



EcoEducation



There's something going on in our schools. Students are voluntarily taking an active interest in conserving their local environments. They are visiting forests, beaches and wetlands to study native wildlife. And they are having fun! What is happening and why?



by Nicole Bailey
and Liz Moore

Winning over school communities

Can you put a name to a tree-dwelling, squirrel-like marsupial, grey in colour, with a distinctive black bushy tail, a narrow face, large eyes and pointed ears? Applecross Primary School students will immediately tell you this is a brush-tailed phascogale, a rarely seen native animal they trapped while assisting in the Western Shield monitoring program in 2001.

The unusual and exciting find was one of the rewards of a whole school participating in the Department of Conservation and Land Management's EcoEducation programs. As well as creating an Internet website to record sounds and pictures from their activities at the Western Shield camp, the students also raised \$5000 over five years for threatened species at The Hills Forest in Mundaring, where the programs are based. These accomplishments are testimony to the school's commitment to nature conservation.

Other schools are taking on this whole school community approach to our programs and reaping the benefits. Deputy Principal of Heathridge Primary School, Ann Wood, noticed a discernible shift in the culture and



attitudes of the school community towards biodiversity conservation since the whole school engaged in EcoEducation programs during 2001.

THE BIG DAY OUT

Last October, more than 300 students, teachers and parents from Heathridge Primary School, in Perth's northern suburbs, embarked on a hands-on activity day at The Hills Forest Discovery Centre.

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Main: Heathridge Primary School students experience traditional Aboriginal fishing techniques at The Hills Forest under the encouraging eye of Aboriginal leader, Koodah Cornwall. Photo – Tony Nathan

Inset: CALM Bush Rangers from John Septimus Roe Anglican Community School instructing conference participants about a new marine community monitoring program. Photo – Carleen Edwards

Left: Brush-tailed phascogale 'discovered' by Applecross Primary School students. Photo – Jiri Lochman

Below: A young student celebrating traditional Aboriginal lore with leader Delvene Cornwall. Photo – Tony Nathan

This excursion, along with preparatory and post-visit teaching modules, has had practical outcomes. Students voluntarily ask for tongs at recess and lunch breaks so they can go and pick up rubbish around the school grounds 'because it could kill the native animals'. While a little less litter may seem a small step in the grand scheme of conservation ethos, it is the type of ownership towards the natural environment that





the department aims to inspire through its EcoEducation programs.

Since their inception in 1993, school strategies, like 'Exploring The Hills Forest' education programs, have been enjoyed by more than 90,000 students and teachers from regional and metropolitan schools. The programs have proven to be a crucial first step in ensuring that the next generation cares about land management and nature conservation. The programs engender enthusiasm for nature conservation, as well as landscape and heritage values, by providing classroom resources and challenging activities in the natural environment. These relate to forest ecology; the impacts of dieback, clearing and fire on water quality in catchments; the recovery and monitoring of native animals; and the traditional culture of the Nyoongar people.

The excitement of young people who have been bound by manicured suburbs and city concrete is tangible when they enter a completely new environment—an environment that some may have walked through, but were never taught to explore. The programs open a whole new world for them. The activities show students how to look at nature in a new light, to understand human dependency on natural systems and ways in which they can contribute to conservation. But the world of opportunities in EcoEducation extends beyond The Hills Forest, as communities are drawn into



nature conservation projects through programs offered to schools throughout the State.

WELLINGTON DISCOVERY FOREST

Schools in the Bunbury, Collie and Harvey areas are being actively encouraged to develop a sense of ownership of Wellington Forest, including Wellington National Park, the adjacent conservation parks and Wellington Discovery Forest.

Modelled on the successful 'Exploring The Hills Forest' programs, the Wellington Discovery Forest programs

Top: Students taking part in the practical science of monitoring native animals during a 'Back from the Brink' excursion.

Above: A young 'Forest Private Investigator' tracks down a fox on the 'Forest Detective Trail' at The Hills Forest. Photos – Tony Nathan

allow local communities to learn about and contribute to the conservation and maintenance of their local jarrah forest or national park. In 2001, the first year that programs were offered there, more than 2000 students, teachers and other adults were involved.

Two local schools, Dardanup



Primary School and Collie Senior High School, are already on board as 'Friends' of Wellington Discovery Forest, and are planning a curriculum program for this year that will include a number of conservation projects such as research into frogs, invertebrates and plant life of the forest. A plan has also been proposed to allocate sections of this forest to individual schools to serve as their dedicated research area, which they can study year after year. For example, within a school, Year 2 students might study creatures in the leaf litter, while Year 3 students study the different plants at the mid-storey

level, and so on. The idea is that by the time the students have left school, they will have a well-rounded picture of overall forest dynamics, and developed skills that will help them contribute to biodiversity conservation.

Partnerships have been established with local community groups, such as the Bunbury Naturalists' Club, councils, other government agencies and managers of the Wellington Mills Cottages, to expand the program's reach.

WESTERN SHIELD SCHOOLS PROGRAM

School programs are extended

further through Western Shield, a departmental initiative focused on controlling introduced animals, such as the fox and feral cat, in order to reduce predation on native animals. Since 1996, more than 45,000 students and teachers have participated in the Western Shield Schools Program, which offers resources for use in schools, field excursions and professional development days for teachers. All aspects of the program highlight the importance of saving threatened species.

Feedback for the program has been positive, with teachers expressing appreciation for the information and resource materials provided during professional development camps and students voicing enthusiasm about the hands-on experience. Kingsway Christian College teacher Marnie Giroud described the resources as fantastic and the 'Be a Nature Conservation Officer for a Night' as the best professional development camp she had participated in.

Students are equally keen. During a Western Shield 'Back from the Brink'



Above: On the 'Catchment Carers' Trail' students are challenged with the issues of managing forested catchments for water quality.

Photo - Jiri Lochman

Left: Examining a scientist's toolbox and learning to complete data sheets are components of the Statewide Western Shield threatened species program.

Photo - Tony Nathan



Above: Local historian Mark Paget brings to life the physical demands of a sleeper cutter through his hands-on session for students at Wellington Discovery Forest.



Above right: A chuditch is caught! Teacher Wendy Fearn assists with Western Shield monitoring at Wellington Discovery Forest.

Right: Helping to release translocated woylies; teachers get involved in nature conservation at Wellington Discovery Forest.

Photos – Liz Moore



excursion they are introduced to wildlife monitoring methods, the field scientist's toolbox and pitfall trapping techniques. In groups, they mix bait, set traps, learn how to complete a scientific data sheet, check the traps, find an animal (a life-like stuffed bandicoot!) in their trap, and record its measurements. Secondary students also calculate trap success rates. They look for wildlife habitats and view a demonstration den as well as nesting boxes that have been placed in the local regrowth forest to encourage wildlife.

A highlight of the day is a close encounter with captive-bred threatened species such as bilbies and mala from the Kanyana Fauna Rehabilitation Centre. Most importantly, students see practical ways they can act individually to help save threatened species and maintain WA's biodiversity. Many schools now have ongoing environmental projects,

such as native species gardens, and are raising funds for threatened species.

With the help of these students and others, such as the CALM Bush Rangers cadets, the program has demonstrated tangible benefits. For example, the phascogale trapping was significant for being the first in the area since fauna monitoring began as part of the wildlife recovery program. Furthermore, under the Western Shield program, three animal species have already been taken off the threatened species list, and many native animals are being bred in captivity and re-established in their former habitats. It would be hard to beat for a positive learning experience.

CALM BUSH RANGERS

From Broome to Albany and Coolgardie to Kalbarri, 1200 young people across WA are active voluntary participants in nature conservation in conjunction with their local community. Last year, the CALM Bush Rangers collectively contributed more than 100,000 hours to the study of nature conservation and special projects.

CALM Bush Rangers are a component of the Western Australian government program known as 'Cadets WA', which provides 13 to 17-year-olds with opportunities to develop life skills such as leadership and teamwork. Each 'unit' chooses its conservation projects

EcoEducation Objectives

- To develop school community awareness and appreciation of the biological and physical diversity of the natural environment and of the need for a range of management procedures for conservation.
- To provide the school community including students with the opportunities to learn about and gain hands-on experience with conservation issues.
- To promote school community and student involvement in and support for nature conservation.
- To provide resources and experiences that will assist students to understand that they are part of nature and dependent on many natural resources for their daily needs.
- To develop school community awareness and appreciation of traditional Aboriginal culture, including technological, sociological and ideological aspects and its link to the department's approach to conserving biodiversity.
- To give members of the school community and students personal experiences that will bring about changes in attitudes that prompt changes in habits and lifestyle in relation to their use of natural resources.



from a list compiled by the local community and unit members. The community service projects have included harvesting termites for the numbat-breeding program at Perth Zoo, actively engaging in 'dieback' operations, completing mosaic control burns for property and biodiversity management, and compiling photographic essays of a marine park.

The impact of this program, now in its fourth year, has been positive. Young people from across WA have met by participating in regional and state Bush Ranger conservation events. Bush Rangers are now meeting virtually on the Internet—designing and operating their websites. The program's National Accreditation is impacting on Year 12 students, who are now choosing tertiary studies and careers in natural resource management. Most importantly, many are instilled with an ethic of environmental responsibility and are continuing their volunteer work in nature conservation.

RELEVANT AND MEANINGFUL

All of the EcoEducation programs are relevant to the school curriculum, and provide meaningful content to support the key values of 'social and civic responsibility' and 'environmental responsibility'. To that end, the programs have three components: professional development for teachers; resources for use in schools; and excursion and camp activities in the natural environment.

The approach works particularly well with schools like Heathridge Primary, where the whole school community is involved. Staff from the school initially participated in a full day of professional development at The Hills Forest in May 2001, and then returned to school with resources and educational

Above far left: Checking a bat box; part of a project to encourage native wildlife back to The Hills Forest area.
Photo – Jiri Lochman

Above left: TAFE participants explore bush tucker and traditional life at Wellington Discovery Forest with Aboriginal land custodian Jo Northover.
Photo – Liz Moore

Left: Learning to love reptiles with Wildlife Officer Andrew Ando.
Photo – Tony Nathan

packages to work with their students and prepare for their visit. Much of the work done by the students was integrated across the curriculum, particularly in the learning areas of Science, Society and Environment, and English. The students did an incredible amount of work before and after the excursion, and took much of it home to show and discuss with their parents. Thus, the programs impacted on the whole school community—parents, staff and students.

PLANNING FOR THE FUTURE

Parents and other interested adults are encouraged to participate in EcoEducation camps and excursions with the children. As a result, parents are better equipped to talk to their children about their experiences, providing a more effective educational outcome. This solidarity is central to the EcoEducation ideology; the whole community needs to be involved if the department is to succeed in its nature conservation mission. Western Australia has an amazing biodiversity, which we could lose unless we all understand how important it is. The department has limited resources with which to manage a huge land area and the State's many threatened species. We need the community to be interested, involved and on-side.

This premise has already met with support from industry, community groups and individuals that understand the value of opening young minds to our natural heritage. Their enthusiasm and commitment to conservation programs is reflected in financial contributions from many sponsors. In particular, Alcoa World Alumina Australia has generously sponsored the 'Exploring The Hills Forest' programs for four years, which has allowed the program to expand and reach many more students than in previous years.

Community commitment to such conservation programs is also shown in the devotion of volunteers, who give an enormous amount of time and energy to the department's activities. More than 1600 volunteers dedicated almost 200,000 hours in the past year alone—up from 70,000 hours five years ago. The involvement of young people is integral to long term growth of this



incredible volunteer base and, thus, to the Statewide maintenance of our natural assets. To this end, the aim of future EcoEducation programs is to reach more school communities by expanding to other areas in the State, particularly country areas.

Top: Dunes of Windy Harbour received attention from CALM Bush Rangers of Manjimup Senior High School after this community work instruction session. Photo – Graeme Gibson

Above: CALM Bush Rangers contribute their time to the department's fire management program. Photo – Rolf Perey

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If you would like to initiate EcoEducation programs in your area, or find out how to get involved with existing programs, contact Liz Moore, or go to the 'For Schools' section of the department's NatureBase website at www.naturebase.net/schools/index.html.

For further information about the CALM Bush Rangers cadet program contact Coordinator Bronwyn Humphreys on (08) 9334 9137 or by email (bronwynh@calm.wa.gov.au).

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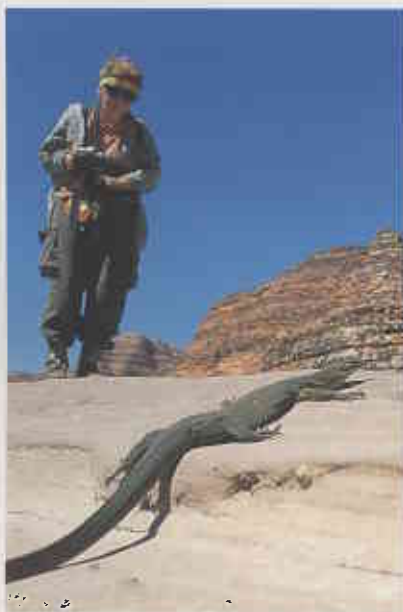
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Conserving the nature of WA



During the past decade more than 500 people have contributed to science projects in WA by joining a *LANDSCOPE* Expedition (see page 34).



Since the 1960s Barrow Island's animals have shared their island paradise with the oil industry. Read how the mammals are being monitored and protected. See page 18.



Georgiana Molloy made a major contribution to the early botanical knowledge of the south-west. Read about this remarkable woman on page 43.



The Goldfields Woodlands National Park protects the region's best examples of eucalypt woodlands (see page 28).



Collecting seeds is one way in which we are helping to conserve biodiversity. Join the 'Hunters and Gatherers for Conservation' on page 49.

COVER

There's something going on in our schools. Students are voluntarily taking an active interest in conserving their local environments. They are visiting forests, beaches and wetlands to study native wildlife. And they are having fun! What is happening and why? See 'EcoEducation—winning over school communities' on page 10.



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