A hillside covered in flowering Sturt’s desert pea provides a wonderful carpet of colour at White Leeds Station. The property of almost 8000 hectares, owned by Steve Radford and Margaret McBride, is a Wildlife Refuge on the outskirts of Broken Hill. The recent rains have produced an abundance of wildflowers and plentiful wildlife. Photo: Margaret McBride
Contents
2 From the Director General
2 Private land conservation grants
3 Education day at the McLarens
4 The Crossing Land Education Trust
6 NSW Atlas of Wildlife
7 Five Corners—a conservation area for the public
8 Community contributions to the science of wildlife conservation
10 Fivebough and Tuckerbil Swamps
12 Wildlife Land Trust
14 Land for Wildlife—‘the national program run by locals’
15 Connectivity and the Great Eastern Ranges Initiative (GERI)
15 Book review—biodiversity: integrating conservation and production
16 Books

From the Director General

Environmental education plays an important role in building knowledge, skills and experience in protecting and conserving our unique natural and cultural heritage. The more we understand about the environment, the better we are able to care for it. Research and education about wildlife and its habitats, ecosystems, biodiversity, and cultural heritage takes place not only in national parks and reserves but also on other public and private conservation lands.

This edition of Bush Matters showcases landholders in the Conservation Partners Program who are using their Conservation Agreement and Wildlife Refuge properties in a variety of ways to educate the broader community about biodiversity conservation and other aspects of sustainable land management.

LISA CORBYN
Director General
Department of Environment, Climate Change and Water NSW

Private land conservation grants

The Private Land Conservation Grants are a co-funding partnership initiative of the Foundation for National Parks and Wildlife, the Department of Environment, Climate Change and Water NSW, Diversicon Environmental Foundation, Nature Conservation Trust of NSW, the Paddy Pallin Foundation and the Wildlife Land Trust.

These grants support landowners whose properties are protected in perpetuity, by Conservation Agreements and Registered Property Agreements.

The latest round closed in June 2010, with more than $73,000 awarded to landholders to support conservation programs.

The types of projects funded are wide ranging and aimed at habitat and species conservation. Funded projects included weed control on a number of properties, especially where weeds were impacting on endangered ecological communities and threatened species habitat. Feral animal control was also funded.

Other projects included installing nest boxes and interpretative signage, and frog surveys to assist management of a wetland protected under a Conservation Agreement. Landholders in the Conservation Partners Program will be notified by mail or email when applications are open for the next round of funding. Also see: www.fnpw.org.au/Funding/SmallGrantsProgram.htm

Interested in keeping up to date with events in your area?

Visit the events page on our website: www.environment.nsw.gov.au/cpp/ConservationPartnersEvents.htm or send us your email by contacting conservation.partners@environment.nsw.gov.au and we can let you know of coming events in your area. This is especially good for events at short notice.

Are there any events in your area that may be of interest to landholders? Contact us to publicise these on our website.
Education day at the McLaren conservation agreement properties

In the granite region of northern NSW near Tamworth, Wallaby Downs, Wunder Valley and Piney Ridge form three adjacent Conservation Agreement (CA) properties totalling 2742 hectares. The first two properties are owned by Kate McLaren, winner of the 2010 Australian Government National Individual Landcarer Award, and the latter by Raymond McLaren.

Community interest in the McLaren CAs was sparked by publicity surrounding Kate McLaren’s recent national award. The McLarens, with the assistance of Regional Landcare Facilitator Rachel Webster from Liverpool Plains Land Management, recently organised a field day—issuing an open invitation to anyone interested in seeing the properties.

The meeting place for the day was Minbalup Hostel—literally a stones-throw from Piney Ridge CA, and a kilometre from Wallaby Downs CA. Despite very soggy soil following an abundance of winter rain and a burst of cold weather interjected into what has been a lovely but wet spring, over 110 people ventured out to see the properties and listen to guest speakers including Anaiwan Elder Bob Faulkner, botanist John Hosking, ecologist Phil Spark and manager Kate McLaren.

Three busloads of people, and others in cars travelled from a variety of centres up a winding country road 26 kilometres west of the village of Moonbi. It was a diverse group including Aboriginal Elders and community members; Green Corps teams from Gunnedah, Quirindi and Tamworth; TAFE students, high school students, farmers, Landcare members and other interested people.

With the tracks being too wet to carry vehicles, many visitors braved the weather to join Bob Faulkner in a walking tour to see Aboriginal rock art and some significant sites on the property, or accompany Phil Spark for a close up view of some of the wildlife including an antechinus mother and her young babies, or identify and discuss plants of the area with John Hosking.

The day held great excitement and wonderful interaction. There was non-stop talk between visitors who networked with each other and the experts. Others enjoyed the lectures but decided to stay inside around the warmth of the fire and listen to Kamilaroi (Gomeroi) Elders share their stories.

No one went hungry, with a warming cup of tea to start the day, and morning tea with delicious slices that were gone in minutes as people chose an expert to accompany into the bushland. They returned from the bush to the smell of BBQ sausages and sliced marinated kangaroo accompanied by bread, salad and a fruit and cheese platter.

Despite being rushed to fit all activities and talks into the day before the buses departed, Kate and Rachel were thrilled by the delight of a constant stream of people saying how much they enjoyed their visit and querying when the next open day might be held. There was also a request by the majority of Aboriginal people present to arrange an overnight stay with elders and youth at Jan Hystek’s Minbalup Hostel so they could listen in depth to Bob Faulkner speak about Aboriginal history in the Moonbi area.

Jan Hystek himself is an interesting fellow who came from Holland some 60 years ago and worked in a variety of jobs but ultimately as an airplane engineer and TAFE teacher. He built Minbalup Hostel at the site of his old shearing shed—enhanced by the addition of a large games room which doubles as a conference area. Minabalup means ‘happy place’ and Jan, although in his 80s and retired, stays fit seeing that people of all ages enjoy and love this Australian bush. His 18-seater 4-wheel drive, used for the field day, is part of the educational journey at Minbalup. The 38-bed hostel is comfortable, basic and filled with a wonderful energy of nature—great for birdwatchers, bushwalkers and those who love a chorus of birds and frogs.

If you wish to visit or learn more about these CAs, contact Kate McLaren on katemclaren2@bigpond.com
An environmental education centre with a conservation agreement and positive conservation involvement for young people.

We purchased The Crossing property in 1994. Inspired by our previous work with young people and sustainable living, we created The Crossing Land Education Centre. Along the way we established a company and volunteer Board. Both of us still remain involved—Annette has taken a position on the board as a trustee advisor, and Dean now has the role of project director overseeing staff and volunteers.

The Crossing Land Education Trust is a recognised Australian Environmental Organisation and not-for-profit, sustainably designed bush camp near Bermagui on the NSW Southern Wilderness Coast. The Crossing is in a key wildlife corridor between two major coastal national parks. To assist protection of this corridor 93% of The Crossing land is conserved in perpetuity with a Conservation Agreement over 20.2 hectares.

We signed The Crossing’s Conservation Agreement in 2003 and roughly 70%, was made part of a gift to The Crossing Land Education Trust in 2007.

What the education centre does

The Crossing Land Education Centre aims to involve young people in positive environmental projects, inspiring them to conserve through environmental education and leadership projects. The Crossing caters for groups of up to 30, using a wholefoods menu. Many groups paddle up the Bermagui River in canoes to the education centre which is at the end of the tidal estuary.

During their stay, young people and other volunteers contribute to conservation through sustainable design work around the centre and nature conservation work. This includes gardens and buildings as well as purposeful journeys involving landcare and participation in habitat surveys. So far The Crossing has had the assistance of over 2000 young people and many older people as well.

One highlight is a big Australian journey from the sea to the snow. Each year up to ten people from 16 years of age in south-east NSW begin the challenge of journeying from Bermagui on the east coast to the top of the Snowy Mountains using boats, bikes and boots. Along the way they learn about the sustainable management of natural resources and help the community with landcare. The journey also provides direct entry and recognition under the Gold Duke of Edinburgh Award.

In 2005 with help from volunteer staff, The Crossing won the International Student Volunteers Award (ISV) for best Conservation Project in Australia. The trust consistently rates at the top of the ISV Conservation projects in Australia.

The property puts sustainability into action. Exploration of sustainable design principles at The Crossing include:

- solar passive building design
- stand-alone solar power (off the grid)
- solar and wood fired hot water and cooking
- development and maintenance of permaculture food forest gardens
- water saving and grey water reuse through an artificial wetland reed bed system and,
- Conservation Area monitoring with nest box and arboreal education in addition to koala habitat survey work.

Sustainable living in practice

An understanding of the elements and actions involved in ‘living more sustainably’ are demonstrated at The Crossing. A curriculum organised around ‘centres of care’ helps young people to develop and practice an ethic of care, acknowledging the three-fold goal of living as healthy people within healthy communities in a healthy environment (Fein, 2003).

Experiences in biodiversity surveys

Working in partnership with DECCW, project groups at The Crossing contribute to what is possibly the largest field-based biodiversity survey in Australia. Loss of biodiversity and habitat is one of the greatest threats to the environment, and education has a critical role to play in addressing this (Gladstone, Stanger & Phelps, 2006).
The biodiversity survey, led by DECCW officer Chris Allen, has grown from a koala survey, the first phase of which assessed the distribution and abundance of a highly scattered and endangered koala population occupying the coastal forests south from The Crossing (Allen et al. 2010). The survey takes a partnership approach involving government agencies, Aboriginal organisations, educational institutions and volunteers, with Crossing staff, volunteers and young participants playing an important part.

As well as providing young participants with opportunities for a forest experience, the survey process provides many educational opportunities to learn about plant and animal identification, and about ecology.

Project participants and other community volunteers know that they are contributing to a big and important project. Since 2007, survey teams involving more than 300 people have visited more than 750 sites and searched through the litter under 22,500 trees in three study areas covering more than 35,000 hectares of forest.

The information gathered can inform forest managers in many ways, i.e. where to apply fire, improve predation control and alter logging regimes. It has also helped inform landholders about the biodiversity on their properties and adjacent lands. Perhaps most importantly, the surveys conducted by Crossing groups and others in the local community provide key baseline information about our forests as they face great changes, including those associated with climate change. Now we have a record of what’s there.

The Crossing has adopted survey sites including sites within its own Conservation Area, and young participants will return to these sites over time to measure changes and contribute to understanding a bigger story.

Recently, The Crossing has been the recipient of a Southern Rivers CMA ‘Caring for our Coasts’ grant and has employed a young trainee to help manage a revegetation project for the upper Bermagui River focusing on regeneration of koala forest along the river. This exciting project involves working in partnership with neighbouring landowners, the Far South Coast Landcare Association and DECCW.

The work done by Crossing young people is helping to protect vulnerable species and monitor forest health including the impact of disturbance events and climate change. It is also helping to re-establish biodiversity and biodiverse corridors and to protect rivers and estuaries.

‘Australian identity is significantly influenced by our flora and fauna ... it is important for Australians to know who their more-than-human neighbours are, understand how they live, and take an interest in their well-being and survival ... The loss of native species and the loss of a culture of paying attention to one’s surroundings leaves Australians impoverished in their capacity to imagine and develop a rich sustainable future’ (Stewart, 2006).

For more information contact:
The Crossing Land Education Trust
PO Box 72 Bermagui NSW 2546
p 02 6493 3400
e thecrossing@thebegavalley.org.au
w http://thecrossing.thebegavalley.org.au
Gifts to The Crossing Land Education Trust Fund are tax deductible and must be used to support environmental education for young people and nature conservation.

Chris Allen has managed community-based koala survey programs in south-east NSW for over 20 years. Many hundreds of community volunteers, students, Aboriginal representatives and agency staff have participated in these programs. The improved knowledge and community awareness that has evolved from these surveys is significantly contributing to regional capacity to support the good management of surviving koalas.

Contact Chris at the NPWS Merimbula office. PO Box 656 Merimbula NSW 2548
p 02 6495 5008 or 0417 231 477
e chris.allen@environment.nsw.gov.au

References

Photo credits: The Crossing Land Education Centre
Atlas of NSW Wildlife

The Atlas of NSW Wildlife records sightings of flora and fauna. Landholders can both use and contribute to the Atlas.

The Atlas is the NSW Department of Environment, Climate Change and Water (DECCW) database of fauna and flora records. It contains over four million recorded sightings and is the main repository of information and knowledge about biodiversity in NSW.

Why is the Atlas so important?

The records within the Atlas are used by a large variety of people for a variety of purposes, such as:

- private individuals who may wish to know about species on and around their property
- academics and researchers working in particular areas or species
- students working on school projects
- DECCW staff to assist in better management and conservation of species, both on and off reserves
- Commonwealth and state government departments for conservation planning and land management
- local government agencies for environmental impact assessments
- consultants and landholders looking at activities which may include clearing of native vegetation for development or agriculture.

The Atlas plays an important role in the planning system in NSW. When assessing the environmental impacts of developments and land clearing applications, government authorities and environmental consultants use the information contained in the Atlas to determine which fauna and flora species will be affected and whether this impact is acceptable. Any new surveys undertaken are subsequently entered into the Atlas to help build a more complete picture of our biodiversity.

Where does the information come from?

Records come from various sources including historical reports, DECCW staff, survey data from major projects, consultants (as part of the Scientific Licence procedure), landholders and the general public.

How can landholders use the Atlas?

The Atlas contains sightings of plants, mammals, birds, reptiles, amphibians and endangered invertebrates (such as insects and snails). It does not contain records of fish, or invertebrates unless they are listed under the Threatened Species Conservation Act 1995.


By choosing an area to search in, and the sorts of species you would like to search for, a map or report can be produced showing the records in the Atlas. If there are no records of that species in the search area, it does not mean the species is not found there—it simply means that there are no records to date.

Why contribute?

The more records in the Atlas, the better the picture of the distribution and presence of species in an area. Landholders with Conservation Agreements, Wildlife Refuges, Registered Property Agreements and other properties with significant conservation values are able to contribute to the Atlas by recording their sightings of fauna and flora and submitting them to DECCW.

These areas protect some of the best biodiversity in the state and they are a wealth of information.

Many landholders have extensive species lists of fauna and flora that they have seen on their properties. Submitting these records to the Atlas allows increased knowledge about what is found in the area and may be used to predict what species are likely to exist in similar habitats in the local area. This assists well informed decisions about land use and management. They will also be contributing to our understanding of the world around us and add to the body of scientific knowledge.

Private landholders can make valuable inputs to the Atlas and help ensure important decisions are done with the best information available.

How can you contribute to the Atlas?

To ensure records are accurate, it is important to record all relevant information including full name and contact details, location, date, habitat and other information. The spreadsheet and the manual cards will tell you what is needed to accurately record sightings.

If you are interested in supplying records to the Atlas, please contact the Wildlife Data Unit on gis@environment.nsw.gov.au or Conservation Partners Program on conservation.partners@environment.nsw.gov.au or 9995 6769. Records can be submitted electronically using a spreadsheet, or manually using cards.
Five Corners—a conservation area for the public

Shirley Handy

This property near Inverell was purchased with a view to using it for education and ensuring its protection through a Conservation Agreement.

Five Corners is a vegetated island in a largely cleared landscape. Ironbark–cypress woodlands dominate the northern half of the property. Also present is Grassy White Box Eucalyptus albens Woodland and Red Gum–Yellow Box Grassy Woodland, which are listed as Endangered Ecological Communities on the Threatened Species Conservation Act 1995.

The property is in a major wildlife habitat corridor in the Nandewar bioregion where less than 2% of the landscape is reserved for conservation. A number of threatened birds have been recorded on the property, or nearby, including the turquoise parrot, hooded robin, speckled warbler, diamond firetail, brown treecreeper and black-chinned honeyeater.

Visiting the property

The property was purchased with a view to helping the public find out more about the bushland. One of the jobs to make visits an enjoyable and easy experience, was to put in walking tracks and signage.

A property profile and map have been produced to show the location of walking tracks and other points of interest. These are available at the entrance to the property along with other information to self-guide visitors.

Highlights of the property profile

Five Corners is a 240 hectare property north of Inverell NSW at the end of Halls Lane, Nullamanna. It forms part of a major subregional corridor located in the Nandewar Bioregion.

One third of the property has had little disturbance, however two kilometres of Frazers Creek, which forms part the boundary, has been extensively mined for sapphires. The remaining land has been heavily cut for timber in past years.

Five Corners was purchased to promote practical, commonsense conservation, with the accent on practical, active education not just for farmers but for everyone through learning.

The overall aim is to create understanding and a responsible attitude to our duty of care to the land which sustains us. This can only be done by first understanding what is there to start with.

Study groups were commenced in 2005 and will result in records being kept to monitor any changes in the biodiversity of the area. These records will be constantly updated.

There are many walking tracks with varying degrees of difficulty and a map to show the way.

The Conservation Agreement

A Conservation Agreement covering 237 hectares of the property was signed on 5 July 2005, to protect the values in perpetuity.

The agreement was made with the help of a wonderful Glen Innes National Parks and Wildlife ranger, Peter Croft. Together we also worked on a plan of management, which covers fire control, weeds and feral animals, looking after Aboriginal sites and the education potential.

However, you may be asking, why a Conservation Agreement in perpetuity?

• the area is 240 hectares and is big enough to sustain wildlife—the flora and fauna recorded and closeness to the Gagen Mountain, now Nullamanna National Park, enhance this ability
• my opportunity to leave a positive environmental footprint on the earth and give something back
• the potential for education.

There are also not many ‘bush kids’ these days and I hope to help people gain an understanding of farming sustainability and the environment. We are losing skills especially those of observation and listening, without which we will not survive, regardless of whether we manage a business, are lost in the bush, or are in a relationship.

Future activities

I continue to find out more about the property. In 2006 with the help of Phil Spark, an ecologist from Tamworth, a fauna survey was completed with surprising results. I hope to do another survey this year to follow up. The work is ongoing with many rewards, for example, new orchid species being found and the discovery of the border thick-tail gecko in June. A survey for aboriginal sites is being conducted and future signage will explain the significance of the sites.

I have been able to run field days on the property and invite people to come and learn more about their environment, and I hope to help people gain an understanding of farming sustainability and the environment. We are losing skills especially those of observation and listening, without which we will not survive, regardless of whether we manage a business, are lost in the bush, or are in a relationship.

My invitation is also extended to those who just wish to walk on the earth and turn off the world. Entry is free of charge—the only requirement is that ‘you take care of the land and it will take care of you’.

Location

If you want to visit the property, go along the Inverell to Ashford Road until 20 kilometres north of Inverell. Then turn right into Goomerah Lane and after 3 kilometres turn left and follow the signs. Another 4 kilometres will find you at the property and parking area.
The crucial role of community contributions to the science of wildlife conservation

Daniel Lunney, Corinna Orscheg and Ian Shannon, DECCW

Community efforts are vital for conservation in the 91% of NSW that is not in national parks or reserves. Koala research is a good example, as many landholders are helping to find where koalas are, how they are faring, and how this is changing over time.

As research scientists, we are keenly aware of the pivotal role that the community plays in conserving our native wildlife. The figures in the Northern Rivers Regional Biodiversity Management Plan, published in April 2010, give but one demonstration of the extent of the community’s willingness to conserve our natural areas and our wildlife. The reach of community involvement comprised over 1900 groups and individuals who, since 2002, have received funding to implement 2600 environmental projects; and nearly 500 landowners have entered into some form of binding contract or covenant on their land.

This effort complements the sustained community support for the concept of national parks and nature reserves, which form the core of our endeavours to conserve our fauna. However, wildlife conservation is not limited to these areas; it also matters in the other 91% of the state1. Hence the importance of community involvement in conservation, whether led by government initiatives, drawing on government grants, or working using community leadership and funding. All of it matters a great deal to the long-term future of conserving our distinctly Australian biodiversity.

We have a particular interest in community conservation. Our focus is on local knowledge of the fauna, and a willingness to work with scientists. That willingness does require patience and a recognition that research is aiming to uncover new information, generate new ideas and propose new initiatives. Our view is that we need new approaches, as well as conspicuous action, to conserve our wild places and our wildlife. We can illustrate this through two of our current programs where the community is an integral part of our research.

These accounts are neither the beginning nor the end of our interest in community-based conservation, or indeed a full reflection of the community’s interest in the matter, but they do present a picture of how we, as scientists working within DECCW, interact with the community to provide wildlife managers and policy writers, as well as the community, with reliable information to both frame and test new policies.

A community-based survey of koalas in NSW

An acceptable way to overcome the difficulties of species detection on private land is by using public surveys, i.e. community surveys, or ‘citizen science’. Such surveys can cover a vast area simultaneously by taking a snapshot of a species’ distribution, enable collection of records on private land to be made without intrusion, and provide both current and historical records of wildlife populations through the ability to draw on people’s memory of sightings.

As DECCW scientists, we used the koala, along with nine other icon species, to expand the potential for community surveys to contribute to species conservation. The ecology of this species shows important differences through its range, and points to new ways to study and manage widespread species, especially those with difficult wildlife management problems. In 2006 our community surveys used a map-based, postal questionnaire, which we posted to a quarter of the residents of rural NSW. We combined the total number of returns onto one map and, with new statistical techniques to estimate detectability, as well as species occupancy, we were able to plot a high-resolution map of the distribution of the koala in NSW.

The koala was listed as vulnerable in NSW in 1992, based largely on a state-wide community survey, via the postal system, which we conducted in 1986-87. We repeated this state-wide survey approach to determine its distribution in 2006, although using maps, not just postcodes, and compared it with the 1986 data. We found that the koala remained widespread in NSW, but the losses exceeded the gains, i.e. the distribution of the koala has continued to decline. The relatively high number of koala records on private land, compared to reserved areas, raises particular issues for their conservation, such as planning and land management. That matter is reflected in the NSW 2008 Koala Recovery Plan. Koalas are particularly susceptible to habitat loss and fragmentation, caused by continuing urban development in northern NSW and south-western Sydney and, to a lesser extent, by agriculture in the more inland areas.

The success of this novel combination of statistical methods (estimates of site occupancy and species detectability applied to spatially-explicit data from a public, map-based survey) has demonstrated that community knowledge can provide information on species distributions on private lands that could not be obtained otherwise. We are confident that the survey encompassed the koala’s range because the locations of the koalas were a subset of the locations of all ten species of wildlife.
Rehabilitator groups

In NSW there are 30 licensed wildlife rehabilitator groups. In the year 2008-2009, they took over 70,000 animals into care. Groups record information for each animal coming into care, with key data being species, sex, age, weight, date into care, location found, cause for entry into care, and days in care. This represents a considerable effort in data collection. Until recently, such records of wildlife rehabilitators have rarely been analysed for their use in understanding species’ ecology, conservation and management. However, the role of wildlife rehabilitators in conservation is increasingly being highlighted by studies using their records to identify potentially threatening processes, explore species behaviour, examine the success of wildlife rehabilitation, and monitor infectious diseases. We are currently studying the wildlife rehabilitators’ records of koalas. So far, several factors have been identified that highlight emerging threats and differences in threats between regions, seasons, sex and age. The study reflects an action in the NSW 2008 Koala Recovery Plan as well as the 2009-2014 National Koala Conservation and Management Strategy. The results of our investigation can be directly applied to tailor conservation efforts more specifically to local issues. To date, as scientists, we have found that the biggest struggle is to be sure that one year’s records were as rigorously collected as in another year. The information recorded about animals coming into care needs to be consistent and constant across regions, rehabilitators and years if we are going to be able to detect changes, such as a steady loss of koalas in a particular location, or the rise in one threat or another, such as disease, dog attacks or road deaths. What is an eye-opener is the scale of the operation of koala rescue and rehabilitation. It is large and, we suspect, it is growing, but the records are not convincing on this point. However, when we compare the number of koalas in rehabilitation to the community surveys, we can detect that some locations must be dealing with a much greater proportion of their koala population in rehabilitation than in other locations. This adds to our capacity to detect danger spots. This is work in progress. We shall report it next year in a full published form, as we did last year with the community survey of the koala across NSW.

Conclusion

We see community contributions to wildlife conservation as a partnership between the public and the scientists and wildlife managers in the state agency charged with the responsibility to conserve our wildlife. Further, such contributions can add crucial information, without which the data for management policy and decision-making can often be limited.

Acknowledgments

We are indebted to the many thousands of people who have contributed their knowledge and ideas with the spirit of participating in a project—wildlife conservation—that is far bigger than any one person or organisation. We are also indebted to many colleagues for their sustained support for our research. We also wish to thank our immediate DECCW colleagues Mike Fleming and Murray Robinson.

Further reading


Fivebough and Tuckerbil Swamps

These swamps in the NSW Riverina are internationally listed wetlands under the Ramsar convention with part of the swamps proclaimed as a Wildlife Refuge. They provide habitat for wildlife as well as education opportunities.

A total of 159 species of birds have been recorded at Fivebough and Tuckerbil Swamps. The wetlands are renowned for the waterbirds that inhabit the area. There are 86 waterbird and associated species, of which 24 species are included in Australia's bilateral agreements with the Governments of Japan (JAMBA) and China (CAMBA) for the protection of migratory birds. The site also provides habitat for seven species listed under the New South Wales Threatened Species Conservation Act 1995, and include the Australasian bittern and Australian painted snipe.

Local recognition

In recognition of the importance of these wetland areas, local groups keen to see the improved management of these wetlands made submissions to the then Lands NSW who had control of the land encompassing the swamps. The Minister agreed that the department would facilitate the development of a management plan, in conjunction with the Murrumbidgee Wetlands Working Group and the Murrumbidgee Field Naturalists Club. A management committee was formed in 1998. Later, in 2001, the Fivebough and Tuckerbil Wetlands Trust, a non-profit making community organisation, was formed, and then in 2002 it became an incorporated body.

Ramsar listing

In 1971 at the Convention on Wetlands at Ramsar in Iran, a treaty was agreed to promote wise use of wetlands. Amongst other actions, parties to the treaty agreed to have sites listed for inclusion in the List of Wetlands of International Importance. Fivebough and Tuckerbil Swamps were designated a Wetland of International Significance (under the Ramsar convention) on 21 October 2002. The wetlands are site 124, and the 62nd Australian Ramsar site.

As Crown land, the site is administered by the Land and Property Management Authority (formerly NSW Department of Lands). The trust provides advice to the authority with respect to matters of day-to-day management, guided by a site management plan and, where appropriate, taking such actions. The trust also liaises with lessees of the two sites in terms of their management activities, including grazing.

About a third of the reserve (70 ha) was gazetted in 1984 as a Wildlife Refuge with the NSW National Parks and Wildlife Service.

Two key management areas have been identified within Fivebough, an area of permanent wetland which is open to the public every day, and an ephemeral wetland area managed primarily for waterbird conservation, with access by permission only.

As Crown land, the site is administered by the Land and Property Management Authority (formerly NSW Department of Lands). The trust provides advice to the authority with respect to matters of day-to-day management, guided by a site management plan and, where appropriate, taking such actions. The trust also liaises with lessees of the two sites in terms of their management activities, including grazing.

About a third of the reserve (70 ha) was gazetted in 1984 as a Wildlife Refuge with the NSW National Parks and Wildlife Service.
bittern, which is listed as vulnerable globally by the World Conservation Union. Numerous observations of the species have been made over the years, and Fivebough is one of the few local wetlands where it may be reliably observed during the spring-summer months. The bittern favours wetlands with at least five hectares of tall, dense vegetation (e.g. *Typha* spp. and *Phragmites australis*), which is the primary habitat for the species. Much of this type of habitat has been lost from across the Riverina.

Fivebough Swamp also provides important feeding habitat for the great egret, intermediate egret, little egret, and cattle egret during their breeding season in the spring-summer months. Fivebough Swamp may also be a drought refuge for waterbird species, as part of the swamp retains water year round and provides habitat during extended dry periods. Other species of note include the glossy ibis, sharp-tailed sandpiper, painted snipe, whiskered tern and brolga.

**Water management**

The natural hydrological patterns of both swamps have been highly modified by surrounding land uses and regulation of water flows, affecting both the volume of water entering the wetlands and its seasonal timing.

The water regime of Fivebough was originally determined by the balance between rainfall and evaporation. Today, the water regime is much more varied, fluctuating considerably from season to season. Rainfall, stormwater runoff from the surrounding catchment, irrigation runoff, automatic overflow of drainage water following heavy rainfall, deliberate releases of excess water by Murrumbidgee Irrigation and water from treated sewage effluent discharges all contribute potential inflows into Fivebough.

**Education and community involvement**

In its past, the area surrounding Fivebough and Tuckerbil Swamps would once have been a traditional hunting/fishing area for the Wiradjuri people. Today, a number of local, national and international visitors are attracted to Fivebough by the waterbirds at the sites.

A key objective of the Fivebough and Tuckerbil Wetlands Trust is to provide opportunities and facilities for education and ecotourism. As an important component of this objective, the trust has and continues to develop facilities to assist public access to Fivebough Swamp. With over five kilometres of walking trails (including three kilometres of all-weather trails), visitors are provided with numerous viewing mounds and bird hides, to allow easy viewing across the wetland areas.

The Budyaan Baamirra Centre was constructed by the trust in August 2001, to the design of architect Simon Lloyd, and engineer Glen Saddler. The centre is designed and sited to blend with the skyline of the Brobenah Hills to the north east, while also representing the wings of a bird. Budyaan Baamirra is Wiradjuri for ‘birds at the swamp’. The mural on the centre’s wall has been painted by local Wiradjuri artist William Ingram.

Fivebough is used by local schools, as well as other community groups, as a study resource. Formal scientific study also occurs around the swamps, including recent foraging studies on waterbird communities on the swamp and neighbouring irrigated crops, studies on the painted snipe and on tortoise populations at Fivebough.

The Friends of Fivebough was established in 2007. The group provides an additional avenue for the community to participate in the various activities occurring about the swamps.

More recently the Leeton Aboriginal Land Council established a project, funded through the NSW Environmental Trust to develop an educational area which can be used by many different stakeholder groups and providers of education, as well as the local land council themselves. The area surrounding the Budyaan Baamirra Centre has been landscaped with local native plants, through which a newly formed track takes the visitor around the site, past signs covering a wide range of topics to inform the visitor about the life and history of the Wiradjuri people in this area.

From time to time other community events are held. On the third week of September each year, the nearby town of Yanco hosts the Annual Australian Birdfair, and the Friends of Fivebough are very involved in this.

For more information

- [http://fivebough.org.au](http://fivebough.org.au)
- 02 6953 2541
- Trust@fivebough.org.au
- Fivebough and Tuckerbil Wetlands Trust
  PO Box 357 Leeton NSW 2705
- Ramsar: [www.ramsar.org](http://www.ramsar.org)
What’s happening with the Wildlife Land Trust

Just over three years ago the Wildlife Land Trust (WLT) global sanctuary network was established in Australia under the auspices of Humane Society International (HSI). It featured in the winter 2007 edition of Bush Matters.

At the time of establishment of the WLT in Australia, the Australian representatives of this network of properties and landholders were limited to just two properties, Curricabark and Warrillwillah, which were both, and continue to be, owned purely for conservation purposes.

Since that time, the WLT has broadened its direction, with a primary focus of encouraging private land holders who have an interest in such areas as environmentalism and habitat protection to join with like-minded people in a national and global effort for wildlife conservation. Although we still see the WLT as a relatively new initiative, growth has been excellent of late, and our members now span 86 properties across all six states, totaling approximately 35,000 acres.

An international approach to conservation

The international aspect of the Wildlife Land Trust enables our members to keep up to date with a number of quality global conservation initiatives and efforts, including those of Wildlife SOS in India, SanWild and Klipkop Wildlife Sanctuaries in South Africa, and the Friends of the National Parks Foundation in Indonesia. Furthermore, in the United States the WLT spans more that 100 sanctuaries nationwide, just over half of which are owned by the WLT itself.

WLT work in Nusa Penida, Indonesia

Nusa Penida is located approximately 70 kilometres east of Denpasar in the Bali Sea, and in comparison to its neighbouring islands has very little tourist infrastructure. The island’s 20,000 hectares are comprised of a series of government and traditional villages which just over 20,000 people call home.

In partnership with HSI for over ten years, Friends of the National Parks Foundation (FNPF) has been assisted by the WLT through:

- the purchase of a block of land to extend the Nusa Penida Bird Sanctuary
- anti-wildlife trade education and activities
- funding for extensive forestry revegetation efforts
- a program which will see one child from each of the island’s villages (41 in total) through school, while educating community leaders and the general population on the importance of wildlife and conservation awareness.

The Nusa Penida Bird Sanctuary project has been very successful and receives a lot of support from the local community. Its success is largely due to the sense of cohesiveness it has generated, working in a holistic way to bring together members of farmer’s groups, village elders’, temple board members, schools, government institutions and conservation groups. The sanctuary has a rich array of wildlife and rainforest dwelling species which enjoy total protection and include the green junglefowl, white-browed crane, pied imperial-pigeon, house swift, rainbow bee-eater, common iora, black-naped oriole, black-winged starling, olive-backed sunbird and Javan munia among many, many other bird species. The sanctuary is also thick with a rich diversity of invertebrate, amphibian and reptile fauna, including two species of python, three viper species, a cobra and the monitor lizard, while the most notable mammal inhabitant of the area is the long-tailed macaque.

With the Sanctuary being previously cleared of much of its vegetation, FNPF is in the process of developing and implementing an extensive management plan for replanting. A comprehensive and dedicated reforestation program has been underway on the island since 2005, and this year alone has resulted in approximately 35,000 plants of 11 species being distributed and planted on Nusa Penida. These efforts support FNPF’s unique program to reintroduce highly threatened Indonesian birds into the sanctuary, including the Bali starling — a particularly magnificent species that has come extremely close to extinction in recent years. A captive breeding program conducted in several countries worldwide has achieved wonderful outcomes and continues to steer the population back on track. Results include the Nusa Penida population being well on the way to survival levels that are naturally sustainable on the island, with eight proven pairs now breeding in the wild.

Friends of the National Parks Foundation founding director Dr I. Gede Nyoman Bayu Wirayudha (right), conducts a special ceremony before releasing a highly endangered Bali starling on Nusa Penida Bird Sanctuary. As a vet he has great expertise in the captive breeding of birds, and is also a highly-regarded spiritual figure. Photo: WLT M. Kennedy
An invitation to join:

The program is completely voluntary and there are absolutely no costs or legal obligations involved—becoming a member of the Wildlife Land Trust will effectively complement any arrangements landowners have on their properties.

Membership benefits include:

- becoming part of a continually growing national and international network of sanctuaries, promoting best conservation practices and protecting wildlife and habitats around the world
- communication between members, HSI staff, experienced land managers, and native wildlife rehabilitators
- help and advice about the legal and ecological integrity of the property should it be required
- the opportunity to talk about the invaluable work undertaken to protect important wildlife habitats through feature pages on our website and in our regular Wildlife Lands newsletter
- Wildlife Land Trust signs to erect on your property.

To register your property as a sanctuary with the Wildlife Land Trust, download an application form from www.hsi.org.au/wlt to be mailed to the above address, or simply fill out the online form at surveymonkey.com/s/wlt. If you don’t have internet access, give Evan Quartermain a call on either of the listed numbers to have an application pack sent out. You will have taken the first step in becoming part of a group of like-minded Australians concerned about protecting our habitat and species for future generations across the globe.

Conservation education in Australia

There are few better examples of the WLT being complementary to other conservation agreements and programs than Dr Mary White’s Falls Forest Retreat, situated on the Mid North Coast of New South Wales. Mary became the 54th Australian WLT member in June this year, bolstering the protection and recognition of her property’s high conservation value already identified through a Conservation Agreement with the DECCW.

Recently she was a successful applicant in the Private Land Conservation Grants Program run by a partnership of the WLT, Foundation for National Parks and Wildlife, Nature Conservation Trust of NSW, Paddy Pallin Foundation, Diversicon Environment Foundation and DECCW. Mary funds the majority of her conservation and educational efforts through townhouses and a conference and function centre on the property. Activities include:

- weed control throughout the property’s richly biodiverse forest corridor
- school excursions offering a view of active biodiversity conservation, plus use of the conference centre and signed education walks through the various ecosystems
- surveys conducted by the Frog and Tadpole Study Group of NSW and private birdwatchers,
- opportunities for researchers and university students to be involved in biological and ecological research.

Falls Forest Retreat is a fantastic example of how individual people can contribute to conservation. Anyone wishing to visit can find details at www.fallsretreat.com.au/. It is truly encouraging to see someone so dedicated to the protection of Australia’s native wildlife and its habitat, and the WLT is proud to have Dr Mary White’s property as a sanctuary.

Contact details

m Wildlife Land Trust Australia PO Box 439 Avalon NSW 2107
P 02 9973 1728 or 1800 333 737
f 02 9973 1729
e evan@hsi.org.au
w www.hsi.org.au/wlt (Australia and partners) or www.wlt.org (International)
Land for Wildlife—‘the national program run by locals’

John Asquith from the Community Environment Network provides an update on this program, which is a non statutory property registration scheme for conservation of wildlife habitats.

Land for Wildlife (LFW) is now approaching 30 years in supporting and recognising the conservation efforts of rural landholders. Anniversary celebrations are expected in Melbourne late next year. The Community Environment Network (CEN) co-ordinates Land for Wildlife across NSW and works in partnership with the DECCW Conservation Partners Program.

There are now over 13,000 members Australia wide and over 600 members in NSW. Next year there will be a NSW Land for Wildlife Workshop and Conference in Sydney on 6th May. If you have an interesting case study or idea, contact us at the CEN.

Land for Wildlife provides good support and networking for landholders who have a Conservation Agreement or Wildlife Refuge and is well worth joining if it is being run in your local area.

Regional providers

Our website has information about where the Land for Wildlife program is being delivered by local organisations (www.cen.org.au/landforwildlife/regionalproviders). Locations across the state include Gosford, Wyong, Lake Macquarie, Cessnock, Byron, Hornsby, Wingecarribee, Clarence Valley, Kyogle, Lismore, Richmond Valley, Manning Valley, Karuah, Great Lakes, and Wakool. Lachlan and Murray catchments are also being set up to join the program.

News from local programs

Recently, the Murrakool Land for Wildlife group near Barham elected new office bearers and had a display at the Barham Show. Wakool Council provided support with an article in the newsletter. Murrakool also have a native Arboretum to grow native plants for seed stock. Contact Murakool Land for Wildlife group on 04 2853 2435 or email murreden@malleenet.net.au.

In Grafton on the north coast, Clarence Environment Centre became the Clarence Valley regional provider of LFW in July. Already many landholders have registered, nest boxes have been distributed and training finalised. Contact Clarence Environment Centre on admin@cec.org.au or 02 6643 1863 for more information.

At Kyogle near the Border Ranges, Northern Landcare Support Services has become the regional provider of LFW in this area. It is one of Australia’s top four biodiversity ‘hotspots’ so strong local support and proximity to the extensive program in Southeast Queensland means that significant benefits to local wildlife can be expected.

On the northern edge of Sydney, Hornsby Council has held training and workshops for landowners. Contact the council on hornsby.nsw.gov.au or 02 9847 6832.

CEN is seeking expressions of interest from landholders or organisations interested in supporting Land for Wildlife in the Lachlan and Murray catchments. If you live in these catchments and would like to be registered or involved in some other way, contact John Asquith at CEN.

Lastly, the CEN webmaster is building free webpages for LFW groups who do not yet have a web presence. Let John know if this would help your group.

NSW contact details

For Land for Wildlife State Co-ordination, contact John at the CEN
p 02 4349 4759
f 02 4349 4755
e fwnsw@cen.org.au
w www.cen.org.au/landforwildlife
m NSW Land for Wildlife PO Box 149 Ourimbah 2258
Connectivity and the Great Eastern Ranges Initiative (GERI)

Brynley Walters, Project Officer with the Conservation Partners Program for the GERI brings us up to date on this program.

This initiative aims to connect and conserve ecosystems along more than 2800 kilometres of the great escarpment on the east coast of Australia, from Walhalla in the Victorian Alps to Atherton in Far North Queensland. In New South Wales this covers 1200 kilometres. Connecting people is another aspect of the project.

The project is a strategic response to climate change and other threats to natural and cultural heritage, and will be built on partnerships with the community through a range of organisations including DECCW. Recently a GERI lead partners group was formed comprising the National Parks Association, Greening Australia, the NSW Nature Conservation Trust, OzGreen and DECCW to carry the initiative forward.

The Conservation Partners Program of DECCW is assisting by helping landholders protect and manage their properties for conservation through entering into Conservation Agreements or having their land proclaimed as a Wildlife Refuge.

To help ensure a strong scientific base and enable priority locations to be identified, a report was commissioned by the interstate agency working group advising the NRM Ministerial Council. The report, Connectivity Conservation and the Great Eastern Ranges corridor, by Prof Brendan Mackey, Dr Graeme Worboys and Dr James Watson was produced in March 2010. It brings together the latest thinking on connectivity conservation and applies it to the Australian context and the opportunities for this in the Great Eastern Ranges. It concludes that partnerships and collaboration to reconnect habitat and manage threatening processes across entire landscapes will be an essential step.

More information, including the report, can be found at the Great Eastern Ranges website: www.greateasternranges.org.au.

Book review

Biodiversity: Integrating Conservation and Production. Case Studies from Australian Farms, Forests and Fisheries
Editors: Ted Lefroy, Kay Bailey, Greg Unwin and Tony Norton

Bev Debrincat, Conservation Agreement landholder

I love reading about the experiences of farmers and land managers, and this book certainly was an inspiring read. Most of the 17 case studies focus on whole-of-landscape approaches which benefit production, the farmer and biodiversity. Case studies are from across Australia. At a conference, hosted by the Tamar Natural Resource Management community group, 250 farmers, foresters and fishers got together—this book evolved from there. Conservative farmers manage biodiversity as an integral part of their land’s productivity, and to bring down farm costs. Chemicals and pesticides are expensive and in some instances have been replaced with more natural approaches. There are discussions focused on integrated pest management, reintroduction of native grasslands for pastures and native areas, water quality, weed management, conservation agreements and other government approaches, biodiversity, cultural heritage, fisheries, monitoring, some innovative ways at looking at production and community co-operation.

An overarching theme is the need to find a balance in our ‘three legged stool’, of economic, social and environmental outcomes. One farmer states ‘our aim is to produce a profit from plants and animals in a way that gives us time for recreation and habitat for flora and fauna’.

When we share our experiences, we can learn from each other’s successes and failures. We can find innovative and cost-effective ways of doing things rather than just buying more chemicals and bigger pieces of equipment. One anecdote that particularly struck me ‘involves simply erecting a pole with a T-piece at the entrance to a rabbit warren. Birds of prey would see the perch above the flat plain and roost there, quickly discovering the source of tasty food below. Rabbits that weren’t taken by birds literally starved to death by staying in the burrow’.

One case concludes by saying ‘the successful approach to biodiversity, conservation and production first involved recognising four different types of production—financial, cultural, biodiversity and emotional/psychological. The new model emphasises that each area interacts with others to strengthen the whole. We call the whole ‘prosperity’. When we make decisions in any one of the four areas, we test the decision to see how it will affect the remaining three. We act on the decision if the test indicates a likely positive response in all areas. The result is that all areas respond positively with a win-win-win-win outcome.’


The draft Strategy is on public exhibition, and it is your chance to have input into how biodiversity is conserved and managed.

The Strategy aims to coordinate and guide investment and effort in biodiversity conservation in New South Wales for the next five years.

The closing date for submissions is 5 pm on Friday 21st January 2011. The draft Strategy, other supporting documents and submissions information are available at: http://www.environment.nsw.gov.au/biodiversity/nswbiostrategy.htm

Comments can be made by email, post or as an on-line submission.