

Communications, community awareness and schools education programs: *Western Shield* review—February 2003

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ABSTRACT

This paper reports on communication of *Western Shield* to the general public and school communities through the Department of Conservation and Land Management's Strategic Development and Corporate Affairs Division (SDCA), Regional and District Offices. A key emphasis has been to integrate *Western Shield* into the Department's three key outputs – Nature Conservation, Parks and Visitor Services and Sustainable Forest Management.

The terms of reference for this paper were:

- Provide an overview of work done to present *Western Shield* and its progress to the general public.
- What mechanisms are in place to ensure educational and interpretive information is accurate and up to date?
- Provide an overview of programs aimed at school pupils and describe how successful they have been.
- Discuss what changes in public perception and attitude have resulted from the community support and education programs carried out.
- What is proposed for the future?

Schools education programs were considered an important avenue through which to raise awareness of *Western Shield* in the general public (Kawalilak *et al.* 1996). Therefore some emphasis in this paper is given to the extent of the program and strategies for influencing teachers and students. There have been three main ways in which this influence has happened: a comprehensive and structured *Western Shield* Schools Program, secondly activities of the CALM Bush Rangers cadets and thirdly activities led by staff of CALM's District and Regional Offices.

The objectives, strategies, numbers of people involved and expenditure of the *Western Shield* Schools Program are outlined in detail. The difficulties, potential economies

and improvements are also given. The activities of the cadets and District and Regional staff are also addressed but in less detail.

The *Western Shield* Schools Program was successful in raising awareness in a large number of teachers and students (>50,000) over the reporting period. An independent evaluation of the impact of the program on students, by Curtin University's National Key Centre for School Science and Mathematics Education, indicated that the program was effective in raising awareness of *Western Shield* and in harnessing student's interest in the conservation of threatened species. No formal evaluation, however, has been carried out on the effectiveness of the cadets or District and Regional Office activities.

There has been no formal evaluation of changes in public acceptance and attitude to *Western Shield* resulting from the school education programs.

INTRODUCTION

The role of the Strategic Development and Corporate Affairs (SDCA) Division is to provide corporate leadership in communications and organisational development, and the expertise, services and communications products to create and maintain the community trust, understanding and the support necessary for the Department to achieve its mission.

In line with its role, the Division has worked with the *Western Shield* Project Team and other Divisions, Regions and Districts to implement the overall communications and schools education activities associated with *Western Shield*. A key emphasis has been to integrate *Western Shield* into the Department's strategic activities, especially as they relate to the Department's three primary outputs, Nature Conservation, Parks and Visitor Services and Sustainable Forest Management. Specifically, the EcoEducation programs involving *Western Shield* have been designed within the context of Western Australia's Department of

Education Curriculum Framework.

Programs and activities to communicate *Western Shield* to schools fall into three categories. Two of these, the *Western Shield* Schools Program and the CALM Bush Rangers activities are directed and managed through the SDCA Division. The third includes activities and talks run in CALM's Regions and Districts, independent of SDCA Division's direct involvement.

Schools education programs can be an important avenue for changing attitudes and influencing the general public particularly if the whole school community (parents, friends and other groups associated with the school) are encouraged to participate in the hands-on activities relating to the programs. This is the case for the SDCA managed programs.

SDCA prepared the initial Strategic Communications Plan for *Western Shield* (Kawalilak *et al.* 1996) primarily based on the plans for *Project Eden* and *Operation Foxglove* (Kawalilak *et al.* 1993).

This plan dovetailed into the Department's (then) Strategic Plan: to increase community awareness, understanding and support for the Department's nature conservation and natural land management programs, services and policies, and to promote wider co-operation in the prevention and solution of conservation and land management problems in Western Australia.

OVERVIEW OF WORK DONE TO PRESENT WESTERN SHIELD AND ITS PROGRESS TO THE GENERAL PUBLIC (Term of Reference 1)

Media relations and strategic communications

Objectives

The objectives of the communications plan (Kawalilak *et al.* 1996) were:

- To create a high level of awareness of, and support for, the operation in the project areas
- To create a high level of awareness in the project areas of the intent or purpose of these projects
- To gain public acceptance of the use of poison, and the aerial distribution of poison baits, to control foxes and cats
- To minimise the possibility of the accidental poisoning of a family pet or working farm dog
- To foster long-term support for, and influence a positive attitude towards the work of the Department.

Achievements

The basis of the communications plan was acknowledged internationally through the International Association of

Business Communicators that awarded the SDCA Division a Gold Quill Merit Award in 1997. This is the Association's second highest award and was for an entry, *Lending a hand to Wildlife* (Kawalilak *et al.* 1997).

Media Statements: Since *Western Shield* was launched in 1996, the Department has issued more than 120 media statements that have referred to *Western Shield*, either as the main topic or as a link to other initiatives. This has resulted in more than 1,400 print, radio and TV media stories concerning *Western Shield*. The number of readers, listeners and viewers of these stories is not easy to calculate, but one two-page feature relating to *Western Shield* that appeared in the Weekend Australian on 19 January 2002, had a potential readership of 315,000.

Staff development: Division staff have presented training sessions in *Working with the Media and Taking a Strategic Approach to Communications* (Kawalilak and Higgs 1998) to Departmental officers attending the fauna management course at Batalling. This has resulted in many regional and district staff members involved in *Western Shield* initiating coverage of their activities in their local community news media.

Ministerial Services: SDCA, in collaboration with other Divisions, Branches, Regions and Districts, has organised a range of events involving successive Ministers for the Environment in *Western Shield* related activities, in particular translocations of species. This has assisted in building Ministerial knowledge of, and support for, the program.

Advertising: Advertising largely has been confined to meeting the Department's obligations under the Health Act in relation to the use of toxic baiting programs. Advertisements have been placed in metropolitan, community and regional papers four times a year to inform the public about the baiting programs. Public information bulletins also have been broadcast on ABC Regional radio. No 'branding' or 'image-building' advertising has been undertaken.

Advertisements aimed at teachers also have been placed in specialist media aimed at teachers (further details are provided under Term of Reference 3).

Internet: General information about *Western Shield* is posted on *NatureBase* under the 'Projects' section. In addition, species profiles of many threatened fauna species in the 'Animals and Plants' section tie in with the information on the *Western Shield* initiative.

Media statements issued by the Department or the Minister for the Environment also are posted on *NatureBase*.

LANDSCOPE Expeditions are non-profit, self-supported study and research projects run by the Department in association with UWA Extension, a department of the University of Western Australia. They are an integral part of the Department's community relations activities.

The program gives people interested in nature conservation the chance to work with Department scientists and researchers as paying volunteers in important field-based research projects such as *Western Shield*. Since

1996, 13 *LANDSCOPE* Expeditions have focussed on *Western Shield* and its subsidiary programs including *Project Eden*. These expeditions have included 150 paying volunteers.

The expeditions are designed to improve public understanding of native plant and animals species, ecosystems and natural processes in natural habitats, and to raise funds for research.

The program also is designed to attract major media coverage and, therefore, communicate to the wider community. Earlier this year for example, a two-page feature on a *Project Eden LANDSCOPE* Expedition appeared in the *Weekend Australian* (19 January 2002, circulation 315,000).

Publications, Educational Tools and Miscellaneous Activities: A range of articles, publications and other communications and educational tools on *Western Shield* and its subsidiary activities has been prepared. A list of these is detailed in Appendix 1.

Communications from Districts and Regions: Warning brochures are sent out to dog owners with their dog registration papers (100,000 in 50 shires in 2002). Districts also send out further information regarding baiting successes in their areas through the baiting notification process. In addition, District officers endeavour to have articles in their local press wherever possible.

Performance indicators and evaluation

The Director SDCA commissioned three community awareness surveys (Patterson 1996, 1998 and 2000).

The survey methodology has been consistent. Surveying was on two levels. The neighbours' sample included people who had properties next to forest areas baited under the program. The Department provided the research company with a contact list for neighbouring property owners. The 'affected area' sample was created by the research company. Sampling of areas next to the baited areas was generated from the White Pages (Telstra phone directory). All interviews were conducted by trained market research interviewers engaged by the company.

The initial survey in 1996 was carried out to gauge community awareness of *Operation Foxglove* that was formally launched in November 1993 and was the forerunner to *Western Shield*. This survey involved 137 completed telephone interviews of neighbours and dog-owners in the target area between Mundaring and Collie. This survey found:

- 88 per cent of those surveyed were aware of the baiting program
- 90 per cent of all respondents considered it 'true' that the program was to help protect native species
- 70 per cent of neighbours and 58 per cent of dog-owners in the target area were aware the bait was toxic

to foxes but harmless to native species

- 39 per cent of neighbours and 61 per cent of dog-owners in the target area were aware the Department was responsible for the program (*Operation Foxglove*).

The survey consultants reported that an 88 per cent awareness could be regarded as being at or close to the maximum that is possible to achieve. They stated that 'Very rarely do we find awareness figures in excess of 80 per cent and figures of in excess of 90 per cent are almost never encountered'.

The 1998 survey involved 351 interviews in the Perth Hills, Albany, Pemberton and Manjimup, and Collie areas. The survey results reinforced some findings of the initial survey, most notably:

- 84 per cent of all respondents were aware of the fox baiting program
- 37 per cent of all respondents, however, were unable to express a view as to the effectiveness of the program
- 57 per cent of all respondents (69 per cent of neighbours) were aware the Department was carrying out the program
- 42 per cent of all respondents (72 per cent of neighbours) were aware of the term *Western Shield*.

The 2000 survey canvassed those areas surveyed in 1998. A total of 368 interviews were completed. Major findings were:

- 44 per cent of all respondents had a 'net awareness' of the term '*Western Shield*'
- 88 per cent of all respondents (95 per cent of neighbours) were aware of the fox baiting program
- 90 per cent of all respondents were aware the baiting program was to help protect native animals from foxes
- 51 per cent of all respondents were aware the Department was conducting the program.

Problems and limitations

The limitation of the surveys has been that they have focussed on landowners whose properties are next to baited areas and are more likely to be aware of the program. There have been no general, more widespread, community awareness or attitudinal surveys. This is something that could be addressed as part of the recommendations of the review.

Expenditure

The three awareness surveys cost a total of \$25,290 (\$6,490 in 1996, \$9,000 in 1998, and \$9,800 in 2000) and were funded through the *Western Shield* Project account.

MECHANISMS IN PLACE TO ENSURE EDUCATIONAL AND INTERPRETIVE INFORMATION IS ACCURATE AND UP TO DATE (Term of Reference 2)

SDCA Division maintains a formal approvals process for all media statements, briefing notes, speeches and events prepared and co-ordinate through the Division. This includes obtaining initial clearance of prepared material from the primary contact officer. This is generally a senior officer within Wildlife Branch, Science Division, District or Region who is the nominated officer for a particular aspect of *Western Shield*. Often the Director of Nature Conservation or Director of Science gives the clearance.

The Director SDCA approves communications materials before they are forwarded to the Executive Director for final approval.

The Nature Conservation or Science Divisions approve educational materials and material for *NatureBase* before they are published and disseminated. Further details on the EcoEducation schools programs are provided under Term of Reference 3.

Articles for *LANDSCOPE* magazine are checked for accuracy and approved by the relevant author and by the magazine's Scientific and Technical Advice Panel that comprises representatives of the Nature Conservation Division, Science Division, SDCA Division, and Management Audit Branch. Articles are amended in the light of comments from the Scientific and Technical Advice Panel and in consultation with authors.

Technical aspects of display materials are checked with relevant officers in Nature Conservation and Science Divisions.

Advertisements are checked with the Program Manager.

OVERVIEW OF PROGRAMS AIMED AT SCHOOL STUDENTS AND DESCRIPTION OF HOW SUCCESSFUL THEY HAVE BEEN (Term of Reference 3)

The following overview considers the three avenues through which school students are targeted; *Western Shield* Schools Program (SDCA), CALM Bush Rangers cadet program (SDCA) and activities run by CALM's District and Regional Offices.

Western Shield Schools Program (SDCA)

This program, funded by *Western Shield*, has been documented in unpublished, internal reports to the Department (Moore 1998, 1999, 2000, 2001) and in a paper published in the *Australian Primary and Junior Science Journal* (Moore 2001).

Objectives

The *Western Shield* Schools Program by involving the greater school community aims to contribute to the general community's understanding of the importance of *Western Shield*. Specifically, the objectives are as follows:

- Develop school community awareness of the Department's *Western Shield* strategy: eradication of foxes and feral cats in the areas the Department manages, research and captive breeding of native species and reintroduction of species into their former habitats.
- Promote school community involvement and action for threatened species and communities conservation;
- Provide hands-on opportunities during excursions and camps for students and teachers to participate in *Western Shield's* research and monitoring methods.
- Provide opportunities during excursions for students to have encounters with captive bred threatened species.
- Give students personal experiences that will bring about changes in attitudes that can prompt changes in habits and lifestyle in relation to their use of resources and impact on threatened species and communities.

Achievements

Table 1 summarises participation in the *Western Shield* Schools Program through use of written resources (e.g. Action Pack), excursion activities and camps. Parents and other adults associated with the school are encouraged to participate as young people are important in influencing older generations' acceptance of conservation behaviours and environmental protection.

This program supports the learning experience in three ways:

- Teacher Inservices including an overnight camp (*Be a Nature Conservation Officer for a Night*)
- Resources for use in schools (an Action Pack, videos, *LANDSCOPE* articles, Internet information, quiz)
- Opportunities for hands-on experiences for students during an excursion or camp (*Back from the Brink* and *Year 11 Biology* excursions, and *Monitoring Marsupials* sessions).

Inservices

Inservice camps for teachers titled *Be a Nature Conservation Officer for a Night*, focusing on *Western Shield* have been offered since 1999. The aims of the Inservices have been:

- To introduce teachers to the *Western Shield* schools program and *Western Shield* project
- To provide teachers with resources about threatened species that they can use in school
- To give teachers a hands-on experience of research monitoring methods and particularly those activities in which students can participate

TABLE 1

Western Shield Schools Program: summary of participation since the program began.

1 YEAR	2 NUMBERS OF ACTION PACKS DISTRIBUTED TO SCHOOLS	3 NUMBERS OF STUDENTS AND TEACHERS USING THE ACTION PACK ¹	4 STUDENT CAMPS <i>WIN A NIGHT OUT WITH THE WOYLIES</i> Student	5 EXCURSIONS <i>BACK FROM THE BRINK</i> Student and Adult numbers ²	6 INSERVICES <i>BE A NATURE CONSERVATIONS OFFICER FOR A NIGHT</i> Teachers and other adult numbers ³	7 OTHER ACTIVITIES <i>MONITORING MARSUPIALS YEAR 11 Biology</i> Student and adult numbers
1996	878 ⁴		61			
1997	300 ⁵	9,300	274			
1998	300	9,300	262	171 ⁶		
1999	250	7,750		1075	80	
2000	400	12,400	35	2281 ⁷	63	
2001	174	5,394		2816	28	155
Total	2,274	44,144	632	6343	171	155

Target audience: primary and secondary school students and their teachers.

Secondary target audience: wider school community

Overall more than 50,000 students, teachers and other adults (sum of columns 2 to 6), have been made aware of *Western Shield* through the Schools Program. This figure does not include an estimate of the numbers of teachers who may have used the Pack when it was first sent to schools in 1996.

This may be a conservative number as some teachers may be using the pack having received it in a previous year. The figure does not include those who have down-loaded the pack from the Internet.

¹ Numbers in this column are based on class size of 30 students plus the teachers using the Pack

² Camps were offered at The Hills Forest (Mundaring), Dryandra Woodland (nr Narrogin), Batalling Forest (nr Collie), Perup Forest Ecology Centre and Wellington Discovery Forest (near Bunbury).

³ Inservices were offered at The Hills Forest (Mundaring), Dryandra Woodland (nr Narrogin) and Wellington Discovery Forest.

⁴ Action Packs were sent out to all primary schools in the State in 1996

⁵ The number of Action Packs requested by teachers from 1997 to 2001 is listed in this column

⁶ Excursions in 1998 and 1999 were offered only at The Hills Forest

⁷ Excursions in 2000 and subsequent years were offered at The Hills Forest and Wellington Discovery Forest

- To give teachers a close encounter with threatened fauna being rehabilitated by animal carers and to find out about threatened species breeding programs
- For teachers to meet and question the Department's Officers working on recovery programs for threatened fauna.

A total of 171 teachers attended the camps over a three-year period to the end of 2001 (Table 1). Feedback from teachers indicated that they planned to use the resources received at the camps with their class of students. Classes have on average 30 students so at least 5,113 students will have been made aware of *Western Shield* as a result of the Inservices. Anecdotal evidence from teachers indicates that teachers after a camp focus on *Western Shield* for more than one year and hence the figure is likely to be conservative.

Resources

The *Western Shield* Action Pack for primary schools was first offered in 1996 for upper primary students and was up-dated in 2000 to fulfil the needs of the Curriculum Framework and the required student outcomes. The pack is now available for down loading from the 'For Schools' site on *NatureBase*.

Teachers of lower secondary students use 'Winning Back Wildlife' module from Manual 2 of the CALM Bush Rangers program. This module outlines the work of *Western Shield*.

Two videos about *Western Shield* are promoted to teachers at Inservices. The video, *Deadly Protectors*, has been made available for loan from the Department's Science Library and three District Education Office Resource Centres in the metropolitan area and from the Department's Katanning and Narrogin District Offices, Kirup and Albany Work Centres and the Wellington District Office for schools in these areas. Feedback from teachers about this video continues to be very good. The video, *Mission Wild*, is also available for loan from the Department's Science Library.

The *LANDSCOPE* reprint, *Bouncing Back*, and *Western Shield – Bringing wildlife back from the brink of extinction*, as well as *Western Shield* newsletters, have been made available to teachers attending the Inservice camps (Appendix 1).

The Biodiversity Quiz, an initiative in 2001, was aimed at raising awareness of *Western Shield*. This quiz competition was sent to all schools State-wide and held in September to help celebrate Biodiversity Month. All answers were available on *NatureBase* so could be

completed by any student throughout the State who had access to the Internet. This was a cost effective way of drawing students' attention to the wealth of information on *NatureBase* about *Western Shield* and threatened species.

Excursions and camp activities for students

An excursion, *Back from the Brink*, has been designed specifically for this program. The aim is to give students some hands-on experience of the science behind *Western Shield* and how species are monitored over time. Students also have a close encounter with captive-bred threatened species or animals that cannot be released back into their natural habitat.

Table 1 indicates the participation and location of these excursions and camps.

The excursions include the following components:

- Short role-play where students act out the sequence of events leading to the decline of native fauna and the role of *Western Shield*
- Introduction to fauna monitoring methods, the field scientist's toolbox and pitfall trap techniques. Students mix bait, set traps, learn how to complete a scientific data sheet, check the traps, find an animal (life-like bandicoot) in their trap, and then record its measurements. Secondary students calculate trap success rate
- Forest walk looking for wildlife habitats and viewing of a demonstration artificial den as well as nesting and bat boxes placed in the forest to encourage wildlife in the local regrowth forest. Students observe ways they can contribute to nature conservation
- Overview of captive breeding programs and animal encounters with captive bred threatened species such as the bilby and rufous hare wallaby
- 'What you can do' game and closing session aimed at giving students ideas on how they can act individually to help save threatened species.

Other initiatives relating to *Western Shield*

Over a period of six years Applecross Primary School has raised \$6500 for the Department's threatened species programs at The Hills Forest Discovery Centre. Currently this money contributes towards the cost of animal encounters provided by Kanyana Wildlife Rehabilitation Centre volunteers during the Exploring The Hills Forest excursions. Students on camp take part in the *Western Shield* monitoring of the area and the data collected from this session is included in the fauna data file for the area.

At the start of the *Western Shield* Schools Program a competition was run for groups to '*Win a night out with the woylies*' an overnight camp with all expenses paid. Students were able to participate in monitoring live native animals. These heavily subsidised camps are now offered only to teachers, a more cost-effective strategy. Involvement in monitoring and live trapping, *Monitoring Marsupials* sessions, are now offered to a limited number

of groups of students at The Hills Forest Discovery Centre and Wellington Discovery Forest. The data collected on the camps is included in the Department's fauna data file. These sessions have proved highly successful in building an understanding of *Western Shield* through hands-on activities (Table 1).

Year 11 Biology excursions were offered as an initiative in 2001. This excursion includes hands-on experience and an information session about scientific methods used for *Western Shield* monitoring of small marsupials. Students who have not heard about *Western Shield* in their earlier school years receive an introduction to the program during this excursion.

The *Forest Detective Trail* was developed and trialed in 2001. This excursion is offered to Year 4 and 5 students at The Hills Forest and focuses on scientific investigation and the solving of a mystery. The post-visit work at school introduces the students to *Western Shield* and the impact of fox predation on native fauna. It helps to prepare students for involvement in the *Back from the Brink* excursions for Years 6 and 7 students.

Advertising and promotion

The *Western Shield* Schools Program has been advertised through the following avenues:

- *School Matters*, the Department of Education's bi-monthly news-sheet, which goes to all government schools
- Direct mailing to teachers who have attended programs in previous years
- The Department of Education's mailing list
- Fliers to the Association of Independent Schools and Catholic Education Commission and distributed to all schools
- Contacts at District Education Offices
- The EcoEducation programs involving *Western Shield* have been posted on *NatureBase* under the Internet 'For Schools' site. These pages were most recently updated in 2002. An analysis reveals that these pages regularly attract more than 4,580 'page hits' a year.

Each year workshops and talks are presented to promote CALM's EcoEducation programs including the *Western Shield* Schools Program. The following lists the annual events:

- Catchments, Corridors and Coasts Course workshops
- Murdoch University, workshops for Diploma of Education Science students and Environmental Education and Environmental Science students
- World Environment Day (June 5) activities and *Western Shield* display
- State Science Teachers Conference (Conasta) workshop and display
- Primary Science Teachers conference (PRISSEM)
- Edith Cowan University in Perth and Bunbury workshops for Bachelor and Diploma of Education students

- Average of six inservice days per year at The Hills Forest and Wellington Discovery Forest
- Workshops at District Education offices in the metropolitan area and the south-west.

Other promotional events include

- Conference paper and workshop presented at the Australian Association for Environmental Education Conference in Melbourne January 2001
- Environmental Education Expo presentation for primary teachers at Whiteman Park.

Performance Indicators and Evaluations

Curtin University's National Key Centre for School Science and Mathematics Education carried out an independent evaluation of the pack and student camps (Taylor and Waldrup 1998). This showed that the pack and the camps were particularly successful in raising students' awareness of the nature and extent of the problem of extinction facing native animal species and of the practical measures through *Western Shield* taken by the Department to save them. The camps had a major impact on harnessing students' interest in learning how to conserve threatened species.

Ongoing evaluation through questionnaires completed by students and teachers attending camps, excursions and inservices has provided very positive feedback (See example of collated feedback from one camp). The program is modified in response to the feedback.

Example of Feedback from one camp

Teacher Inservice camp *Be A Nature Conservation Officer for a Night 2001*

18 respondents

Q. Was the Inservice relevant to your school program?

A. Yes 100% (N=18)

Q. Did the activities provide opportunities for your school program?

A. It was great to become more aware of the wildlife/threats and management of the flora/fauna of WA.

It was perfect for what I needed. Made me most keen to keep working in this area.

Gave ideas what excursions would offer to enhance Science programmes including endangered species.

Trapping- great for working scientifically/maths/team work.

Inspired me to learn heaps. I know what programs I can bring them to, and many resources available.

Animal encounter/trapping – getting to know animals - ID - more knowledge I can take back to kids.

Q. Did the Inservice help you to understand the part that the *Western Shield* Project plays in saving threatened species?

A. Yes 100% (N=18)

Q. Did the Inservice help you to understand the part that the *Western Shield* plays in saving threatened species?

A. It was great to become more aware of the wildlife/threats and management of the flora/fauna of WA.

Yes very good. I had no idea beforehand on *Western Shield*. Certainly did - very little knowledge previously about *Western Shield*.

I would like to participate in this. I will look into it when I have a class next year.

Q. Which activity provided the best learning opportunity for you and why?

A. Animal trapping - very informative & helped me to understand exactly how a conservation officer works.

Catching and releasing animals and close encounters allowed contact with animals never seen before.

The trapping of animals. Kanyana's talk and demo with animals.

I am very enthused. The activities were excellent. Very stimulating - I am inspired.

I would like to bring my Yr 11 Biology students to do a transect and other activities.

Q. Will the resources provided help you to plan your school program?

A. The resources are fantastic! I have started bits and pieces and it's all here.

The slides and talk were excellent and setting and checking the traps was fantastic.

Definitely - they are great resources. Activities are very relevant.

General Comments

Keep coming up with the great programmes and maybe a few that could be done at school.

Great! Inspirational! I will be back!

Brilliant! Well done. A cheap and effective inservice run by a superb team – well done.

A thoroughly enjoyable inservice – thank you. I feel enthused and refreshed by the environment.

'Thank you to Liz who organized the best Inservice I've ever been on'.

End of Example

There continues to be a demand for the *Western Shield* Schools Program, which is an indication of its relevance and acceptance by teachers and students. To quote one teacher –

'A relevant and practical program for students to learn how to assist threatened species. A must for every Science, and Society & Environment teacher and student. The vision and value behind the program needs to be continually promoted. It is encouraging to see the progress that has been made. Each individual needs to feel included and be part of this vision. Your program certainly helps to do this'.

Table 1 presents an overall summary of the numbers of students and teachers involved since the schools program began.

The main features of the program that contribute to its success are:

- It is curriculum-based and interdisciplinary with an action pack that addresses curriculum outcomes
- It offers incentives for participation. The Department covers most costs for the teacher inservice. By completing the work in the pack, classes have been able to enter a draw to win an excursion to a field centre
- Activities at the field centres are based on small-group work and ensure that all students receive hands-on experience of research methods. The close encounter with rarely seen fauna has a profound impact on attitudes to wildlife
- It provides opportunities for teachers and some selected student groups to participate in real research as well as to meet and question scientists working in the field
- It involves the local community through projects initiated by schools whilst using the packs; and
- It is continuously evaluated and modified according to the feedback.

Expenditure

Tables 3 summarises the expenditure of the *Western Shield* Schools Program over two financial years 2000/01 to 2001/02 with the funding of \$15,000 per year provided by the *Western Shield* budget. Expenditure does not include the cost of the Coordinator's time.

Note that most of the costs associated with the *Back from the Brink* excursions (e.g. equipment, training of staff, changes in the content depending on requirement of the group) are covered by the Exploring The Hills Forest and Wellington Discovery Forest budget and the fees paid by the schools. The *Western Shield* Schools Program budget, however, covers the cost of excursions for the *Back from the Brink* winners of the draw.

Problems and limitations

Whilst the *Western Shield* Schools Program has been meeting its educational objectives, there have been a number of factors that have limited its success.

- With a limited budget, many opportunities for promotion and expansion of the program are missed.
- The current excursion policy of the Department of Education raises issues of duty of care and increased paper work for teachers, which is deterring them from

TABLE 3
Summary *Western Shield* Schools Program (SDCA) expenditure, 2001–01 and 2001–02

ITEM	EXPENDITURE 2000–01	CREDIT 2000–01	EXPENDITURE 2001–02	CREDIT 2001–02
Funding provided by <i>Western Shield</i> Student Excursions. (Bus costs & leader costs for winners of draw)		\$15,000.00		\$15,000.00
Trial for secondary Biology excursion	\$986.70		\$615.00	
Trial for Albany excursion	\$655.00		\$1,779.11	
Teacher Inservice (Food, contract leaders, overtime for CALM Officer, vehicle, accommodation)	\$3,669.39		\$3,593.39	
Administration (Contract clerical assistance for collating information, bookings time etc)	\$1,760.00		\$670.00	
Advertising/Promotion. (Adverts in journals, newsletters etc)	\$4,439.00		\$3,365.00	
Biodiversity Quiz. Leaders for Winners Video, Deadly Protectors, copies, Bouncing Back <i>LANDSCOPE</i> reprints printed	\$1,800.00		\$273.00	
Printing. (Printing of Action Packs and Certificates)	\$2,342.50		\$3,297.80	
Miscellaneous (Display for National Science Conference and travel)	\$688.00			
Travel Expenses and contractor to work on resources			\$1,500.00	
Income from teacher Inservices		\$900.00		\$1,155.00
Total expenditure	\$16,340.59		\$15,093.30	
Total income from teacher Inservices and budget provided		15,900.00		\$16,155.00
Overall balance	-\$440.59		\$1,061.70	

leaving their school grounds for excursions and camps. Many schools now are fulfilling curriculum outcome requirements of the core value of *Environmental Responsibility* through local projects. Additional time and resources are needed to prepare and promote Emergency Response and Evacuation Plans and to ensure that all leaders have current First Aid certificates to lead at excursion sites.

- Teachers are increasingly reluctant to attend Inservices out of school hours. Inservices are run on Saturdays, as no funds are available for relief teachers during the week. In 2002 Inservices have been cancelled due to lack of support. To continue to raise awareness of *Western Shield* in schools, innovative ways of drawing teachers' attention to the program, inservicing at schools and incursions are required in the future.
- There is no suitable curriculum written resource for secondary students available for pre-excursion preparation and post excursion follow up work. Currently a component of the CALM Bush Rangers' manuals is offered but without supporting resources to complete some of the activities.
- The videos, *Deadly Protectors* and *Mission Wild*, are excellent teaching tools and permission has been given to copy these for educational purposes. Use of these by schools is limited to borrowing from libraries and a few of the Department's District offices. Curriculum-linked activities need to be developed and the video promoted as part of the proposed biodiversity package for secondary schools. Funding is required to develop this package and copy the videos.
- The Biodiversity Quiz for schools in 2001 was not offered in 2002 because of the lack of resources to organise this activity despite the fact that it was an excellent way to promote *Western Shield*.
- Further longer-term evaluation is required to determine changes in behaviour and attitude as students mature and enter adulthood.

CALM Bush Rangers (SDCA)

Achievements

CALM Bush Rangers, which began in 1998, is part of a broad WA Government program known as Cadets WA. Over 1100 young people across WA are participants in nature conservation projects in conjunction with their local communities.

All cadets learn about *Western Shield*. The theory training about *Western Shield* is based on information in the program's manuals; specifically Manual 2 module, *Winning back wildlife*, and Manual 3 module, *The practice of nature conservation*.

Many of the outcomes of the program are achieved through involvement in nature conservation projects and some of these contribute to *Western Shield*. In 2001, Albany SHS, Chisholm Catholic College, Duncraig SHS, Esperance DHS, Gosnells SHS, Kalbarri DHS, Katanning DHS, Kellerberrin DHS, Manjimup DHS, Roleystone SHS, Rossmoyne SHS, John Septimus Roe Anglican Community School, Emmanuel Catholic College, Mt Lawley SHS, Northam DHS, Waroona DHS, Ursula Frayne Catholic College and Wongutha Christian School Units took part in these and related nature conservation projects.

An annual reward scheme for cadets who have shown excellent commitment to their communities includes *Western Shield* monitoring of fauna at Perup Forest Ecology Centre and at Shark Bay on *Project Eden*. The Perup Camp is held in March and October each year and the Shark Bay camp is held in October.

Regional and district activities

Achievements

Table 4 summarises the record keeping and communication of *Western Shield* to schools in Regions around the State. This table excludes activities for the CALM Bush Rangers. The data collected is not comprehensive but is indicative of trends in the Regions. Records of *Western Shield* activities for schools are not generally kept nor are the activities formally evaluated although most officers report positive feedback from participants.

All responding officers indicated that they give talks and run activities about the Department's work which includes aspects of *Western Shield*. These are given in response to requests from schools rather than officers initiating them ie the approach to communicating *Western Shield* is more reactive than pro-active.

Problems and limitations

Although staff around the State involve students in their *Western Shield* monitoring programs the value of these opportunities could be greatly enhanced if there was a co-ordinated approach to ensure that students have relevant information and take part in pre- and post-visit activities at school.

TABLE 4

Summary of record keeping and communication of *Western Shield* to schools through CALM's Regional and District Offices.

SURVEY QUESTIONS	REGIONS								
	SOUTH WEST			WARREN	WHEATBELT		MIDWEST	SWAN *	PILBARA
	Albany	Blackwood	Busselton		Katanning	Narroogin	Moora		Karatha
Formal record kept of talks to schools?	no	no	no	no	yes	yes	no	no	no
Number of talks per year?	3-10	8-12	12-15	15	2	14	?	?	1-2
Record kept of involvement of student groups in <i>Western Shield</i> monitoring/research per year?	no	no	yes	yes	yes	NA	NA	NA	NA
Numbers of students involved per year	6	none	200	185	70	NA	NA	NA	NA
Formal evaluation done on effectiveness of activities	no	no	no	no	no	no	no	no	no
Reactive (R) to requests for activities or pro-active (P)	R	R	R	R	R	R	R	R	R

* Information given for Swan Region excludes activities that are carried out at The Hills Forest. These are covered under SDCA *Western Shield* Schools Program.

CHANGES IN PUBLIC PERCEPTION AND ATTITUDE RESULTING FROM THE COMMUNITY SUPPORT AND EDUCATION PROGRAMS (Term of Reference 4)

The results of the surveys discussed under Term of Reference 1 indicate a consistent high awareness of *Western Shield* in communities adjacent to fox baiting areas since 1998. These surveys focused on awareness rather than changes in attitude.

There has been no formal evaluation of changes in attitudes of school students over time resulting from the *Western Shield* Schools program or other activities. Taylor and Waldrip (1998), however, carried out a formal evaluation of changes in awareness of students before and after using the *Western Shield* Action Pack and before and after attending camps (Term of Reference 3). These were found to be highly successful in raising awareness and encouraging interest in fauna conservation.

A qualitative assessment within school communities indicates that, particularly in country areas, awareness of *Western Shield* and its importance to biodiversity conservation is much greater today than six years ago. Teachers regularly comment favourably on the cross-curricular outcomes and the interest that the subject matter generates in their students.

Overall public acceptance of *Western Shield* implies success of the community support and education programs.

PROPOSED FOR THE FUTURE (Term of Reference 5)

SDCA continually monitors its overall communications activities as they relate to *Western Shield*. In particular, there is a strong emphasis in ensuring *Western Shield* and other biodiversity conservation actions are integrated into the Department's overall communications strategies.

The presentations from all Divisions to this overarching Review will provide opportunities to re-evaluate existing communications and educational activities. In addition, the findings and recommendations of the review will provide a new, and perhaps more focussed, direction which will be included in an updated *Western Shield* communications plan.

The preparation of this submission has identified some areas that will be considered in the immediate future, pending a definitive change in direction for *Western Shield*. These include:

Media relations and strategic communications

- The communications plan will be updated in the light of the presentations to this review as an interim measure. In the longer term, the communications plan will be updated to reflect any changes in the project stemming from recommendations of the review.

- Updating display materials to ensure they reflect the most up-to-date results of the *Western Shield* program and ensuring displays continue to be available to Regions and Districts for use at a range of community events including agricultural and other local shows and other promotional activities.

Schools education program

Ongoing action

- The *Western Shield* Schools program will continue to provide Inservice camps for teachers, resources for use in school and excursions and camps for students.
- Initiatives introduced in 2001 such as *Monitoring Marsupials*, and the *Year 11 Biology* and *Forest Detective Trail* excursions will continue to run at The Hills Forest Discovery Centre and be offered at Wellington Discovery Forest.
- Involvement of the CALM Bush Rangers cadets in nature conservation projects that focus on *Western Shield* will continue.

Proposed action

- Inservicing in schools is viewed as essential to maintain interest in the program and will require additional funding over and above the current funding.
- Inservices, *Be a Nature Conservation Officer for a Night* camp, will be offered in Albany, in 2003. Other areas to be considered for similar camps are Moora, Katanning, Margaret River and Albany.
- *Back from the Brink* excursions may be offered in the Albany area in 2003. A proposal will be prepared for the Albany District Office as resources will be required to support these excursions.
- Planning will begin for an expanded biodiversity conservation secondary schools package. This initiative is still in a very preliminary concept phase. The development of this proposal and a better co-ordinated approach to delivery of opportunities for students in country Districts will involve other Divisions within the Department and a financial commitment through Service Provider Agreements.
- Further independent evaluation is required to ensure that the program continues to be effective and aligned with the Department's required outcomes. Longer-term evaluation of the impact of the program on changes in behaviour is required to determine whether this action is carried through into adulthood.
- The Division will explore opportunities for further partnerships across the Department's Districts and other activities such as *Land for Wildlife* and *Bushcare* to increase awareness of *Western Shield*.

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- Taylor P, Waldrip B (1998) Evaluation of *Western Shield* Action Pack and Camps. Unpublished, internal report to Department of Conservation and Land Management, Western Australia.

APPENDIX I

Publications

- Bailey C (1996) *Western Shield bringing wildlife back from the brink of extinction*. *LANDSCOPE* 11 (4), 4-48.
- *Western Shield* September 1996 (colour fact sheet and Questions and Answers).
- *Western Shield* Newsletter Aug 1997.
- *Western Shield* Newsletter Nov 1997.
- Morris K (1998) Bouncing back *Western Shield Update*. *LANDSCOPE* 14 (1), 28-35.
- Algar D, Smith R (1998) *Approaching Eden*. *LANDSCOPE* 13 (3), 28-34.
- *Western Shield* Newsletter April 2001.
- Vance M (2002) *Kanyana to the rescue*. *LANDSCOPE* 18 (1), 42-48.

Educational tools

- *Western Shield* Speakers Kit (slides and text).
- *Western Shield* Display (pictures and text) – used extensively by Branches, Regions and Districts at events throughout the target areas including country shows and shopping centres.
- EcoEducation programs that include teacher inservices, resources for use at school and excursion and camp activities and nature conservation projects.
- EcoEducation display (photographs and text about student involvement in *Western Shield*) for teacher conferences and workshops.
- *Western Shield* banner for display purposes.

Miscellaneous activities and products

- Dog Owners brochure for included in dog registration renewals.
- Beta-cam and VHS copies of footage of native fauna helped by *Western Shield* including woylies, bilbies etc. This has been distributed to TV stations.
- *Western Shield* parade in Fremantle Festival.
- Photographic collection of *Western Shield* fauna and baiting operations.
- *Western Shield* Threatened Species Signs for Perth Zoo.
- *Western Shield* component of Gnangara Park Concept Plan.
- Facilitated and assisted with making international documentaries such as *Return to Eden* (shown on ABC National Television in June 2002 and on international cable networks) as well as articles in international publications such as National Geographic.
- Coordinated the design and production of *Western Shield* logo caps and shirts for staff.
- Inclusion of *Western Shield* themes at Perth Royal Show and various events and displays throughout country areas.
- Production of 350,000 paper tray liners that carried the *Western Shield* message and used in Hungry Jacks restaurants in Western Australia.