negligible, that title rests with Australia and other developed countries. The largest contribution to emissions from Pacific Island countries is through land clearing and logging. Worldwide, deforestation and degradation of tropical forests is responsible for approximately 20 percent of annual global carbon dioxide (CO_2) emissions. Surprisingly, this is significantly higher than the emissions made through the transport sector worldwide.

Live & Learn is an Asia / Pacific based non-government organisation working with communities in Melanesia to respond to the climate change challenge. Local Indigenous people, who are supported by a regional network, manage Live & Learn's operation in each country. A major focus is to increase the resilience of communities to adapt to climate change and to reduce emissions through community forest management. Healthy forests play a vital role in protecting water resources and provide a range of resources such as foods, building materials and medicinal plants.

Reducing Emissions from Deforestation and Degradation (REDD)

International efforts to combat climate change now present a new opportunity for Pacific communities to derive livelihood opportunities from forest conservation. Reducing Emissions from Deforestation and Degradation (REDD), proposes that mechanisms are developed to make payments to countries or communities that protect forests that would otherwise be cleared or degraded.

Live & Learn has been working with communities and governments in Papua New Guinea, Fiji and Vanuatu to design and establish pilot projects to enable Indigenous people to participate and benefit equitably from REDD. Initially, funding was received through AusAID to enable Live & Learn to work with the PNG Government and local communities to research and design a REDD pilot activity. Further funding now approved by the European Commission will allow Live & Learn to pilot grass roots REDD programs in Vanuatu and Fiji over a five year period.

Cosmos, an Indigenous landowner from Asirim PNG, inspects round logs bound for export. Cosmos is a strong advocate for alternatives to destructive logging, which have provided inequitable and short-lived benefits to local people, and are a major cause of land degradation, social problems and GHG emissions. Photo by: Jess Abrahams

Integrating traditional and new knowledge

Enabling rural Indigenous people with low levels of education to participate in REDD is a significant challenge. Community involvement must be built on a solid platform of education that integrates traditional and new knowledge. Live & Learn has conducted social research with communities using the Research of Aspirations and Perceptions (RAP) approach. The findings have identified community perceptions and knowledge.

Developing non-profit community cooperatives

Indigenous community involvement in forest protection and carbon finance also requires investment in governance education and support. Live & Learn's approach is to work with Indigenous landowners to develop not-for-profit community cooperatives that will manage community conservation areas. Cooperatives will establish the 'rules' for management of community forest conservation areas, including how decisions are made, how rules are enforced, conflict resolution and land use planning. Traditional (kastom) law and national legislation will have important roles in protected area management.

Perhaps the biggest challenges for REDD are to ensure 'permanence' of protected areas, protect Indigenous land rights, and to sustain equitable economic and social benefits for Indigenous forest dependent people. Live & Learn is working in partnership with the Northern Territory based organization Little Fish to provide education and support to REDD cooperatives in financial and new enterprise management. Cooperatives will be supported to manage a community development fund that receives carbon finance for forest conservation. The intent of the community development fund model is to promote investment in infrastructure (eg water supply), services (eg health), and livelihoods (eg micro-finance), to benefit whole communities, with an emphasis on minimizing cash royalties. Funds will also support employment in administrative and land management roles, including monitoring and reporting.

Pacific Island governments are in the early stages of developing REDD, and NGOs such as Live & Learn are playing an important role in constructively advocating for approaches that enable Indigenous peoples to equitably benefit from their involvement. □

USEFUL RESOURCES:
Live & Learn
www.livelearn.org
robbie.henderson@livelearn.org

UN REDD Programme
http://www.un-redd.org

Impact of climate change on remote communities

1. **PROJECTIONS** for the region — tropical Northern Australia, Torres Strait Islands and the Pilbara region (WA) indicate a range of biophysical impacts with various levels of certainty.

2. **WILL** impact the natural environment of the north both directly and indirectly, with major flow-on implications for remote communities dependent on natural resources.

3. **IS** likely to exacerbate existing, and create new health risks for Indigenous people.

4. **BOTH** transport and communications infrastructure in many areas of the study region is extremely limited.

5. **EDUCATION** has an important role in preparing northern communities for climate change. Amendments to current school curriculums are required to help communities learn how to adapt and build resilience to climate change impacts.

6. **ECONOMIC OPPORTUNITIES** may arise from the need to better manage / restore ecosystems and for carbon dioxide mitigation. Opportunities and livelihood options related to this issue need to be better understood.

SOURCE: Green D, S Jackson and J Morrison, 2009, Risks from Climate Change to Indigenous Communities in the Tropical North of Australia. Department of Climate Change, Canberra, Australian Government.