

If Australia's wild areas are to last, support for traditional owners will be critical. TANYA LOOS reports

WHY WILDERNESS NEEDS PEOPLE TO SURVIVE

LAST YEAR AUSTRALIA'S interior was identified as one of the last great wilderness areas on Earth, second only to the extensive boreal forests of Russia and Canada.

A few months later, the Canadians turned more than 14,200 square kilometres of forest lands and waters in the remote Northwest Territories into the Edézhíe Protected Area. They did so using the concept and legislative structure of Indigenous Protected Areas, an idea borrowed from Australia.

Together these developments suggest that we may be onto something in this country, while reminding us that we actually have a lot of work to do still. The key to safeguarding Australia's remaining wilderness areas, it seems, lies not in excluding people from them, but the reverse. The knowledge and skills of indigenous communities are increasingly being regarded as essential for the country's ecological future.

Let's look at the bad news first. Our high "wilderness ranking" is in fact rather bittersweet, because it reflects the parlous state of wilderness around the world.

The international team of scientists that did the assessing was led by James Watson, professor of conservation science at the University of Queensland, and PhD candidate James Allen.

They found that more than 77% of land (excluding Antarctica) and 87% of the ocean have been modified by the direct effects of human activity. In all, 94% of the Earth's wilderness, excluding Antarctica and the high seas, is located in only 20 countries, with 70% of it in just five: Canada, Russia, Australia, the US and Brazil.

Despite this, the protection of wilderness areas per se is not included in any country's conservation policy.

Australia's record, Watson points out, is pretty grim. We have the highest rate of mammal extinction in the world – 22 species from continental Australia and a further five from offshore islands – and the highest rate of land clearing in the developed world, particularly in Queensland.

Industrial development in pristine areas continues. A typical example is the Kimberley's Fitzroy River catchment which is threatened by a range of human pressures, from large-scale irrigation, cropping and cattle grazing to mining, gas extraction and urban development.

Known as Mardoowarra and Bandarlngarri by the Aboriginal people who live in the Fitzroy Valley, the river is fundamental to the lives of the people of six language groups. In 2011 the Fitzroy River system was placed on Australia's

National Heritage List for its outstanding cultural and natural values.

Australian conservation scientists are a generally cautious lot, but in 2018 99 of them issued the *Fitzroy River Science Statement* calling for the Western Australian Government to honour its commitment to create a new national park and catchment management plan, and to recognise the concerns described in the *Fitzroy River Declaration* by the traditional owners.

Given this background, it's probably not surprising that Watson is incensed that Australia did not send an official delegate (citing security concerns) to the recent meeting of the Conference of the Parties to the Convention on Biological Diversity in Sharm El-Sheikh, Egypt, where delegates discussed the targets of the *Strategic Plan for Biodiversity Conservation 2011-2020*.

Signatories to the convention, including Australia, translate the targets into national level strategies, such as Australia's national reserve system.

So let's turn to the positive part of this story. A very large proportion of the wilderness map that Watson and his team developed for Australia includes Indigenous Protected Areas (IPAs), where traditional owners who understand the land are instrumental in what happens to it in the future.

Part of a salt lake in the Great Sandy Desert, Western Australia.

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An IPA is not a change in tenure; it is a form of ecological land management of a protected area with the traditional owners instrumental in approving how that land is managed, through an agreed plan and an indigenous ranger program. It also conserves the area's cultural resources, including sacred sites and rock art.

The concept of IPAs was first floated with a range of Land Councils and traditional owner groups at a meeting in Alice Springs in 1995. Land Councils, in particular, were skeptical given their years of hard land rights battles, but there was some interest and in 1998 the first IPA, called Nantawarrina, was declared in South Australia.

Twenty years later, there are 68 million hectares of IPAs, comprising 45% of Australia's conservation estate.

Paddy O'Leary works with traditional owner groups across the entire region through the Pew Charitable Trust, a non-government environmental organisation, from a central office in Canberra. He describes the largest patch on the wilderness map.

"It's a massive interconnected area, broken up into many separate sets of IPAs, each run by their own community, supported by local Aboriginal organisations, and that is the exciting story: that management is being delivered by the traditional owners of that country."

IPAs are typically on indigenous-held land and sea country, but can also be over national parks, Crown land and sea country. IPAs are accredited against International Union for Conservation of Nature (IUCN) criteria.

Gunditjmara elder Denis Rose, who worked for the Commonwealth Government in the 1990s and was instrumental in the creation of the classification of the first IPA, is keen to emphasise that the system is not simply a grant program.

"People might think blackfellas should be thankful they are getting some money to do this, but people need to understand that Aboriginal traditional owners are contributing their land for biodiversity conservation purposes as well as cultural heritage purposes," he says.

O'Leary agrees wholeheartedly. "It is really important to understand people's

view of themselves is absolutely not as stakeholders, it is as owners, users and managers of their estate and that the government and other people can become partners," he says.

At the Tyrendarra IPA in western Victoria, Rose walked me through the volcanic rock fish trap system created by the Gunditjmara people 6400 years ago, making it the oldest aquaculture system in the world. Channels are created in the rocks via the use of very hot fires, then placed to create ponds and weirs through the wetlands, to farm short-finned eels and other fish.

Such complex engineering feats are challenging the common assumption that Australia's First People were hunter-gatherers living in resource constrained environments. Other evidence of indigenous occupation as settler societies is growing, including cultivation of tubers and grains, and an increased understanding of the sophisticated application of fire to create resources and shape natural environments.

In fact, the flora and fauna we desperately want to conserve today was created in part by these intensively

manipulated "eco-cultural landscapes". The first understanding of this relationship between small mammal diversity and indigenous land management only started a few decades ago.

In the mid-1980s, a team of ecologists travelled inland Australia with skins of rare or recently extinct mammals, seeking to better understand the presence of mammals in this region by drawing upon the knowledge of the people living in these areas. Their study area covered a mere 1.6 million square kilometres, comprising several desert regions and districts, including the Great Sandy Desert.

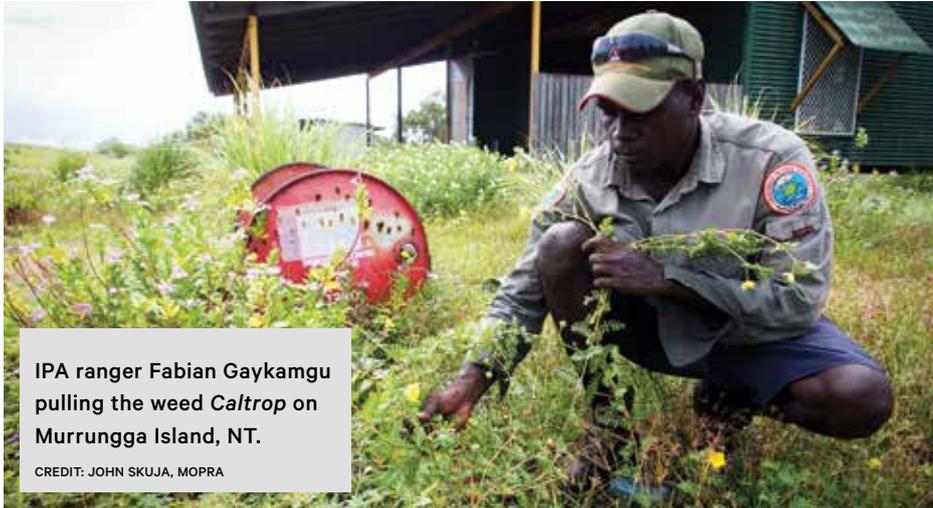
Led by Andrew Burbidge from the Western Australian Government, the team was surprised to discover that the decline or disappearance of many mammals, such as the Golden Bandicoot (*Isoodon auratus*), was directly linked to the time when people were forcibly removed or left the region. When indigenous burning ceased, species disappeared in 10 or 20 years.

Without people "on country", and the associated Aboriginal burning, the ecology of an area changes markedly. The plant biomass increases, and extensive fires in the summer months burn hot over huge



Punmu elder and IPA ranger Minyawe Miller burning Pilbara country using traditional fire sticks.

CREDIT: GARETH CATT / KANYIRINPA JUKURRPA



IPA ranger Fabian Gaykamgu pulling the weed *Caltrop* on Murrungga Island, NT.

CREDIT: JOHN SKUJA, MOPRA

areas, reducing cover from predators for the small to medium sized mammals.

Barry Trill, lead scientist and director of the Oceans to Outback program at Pew Charitable Trusts, explains. “Most of the outback has fewer people on it managing it now than in the last 50, 60,000 years. That’s a core ecological problem because without people, the country becomes unhealthy. You still have the bush, but species disappear if it is not looked after.”

In the northwest Kimberley region, the Australian Conservancy estimates that 45 species of wildlife are likely to be functionally lost from the area in the next 20 years. Its analysis found that eradication of feral cats would be the greatest help, but technically was not feasible. They calculated that the reintroduction of suitable fire regimes was the most achievable and cost-effective way to prevent these extinctions.

Fire and ecology study is a growing field in Australia, and these findings reveal complex interactions between fire history and the resulting floristic structure, the interactions between the critical weight range mammals and the movements of predators and prey in and out of burnt and unburnt patches.

Ecologists are getting better at understanding these processes, particularly with the use of new technologies, but it is also informative to get the perspective of traditional owners.

Rarritjiwuy Melanie Herdman, former chair of Dhimurru Aboriginal Corporation from Arnhem Land, says if we observed her or a family member carrying out

burning, it would look like they are simply lighting a fire in some vegetation.

“But there’s a specific time, wind direction, where the moon sets, the right timing for us to burn off,” she explains. “For me, it’s an every year thing, it is just a given.”

Yolngu people burn to open up the country and allow access for hunting kangaroos and goannas, or looking for wild honey. The Dhimurru IPA covers 550,000 hectares of Yolngu land and 450,000 hectares of sea country. To manage the area, the rangers and the board straddle old and new worlds.

“We use two systems,” Herdman says “One system is the Yolngu system – our kinship system to land and how we look after our country. And then in the other side we use the tools from the balanda world – the western world.

“Always, whether managing feral animals such as water buffalo, mapping certain areas of the land, rehabilitating habitat, we are always in that both ways mind set; it never switches off.”

At the Tyrendarra IPA, the Gunditjmarra people are working with scientists to better understand the hydrology of the Condah Lake system and restore the flows to an area that has been drained and dammed for European farming.

Some IPAs are more successful than others, of course, and the Country Needs People Alliance, of which Pew Charitable Trusts is a lead organisation, says that indigenous ranger jobs and IPA funding do not yet meet the scale of the need for active

IDENTIFYING WILDERNESS

Mapping intact ecosystems can be done on a global scale using high resolution satellite imagery to assess forest extent, but this approach fails when assessing desert biomes, or indeed any areas that are not forests.

To circumvent this, James Watson and his team used a kind of reverse assessment where wilderness is defined as contiguous areas of land or ocean greater than 10,000 hectares that are deemed free of a number of indicators of human pressures.

Maps created in 2016 for terrestrial areas and in 2018 for ocean areas are based on Human Footprint maps created in the 1990s and updated today.

The advantage of mapping human pressures is that you capture actions which have the potential to damage nature and therefore drive changes in the ecological system, rather than just presence or absence of an ecological state.

Human pressures mapped in terrestrial environments include built environments; crop lands; pasture lands; population density; night-time lights; railways; major roadways; and navigable waterways. Pressures for determining ocean wilderness included sixteen indicators such as shipping lanes, fertiliser run off and fisheries.

environmental work across the millions of hectares, nor the present demand from traditional owner communities.

However, it is widely acknowledged that the staged approach to developing the IPA management plan, and the voluntary nature of the agreement, has contributed to its success as a model.

And that’s what impressed the Canadians. The Edéhzhíe Protected Area is jointly managed by the Dehcho First Nations people and the Canadian National Wildlife Department. ©

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