

Highlighting the hotspot

A community learning approach to biodiversity
education on the South Coast

*Achieving change,
project philosophy, approach
and
guiding principles*

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Greening Australia WA



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Executive summary

Introduction

The South Coast Biodiversity Education Project is developing a learning process to help people, organisations and communities include biodiversity protection in their decision making and actions. Demonstration and documentation of this process will be provided. The South Coast Regional Initiative Planning Team (SCRIPT – now South Coast NRM) is providing Natural Heritage Trust funds to Greening Australia (WA) to undertake the project.

The term “learning process” is deliberately used to suggest a more informal approach than “education” and to emphasize an ongoing process of building community capacity and competency in biodiversity protection.

The need for the project was identified in SCRIPT’s regional strategy, *Southern Prospects 2004-2009*, which contains the management action: “Increase education and awareness-raising to improve understanding of biodiversity values and threats, targeting schools, rural land managers, local governments and urban residents.” In light of research, consultation and reflection, Greening Australia (WA) has revised the project’s purpose to extend beyond awareness-raising: our focus includes a participative process in which the community ‘learns by doing’.

To maximize the project’s benefits to the region’s biodiversity, we envisage most biodiversity education effort being focused towards members of the farming sector, the populations of the small coastal towns (including some significant peri-urban growth areas) and the decision makers involved in the future of these areas.

The project is expected to achieve several outcomes, including:

- a learning process and a suite of activities tailored to south coast communities, which also meet recognised biodiversity needs and provide a foundation for ongoing expansion across the region;
- increased engagement in biodiversity protection in the several communities in which our efforts will be focused; and
- new and strengthened biodiversity conservation networks and relationships.

Achieving change

Greening Australia (WA) reviewed a range of approaches to environmental and biodiversity education, including local, Australian and international experience. We looked for the essence of each approach and identified key components for achieving social change to benefit biodiversity.

The following educational approaches were reviewed:

Action learning emphasizes ‘*the learning that arises from the process*’ of participant involvement in the development of action plans, their implementation and reflecting on what has been learned.

Learning for sustainability aims to empower people to contribute to a better future through (a) building the competency of people/organisations to recognise the root causes of issues, form new mental models, and influence change, and (b) participation in learning-based change strategies, such as action learning.

Social marketing draws on commercial marketing principles and uses techniques from behavioural psychology, such as behaviour modification, to target messages to a particular audience, in order to achieve social change.

Place-based education values local knowledge of place, strengthening people's sense of community and land, and integrating people with the place in which they live, while also being sensitive to broader ecological and social relationships.

After analysing these approaches and how they relate to the south coast context, we are developing a hybrid model, which steers a course between the ideals of the learning for sustainability approach and the more focused approaches of action learning, social marketing and place-based education.

The South Coast experience

Greening Australia has sought the views and experience of a wide range of people and groups on the south coast concerning past activities and perceived gaps in biodiversity education. Key messages that emerged from these discussions include: the importance of fostering a sense of place; the value of trusted local knowledge; the potency of hands-on activities; and the importance of meeting community needs and priorities and developing activities that are part of an ongoing effort (rather than one-off, stand-alone events).

The discussions yielded a number of themes requiring our attention : the need to identify and tackle barriers to people's involvement; the potential to incorporate biodiversity messages into existing programs; the need for quality, locally-relevant information and actions; the importance of reaching 'newcomers' to the region; and the effectiveness of reaching people/groups who can influence a broader audience.

Philosophy and approach

The philosophical basis of the biodiversity education project can be described as:

Localised – working at the scale of a “local community” to enable a flexible approach tailored to the diverse landscapes and human communities that exist across the region, while also supporting community efforts to develop and implement learning processes suited to local needs and interests; and facilitating access to traditional and local knowledge.

Collaborative – being part of a mix of groups and individuals that integrate their work and share knowledge for better outcomes than could be achieved by groups working individually, and seeking common ground with, and strengthening the biodiversity component of, existing projects.

Humanised – tending to the relationships both between people and nature and among individuals seeking to engage with biodiversity conservation, by encouraging a humanised approach to learning, including the use of stories about people's positive and diverse interactions with nature and offering hands-on and face-to-face learning.

Capacity building – strengthening the ability of local communities to manage an ongoing learning process by adopting knowledge-sharing rather than a dependency approach of information 'extension' services; giving local experts increased recognition; and fostering action competence.

In our view, the best use of biodiversity education is its integration into specific conservation/landcare efforts that have clear targets, rather than designing a stand-alone program. The former approach allows Greening Australia (WA) to offer a learning process featuring a range of techniques and guiding principles that can be adapted across the region. By presenting guiding principles rather than a single methodology, we are recognising the importance of following 'fundamental principles and not rigid models'.

We will work closely with several communities in the south coast region to test and refine the learning process and deliver on-the-ground outcomes. This “modular” approach includes Greening Australia

(WA) engaging local facilitators to collaborate with local groups in the creation of a learning process tailored to local needs and linked with specific conservation/landcare projects.

Case Study - Western Fitzgerald Biosphere

A pilot project is underway in the Western Fitzgerald Biosphere to trial the approach being developed. This area was chosen for a range of reasons, including the range of landholders from urban (in Bremer Bay and Jerramungup), peri-urban (around Bremer Bay) and broad acre (rural) audiences.

During 2006 a baseline survey was undertaken through Curtin University's Alcoa Research Centre for Stronger Communities. The study's purpose was to build knowledge about the local community's attitudes, understanding and actions towards the natural environment, with a particular focus on biodiversity. The research methodology included the participation of local people, as community researchers, in the questionnaire's development and surveying of local households. The report was launched in October 2006.

Following enthusiasm expressed by the community researchers, a week-long fauna survey was carried out in the pilot area, on a farm just south of Jerramungup. The event was advertised and a biologist with environmental education experience co-ordinated the survey. The survey demonstrated to participants the role of remnant vegetation on farms as a critical wildlife refuge. The involvement of a wide range of community members with traditional and local knowledge and expertise in a range of biodiversity issues was another important outcome.

With the formal assistance of Curtin University, trialling and evaluating the learning process in the pilot area will continue in 2007/08. This information will help us to refine our approach and tailor it for audiences in other parts of the south coast region.

INTRODUCTION

Welcome to the biodiversity education package for the south coast region. If you are keen for ideas on how to engage your community or a particular audience in learning for biodiversity conservation, then we're writing for you. Below we introduce the project and the content of the biodiversity education package.

First, we want to acknowledge that our consultations with south coast community members and group representatives have given us an appreciation of the amount of valuable biodiversity-related work done on the south coast in recent decades. Our plan is to build on that good work.

Project history

This document has been produced as the first stage of a three year project to develop and implement a biodiversity education and promotion package for the south coast region of Western Australia. This region covers an area of 5.4 million hectares and includes the Shires of Denmark, Plantagenet, Cranbrook, Tambellup, Broomehill, Gnowangerup, Jerramungup, Ravensthorpe, Esperance and the City of Albany. It also includes parts of the Shires of Kojonup, Manjimup and Kent. The South Coast Regional Initiative Planning Team (SCRIPT) is the natural resource management co-ordinating body for this region.

The initial direction for this work came from Management Action Target B15 in SCRIPT's regional strategy, *Southern Prospects 2004-2009*: 'Biodiversity values education and promotion package developed by 2006.'¹ The associated Management Action was stated as 'Increase education and awareness-raising to improve understanding of biodiversity values and threats, targeting schools, rural land managers, local government and urban residents.' In accordance with these undertakings, Natural Heritage Trust funding to do this work was provided via SCRIPT to Greening Australia (WA).

Over the past year, Greening Australia has researched current approaches to environmental/biodiversity education and ideas on how best to achieve social change that will benefit biodiversity; documented a philosophy and approach to biodiversity education in the region; and researched and developed guiding principles and strategies for implementation. Trialling these elements has commenced in the Western Fitzgerald Biosphere, an area roughly bounded by Jerramungup, the Fitzgerald River National Park, Bremer Bay and the Pallinup River.

Who are we writing for?

We hope to assist people and groups on the south coast who wish to undertake biodiversity education and promotion in their community and are looking for guidance and support. This includes biodiversity implementation officers, natural resource management officers, and environment, catchment and landcare groups.

These documents also have the purpose of guiding Greening Australia in the implementation of the south coast biodiversity education package over the next two years. Within the framework described in this package, Greening Australia will help facilitate the efforts of several communities who wish to run with and trial the biodiversity education package, as well as develop and test biodiversity education activities and related materials for use by communities across the region.

What outcomes are we seeking?

While acknowledging the achievements of a number of biodiversity education efforts in this region over recent decades², this project seeks to build a systematic foundation that will improve the effectiveness of future efforts. In a south coast context, we consider that the best use of biodiversity education is through its integration into specific conservation/landcare efforts that have clear targets.

Where will we have most influence?

Over 50 percent of the population of the south coast region is concentrated into two urban areas, Albany and Esperance, and while there are pressing concerns in these areas, they only cover a very small part of the south coast ecosystems.

The two critical areas where biodiversity education and improved community knowledge and activity can have the most significant benefit, particularly with the available resources, are the farming landscapes and the extensive coastal areas that often suffer significant recreational impact and development pressure.

Consequently, we envisage most biodiversity education effort being focused towards members of the farming sector, the populations of the small coastal towns (including some significant peri-urban growth areas) and the decision makers involved in the future of these areas.

We haven't ruled out putting some effort, opportunistically, into other urban programs where these are largely run by other groups and where the biodiversity education component would have a significant multiplier effect.

Package description

Many issues emerged as we started to develop the south coast biodiversity education package, including how a learning process could best strengthen biodiversity protection in this area; what's been done before and what worked; how to identify our audience; how to talk about biodiversity; and how to structure an approach to fit within a small budget for 5.4 million hectares of country. These issues and more are addressed in the package.

Part One of the package explains what our project aims to do and is likely to achieve. It begins by outlining the current context for a south coast biodiversity education project.

Part Two gives voice to over 35 south coast individuals and group representatives on their experiences with, and perceptions of, biodiversity/environmental/landcare education activities and projects in the region, including what worked and why, and gaps and needs to be filled.

Part Three presents an overview of contemporary research, thinking and experience, largely from the field of environmental education, drawn together in a discussion on how to achieve social change for biodiversity outcomes.

Part Four describes our philosophy of biodiversity education and our broad approach to its implementation in the south coast region.

Part Five presents Guiding Principles for undertaking biodiversity education. Its purpose is to guide you and help you make decisions, not to make them for you. Instead of a nice neat cycle of steps, picture a firework display, which presents a seemingly random display of colours, noises and effects, all of which come together into a total experience.

An outline of Greening Australia's pilot project in the Western Fitzgerald Biosphere, including the Bremer-Pallinup-Jerramungup area, is provided as a case study in Part Six.

Evolving process

These documents are not a fixed or final form of ideas; they are a means to communicate our best thinking to date. We expect them to undergo change over the course of the project and welcome your suggestions about modifications.

PART ONE

Project background

1 Introduction

Here we set the scene for biodiversity education on the south coast at the present time, and describe our overall project aim and likely achievements. We outline what to us would be a successful south coast biodiversity education project and the realities we have to factor into planning a useful and effective package.

1.1 Context

Our planning for biodiversity education needs to take account of existing circumstances that will influence our work.

1.1.1 International significance

Scientists have identified 34 places in the world as the top biodiversity hotspots: 'featuring exceptional concentrations of endemic species and experiencing exceptional loss of habitat'³ (see Glossary). Their analysis primarily focused on endemism within vascular plants and the degree of threat through habitat loss. The study's authors called for a concentrated effort to safeguard biodiversity in these hotspots and 'thus a large proportion of all species at risk'.⁴ The south-west of WA is one of these biodiversity hotspots, the only one in Australia, and parts of the south coast region are recognised as epicenters of this hotspot due to their botanical richness⁵.

In contrast to the international focus on the need for a much stronger biodiversity conservation effort in this part of the world, only 20% of 100 recent telephone survey respondents in the south coast region listed decline in biodiversity as an environmental or conservation issue currently affecting the southern coast of WA.⁶ Although this survey is only a snapshot, and may just reflect a community aversion to the term 'biodiversity' (see Part Five), it gives some indication that communications about the need for biodiversity conservation aren't hitting home with the public.

1.1.2 Local history of conservation effort

Conservation groups with a focus on biodiversity-related issues started forming in this region from the 1960s, so nature conservation and related awareness-raising activities have been underway here for over 40 years. During the 1980s the tempo of activity, on both the ecological and landcare fronts, started to reach impressive levels in many parts of the region. And the area is now at the forefront of Gondwana Link, Australia's largest biodiversity and landscape restoration project. Yet, within the ambit of the present government-funded push for 'natural resource management', a number of people consulted during the development of this package hold the view that production often holds sway in land management decisions and the ecological trends continue to run downhill.

As you will see from our Project Aim (below), this project will help to create an environment for biodiversity protection to feature prominently in people's decision-making and actions.

1.1.3 Community values and biodiversity knowledge

Since biodiversity protection and nature conservation have received attention in the south coast region over many years, as well as mass media coverage, we can expect that many community members will already have values and knowledge relevant to these issues - we are not starting with a blank slate. Below we provide a snapshot of one local community's environmental values taken from our pilot-project survey in the Western Fitzgerald Biosphere.

In a 2006 community survey⁷ conducted in the Western Fitzgerald Biosphere pilot for this project, respondents were asked to rank the importance of the statement '*The local area has tremendously high levels of biodiversity and is one of the world's most important and endangered environments*'. Townspeople, peri-urban residents (less than 20 hectares) and rural landholders were interviewed. Rankings by 104 respondents were:

58% Very Important
37% Somewhat important
5% Not very important

Of these same 104 respondents:

85% agreed⁸ with the statement '*Every bit of nature is important*';
82% agreed with the statement '*Biodiversity on my property is an important part of the broader landscape*';
72% agreed with the statement '*The natural environment is an integral part of my property*';
77% agreed with the statement '*Wildlife are an important part of my life*'; and
71% agreed with the statement '*Biodiversity in my local area is under increasing threat and we should all contribute to its protection and management*'.

How do we reconcile these results with the quite low awareness reported under 'International significance'? First, neither survey claims to offer more than a snap shot of community attitudes, so it would be unwise to assume these findings are in any way definitive. Secondly, one of the major problems with attitude measurement is that 'respondents often develop attitudes in response to questioning — even though they actually didn't hold that opinion prior to the research.'⁹ Research design can try to eliminate this problem.

Our consultations with people and organisations in the region (covered fully in Part Two) revealed these insights into community attitudes to and knowledge of biodiversity and its conservation:

- farmers are time poor and generally feel they have little time to invest in conservation and restoration of natural areas;
- farmers would be more motivated if they had a greater understanding of the relationship between biodiversity conservation and farm productivity;
- people want to do the 'right thing', but don't know what that is;
- the community generally lacks a solid understanding of the interconnectedness of natural systems; and
- people are overloaded with information and have ceased to absorb new insights delivered in traditional ways.

1.1.4 Estrangement from our ecology

The forces of cultural homogenisation and urbanisation are widespread and leading to a changing sense of place, estrangement from our ecology (the system of which we are a part) and loss of local ecological knowledge. Environmental education commentators write about the importance of relearning land literacy, rebuilding our ecological consciousness, and redeveloping a deep local knowledge of place.¹⁰

Support for the idea that many people feel disconnected from their environment comes from a study into how NSW urban residents, from small towns to large cities, relate to living with wildlife. This research found that among the 1000 participants in the study, 'areas that are "right for humans", and areas that are "right for animals", are considered functionally separate spaces.'¹¹ According to this view:

*'Wildlife conservation more logically takes place in areas that are "right for animals". The other important implication of this partitioned view of the world is that the natural environment is seen as distant from urban communities. The natural environment is viewed as a place to visit rather than live. The concept of humans being separate from a living environment, rather than as part of it, is reinforced through this partitioning.'*¹²

We expect these findings to have some relevance to the south coast, where over half of the region's 57,000 residents live in Albany or Esperance and population growth is occurring in the coastal towns.

We can draw further insights from a workshop held in July 2006 to develop the Western Fitzgerald Biosphere community survey. Ten participants from farms and small towns in the local community identified reasons for people's disconnection from the natural environment, including 'our modern way of life'; 'not a conscious disconnection – just don't see it'; 'perceived no value in bush'; 'lack of education/awareness of the environment'; 'environment – snakes/dangerous/unsafe/dirty'; 'take it for granted'; 'environment equated with greenies – bad image'; and 'too many negative messages'.¹³ In the subsequent survey, 74% of 104 respondents agreed with the statement that *'Most of us take the natural environment for granted'*.¹⁴

Yet, when asked to indicate the importance of 10 issues, 70% of the 104 respondents stated that the natural environment is 'very important', placing it ahead of income, work and community. Only family and friends received a higher score for the category 'very important'. There appears to be a strong (yet arm's length) concern for the natural environment that can be fostered. The challenge is to find ways for people to feel a part of nature.

1.1.5 Information gap

Scientific research to understand the region's biodiversity is still in its early stages, despite major leaps forward in some areas of study. However, some excellent information exists about the region's biodiversity, but much of it is hard to access and a great deal of it is not readily decipherable by non-scientists. Most of it has been produced for specific uses (e.g. as research for development proposals or for the Department of Environment and Conservation) and needs integration and re-packaging to be of value to a community audience.

Inventories of vascular plants (plants containing conductive tissue) and vertebrate fauna (animals with a backbone) have only started to become comprehensive in recent

years. Invertebrates (e.g. insects) and non-vascular plants (e.g. fungi) are not at all well catalogued. If we try to put together all that's known as a big picture, to understand how ecosystems function and the processes that sustain them (see Glossary), then we know even less. It has been suggested that the answer is not to try to know it all, we never will, but to proceed with what we know in a learning framework that readily adopts new knowledge as it becomes available.

1.2 Project aim

Although our focus in this package is to present ideas and information that will enable you and your community or organisation to act to conserve biodiversity, we do need to explain what we aim to achieve through the project and describe our role. This information will also give context to the philosophy and approach and the methodology set out in later parts.

1.2.1 Project aim

To develop a learning process that helps people, organisations and communities include biodiversity protection in their decision-making and actions.¹⁵

We use 'learning process' for two reasons:

- 'learning' suggests an informal approach suited to learning through experience and in a social situation, whereas 'education' is now generally associated with the formal education system;
- 'process' conveys the idea that we are not focused on a specific message or level of understanding which must be achieved¹⁶, but rather on an ongoing process of building people's and organisations' abilities and inclinations around the need for biodiversity protection.

To this second dot point we add that the learning process should be a change strategy – a way of affecting the way people think about and act towards biodiversity.

Implicit also is our decision to set the project's aim beyond awareness raising. The environmental education literature is full of statements about the mistaken belief in a 'progression from knowledge to attitudes to action'.¹⁷ In other words, providing people with information about biodiversity won't necessarily move them to act for its protection and management; achieving changes in behaviour requires active management.¹⁸ We talk more about this issue in Part Three.

In order to achieve the project aim, this package sets out a philosophy, tools and strategies that can be used by Greening Australia in collaboration with other local groups, or by such groups acting under their own initiative, to:

- build biodiversity learning and conservation components into existing landcare/NRM/environmental projects;
- build understanding of local biodiversity and its value;
- strengthen the importance of the natural environment to our sense of place;
- foster a deeper local knowledge of place;
- encourage a heightened awareness of people as part of their/this region's landscape and ecology, with a capacity for mutually enriching relationships and interactions with the natural world;
- discuss how the major global ecological changes now occurring, such as climate change and species extinction, are expressed in this region; and
- build greater awareness of the global ecological significance of the region.

Although the project is focused on biodiversity conservation, the learning process will also support a broader sustainability agenda (see Glossary). In particular, we seek to promote the links between biodiversity and other issues, such as production systems, and socio-cultural values. We see value in broader processes that can, for example, assist NRM and landcare groups on an expanded range of issues and consider that biodiversity protection will be enhanced if other issues, such as development of sustainable production systems, advance in unison.

1.2.2 Likely achievements

The following achievements are likely over the three years of the current project (2006-2008):

- development of a learning process and a suite of activities tailored to south coast communities and biodiversity needs, providing a systematic foundation for ongoing efforts and their future expansion across the region;
- within the several communities across the region where our efforts will be focused, we expect to see increased engagement in biodiversity protection and management by a broad spectrum of the community, including farmers, farm advisors, rural women, landcare/NRM organisations and government agencies, peri-urban residents and, to some extent, tourism operators, local government and schools;
- greater awareness of where key knowledge resides in the region (through 'showcasing the people with the knowledge');
- new and strengthened biodiversity conservation networks and relationships among the wide circle of people who will collaborate in this work;
- the integration of biodiversity stories and information into other conservation and landcare/NRM projects in the region; and
- an increase in the skill-level of landcare/NRM officers and community members to develop biodiversity learning and conservation components within their projects.

1.2.3 Tangibles

Tangible products and hands-on activities arising from the biodiversity education project will differ across the communities with whom we work, depending on what is needed, the message we want to convey, the audience, the local context and so on. Below is a list of potential activities and products:

- direct contact with a significant number of south coast people through activities organised to provide hands-on learning, such as fauna surveys, guided seasonal tours, bush-food feasts with nature narratives, and small group discussions, as well as larger, widely-advertised events;
- improved access to existing knowledge about south-coast biodiversity through a simple bibliography that covers publications, websites and people with biodiversity-related knowledge;
- the creation of a range of artistic, electronic and printed media that highlight local diversity against a theme of ecological cohesion across the region; and
- documentation of a south coast biodiversity learning process and activities (this package), which we will continue to develop during the project's evolution in order to provide effective tools for ongoing and future projects.

1.2.4 Success and reality

We consider that a 'south coast biodiversity education project' will have succeeded when:

- with support, communities begin to manage the learning process;
- community members and organisations can readily access a range of critical information about their area's biodiversity, its values and the steps to sustain and restore it;
- we have confidence that the changes (behavioural and systemic, such as market and policy settings) needed to protect and sustain biodiversity are supported/driven by the general community; and
- we see biodiversity firmly on the agenda of landcare/NRM efforts and increased on-ground biodiversity protection and management in the communities and landscapes where the project is focused.

This project is currently limited to three years with one full-time equivalent position and a regional scope. Until further funding is found, it is probably best to think of the above success statements as forming part of a vision for the project and the ideal to strive for, rather than objectives that we expect to meet.

It follows that currently we do not anticipate this project will, on its own, achieve fundamental change in how people, organisations and communities across the region think about and act towards biodiversity. Rather it will be another useful and important step towards this outcome. We are developing and testing an approach that needs to function well over time and provide tangible benefits for biodiversity and communities. It needs to be flexible and responsive to allow the process to evolve as we trial and learn.

As suggested earlier, a process of trialling and learning about successful biodiversity-related communication and activities has actually been underway for many years on the south coast. In the next part we present the insights and experience we have gleaned from discussions with a host of south coast people.

PART TWO

The South Coast experience so far

2 Introduction

In the past 25-30 years there have been a large number of south coast events, activities and programs of importance to biodiversity education. When we embarked on this biodiversity education project one of our first priorities was to build on this richness of activity. We wanted to probe into what made past events successful or otherwise, particularly in the last few years, and to find out what events were being planned for the future.

Consequently, over 35 people have been interviewed across the SCNRM region, including Natural Resource Management Officers, individuals with nature based expertise, committee members from 'Friends of' groups and national park associations, agency staff including representatives from the Department of Environment and Conservation and the Department of Agriculture and Food, staff from not-for-profit organisations such as SCRIPT, Greening Australia (WA) and Green Skills, volunteers from community groups such as wildflower, weed and environment groups, as well as private individuals. Collectively these people have a very broad range of experience in activities related to the environment in the south coast region. All were asked the following set of core questions.

Core Questions

1. What biodiversity education activities or events have you been involved in your community in the past?
2. Which events and activities worked best and what do you think made them successful?
3. What events are in the pipeline for the future?
4. What sort of events and activities are the people in your community most likely to want to be involved in (e.g. seminars, workshops, or on-ground activities)?
5. When you want to get a message across how do you usually do it (e.g. meetings, emails, printed matter, word of mouth or radio)?
6. What are the gaps in biodiversity education that you can see in your community?
7. If you had help with resources and capacity what sort of biodiversity education activities would you really like to see happening in your community?

This part draws together the insights gleaned from these interviews. These local insights, as well as learnings from a range of literature, have then been brought together to produce the list of Guiding Principles in Part Five.

2.1 Local reflections on what worked and why?

There are a lot of variables here, and the list of insights into what makes for a successful event or program grew with the number of people interviewed. However common threads emerged and were strengthened and these are discussed under the subheadings below.

However, one concern remains unresolved – how is an event or program judged to be successful? For some people lots of attendees having a good time indicated success. Others felt an event or program was successful if people changed what they did because of it. For example, if the people who attended a ‘weed awareness walk’ went home and removed non-indigenous plant species from their gardens, the walk would then have been considered a success. An event or program was also considered successful if those involved asked for additional events or information – they were interested enough to seek to build on their experience.

2.1.1 Fun

A very common success theme was to make sure your event is fun. Feedback indicates that events considered successful were often family events where people could socialise, relax, be outdoors and have fun. The program referred to most often was the Hooded Plover program. From Walpole to Esperance an increasing number of people are involved each year in beach walks to count Hooded Plovers. When asked why, it was the same answer every time – “Everyone loves to walk along the beach”. Other walks are also very successful.

“If you want to educate, keep the event light, interesting and simple. Then people learn without trying, know it forever and it self propagates” (Coral Turley, Esperance Wildflower Group).

2.1.2 Fostering a sense of place

(A ‘sense of place’ describes a sense of belonging and connectedness to a particular place. Connection to place is vital to our sense of identity, both personal and community, and is integral to personal commitment and responsibility for that place.)

Many of those interviewed declared the development of a sense of place to be an important aspect of biodiversity education. Programs often highlighted what was unique in an area, the threats to this special-ness and provided information on how individuals could help.

For many years Di Harwood has been very involved with the Denmark Weed Action Group. In her quest to rid the area of weeds she finds that walking people around their neighbourhood and pointing out unwanted plants is very worthwhile. These very local walks develop the participant’s sense of place and commitment to weed eradication. Di feels that many people are eager to learn about their immediate surroundings, want to do the right thing and are happy to change their behaviour if guided on what to do. She feels that people like to receive information that is relevant to their local area.

Carol Daniels (a farmer with a long involvement in landcare around Jerramungup) feels that plants play a key role in developing people’s sense of place. She thinks that the older people in a district have seen a lot of changes and so can reminisce about what trees were there and have now gone, sparking recognition in others of what makes their place home. Arlene Moncrieff from Greening Australia (WA) spoke of an ‘environmental generational amnesia’ - where younger community members didn’t

appreciate important aspects of the natural environment because it had already been changed considerably before they were born. A number of those interviewed felt that older generations reminiscing about the 'old days' may develop in the younger community members an understanding of the changes in nature.

2.1.3 Getting the timing right

Many people talked about how busy community members are with their work, family and commitments, including to a range of community initiatives. It was suggested that it is best not to generate additional events, but to integrate biodiversity messages and activities into existing programs. For example the Western Australian Museum successfully incorporates their educational events into rural field days as they feel people are too busy to attend separate events. Feedback also suggests that any additional activities need to be planned around seasonal and daily availability. An event may work if run at a time when local rural landholders have spare time but it may not work if it is run in the middle of harvest or on the date of the local football grand final (or WAFL grand final for that matter).

2.1.4 What the community wanted

Many echoed the view that having an event or program driven by community needs and priorities is critical to success. In Bremer Bay there is considerable interest in removing the weed Bridal Creeper and the community has got stuck into its eradication. Community members spread the rust fungus, revisited Bridal Creeper infestations to re-inoculate and are monitoring the environment for new outbreaks.

"The community perceived the problem and wanted the solution" (Priscilla Broadbent on Bridal Creeper around Bremer Bay).

Tourists visiting Esperance were very keen to have a wildflower guide, so the Esperance Wildflower Group produced four books. The Albany Wildflower Group is also considering a similar venture in response to a similar need in their area.

2.1.5 Utilizing trusted local knowledge

The involvement of respected and trusted local individuals was often felt to be vital to the success of activities and events as well as entire programs. The "Day in the Bush" event where Salmon Gums school children walked through their local bush and heard about various aspects of the environment from trusted community members was very successful. It was felt that the children particularly enjoyed hearing from people like Alan Longbottom who is a local resident and self-taught naturalist.

2.1.6 Hands on activities

Many agreed that hands-on, 'touching things', sensory activities are the most successful. Sylvia Leighton (Land for Wildlife Officer, Albany) and the Western Australian Museum have plenty of props (live if possible) at their events that can be touched and held: nothing like a snake draped around a child's neck to get their attention. Carol Daniels loves taking her cat-shaped pyjama bag to relevant events and pulling out stuffed animals to show what the cats owned by audience members may have had for breakfast. Fauna survey events were reported to be popular by Angela Sanders (consultant ecologist), Natasha Moore (Biodiversity Implementation Officer, Jerramungup) and others as they involve both a walk in the bush and a chance to see and hold living creatures. These trapping events are also thought to develop people's sense of place. The teenagers in the marine science program at Albany Senior High

School said one of the main reasons they enjoy the program is they “Get to see and catch cool stuff”.

It is important that any hands-on work is well planned and not tokenistic. The Walpole school children planted a native garden one Arbor day, only to see it destroyed by Western Power when new power lines were installed a year or so later. Not a good message for those children and their families.

2.1.7 Involve children

Working with children is often stated to be worthwhile and rewarding, although Andrew Chapman (Friends of the Fitzgerald River National Park) feels that the red tape involved when community members wish to involve school children really deters volunteers. Katie Syme (regional mycologist) has been involved in all sorts of projects as a volunteer but felt her school projects, such as running Jean Paul Orsini's "Bugs, Beasts and Biodiversity", were the most rewarding. Green Skills highly values their ongoing partnership with the Denmark High School, which runs events including a landscape plan for the school grounds, revegetation and water monitoring. It is often key teaching staff who ensure the success of these programs. Programs with children are not only fun and rewarding, but were also thought to be a useful conduit for taking messages to their parents.

To incorporate events into the school calendar it is important that they either fit into the school curriculum or are tied to a particular date eg Arbor Day. When planning a seed collecting and direct seeding program with Ongerup Primary School care was taken that legitimate outcomes for maths (measurements when building the seed smoker) and English (report writing) were specified.

2.1.8 Continuity

Events that form part of an ongoing program are perceived to be far more successful than those that stand alone. One local landholder said that many other landholders had become jaded and disengaged because they were involved in isolated projects which appeared to lack continuity and were reinvented later.

The ongoing Birds Australia bird surveys are a good example of a continuous program. Members of the Walpole-Nornalup National Park Association have been involved with bird counts for a number of years and these surveys, and the picnics that follow, are a regular and anticipated event on their calendar.

The bird surveys are also valued by the greater community for the data they produce. Basil Schur (Projects Manager, Green Skills, Denmark) assured me that hands on projects are really important but must not be tokenistic. He said that the more real the data and the more it contributes to the bigger picture the more beneficial the event will be and the more committed people will become to further involvement.

2.1.9 Partnerships

Basil Schur has a longstanding commitment to the south coast environment and feels that forming genuine partnerships is quite critical to the success of a program. Partnerships can assist with continuity, funding and providing the full complement of required skills. He believes creating partnerships with institutions, agencies and other strong entities that are committed to providing support over time, gives your program continuity.

Gondwana Link is about local and national groups working together to ecologically relink the country from Kalgoorlie to the karri forest. The groups involved have complementary skills (e.g. Australian Bush Heritage Fund purchases conservation properties, sometimes with a portion of cleared land, while Greening Australia (WA) has strengths in revegetation). The Waterwise partnership between local schools and the Water Corporation is another success story in the region.

Working with others is also valuable for knowledge sharing. Aden Eades, a Noongar Elder, was very pleased to see a honey possum for the first time during a Jerramungup fauna trapping event, where he was also able to exchange information on the animals he knew years ago in the region.

2.1.10 Advertise well

Interviewees raised two aspects of advertising well: choosing the most appropriate mechanism to circulate information and the actual content of the promotional material. With regard to circulating information, Mark Waud (NRMO Pallinup North Stirlings group) felt the best was through conversation, the 'grapevine' and through the group's monthly newsletter sent by fax and email. Fred Powell (Jerramungup farmer) said you wouldn't believe the amount of information that comes through the fax and goes into the recycled paper pile without careful consideration. The committee of the Fitzgerald Biosphere Group isn't sure if their members read their email newsletter and feel that social get-togethers and fun events at various locations across their region may be a better forum for circulating information.

Gill Craig (consultant botanist, Ravensthorpe) feels it is important to take care that you promote an event to your intended audience and avoid prejudices by using careful wording. Several said it is important to ensure that the promotional material uses language appropriate to your audience - not too scientific, condescending or disrespectful.

2.2 Gaps in biodiversity education - future directions

2.2.1 Remove barriers

A number of interviewees felt that identifying barriers to involvement is a very important step in ensuring effective biodiversity education. These barriers are often financial and time-based, but many identified attitudinal barriers that also need to be recognised and addressed.

2.2.2 New incentives

Many felt that incentives can be useful in biodiversity education programs and, while incentives based on cost saving were seen as valuable, there was also support for the development of incentives that weren't purely financial. When the Malleefowl Preservation Group funded a free cat sterilization day, people came from far and wide to have their cat sterilized for free - this was an extremely successful program. Di Harwood runs a weed information service, but feels that this service would be more widely used if the service could be provided free-of-charge. She also feels that 'swap a weed for a native plant' programs could be a motivator in weed removal programs, but funds need to be found to support such an initiative.

One incentive a number of people were keen to see developed was the connection between environmental (ecological) and personal (mental and physical) health. Several

people spoke of the research and literature on this linkage, but felt that until this connection could be better quantified and accepted by mainstream community members it was unlikely to be useful as an incentive.

Another incentive referred to is the connection between environmental (ecological) health and farm productivity. It was felt that firm evidence of this connection could significantly change people's attitudes to nature and biodiversity. Although there is evidence for other parts of Australia it seems important that locally persuasive evidence needs to be based on reliable, local examples. Wendy Bradshaw's book 'Critters and Crops' addresses some of these issues and has supporting information. Wendy (Greening Australia Biodiversity Officer, Tambellup) is disappointed that the ideas in the book have not been widely adopted but recognises that perhaps a book was not the best way to get the messages across. She feels that it is far better for people to visit other properties where new techniques or strategies have been adopted and to utilize the power of one to one communication. Watching what your neighbours are doing was identified by many as an important way of learning and accepting new techniques. Wendy also felt that pride could be an incentive. For many people the consideration of biodiversity was a 'greenie' thing so there could be a lot to gain if this attitude was changed such that environmental work on one's property engendered pride.

2.2.3 Lack of time and money

Several Natural Resource Management Officers (NRMOs) sounded a little frustrated that they lacked time for the broader promotion of biodiversity in their communities. Robyn Cail (NRM, Esperance Regional Forum) was very keen to have a biodiversity education package with key messages, types of activities to use in specific situations, and instructions on how to plan and run activities. She would like to be involved with activities but felt she did not have the time to research how to go about it.

From the interviews it seems that there is opportunity for incorporating biodiversity messages into many existing programs without creating new events. This would significantly increase the potential to deliver environmental messages and many, including agency project managers, felt this to be an important approach to pursue.

2.2.4 New audiences

Carol Daniels refers to the peri-urban sector (landholders with properties larger than residential but under 10 hectares) as the 'sleeping giant' that needs to be educated. "They lack skills and knowledge and have the ability to greatly change the environment – we need to educate them" she said. Daniela Stehlik, from Curtin University's Centre for Stronger Communities, also agrees that the peri-urban group are important to consider, as well as other new comers to the region. With a predicted 50% of landholders leaving the Jerramungup community over the next 20 years it is important to consider the newcomers and we don't know who they are yet.

Mal Grant from the Department of Environment and Conservation at Ravensthorpe is also concerned with the peri-urban and other newcomers arriving in his district as a response to the mining operations. He feels it is important to educate these people as they arrive in the community. "Better to educate in advance rather than playing catch-up" he says.

Several community groups are keen to involve new people in their biodiversity related events but despite wider advertising and recruitment drives often have the same faces

at events. The Friends of Fitzgerald River National Park and the William Bay and Walpole-Nornalup National Park Associations readily admit that often more than 80% of attendees at their events are members. Some groups actively promote the idea of 'bring a friend' to events. These groups are aware that they need to 'market' to new audiences, particularly younger people who may one day be the driving force of the group.

2.2.5 Good information

Both Johanna Tomlinson (ex Executive Officer, Fitzgerald Biosphere Group, and farmer) and Wendy Bradshaw expressed concern that some information on environmental matters being circulated in the community is actually misleading or flawed in the local context and that there was a need to ensure only sound information was being utilized. There was also concern about conflicting or contradictory information emanating from agencies and other sources. This has also been raised and recognised as an issue by the SCRIPT Fostering Change Working Group.

David Broadhurst (NRMO, Oyster Harbour Catchment Group, Albany) keeps a range of information with him to distribute to landholders when he does site visits as people are often interested in subjects he raises and want to find out more. Some people I talked to were keen to see more locally relevant information made available such as local wildflower books and Dorothy Redreau's 'Southern Plants'.

Several people I spoke to were concerned about information flow between the scientists and community and that scientists respected community knowledge. Part of the difficulty was perceived to be the language used – it is important that information was not too 'dumbed down'. Basil Schur suspects that some 'scientific' projects were not community driven hence did not engage the community.

2.2.6 Targeting audiences 'one level up'

An often repeated message was that teacher training may be more efficient than working with school children – train the teachers then they can pass on messages to the children who can then carry them home to their families. Training shire staff was also suggested as an effective way of multiplying lessons. The shires were seen as needing to alter shire policy on environmental protection as well as having capacity to influence residents, particularly newcomers to the area, by presenting them with information. Working with project managers on all sorts of affiliated programs could also be effective.

In conclusion, everyone spoke freely about their experiences with biodiversity education in the region. Without exception, those interviewed were keen to see additional and more effective programs in the future – there was no shortage of support for the concept of biodiversity education across the South Coast region.

PART THREE

Achieving Change

3 Introduction

There are differing opinions among environmental educators about how best to achieve social change that will benefit the environment and biodiversity and support a broader sustainability agenda. Below we try to present you with some of the core ideas from the environmental education literature. Plain language is used wherever possible, but sometimes you might find the glossary useful. The ideas we think will work best for biodiversity and communities on the south coast have been incorporated into our Philosophy and Approach (Part Four), and Guiding Principles (Part Five).

3.1 Research and experience

We have studied reviews of and guides to environmental and biodiversity education¹⁹, and community engagement²⁰, as well as change ideas documented in several case studies - the Living Landscapes²¹ landcare project in the central wheatbelt of WA, and Watershed Torbay²², a whole of catchment river restoration project – fitting under the umbrella of landcare – in the south coast region.

Debates about how to achieve change will be ongoing within the field of environmental education. We agree with the view that all situations are different so it's important to follow fundamental principles not rigid models, and the principles can be drawn from a multitude of approaches and experiences.²³ Some guides (e.g. *Enabling Ecoaction*) and projects (e.g. Watershed Torbay) do just that.

Below we outline what various writers and researchers say are the necessary components to achieve change – not that there is always agreement. We hope this material will make you think too.

Our review of the discussion and debate in the literature covers four approaches:

3.1.1 Action learning

An action learning approach emphasizes 'the *learning that arises from the process* rather than (though inextricably linked to) the solution to an actual problem'.²⁴ Action learning may involve a facilitator and/or mentor assisting participants in a cyclical process of developing an action plan, implementing the plan and then reflecting on what they have learnt from this.²⁵ The Living Landscapes project is described as 'an *action-learning* process based on *experiential* learning – "learning by doing"²⁶. Likewise, Watershed Torbay is described as 'action learning'²⁷, but it also draws significantly on social marketing principles (see below) and action research.²⁸ *Enabling Ecoaction*, a biodiversity education guide, reflects an action learning approach in advocating 'Participative, community-driven approaches to enable collective action for change'.²⁹ It also 'attempts to bring together useful ideas on social change from fields as diverse as health promotion [i.e. social marketing] and adult learning'.³⁰

3.1.2 Learning for sustainability

Learning for sustainability is about ‘empowering people to contribute to a better future through mindset changes, critical reflection and building of new skills’.³¹ It has two aspects:

- *Capacity building*, seen as participative training to develop the competencies of individuals and/or organisations to recognize the interrelatedness of social, natural and economic systems.³² It seeks to build people’s skills and capacity as agents of change, e.g. by promoting the learner’s active engagement in decision-making and developing policy.³³
- *Learning based change*, employing various strategies in ‘an informal collaborative but structured process ... to improve the effectiveness of an organisation, program or action plan’.³⁴ The strategies include action learning and providing opportunities for people to reflect upon and define their vision for sustainable development, which they can use to ‘determine their own relevant and realistic pathway’.³⁵ Some educators, for example, have used the learning based strategy approach in Local Agenda 21 processes to build action plans for sustainability.

Learning for sustainability promotes the concept of envisioning and negotiating change in order to transform current systems.³⁶ It is underpinned by a belief in challenging the mental models and practices that have led to unsustainable development, which requires ‘new approaches and new learning, rather than focusing solely on new knowledge’.³⁷ It supports the use of learning approaches such as mentoring, facilitation, participative inquiry, action learning and action research³⁸ (see Glossary), and incorporates the principles of the action competence approach³⁹ (see 3.2.4 and Glossary). A ‘learning for sustainability’ critique of environmental education approaches is provided in Box 3.1 at the end of this section.

3.1.3 Social marketing

Social marketing is an approach widely associated with health and safety campaigns (e.g. the anti-tobacco campaign “Quit” and the “SunSmart” campaign against skin cancer) but is increasingly used in community environmental education.⁴⁰ It is described as ‘*the creation, execution and control of programs designed to influence social change. It uses many principles of commercial marketing - from assessing needs to identifying audiences, developing products and measuring results. But it is also quite different. The aim of social marketing is not just a one time business transaction – it is to build a long-term relationship between your organisation and its different audiences.*’⁴¹

Social marketing also uses models derived from behavioural psychology and ‘relies on behaviour modification theory as its base.’⁴² Its programs ‘tend to target their messages to a specific audience’ with the aim of achieving individual behaviour change.⁴³ Scepticism of this ‘tendency to regard the educational task as a question of behaviour modification’ has given some commentators cause to promote alternative concepts, such as the action competence approach.⁴⁴

Social marketing models recognise ‘that “education” is much more than just communication’, in particular it requires an understanding of the needs and perceptions of the audience and development of skills and capabilities in that audience.⁴⁵ ‘The desire to make concrete changes and see tangible results’ is also part of social-marketing philosophy.⁴⁶ Social marketing is said to be ‘focused on helping people commit to small changes and then building on those changes’.⁴⁷ In community-based

social marketing, behaviour change is said to be ‘most effectively achieved through initiatives delivered at the community level which focus on removing barriers to an activity while simultaneously enhancing the activities benefits.’⁴⁸

There is awareness of the potentially manipulative aspects of social marketing – ‘the paternalistic implication that someone else knows best’ – and the risk ‘that social marketing will become a tool for government and corporate managers obsessed with control’.⁴⁹

See endnote⁵⁰ for further social marketing references.

3.1.4 Place-based education

The place-based education movement regards itself as ‘broader and more inclusive’ than the traditional environmental education focus on nature studies and its later form as ‘catastrophe education – learning about rainforest destruction, ozone depletion, toxic waste and endangered species.’⁵¹

Place-based education, which has operated in the United States since the early 1990s, ‘teaches about both the natural and built environments. The history, folk culture, social problems, economics, and aesthetics of the community and its environment are all on the agenda. In fact one of the core objectives is to look at how landscape, community infrastructure, watersheds, and cultural traditions all interact and shape each other.’⁵² It is said that ‘Place-based education might be characterized as the ... reintegration of the individual into her homeground and the restoration of the essential links between a person and her place.’⁵³ According to this approach, the path to a ‘sane, sustainable existence must start with a fundamental re-imagining of the ethical, economic, political, and spiritual foundations upon which society is based, and that this process needs to occur within the context of a deep local knowledge of place’.⁵⁴ ‘Enlightened localism’ is a term used to describe this approach, reflecting its sensitivity ‘to broader ecological and social relationships at the same time as it strengthens and deepens people’s sense of community and land.’⁵⁵

BOX 3.1

A ‘learning for sustainability’ critique of environmental education approaches

Unless specified, the material is adapted from Tilbury and Cooke.⁵⁶

Traditional	Critical
Passing on knowledge and raising awareness of issues, and involving people in often one-off, specific actions (e.g. tree planting).	Using critical and systemic thinking to help people to ‘identify the root of the issues and to work actively towards trying to address these’.
Single actions – environmental education has been increasingly focused on learning linked to volunteer conservation action. This enables some positive environmental outcomes, but most volunteers do not build the capacity to manage change. ⁵⁷	Learning for change – taking the action dimension a step further by ‘helping learners develop the skills to influence change within a system, organisation or wider society’, as opposed to single actions which may not challenge root causes.

Traditional	Critical
Teaching attitudes and values – having an objective of instilling in people a specific set of values and attitudes for the environment.	‘There is no evidence that a particular values set will correspond with a set of specific actions’, and ‘Having deeply engrained values for the environment does not mean that one has the competence to be engaged in effectively contributing to change for sustainability’. Rather than trying to change people’s values system, it is more effective to develop their understanding of how their backgrounds and experiences influence how they think and act, so they can develop their competence as ‘agents of change’ for sustainability.
Seeing people as the problem – their actions need to be ‘corrected’ in order to address environmental issues; using strategies to modify people’s behaviour.	Seeing people as agents of change ‘who can be empowered to create alternatives to the current situation’, e.g. by promoting the learner’s active engagement in decision-making and developing policy.
More focus on individual and personal change.	More focus on structural and institutional change.
Integrating sustainability into mainstream practice by adding content.	Innovation and transformation is required in the form of new mental models, involving questioning and reflecting upon actions and decisions. Simply integrating sustainability into mainstream practice won’t change the status quo.
Problem-solving environmental issues.	<p>Imaging a better future – developing the belief that there is an alternative to our current situation and an understanding of how the process of change happens, which transforms the way we act today.</p> <p>Focusing on existing problems can become overwhelming and depressing. <i>‘Envisioning is positive. We envision the change that we want. What does it look like? The vision becomes compelling – something we really want to bring about. A compelling vision triggers thoughts about what would need to be in place for that vision to be real.’</i>⁵⁸</p>
Sending messages to target audiences.	<p>Creating opportunities for reflection, negotiation and participation – encouraging collaborative learning environments which do not merely impart knowledge but build capacity of the learner through dialogue, ‘critical reflection’ and the sharing of knowledge⁵⁹ and enable the negotiation of action plans for sustainability.’ The learner drives the learning, aided by facilitation and mentoring, rather than the traditional teacher/expert role.</p> <p>Education for sustainability is ‘vital to help us not only build motivation and capacity to take action but also to challenge the mental models which have driven us to unsustainable development.’</p>

3.2 Components of a change process

To help understand how to achieve change, we looked at the change components advocated by the major learning approaches, including common elements and critical points of difference. These are summarised below:

3.2.1 Moving beyond awareness-raising

The literature clearly indicates that a focus on awareness-raising and information dissemination does not necessarily lead to behaviour change.⁶⁰ In recognition of this, some recent programs, such as Watershed Torbay, have 'proceeded on the basis that behaviour change itself would need to be the key objective of the restoration plan.'⁶¹

3.2.2 Imagining a better future

Imagining a better future (see Envisioning, Glossary) is a key plank of a number of approaches. It's how we develop the belief that there is an alternative to our current situation, understand how the process of change happens and transform the way we act today.⁶² According to the Watershed Torbay project, 'a clear, shared vision can act as a catalytic force, an organising principle to maintain pressure for change and drive implementation of change'.⁶³ Living Landscapes define a vision as 'a shared, practical picture of a desired future.' They argued that 'Having a well-developed and widely-shared long-term vision is important for ensuring that everyone is pulling in the same direction.'⁶⁴

3.2.3 Understanding values

There are a range of views on the importance of values. The Living Landscapes review argued that 'Our values guide our decision-making and ultimately our behaviour' and 'Exploring our values can be an important element in building a shared vision of what a group wants its future landscape to look like.' The review stated that 'Firmly-held values can be challenged and/or changed, potentially resulting in changes in behaviour and attitudes. Change usually results from people being directly involved in decision-making, planning and doing.'⁶⁵

The Learning for Sustainability approach places greater emphasis on a person's competence to effectively contribute to change. Tilbury and Cooke claim there is 'no evidence that a particular values set will correspond with a set of specific actions', so rather than trying to change people's values system, it is more effective to encourage them to understand how their backgrounds and experiences have influenced how they think and act, so they can develop their competence as 'agents of change' for sustainability.⁶⁶

3.2.4 Action competence and capacity to change

Community action programs are being urged to strengthen the competence of communities to participate in change.⁶⁷ While government-funded community action programs, such as Landcare and Coastcare, and activities like revegetation and weed control run by volunteer groups, have contributed to some positive environmental outcomes, it is said that 'most volunteers have not built the capacity to envision and manage change (predominantly social change) for sustainability'.⁶⁸ Instead, 'they accept an end-of-pipe approach to environmental management, for example through their involvement in pre-determined restoration and conservation projects'.⁶⁹ (We suggest that this analysis may be less relevant to landholder-based catchment groups.) The review advocates the adoption of an action competence framework (see Box 3.2), in which 'community action groups will be challenged to consider the role of democratic

engagement; the need to understand the context for action; and the development of action-taking skills.⁷⁰

BOX 3.2 Action competence

'Action competence is inherently linked to the concept of democracy. In this context actions are viewed not as reactive behaviour but rather as an active exercise of democratic participation in society ...

Action competence occurs when citizens:

- *have a critical and holistic knowledge of the issue;*
- *are committed, motivated and driven;*
- *can envision a sustainable solution; and*
- *have experience taking successful concrete action.'*

Action competence is seen by some as a crucial outcome for Environmental Education because it brings together the processes and practices of education with the need to develop democratic citizenship skills and values, and with the nature of the social and environmental crises facing the world.⁷¹

The Watershed Torbay project saw a need to build capacity to change at very applied levels, through researching the development of sustainable farming products jointly with landholders, increasing skills to manage natural systems and new farming systems, building greater resilience in rural communities, and assisting those in the most marginal areas to evaluate their viability, resulting in some land being retired from production. But capacity to change also meant being able to achieve higher level changes, through addressing the nature of current institutions and their appropriateness for supporting sustainable natural resource management.⁷²

3.2.5 Critical (reflective) thinking

One Canadian review takes the position that: 'Unlike advocacy campaigns that tell people what to think, responsible biodiversity education must be concerned with helping learners to better understand their own values and to develop the processes and skills they need to think critically and to make their own well-informed decisions'.⁷³

Tilbury and Cooke's review places particular importance on critical (reflective) thinking: helping people to challenge the way they interpret the world and to reflect on how their knowledge, values and opinions are shaped by personal experiences, social influences and our culture. "Critical" thinking involves personal reflection on the appropriateness of mental models that have traditionally guided thinking and action', in order to empower people to think and make their own decisions about how to engage with sustainability.⁷⁴

Community action programs, including those implemented by Landcare, Coastcare and 'Friends of' groups, are being urged to adopt an 'action learning' approach, to 'help reorient the focus of community action programs towards identifying opportunities for systems change and away from end-of-pipe solutions'.⁷⁵ It is argued that critical thinking and reflection are crucial to effective action learning. Action learning is seen as a way of 'engaging community volunteers in learning for sustainability, whilst continuing to generate action through conservation and restoration programs'.⁷⁶

3.2.6 Systemic thinking

Social, natural and economic systems are complex and interrelated. Some of the literature encourages us to look across traditional boundaries to see these connections. As Tilbury and Cooke put it 'Dominant models of thinking often blind us to the complete picture and create false divisions and segregate patterns of thought. It is common to find people seeking singular solutions to what are perceived as singular problems', and thus tackling the symptoms rather than the underlying causes.⁷⁷

Canadian reviewers argue that biodiversity issues are not merely defined or solved by scientific knowledge and biophysical information – they 'are defined as much by socio-cultural values and political and economic factors'.⁷⁸ It is important to be receptive to diverse ways of thinking and acting, and collaborating across different knowledge systems: valuing and integrating knowledge from traditional, local and scientific communities. This is seen as not simply 'a matter of plugging alternative sources of information into an existing bureaucratic system . . . effective integration requires a willingness to adopt decision-making processes, timelines and organizational structures that reflect the different values upon which alternative knowledge systems are based.'⁷⁹

Thinking beyond the scope of scientific knowledge to embrace the 'human element' is urged by one biodiversity education handbook:

*'The danger of focusing on the natural environment is that we emphasise the problems but not the solutions. Environmental damage is a symptom of human choices, human behaviours and human-created systems ... we therefore need to focus our understanding and professional skills on human beings, human society, and its economic and political systems ... to effect change, our human skills and understandings are probably more important than our ecological or scientific knowledge.'*⁸⁰

3.2.7 Participation in decision-making

It follows from the previous point that people working as environmental communicators, educators and facilitators are being encouraged to avoid a focus on knowledge transfer – the production and dissemination of information by 'experts' or educators – in favour of adopting 'participative, community-driven approaches which focus on enabling collective action for change'.⁸¹ Different skills – "people skills" – are needed for the latter approach, including team building, group facilitation, conflict resolution, change facilitation and an understanding of leadership and sensitivity to group dynamics.⁸²

Genuine participation in the learning experience, in which learning is in the hands of the learners rather than an "expert", is essential to build people's abilities and empower them to take action for change towards sustainability, say Tilbury and Cooke. They argue that '*Stakeholders cannot be expected to engage with issues of sustainable development just by providing them with information. To go beyond awareness-raising, environmental education needs to be more than a resource or a website. It needs to engage people in an education process – this is where participation holds the key to change.*'⁸³ This is more likely to lead to permanent changes as compared to participation in one-off events. As with the approach outlined in the previous paragraph, instead of an "expert" source of information there is a facilitator 'dedicated to helping learners to rethink and take decisions and actions aligned with sustainability.'⁸⁴

3.2.8 Facilitation, communication, coordination

*'Perhaps the most important human skill of the biodiversity educator is effective facilitation.'*⁸⁵

The importance of these skills is a recurring theme in the literature, a point already highlighted in the preceding discussion. Additionally, we found that all the reviews we studied contained very useful approaches, but none could be implemented without skilled management. This is not work for the faint hearted.

In reflecting on the Watershed Torbay project, Louise Duxbury noted that there have been excellent manuals developed as part of the landcare movement articulating change theory, communication techniques and group theory, resting on the assumption that landcare is a movement of voluntary change. While they are good resources they require skilled people to be fully utilized, since change does not come easily to the majority of community members. A range of incentives and disincentives, communication work and marketing is required to assist in the process of change. For the Watershed Torbay project, communicators, facilitators and coordinators had a key role to play in managing these programs and changes to meet the goals of community.⁸⁶

In a similar vein, Tilbury et al note that the high reliance of community action groups on volunteers means it cannot be assumed that these groups have the expertise 'to understand the importance of pedagogical [teaching theory] components such as envisioning, "critical reflective thinking", values clarification and systemic thinking, underpinning learning for sustainability.'⁸⁷ (We would extend this view to include most non-government organisations and government bodies).

3.2.9 Networks and partnerships for change

The Living Landscapes review felt that biodiversity issues need to be addressed at the ecosystem or landscape scale, which makes them too big and complex for individuals to address on their own. It is therefore important to include social processes that encourage land managers, communities and groups to work together, across the larger landscape. In order to achieve these landscape-scale outcomes, the review found that 'groups need to be supported through a process of ongoing learning and development.'⁸⁸

Tilbury and Cooke's review found that 'partnerships which share learning experiences can accelerate the process of change towards sustainable development'.⁸⁹ The challenges of working towards sustainability are 'daunting and so many are finding networks and partnerships are a vehicle for sharing responsibilities and learning how to address issues'.⁹⁰ The Living Landscapes review presents numerous benefits of partnerships, including shared responsibility for the problem and the solution; sharing new skills and knowledge which builds understanding and capacity; introducing a diversity of views for creative solutions; shared enthusiasm and vision; and contributing to building stronger communities.⁹¹

3.2.10 Actions

A traditional way of perceiving environmental education is the progression from environmental awareness, to the development of attitudes and values, and then action to address environmental issues. One environmental education handbook argues that, while behaviours must be supported by knowledge and attitudes,

research has shown 'there is no necessary cause-and-effect progression from knowledge to attitudes to action'.⁹² In fact, some environmental educators believe the main focus should be on the actions themselves:

*'Actions are vital because they are what make a difference for the environment. Secondly, actions are measurable, so we can observe the impact of our work. Thirdly, and even more importantly, people learn best by acting: hence our most effective work as environmental educators will be when we facilitate experiential learning by the participants in our programs: learning by doing.'*⁹³

The change process applied during the Watershed Torbay project included "actionable first steps" (see Figure 3.1 at 3.2.12 below). It was considered necessary to: *'Take action while other research, planning and discussion is being undertaken. It is important that an action learning approach is used so that improvements can be implemented immediately and revised as new information and objectives come to hand to maintain motivation and facilitate learning by doing.'*⁹⁴ Similarly, a Canadian case study found that 'Doing some on-the-ground projects right away was vital to giving our members the taste of success they were looking for.'⁹⁵

3.2.11 Clearing obstacles to change

From a social marketing perspective, the view that awareness building is not the key to behaviour change is further reinforced by considering the question 'What if people already KNOW plenty about the problem AND have a pretty good idea of what they should do and WANT to do it, but something else is stopping them.'⁹⁶ Robinson developed this idea as a 'Seven Doors' social marketing approach to social change, in which he identified seven pre-conditions that need to be present for behaviour change to take place: knowledge ('I know I should'), desire ('I want to'), skills ('I can'), optimism ('it's worthwhile'), facilitation ('it's easy'), stimulation ('I'm joining in') and reinforcement ('that was a success'). He argued that 'Each of these conditions is actually an *obstacle*, so you can think of this model as a set of 7 doors' and the challenge of 'education strategy' is 'about *clearing away obstacles* rather than awareness building', with the educator having the role of 'humble door opener, rather than a font of ultimate truth.'⁹⁷ According to Robinson, this model 'allows us to identify which elements are already being fulfilled, and so concentrate resources on the gaps'.⁹⁸

The Watershed Torbay project considered social marketing essential to targeting 'ways to reduce barriers and increase the benefits of key actions within the plan so that behaviour change is achieved.'⁹⁹ In our pilot Western Fitzgerald Biosphere community-survey a wide range of barriers were identified by community members (see Box 3.3). Interestingly, lack of knowledge only ranked fourth, and well behind the first two – lack of time and lack of finances. But that is a self assessment of adequate levels of knowledge. Natural systems are complex - even the scientific community will admit to understanding little of how these systems work - prompting one experienced environmental educator to comment that people's knowledge of the natural environment is generally (and understandably) more limited than this self assessment suggests.

BOX 3.3 Barriers to NRM/landcare work

Our pilot community survey, 100 of 104 people in the Western Fitzgerald Biosphere found that the barriers people face in doing NRM/landcare/environmental work are:

Lack of time	65%
Lack of finances	34%
Bureaucratic red tape	20%
Lack of knowledge about problem	20%
Doubts about likely success	14%
Lack of knowledge to fix problem	13%
Lack of relevant skills	10%
Age or ill health	9%
Lack of specialised equipment	8%
Not interested	7%
Lack of farm successor	2%
Other	10%

3.2.12 Understanding how change happens

Various social change models seek to explain how change happens.¹⁰¹ One model, the Diffusions of Innovation theory, describes how change (i.e. an innovation, such as an idea or practice) is not adopted uniformly across a population, but passes through society like a wave. An audience can be 'broken down into 5 segments, based on their propensity to accept the new idea or behaviour'. The wave begins with 'visionary, imaginative innovators ... and eventually sweeps in majority audiences'.¹⁰² According to this model, achieving behavioural change depends on how well the various segments of the audience are targeted and their perception of the qualities of the idea, e.g. compatibility with existing values and practices. Many new ideas are said to fail 'making the leap from experimental to mainstream'.¹⁰³

One change process used locally is outlined below. It draws on the landcare experience, which we think has useful lessons for biodiversity education, especially in landscapes dominated by agriculture.

'The Decade of Landcare and subsequent programs were based on a premise that funding for awareness raising and demonstration projects would result in significant behavioural change in land management. This has been shown to be an inadequate response to the magnitude of the land and water degradation issues in Australia.'

*The stated purpose of most landcare projects, like the whole of catchment river restoration project Watershed Torbay, is to address the degradation of natural resources, but few can claim to have achieved such results. Projects such as Watershed Torbay must develop clear strategies for bringing about changes in land management behaviour that go beyond those used by the landcare movement to this point. It is important that such strategies rest on a clear approach to change.'*¹⁰⁴

As a consequence of this analysis, the Watershed Torbay project proceeded on the basis that to achieve change requires active management: it is necessary to clearly outline a philosophy of change and use a change framework to help guide implementation, including working on all elements of change simultaneously.¹⁰⁵

The project drew on the change-process model shown in Figure 3.1, which suggests that successful change requires all elements. The model, adapted from business training material, can be used as a diagnostic tool to identify elements of the process missing according to the result being experienced.¹⁰⁶

Figure 3.1
Key stages in the change process



3.2.13 The importance of context

A Canadian review found that a significant body of educational research emphasized ‘the importance of designing educational initiatives for specific groups within specific contexts’ (i.e. relevant to the context of, say, fisheries workers or eco-tour leaders or primary school teachers) rather than ‘attempting to reach vast, generalized audiences’ through mass-media campaigns.¹⁰⁷ The review found that ‘Programs designed to create a generalized understanding of biodiversity are ... less effective than those targeted toward a functional understanding of problem-specific biodiversity concepts.’¹⁰⁸

3.3 Conclusion

After reviewing the research and experiences of others, we consider that biodiversity education will be most effective when seen within a broader sustainability context, rather than as a stand-alone effort. Given this project’s genesis in SCRIPT’s regional strategy, which is built on a commitment to sustainability¹⁰⁹, then this objective should fit comfortably with many of our package’s intended audiences who already work within a sustainability ambit. Biodiversity education needs to be collaborative and it needs to be complemented by institutional and community efforts, especially through SCRIPT, for broader change across the spectrum of natural resource management.

We are steering a course between the ideals of the ‘learning for sustainability’ approach and the more focused approaches of action learning, social marketing and place-based education. The latter are important because they will help participants to deliver immediate outcomes for biodiversity protection. The learning for sustainability approach provides participants with the opportunity for critical thinking and systemic thinking to take us closer to the long term fundamental changes required. However, we are conscious of the relative difficulty we would have engaging skilled facilitators and mentors to manage the processes of envisioning, critical thinking, values clarification and systemic thinking that are central to this approach.

We don’t have the capacity to work to the broad brief of the place-based education movement described earlier, but we believe that strengthening people’s connection to country is an important aim of our education package. Calls for decision-makers to protect biodiversity can be effective coming from people living outside the area, but a concerned and active local community is essential for both long term protection and the detailed daily work of management.

In conclusion, it is worth drawing on the experience of the Living Landscapes landcare program. In its review, Greening Australia writes: ‘We have learned much over the past five years. A key question is whether community engagement models alone will bring about the

scale of change required to meet environmental outcomes in the time available.’ They conclude that ‘It is not just the local community that has to change, but also the institutions that a community relies on to achieve its outcomes – businesses, all levels of government, scientists, advisors and other partners such as non-government organisations. We recognise that *social processes* [of awareness-raising and capacity building] *alone will not be sufficient* to achieve the magnitude of change required. It will also be necessary to address market and policy [e.g. legislative] settings that influence our capacity to change.’ They argue that social processes ‘are critical success factors in any attempt to change land management practices’, but ‘the success of this type of approach cannot be judged against its ability to “fix the problem” in and of itself, but rather, should be assessed for the relative contribution that it can make to *contributing* to a solution.’¹¹⁰

A similar position can be argued for biodiversity conservation and the capacity of this project.

PART FOUR

Philosophy and Approach

4 Introduction

The philosophy underpinning Greening Australia's (WA) approach to biodiversity education draws on a range of local, national and international experience and research. We debated the ideas and synthesised them with our own to develop a philosophy of biodiversity education that is **localised**, **collaborative**, **humanised** and **capacity-building**. This philosophy is outlined below, together with our broad approach. We have sought to address the points raised under Context in Part One and Part Three, Achieving Change. Many of the issues covered are applied through the Guiding Principles in Part Five.

4.1 Our philosophical approach

4.1.1 Localised

Our core values include respect for local knowledge, for diversity within and between landscapes and communities, and for local people's close relationship with their local area – the well recognised 'sense of place'. We consider it important to also have appreciation for the history of a community's work on biodiversity issues.

We believe that biodiversity education works best at the scale of a 'local community'. Working locally:

- enables a flexible approach tailored to the diverse landscapes and human communities that exist across the region, so that messages and actions are relevant and meaningful to the audience;
- supports community efforts to develop and implement a learning process suited to local needs and interests, and builds understanding and competency regarding specific biodiversity issues;
- fosters the effective exchange of knowledge, ideas and stories through existing community networks;
- provides opportunities for experiences that will heighten the importance of biodiversity and natural landscapes to participants' sense of place;
- facilitates access to traditional and local knowledge, and assists collaboration across different knowledge systems and integration of knowledge from traditional, local and scientific communities;
- encourages people with traditional or local ecological knowledge (e.g. about birds or plants or revegetation methods) to serve as trusted information sources, mentors or motivators; and
- increases the likelihood of the learning process continuing beyond the current project.

Additionally, at this scale we have the best chance of implementing key elements of the learning for sustainability approach (see Part Three, Achieving Change), including:

- a facilitated process of reflecting on how our backgrounds and experiences affect the way we think and act in relation to biodiversity;
- collective discussion aimed at imagining and planning for a better future;
- ensuring decision-making processes are inclusive and participative; and
- building the action competence of participants.

It is necessary for Greening Australia (WA) and other groups to support these elements of the learning process through skilled facilitation. This facilitated learning process would assist with a range of tasks, including finding out what's important about biodiversity to local people, identifying gaps in biodiversity education, identifying biodiversity conservation priorities that point to specific outcomes and actions, providing the stimulus of other perspectives, and ensuring effective monitoring and evaluation.

One other aspect is of particular importance. Local knowledge is often an expression of a profound people-land connection, and a means to strengthen ecological understanding and build local capacity. Many local people – Indigenous and non-Indigenous – are embedded in south coast landscapes and have extensive, first-hand ecological and biodiversity knowledge based on their traditional culture and land use, a lifetime of interaction and observation, or a passion for studying aspects of the natural environment. Their knowledge is accessible both in content and proximity to audience and, as noted, can help build local capacity to tackle biodiversity issues (e.g. as an information source for decision-making, field trips or skills transfer).

We place an important rider on our localised focus, or at least on how such a focus is often perceived. It needs to work within a broader, even global, context. The biodiversity of the south coast is of international importance, few researchers or state or federal government decision-makers are locally based and some decisions needed to safeguard a treasure of international significance may not sit comfortably with all local community members. Our approach needs to ensure intelligent dialogue across all viewpoints. Incorporating external stimuli, be they a tour to see another community's activities, video-conferencing with a national or international forum, or inviting in a speaker, performer or artist, is one way to encourage constructive dialogue and new perspectives. Likewise, scientists can broaden the context in which we think about biodiversity at a local or regional level (e.g. the work of Professor Stephen Hopper on evolutionary patterns across the south west); expand the 'big picture' (e.g. the significance of the south coast to global biodiversity), and highlight the gaps in our biodiversity knowledge.

4.1.2 Collaborative

Collaboration means groups and/or individuals integrating their work and sharing knowledge for better outcomes than could be achieved by groups working individually. Our commitment to a collaborative approach stems from our:

- recognition that often biodiversity issues can only be addressed by working across whole landscapes, with multiple stakeholders;
- understanding that biodiversity protection and management needs to be part of a broader natural resource management/sustainability agenda;
- experience of the complementary attributes and skills different groups and individuals bring to this work; and
- experience of the wealth of ideas and ability in local communities.

We know that maintaining partnerships can be a challenging task in itself, additional to the biodiversity work being undertaken. There can be a significant communication load involved in keeping all groups well informed of each others activities; the need to achieve consensus can lead to lowest common denominator outcomes, rather than the leading-edge work needed; and many groups are innately territorial in behaviour, so partnerships go against the grain. Additionally high skill-levels are needed to

effectively manage decision making processes within partnerships, as there is plenty of scope for confusion about which groups are responsible for implementing specific action steps, and this leads to loss of energy and momentum.¹¹¹

Our consultations across the region confirm that people already working for environmental and landcare outcomes are spread thin and are more likely to welcome a program that supports or adds value to their existing efforts. For example, while recognising its importance, lack of time to focus on biodiversity education was noted by most Natural Resource Management Officers with whom we spoke. Our approach is to acknowledge work that is underway and contribute resources and a process to complement and strengthen the effort. We will seek common ground with existing groups and their projects and endeavour to either work within their organisational structures or partner with them.

We don't have the resources to be community-driven across all communities in the region, so we need some region-wide actions, activities and materials to broaden the project's reach and provide common messages and themes. As long as their development reflects community involvement, draws on sound market research, and is accompanied by a good communication process, then these can become a useful framework for everyone to use and build on. This approach should alleviate some of the potential for duplication, e.g. multiple local communities trying to work out key biodiversity messages (instead they can add to or select from), and provide consistency where it is useful to think regionally (e.g. understanding the significance of this region as part of an international biodiversity hotspot). To implement these region-wide approaches we need to team with other groups, especially in those areas where we are not working intensively with a local community.

Through this region-wide activity we will also help successful, locally-based education projects to influence other communities and projects.

4.1.3 Humanised

People's efforts to protect and manage biodiversity are strengthened if they feel connected with the natural world. Moreover, because we are used to seeing people as the cause of environmental problems, it's hard to imagine ourselves living in a mutually beneficial relationship with nature. But, with so much environmental repair work needed, it's possible (and important) to demonstrate our potential to interact positively with the natural world.

As well as tending to the relationship between people and nature, there are significant benefits in strengthening relationships between people engaged with, or wanting to be engaged with, the protection and management of biodiversity. Continually ramming the environment down people's throats is an approach with well recognised limitations. Outlined below are three linked elements of a more humanised approach to learning about and working for biodiversity.

These are not complex techniques. Part of their strength is in their simple appeal, they are the sorts of activities we tend to gravitate towards anyway, though it is essential that we use them within the larger strategic framework outlined elsewhere in this package. The techniques are:

- Communicating through stories - stories about positive interactions with nature – restoring land, discovering its delights, protecting special places, and productive

lives spent living with nature, such as seed pickers, bee keepers, tour guides and fishers – are a powerful way to humanise biodiversity: ‘Stories can accomplish what no other form of communication can – they can get through to our hearts with a message.’¹¹²

Bringing together the stories of Indigenous Elders, farmers, scientists, artists and local naturalists can also provide rich learning experiences. By valuing this approach we give audience members the opportunity to select from multiple perspectives about biodiversity to find the ideas and messages that work for them.

- Hands-on learning is a critical aspect to our humanised approach. Activities such as fauna trapping, field days, and re-vegetation work (preferably organised as part of a participative, structured program, rather than one-off events), help people to interact with the natural environment and share skills and knowledge while engaging socially. Hands-on learning was identified as the most effective educational approach in a baseline community survey conducted for our Western Fitzgerald Biosphere case study.¹¹³
- Fostering face-to-face learning through a speaker, guide, group discussion or activity has several success factors: social contact, the capacity for interaction and recognition that, as with hands-on experience, a lot of learning is not done through reading.

The outcomes for biodiversity will follow if we get these processes right.

4.1.4 Capacity building

‘Increasing the ability of individuals, groups and organisations to plan, undertake and manage ventures and other initiatives.’¹¹⁴

Our approach will increase the capacity of local communities to research, plan, implement and evaluate the learning process by:

- showcasing and recruiting local knowledge and expertise – giving ‘local experts’ increased recognition and confidence and building relationships within the community so that this expertise is more available;
- fostering relationships with external groups and individuals who have valuable skills, knowledge and perspectives, including scientists, academics, artists, writers and activists;
- adopting knowledge-sharing to strengthen a communities’ capacity to manage an ongoing learning process, in contrast to the dependency approach of simply offering information ‘extension’ services, such as a bundle of pre-prepared educational materials with no real connection to the local area;
- designing and documenting a learning process that improves access of all communities to information about biodiversity and biodiversity education, and can be useful beyond the scope of the current funding;
- establishing a mentoring program to ensure that a range of biodiversity implementation officers, natural resource management workers and community members across the region have knowledge of and experience with the biodiversity education and promotion framework; and
- working to ensure that biodiversity education becomes integrated into a range of landcare and natural resource management activities across the South Coast region.

Additionally, we aim to assist communities to increase their action competence to achieve change. This operates at a number of levels, from specific knowledge about biodiversity protection and management, to having the ability to influence high level decision-making for systemic change (see 'Action competence and capacity to change' at 3.2.4, Achieving Change). This aspect will be developed in the next iteration of this package.

4.2 Structure and content

The biggest challenge facing Greening Australia (WA) is developing the structure and content of the learning process, particularly deciding between:

- Designing a one-stop-shop (fully-integrated) learning program directly tied to on-ground change processes. Several examples exist of this type of approach: Greening Australia's Stepping Stones: Creating Healthy Habitats biodiversity education project, which aims to establish an effective model for achieving behavioural change in urban garden practices¹¹⁵; the Living Landscapes landcare program¹¹⁶; and the Watershed Torbay approach to whole of catchment waterways restoration¹¹⁷; or
- Inserting biodiversity education components into existing landcare, natural resource management and environment projects.

We favour the latter approach because it allows Greening Australia (WA) to develop and offer a range of techniques which can be adapted across the region and made use of beyond the limits of this project and its funding. This adaptability will also enable the package to be more responsive to local needs and strengthen local capacity and relationships. Greening Australia will work as a facilitator to assist local groups keen to initiate biodiversity education within their existing projects, and then step back to a supporting role as the local groups pick up the reins. This way we not only increase available resources to this project, but increase the chances that specific projects will extend beyond the current biodiversity package funding.

The latter approach also recognises the resource limitations we all face and the likelihood that in the short-term we couldn't deliver a resource-intensive biodiversity education model across the region. The risk of a piecemeal effort or partial measure arising from this approach needs to be addressed in the next iteration of this package.

- In essence, we are adopting a "modular" approach: Greening Australia (WA) will engage a Local Facilitator in each community that is the focus of the biodiversity education project. The Local Facilitators will collaborate with about the local community, its attitudes and needs and any obstacles to involvement in biodiversity protection;
- Creating a learning process that is tailored to the community and local biodiversity issues, and links in with other natural resource management projects in the area; and
- Building relationships with key individuals or groups who could assist in the learning process.

Once this groundwork is in place, we envisage that local groups will manage most of the hands-on activities to build understanding of biodiversity and implement community-based actions to protect and manage biodiversity. Our package, especially Part Five, Guiding Principles, will be a tool available to these groups.

PART FIVE

Guiding Principles

5 Introduction

Our original idea had been to present a single methodology document that described a detailed step-by-step practical approach to planning and implementing a biodiversity education learning process that resulted in making changes that benefited biodiversity. But the more we read and digested (see the 'Achieving change' section) the more we realized that it is very difficult to write a single methodology – in each situation different principles will have more relevance or importance and will guide choices that customize your program plan. There will be decision points throughout your planning process where only you can select the best path. As a result this section offers guidelines and principles, not hard and fast rules. It also directs you to additional reading material which will deepen your understanding on issues so that the best choices and decisions can be made for your program. There are lots of references but we have chosen to point you to a short list of items that we found most useful, were referred to by others we trust and that are readily accessible.

There are no bibles, just a multitude of appropriate approaches – none is necessarily “right” or “wrong”. All situations are different – what is important is to follow fundamental principles not rigid models.

This section assembles the guiding principles that we feel you need to carefully consider before designing a program. Thoughtful consideration and application of these principles will allow you to create a customized program that is tailored for your specific area, community and environmental objectives. We have also presented a program plan for the western Fitzgerald Biosphere pilot to give you an example of how the principles have been assessed and utilized in our pilot area.

This is a working document which will be improved and modified with your input and feedback. As you and others implement biodiversity education programs we would like to incorporate your learnings into the document, refine the existing principles and add or delete others with your consultation.

A word of advice – our aim is to foster learning frameworks that result in positive environmental change. We feel that quite central to the success of a program is a facilitator with special knowledge and skills as well as enthusiasm and commitment. This person may not be available in your community. They may need to be borrowed from elsewhere – a substantial budget item!

Below are the basic steps in a program cycle. The following tables outline the principles involved in each of these steps with references to additional reading materials and some short discussion.

5.1 General principles

The following principles underpin the entire program

1. Clear, purposeful planning is vital to the success of your project and always saves time and money. (Many of us would cheerfully skip to 'doing things' as we are keen to 'just get on with it'. And you can. At the end of your program you will be able to report that you have done x, y and z. But have you really made a change in what is being done and how a place is being cared for? Have you left a community that is working towards an environment they care about and will take action to change?) .
2. Ideally the program should be driven by a community's needs, desires and priorities - not your own. However it may be that your program is driven by pre-determined biodiversity objectives. Scientists and specialist community knowledge may have determined these ecological priorities without the broader community's involvement. In this case you need to build a program which fully involves the community in how to best achieve these objectives.
3. The community must be involved in every stage of a program (and should be supported so that they may carry on the work well after you and other facilitators have left).
4. An environmentally beneficial program can only succeed if you consider social, cultural and economic factors in your community.
5. You need to be flexible and responsive throughout the program and continually assess each and earlier steps. Return to previously made decisions and re-evaluate constantly. As the situation changes, you must respond.
6. Trust is an extremely important ingredient in the success of a program - trusted knowledge sources, trusted facilitators, trust in program and partnerships.

5.2 Basic steps in a program

These are the basic steps but it is difficult to even put them into an order. For example some of planning for change steps may come before your research. The order doesn't matter, what matters is that the principles are all considered and that you constantly reflect, evaluate and respond as you progress.

5.2.1 Research

Research your community so that you understand their priorities, concerns, values and barriers to change as well as knowledge sources and existing programs.

- 1 Know your community
- 2 Decide on your audience
- 3 Assess opportunities for collaboration
- 4 Assess pressure for change

5.2.2 Planning for Change

Awareness raising is not enough. Plan for actions that benefits biodiversity.

- 1 Vision, goal, objective and target setting
- 2 Capacity for change – skills, partnerships, training
- 3 Set actionable first steps
- 4 An ongoing program

5.2.3 Implementation Plan

Who will do what where, and when

- 1 Develop a communication strategy
- 2 Determine key messages
- 3 How will you deliver the messages?

5.2.4 Assessing and Refining

Reflect on what has been achieved and evaluate and document the programs progress.

- 1 Monitoring and evaluation
- 2 Are we meeting targets
- 3 Reassess objectives

Refer: 5.2.1 Research

Guiding principle	Information to consider	Tools and tactics
<p>1 Know your community</p>		
<p>Define your geographic area</p>	<p>When choosing your area we suggest you consider the following factors:</p> <ul style="list-style-type: none"> • Your audience and where they live, work and socialise. Social boundaries may be determined by sport clubs, schools, fire brigades, geographic features, quality of roads and distance to nearest town. Social boundaries can be very important in facilitating information flow, finding dates when your audience is free to attend an event, utilizing word of mouth... • Cultural boundaries (e.g. religious, ethnic). • Ecological units and 'boundaries' (e.g. major geological units, vegetation associations, catchments). • Amount of funding available - both from your project and external funding that can support the work. • Existing projects with which you can be involved. <p>Travel distances yourself and your audience.</p>	<p>Use existing reports:</p> <ul style="list-style-type: none"> • Look at shire boundaries and other maps. e.g. catchment boundaries, vegetation types • Ask locals to draw social and cultural boundaries on a map.
<p>Understand community attitudes and values – particularly on environmental issues.</p>	<p>Your program audience may be a section of the community but it is still important to understand your whole community as they will influence your audience.</p> <p>Understand the demographics, what the community will make time for, where they socialize, play sport, holiday, times when they are busy and times when they have more flexibility in their programs, where their</p>	<p>One-to-one discussions.</p> <p>Focus groups.</p> <p>Desk top research.</p> <p>Asset mapping.</p> <p>Information through local networks - local newspapers and newsletters, email networks.</p>

Guiding principle	Information to consider	Tools and tactics
	kids go to school and, of course, their attitudes to, depth of knowledge about and commitment to biodiversity.	
Know and respect the community time frames and build your program around availability.	Don't rush – move when the community is ready or you'll leave them behind. Hold activities-events when the community has opportunities to attend.	Calendar of seasonal activities in the area e.g. for rural areas - lambing, seeding, harvesting ... Calendar of events in the area e.g. field days, sporting fixtures, committee meetings.
Identify stakeholders.	Community members and partners in your program are clearly stakeholders. But ask yourself - where are the decision makers for this area? They may reside outside the area. As an example, if your program was based around Hopetoun two key stakeholders would be Landcorp and BHP Billiton.	Together with the community draw together a list.
Ensure the community is part of your team at all stages of planning and implementation.	You, your partners and the community are working together to develop a program motivated by community concerns, values and priorities. Always remember it is the community members that are voluntarily making commitments and taking action.	Ensure open and accessible community consultation at every step and from the very beginning of a program. Use existing trusted communication networks. Try to welcome all sectors of the community by consulting at different locations and different times of the day Use a variety of communication tools to ensure everyone has an opportunity to be involved.
Find key people in the community.	Key people are motivated, passionate, enthusiastic, knowledgeable and most importantly trusted by their community. The involvement of these people is likely to be important to a program's success.	Key people are referred to wherever you go, they aren't hard to find.
Learn from past and current programs.	Research past and current biodiversity	Desk top research:

Guiding principle	Information to consider	Tools and tactics
	<p>education related programs in the region to find:</p> <ul style="list-style-type: none"> • current conservation priorities • what programs have worked and didn't work. • Identify gaps in biodiversity education. • Don't reinvent the wheel - if something has worked consider continuing or building on this initiative. This also builds continuity. • Get a feel for community priorities and how committed a community may be to a program. 	<ul style="list-style-type: none"> • Consult regional network such as SCRIPT, agencies, NRM's, community groups. • Talk to peers. • Discuss with partners in past and existing programs. • Read relevant reports. • Ask the community members themselves!
<p>Find out what the local community feels is important about local biodiversity. This information can provide the hooks to achieve local engagement.</p>	<p>Hooks – specific issues that the majority of community members recognise and sympathize with - may not be the most important ecologically but may be able to lead people to the supporting ecological processes. For example Malleefowl have captured the imagination of many but underlying ecological processes of predation, connectivity etc are integral to the Malleefowl programs.</p>	<p>Local media reports, what are the underlying issues?</p> <p>Talk with existing groups to gauge feelings and values about biodiversity.</p>
<p>Determine if there are any related initiatives, such as an ecotourism campaign, which could be linked to the biodiversity education program so as to gain broader community appeal.</p>	<p>The environment does not stand on its own - it is part of all facets of our life so can be promoted in a wide variety of forums. Build on existing initiatives.</p>	<p>Visitor and tourist information centres, tourism operators, outdoor education.</p> <p>Build on existing eco tourism activities to showcase biodiversity through guided walks, field surveys etc.</p>
<p>2 Decide on your audience</p>		
<p>Identify specific audiences. Who needs to act? Who will you aim to influence?</p>	<p>Before you select your audience you may first need to think about whether you have a pre-existing environmental agenda. If you</p>	<p>Talks to agencies, community groups and individuals who have a presence in the area.</p>

Guiding principle	Information to consider	Tools and tactics
	<p>have environmental outcomes you wish to meet they will help you to determine your audience group.</p> <p>A discussion on choosing your audience can be found in Box 5.2.1</p> <p>Additional points to consider when selecting your audience are as follows.</p> <p>Experience from the environmental education field suggests that just one, or at most two, audiences should be selected, especially in the early stages of implementation.</p> <p>Which specific outcomes for biodiversity are you seeking and which audience will deliver these outcomes. Your goals may dictate your audience.</p> <p>Existing work – build on existing work rather than establish a new project – utilize the audience an existing project has already brought together.</p> <p>Your budget – don't spread your efforts to thinly, it may be better to choose just one small audience group and do the job well.</p>	<p>Key connections – if there are existing valued and trusted people within certain groups it may be easy to use these connections and their audience.</p> <p>Seek out common goals from existing programs that can link key audiences.</p>
<p>Get to know your audience.</p>	<p>Understand the audience - their needs, values, aspirations and practices. For a program to be successful community priorities need to drive the program and set and achieve objectives.</p> <p>Throughout the program you will learn more about your audience.</p>	<p>Similar techniques to those used in getting to know your community.</p>
<p>Progressive social change is a collective, never an individual process. (Les Robinson 2001, p4)</p>	<p>Often one-to-one communication is cited as the best way to get a message across. And the so called early adopters (See box 5.2.1 Choosing your audience), will take action</p>	<p>This is where working together to picture a shared vision for the future comes in.</p> <p>Find the early adopters who will be 'leaders'</p>

Guiding principle	Information to consider	Tools and tactics
	<p>before the majority of the community. But unless a community as a whole adopts or supports an action based initiative, change is unlikely to be sustained.</p> <p>Indeed biodiversity issues need to be addressed at the ecosystem or landscape scale, which makes them too big and complex for individuals to address on their own.</p>	<p>for action.</p> <p>Support and encourage the 'leaders'</p>
<p>Working with children can be very rewarding.</p>	<p>School children can be an ideal audience. When working with children remember:</p> <p>School programs can take lots of time.</p> <p>It is often the commitment of the teacher that dictates how well your program will go.</p> <p>Plan well in advance - teachers need to know 6-12 months in advance to allocate time into their schedule.</p>	<p>Talk to teachers about your program and potential learning areas that could be addressed. Work to incorporate outcomes into key areas.</p> <p>Tie in with teacher professional development days.</p> <p>Seek a 'whole school approach' to biodiversity education</p> <p>Address several priority outcomes in the curriculum framework to help justify the inclusion of your program in the schools schedule</p>
<p>3 Assess opportunities for collaboration</p>		
<p>Piggy-back your messages into existing programs or events where possible.</p>	<p>Consider integrating your activities with an existing program that offers useful opportunities. Community members are often very time poor so creation of new programs may not be so well received – both in terms of community members finding time to be involved with the planning of a new program as well as time to attend additional events.</p>	<p>Get to know other programs, activities, events already in your area.</p> <p>Use desk-top research and talking with peers and community members to learn about existing programs.</p> <p>Through discussion with existing program planners whether there is a real and useful opportunity.</p>
<p>Value both community based and scientific knowledge.</p>	<p>Respect and utilize knowledge from all sources - institutional, agency, local groups</p>	<p>Ensure message is relevant and easily understood by your audience</p>

Guiding principle	Information to consider	Tools and tactics
	and community members.	
4 Assess pressure for change		
Change must be driven by community aspirations and objectives. People must be able to see the problem and some potential solutions.	Change can only occur if there is a perceived and agreed need for change within the community. People change for their own reasons, not yours.	One of the tactics is to have a facilitator who invites the audience to ask questions. Often people try to form solutions before they have the questions worked out. Asking the questions then forming the solutions makes the agenda their own.
Anticipate conflict of interest within the community	Think about what your antagonists may say.	Think through and develop responsive statements before you begin

Refer 5.2.2 Planning for change

Guiding principles	Information to consider	Tools and tactics
Have a facilitator with the required skills.	Use a local respected person if possible.	<i>Suggested reading ref 2, chpt 8 (see reference list below this table).</i>
High levels of awareness are not necessarily sufficient to change behaviour.	<p>It's important to focus on more than awareness levels and attitudes. Many environmental education programs have been unsuccessful because they focus only on providing information and expecting people to change. There is no necessary cause-and-effect progression from knowledge to attitudes to action.</p> <p>To bring about change requires active management: clearly outline a philosophy of change and use a change framework to help guide implementation. Through her work with the Watershed Torbay Louise Duxbury feels that the following elements need to be present simultaneously for change to occur: pressures for change; a clear vision; capacity to change; and first actionable steps</p>	<i>Suggested reading on change ref 2, chpt 7, ref 4 and 5</i>
Identify, prioritise and remove barriers	<p>There are barriers to engagement and barriers to implementation. Obstacles or barriers need to be recognised then cleared away for a program to succeed.</p> <p>Sometimes barriers can't be removed. In this case you may need to revise your plan.</p>	<p>When talking to people and groups listen for recurring themes in comments that could indicate barriers.</p> <p>Current literature on similar programs may identify barriers.</p> <p>Pre-testing and pilot programs can identify barriers.</p> <p>Promote benefits of positive actions.</p> <p><i>Suggested reading ref 4.</i></p>
Use of incentives can be a powerful motivator.	Incentives are obviously things people value. These could include funds, advice,	<i>Provide incentives after additional reading on what works</i>

Guiding principles	Information to consider	Tools and tactics
	<p>physical assistance, engendering a feeling of pride, a promise of better health, fun family time.... What incentives will work depend on your situation and audience.</p> <p>It is important to think of incentives as other than 'carrots'. Can you link your program to key motivators such as improved health, improved lifestyle, leaving a better place for our children. Shared visions may incorporate these incentives. Incentives should not be used in isolation.</p>	
<p>It is the behavioural change that matters, not the initial attitude or lack of awareness.</p>	<p>This is an interesting and debatable point. If we talk about all having a shared vision then working towards that vision, this point is null and void. But when some community members may not be fully engaged with the vision. Then this principle becomes valid.</p> <p>It may be difficult to get the whole community involved in visioning, so your vision may have been established using only available representatives.</p> <p>Environmental attitudes don't necessarily lead to positive behaviours,. But the learning can <u>follow</u> the action if an educator is there with a set of reasons. Action can help to form attitudes.</p>	<p><i>Suggested reading ref 2, chpt 5,</i></p>
<p>1 Vision, goal, objective and target setting</p>		
<p>Work with the community to develop a clear and agreed community vision then goals, objectives and targets.</p>	<p>There are schools of thought that indicate that an agreed and shared community vision of the future is a critical step in</p>	<p>Envisioning workshops, focus groups, meetings, bus trips, social events etc. This requires a facilitator with the right skills so</p>

Guiding principles	Information to consider	Tools and tactics
	<p>developing a successful program. Once a vision is agreed upon goals, objectives and targets can be set.</p> <p>Points above have already referred to collective rather than individual work needed to effect change and that the scale of change needed requires community effort. But it not just about a vision of a sustainable future - it is getting people to think critically about what is cherished and non-negotiable in their lives and to challenge the mental models which have driven us to unsustainable development.</p> <p>Definitions</p> <p>Vision - a hope or dream for the future e.g. a restored Bremer catchment.</p> <p>Goal - preferred practical strategy to achieve a vision e.g. a restored Bremer catchment: through a supported local community campaign to address erosion.</p> <p>Objective - is a measurable action to achieve the goal. It defines the players involved and the time frame e.g. local landholders fence Bremer waterways to reduce damage to river banks by stock.</p> <p>Target - measurements to be achieved if the program is to be considered successful e.g. 50% reduction of stock accessing natural waterways.</p>	<p>You may need to consider some training or involving a professional facilitator. A good facilitator needs to be neutral, a good listener, interested, assertive, clear thinking.</p> <p>Suggested reading ref 5, chpts 5 and 7.</p>

Guiding principles	Information to consider	Tools and tactics
Ensure that community values and priorities drive the program.	<i>Unless the community owns the vision, the problem and the solutions they will not remain engaged, active and supportive.</i>	<i>As above, establish and maintain effective communication. Allow for regular feedback.</i>
2 Capacity for change – skills, partnerships, training		
Look at establishing sound partnerships.	Partnerships are a way of strengthening what you can offer through supporting: funding; capacity; networks; skill sets - a partnership may supply complimentary or required skill sets; longevity - affiliation with an agency or long standing institution can help to ensure continuity and an ongoing program; and acceptance into a community.	Seek common objectives and prioritise how you can work cooperatively. Build on each other’s strengths. Document each partner’s role and responsibilities etc.
3 Set actionable first steps		
Set achievable actions.	People need to know what they can do to contribute to the solution. Setting actionable, achievable, realistic first steps is important. As the program develops additional action plans can be devised together.	Clearly document actions people can take and provide advice and support. Keep it simple! Celebrate achievements, no matter how small.
4 An ongoing program		
Build the capacity of the community to act after your program is over.	Key to this is: Good framework within which the community can continue to work Partnerships with organisations with a continued presence in the community. Training and mentoring - leave community	Build knowledge and skills of community through activity supported with essential local information Encourage cooperation between existing groups who have common goals. Motivate and engage a local facilitator -

Guiding principles	Information to consider	Tools and tactics
	members with the skills and confidence to continue the work into the future.	see below.
Facilitation rather than expert educators.	<p><i>Instead of an expert to provide information and 'lead' the program, a facilitator should be dedicated to helping the community to reflect on and challenge current thinking models that underpin their actions and decision making processes, and assist the community to develop new decisions and actions.</i></p> <p>People will warm to local 'facilitators' whom they know and respect.</p>	<p>Have a facilitator with the right set of skills Suggested reading ref 5, pages12-15; ref 3, section 5.</p> <p>Support them with resources, contacts, etc.</p>
Use local expertise rather than external 'experts' where possible.	<p><i>Expertise from outside the area should be welcomed when needed.</i></p> <p>Pitch at the right level, remember your audience.</p>	Find out local people who are respected by the community for their knowledge and experience, actions.
One-off activities can be fine but need to be followed up and fit into a broader initiative.	<p><i>Sometimes valuable, one-off opportunities arise that would be unwise not to capitalize on. Look to fit them into the broader implementation plan.</i></p> <p>How can activities or actions be followed up?</p> <p>What is the underlying message behind the activity?</p>	<p><i>Link with other opportunities presented by partners.</i></p> <p><i>Draw up a list of follow on activities before the event. Preferably this will be a natural linkage and will illustrate another one of your key messages on biodiversity.</i></p> <p><i>Use the participants at the activity to generate their own follow up action (in line with your overall objectives).</i></p>

Refer 5.2.3 Implementation Plan

Guiding principles	Information to consider	Tools and tactics
1. Develop a communication strategy		
	<p>A pitfall to biodiversity education is not doing a communication strategy then reviewing and updating as required. Basic parts of a communication strategy are:</p> <ul style="list-style-type: none"> • working out key messages • working out how to deliver these messages 	<p>Several matrices or tables can be used when designing a communication strategy. For example use a table with column headings: audience subgroup; objective; key messages; and tools and tactics to deliver.</p>
<p>Highlight the local context and develop people's sense of place.</p>	<p>By highlighting and showcasing the local context people become more engaged. It become their place, not just any place. Developing their sense of place is very important. But it also important for people to understand their places' importance in the wider context - landscape or global scale.</p>	<p>Produce locally relevant information materials</p> <p>Hold activities at people's properties to highlight their biodiversity value.</p> <p>Compare the biodiversity of this locality to other areas of WA or Australia.</p>
2. Determine key messages		
	<p>Your goals and objectives will guide the key messages. The messages need to provide stimulation to 'get active' and do something towards the shared vision for the future. Within your message include a call to action - what people can actually do.</p>	<p><i>See box 5.2.2 Checklist for effective messages.</i></p>
<p>Are there different subgroups within your audience?</p>	<p>Your main audience, for example rural landholders, may have several identifiable subgroups e.g. children, wives, retired farmers. You may have different messages for these subgroups.</p>	<p><i>Find out what are their motivators. Meet and talk to them - it helps!</i></p> <p><i>Tailor messages according to the subgroup, its unlikely they will be the same.</i></p>

Guiding principles	Information to consider	Tools and tactics
Pre-test your messages.	Trial before launching the full campaign, modify according to feedback.	<i>Focus groups - Suggested reading re 2, chpt 20</i>
It's about sharing knowledge - the two way flow of information.		
Need to hear the same message from a number of angles.	It is said that in these days of the information era a person needs to hear the same message 11 times before they 'get it'.	<i>Use different mediums e.g. visual, audio, printed Alter to present to different audiences.</i>
Be careful with the language used to communicate with your audience.	Don't loose your audience because they can't understand what you are saying because it is too scientific, simple, disrespectful or inappropriate in some other way. <i>See box 5.2.3 The language of biodiversity</i>	<i>Pre-test on a local audience; ask them to help rephrase the message using their lingo.</i>
3. How will you deliver the messages?		
Use the right tool for the job.	You know your audience, have agreed on your objectives and now need to get the messages to more people. You need to carefully consider: The multitude of ways to get your message across. Be imaginative and creative - don't just go for the same old ideas unless you have considered other options and then made a conscious choice to do so. Funding. Capacity. Bang for your buck. What will give the most benefit for the input of time, effort and money?	<i>See box 5.2.4 Tips for delivery of messages</i>
Pre test	What will it tell you about methodology and audience?	Pilot the ideas and techniques.

Refer 5.2.4 Assessing and refining

Guiding principles	Information to consider	Tools and tactics
1. Monitoring and evaluation		
Monitoring and evaluation should be planned up front and continue throughout the project.	<p>Monitoring and evaluation: is 'integral to the ultimate success of any project';</p> <p>continues throughout the project at all levels, not just the monitoring of on-ground outcomes but of your entire process;</p> <p>'happens while a project is proceeding, not as some kind of final step after the project is finished'; and</p> <p>'is critical in helping you tell your story and build credibility'.</p>	<p><i>Evaluation program specifically designed for your program. This is likely to involve surveys that can be used before, during and after the program. You may choose to have a partnership with a research organisation that has strengths in monitoring and evaluation.</i></p> <p><i>Event evaluation forms.</i></p> <p>Listening to people.</p>
Evaluation of entire program - what worked and didn't work.	<p>Evaluate</p> <p>Barriers - what were they, how were they dealt with.</p> <p>Messages - what worked, what needs changing</p> <p>Techniques for delivery of messages.</p> <p>Think about success in terms of investment of time, funds, contribution to achieving targets.</p>	<p><i>Document your learnings</i></p> <p><i>Suggested reading ref 2, Ch. 14, ref 3, Ch. 3.</i></p>
Document processes and learnings in ways the community find most useful (web log, book, stories, video...)	Not everyone learns in the same way or has the same access to information.	
2. Are we meeting targets		
Did we achieve what we set out to achieve?	Targets have been defined in measurable terms which can be reported on.	Know baseline involvement in the target action prior to implementation of the project and at several points afterwards.

Guiding principles	Information to consider	Tools and tactics
Are stakeholder objectives being met?	Reflect on the success of meeting targets and evaluate whether all stakeholders are happy with the progress in terms of what was achieved, degrees of difficulty, expense, level of commitment required and time frames.	
3. Reassess objectives		
	Do the objectives need to be altered, new targets set etc? Has the vision changed?	
Provide feedback to the community	Let people know how effective their actions were	<p>Create opportunities for people to talk to one another about what they have done</p> <p>Showcase success - through media, local networks and celebratory events</p> <p>Celebrate success - social events.</p>

5.2.1 - Choosing your audience

There are a number of critical points to consider when thinking about the important issue of audience.

There is a strong argument for a tailored, rather than generalised, approach to biodiversity education. For example, a Canadian review of biodiversity education found that it is best done by ‘designing educational initiatives for specific groups within specific contexts’ rather than trying to educate ‘the public at large’ through mass media campaigns.¹¹⁸ This approach stems from ‘Growing recognition that the public is not a homogenous mass, but diverse groups of people with differing perceptions, knowledge, attitudes, interests and agendas’.¹¹⁹

Then there is the question of where in the community spectrum to aim. Following research into how urban people relate to living with wildlife, NSW agency staff worked from the premise that on a spectrum of attitudes and behaviours towards the environment and biodiversity, urban people with strongly positive and strongly negative views probably represent a relatively small proportion of the community. They took the view that *‘The “community norm” ... is the set of attitudes held by most of the population. We would expect this group to have moderate and indifferent attitudes and behaviours towards urban wildlife. Mobilising positive attitudes and behaviours in this large part of the population is an important goal for wildlife managers.’*¹²⁰ They argued for taking ‘conservation attitudes and behaviours beyond those who are “keen and knowledgeable” and into the mainstream.’¹²¹

Similarly, in our south coast consultations about audience selection, we concluded that the ‘middle ground’, which we define as ‘open-minded’, represent the majority of people. Given limited resources, we felt there is little point focusing on those with negative views (hopefully they’ll be pulled towards the positive end of the spectrum as the middle ground moves that way), and it’s likely that those already holding positive views will join in. Wary of the conservation adage ‘don’t just preach to the converted’, our thoughts focused on how to reach the middle ground.

A useful thinking tool is the Diffusion of Innovations theory, which holds that the adoption of a new behaviour ‘begins with visionary, imaginative innovators, attracts experimental early adopters, and eventually sweeps in majority audiences, with laggards holding out to the bitter end’.¹²² According to this model, one might involve innovators in the design of the program, and focus on reaching the ‘early adopters’ who will ‘take the message’ to the middle ground where the bulk of people lie. (For one account of this model see pp. 41-47 at http://wwf.org.au/publications/enabling_ecoaction/; or web search a host of other material).

Another point worth considering challenges us to think about the needs of those we call the ‘converted’, rather than brushing them aside: Keith Bradby, Gondwana Link, argues that there is significant unmet demand for biodiversity education and involvement among those members of the community who are interested in environment issues and ready to be engaged. These are people who have been waiting or looking for an opportunity to become active.

You might find it useful to consider these two key questions when thinking about your audience:

- what specific outcomes for biodiversity are you seeking in the local area; and
- which audience will deliver these outcomes.

5.2.2 Checklist for effective messages

This list has been built from materials in all the references below, as well as through insights gleaned by talking with others.

- Be responsive to the local context - make the message work for your audience in their 'place'.
- Be clear and concise so that a message can't be misinterpreted.
- Use captivating information - gee whiz facts.
- Include a call to action - clearly state what you want people to do.
- Frame your message to indicate what the individual is losing by not acting, rather than what he/she is saving by acting.
- If you use a threatening message, make sure that you couple it with specific suggestions regarding what actions an individual can take.
- Make it easy for people to remember what to do, and how and when to do it.
- Be careful with your language - avoid jargon, being too scientific or too simple. Be respectful. Pitch your message in the language your audience is comfortable with.
- Have your message delivered by an individual or organization that is credible with the audience you are trying to reach, i.e. someone they trust.

5.2.3 The language of biodiversity

*'[B]iodiversity (short for biological diversity) is everywhere organized into three levels. At the top are the ecosystems, such as rainforests, coral reefs and lakes. Next are the species, composed of organisms in the ecosystems, from algae and swallowtail butterflies to moray eels and people. At the bottom are the variety of genes making up the heredity of individuals that compose each of the species.'*¹²³

Biodiversity is all living things and the processes and interactions that connect and sustain them, such as pollination and nutrient cycling.

As one south coast person remarked to us, 'the term biodiversity is a turn off'. It is hard to find a plain English definition of biodiversity, and this, combined with the newness of the term (coined around the mid-1980s), probably contribute to its low public standing.

Market research in Victoria found the term biodiversity 'has still not been incorporated into common usage' and 'many are at a loss when asked to describe what it means.'¹²⁴ Similarly, a NSW study found that 'specialty language such as "biodiversity" and "ecosystem" were seen to be primarily the domain of "boffins" and "scientists"'.¹²⁵ In a baseline survey for this project, many of the 98 individuals' responses to the question 'What does the term biodiversity mean to you?' fell well short of the concepts found in scientific definitions.¹²⁶ Authors of an Australian biodiversity education handbook comment that 'Despite considerable educational effort over several years, "biodiversity" continues to be poorly known and even more poorly understood'.¹²⁷ They argue it is a technical term that is 'abstract and remote from most people's lives' and is 'a poor mobilising concept for the public'.¹²⁸

*These authors preferred to use the word "nature" and 'propose that "biodiversity" is a term which can best be understood through personal experience of nature, and through conversations which connect experiences to ecological realities and values. Biodiversity education is therefore about bringing people together to experience nature in the company of their peers and experts, and about designing situations that allow discussion and reflection. Simply writing or talking about biodiversity will not work.'*¹²⁹

Several scientists we consulted argued that terms like natural environment, natural diversity, or nature are preferable to biodiversity because they are more inclusive of the physical (not just the biological) environment, including geology, landforms, climate and so on.

In the search for palatable language, public understanding and acceptance of other terms such as natural environment, wildlife and nature have been tested. 'Natural environment' was described as unspoilt/pristine and untouched by humans in both the Victorian and NSW research. Since we are looking to bring people into the picture, as part of the ecology, and to strengthen an inclusive sense of place through humanising stories about nature, this public perception of 'natural environment' as people-free would present a challenge.

The NSW study found the term 'wildlife' referred to 'animals rather than plants, and in fact, to larger animals and birds rather than insects ... it did have clear connotations of animals roaming free in their natural environment.'¹³⁰ The public's understanding of this term doesn't appear to provide us with a strong starting point for communicating about biodiversity.

In the Victorian research, 'nature' was found to be a 'positive word with very favourable associations', meaning 'green, walks in the bush, fresh air, parks, plants and animals, birds and "all that we need to look after.'¹³¹ This view of 'nature' permits a human presence and allows a role for people as custodians. The term is also very much accepted in common usage. It seems to us that use of 'nature' in communications would place us part way down the track to engaging the wider community.

5.2.4 Tips for effectively delivering messages

General

- Hands on, sensory activities are the best. People love to touch and hold things.
- Be inventive - use new techniques, think of clever, captivating ways to package the message that can't be discarded and thrown away eg. a calendar instead of an information flyer.
- If possible communicate with people through existing mechanisms rather than creating new ones eg use local newspapers rather than create a new newsletter.
- Use a range of media:
 - VISUAL - electronic (web sites, DVDs), TV, photos, artworks, installations, fridge magnets
 - PRINTED - books, newsletters, newspaper articles, calendars, pamphlets, postcards, greeting cards, maps
 - PERFORMING - play, concert, musical, theatre, recordings of natural sounds, mime, dance
 - AUDIBLE - CD, radio, podcasts, story telling circles, music, songs
 - ACTION BASED - demonstrations, doing real work, workshops, walks, spot-lighting,
- Get the timing right - time of day, day of the week, season. For example, when farmers are busy at harvest they are unlikely to attend an event but will probably listen to country hour on their radio.
- Help people see what actually works - practical demonstrations of the actions you are proposing

Activities and events

- Use personal contact to deliver your message whenever possible - one-to-one communication is very effective.
- Make it social.
- Make it fun - people learn best when they are relaxed and having fun.
- Ensure your audience is available - the timing is right.
- People learn by actually doing the work required - make sure there is participation in real work (not just tokenistic work).
- Demonstrations are valuable - people like to see the result of someone else, especially a neighbour, taking action. Model the action you want.
- Advertise well - target advertising at your audience, be sure the agenda is clear and inviting.

Suggested reading: communication pitfalls in ref 2, Chapter 31.

REFERENCES

We recommend you access all five references listed below. In the tables above certain passages have been suggested, but all the references below contain interesting reading on most of the points.

1. Community-based social marketing web site: <http://www.cbsm.com/>
2. L. Robinson and A. Glanzing, *Enabling EcoAction: a Handbook for Anyone Working with the Public on Conservation*, Humane Society International, WWF Australia, World Conservation Union, Sydney, 2003. Available at http://wwf.org.au/publications/enabling_ecoaction/
3. Greening Australia (WA), *Living Landscapes: The Story of a Successful Landcare Program in Western Australia*, Greening Australia, Fremantle, 2004.
4. L. Robinson, *The Seven Doors Social Marketing Approach*, paper presented to the Waste Educate 98 Conference. Available at <http://media.socialchange.net.au/strategy/>
5. L. Duxbury and N. Arrowsmith, *Watershed Torbay: Successes and Learnings*, Land & Water Technical Report, 2006.

PART SIX

Case Study: Western Fitzgerald Biosphere

6 Introduction

This project aims to “develop a learning process that helps people, organisations and communities include biodiversity protection in their decision-making and actions”. In order to achieve this aim, the project has developed a localised approach to education, which respects local knowledge and perspectives and the close relationship local people can have with the place in which they live and work. We have also attempted to integrate the work of this project with previous and existing work being undertaken on NRM and environmental project work in the region. In other words, we are building on the range of good work already under way at a local and regional level.

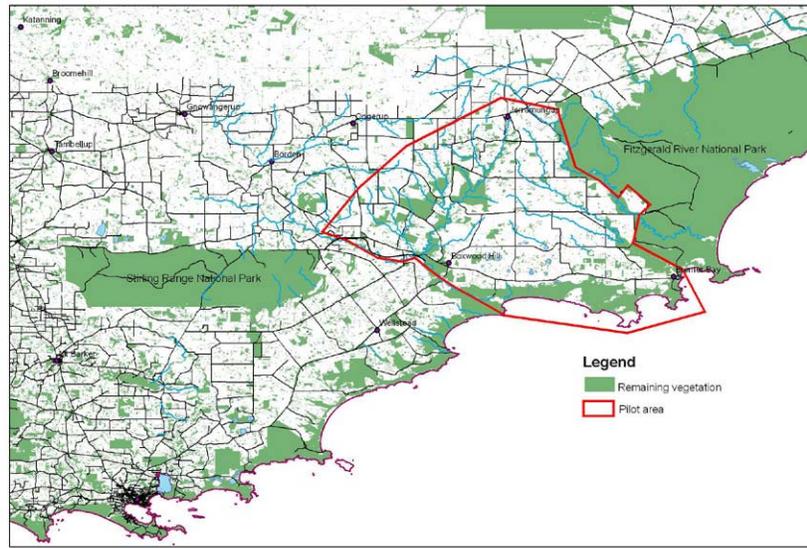
In order to test this approach and to trial different activities or programs, we made a decision to run a pilot project in one of the sub-regions on the South Coast. It is also important to point out, however, that the use of the pilot project is not just a means of trialling different techniques, it is also a fundamental aspect of our approach to biodiversity education. Given the substantial differences in the biophysical landscape and also in the socio-economic context across the South Coast, it is not possible to develop a standard set of activities or printed information that provide a “one size fits all” package for delivery across the region.

The pilot project approach will also enable the project team to monitor and evaluate the success of both the package as a whole as well as of individual activities and modify or improve the package as required. This continuous improvement approach is also an important aspect of our approach to this project. We will use formal feedback questionnaires, meetings as well as more informal conversations with key stakeholders in the pilot region to gain an insight into our successes or failures and to how we can improve our package. These changes will be incorporated in the package documentation for use in the implementation of other subsequent sub-regional projects.

Reasons for choosing the pilot area

After careful consideration and negotiation with local people, it was decided to focus this pilot project on the Western Fitzgerald Biosphere region as detailed on the following map:

Biodiversity education project - Bremer-Pallinup pilot area



This sub-region was chosen for a range of reasons, including that:

- This area has a range of landholders from urban (in Bremer Bay and Jerramungup), peri-urban (around Bremer Bay) and broad acre (rural) audiences. This would allow us to develop and trial approaches/messages/techniques that suit different audiences. Some of the tools and tactics developed for the different types of audiences may then be utilized in other parts of the SCRIPT region that have similar audience groups.
- The Fitzgerald Biosphere Group is very active in the region and we have the support of the Fitzgerald Biosphere Group. The FBG are committed to biodiversity issues as well as sustainable production.
- Our approach to Biodiversity Education is to integrate our work into existing efforts. One of the attractions of the pilot area is that SCRIPT has locally based projects with project managers that are keen to work with us i.e. the Bremer River catchment project and the Wellstead Estuary project. This area also gives the opportunity to work with the Department of Environment and Conservation, Department of Water, Department of Agriculture and Food as well as with the Shire of Jerramungup.
- In choosing the pilot area we looked at social cohesion in the area as this is important to consider with regard to delivering messages, particularly if face to face techniques are utilized. In broad terms the pilot area incorporates two social catchments – Gairdner-Bremer and Jerramungup.
- Gondwana Link and Reconnections have been a focus of considerable biodiversity work in this region and will have neighbouring landholders considering biodiversity issues. It is a good opportunity to build on existing bigger picture work.
- From a logistical point of view the Western Fitzgerald Biosphere is close enough to Albany to make working in this area practical.

- Through Gondwana Link work, Greening Australia staff have developed a better understanding of this area's community and its networks than anywhere else in the SCRIPT region. Knowledge of the local network makes our work much easier and leads to a better outcome.
- It's a lovely area, who wouldn't want to work out that way!

Progress to date

6.1 Community Survey

Amanda Keesing, a member of the Biodiversity Education team, undertook interviews with a wide range of people involved with natural resource management and the environment to gain an understanding of biodiversity education related activities that had taken place in the region and what activities were planned in the future. It was also our aim to find out what people thought about the reasons for the success or failure of these activities. A full description of the process and the responses is included in Part Two of this package – South Coast experience so far.

Key messages - interviews from the pilot area

1. Lots of Landcare work has been done over last 20 years. Some of the basic work still needs to be done e.g. fencing waterways, but landholders need to know that there is still more work to do e.g. revegetation and weed control in the fenced area. There needs to be clear communication about why we need more work and what needs to be done then the provision of information and support.
2. Rural landholders are very busy with their farm business. Even financial incentives may not be enough to stimulate biodiversity protection work as people do not have time. There is the need to move people to a stage where they are willing to adopt management practices that benefit ecosystem health without financial support and that these practices become the norm to consider during farm planning.
3. Biodiversity and productive farming are seen as two separate agendas rather than part of one big picture. Also biodiversity health and personal health are not thought of as interconnected. To increase biodiversity as a priority it would be useful to consider linking biodiversity to income, health and farm sustainability indicators.
4. Information flow needs to be two way and utilise existing networks. Hands-on activities are most successful way of exchanging ideas. Also people need to hear the same message from a number of angles.
5. Apart from landowners, audiences to consider could be Shire staff, farm advisors, agronomists and people new to the area.
6. Integration of projects is needed so people commit to work that is part of an ongoing overall plan.

6.2 Asset mapping

In order to be consistent with our approach to biodiversity education, we initiated a research study through the Alcoa Research Centre for Stronger Communities and this took place between July and September 2006 in the pilot region. The study's brief was to commence

knowledge building about the local community's attitudes, activities and understandings about the natural environment, with biodiversity as a particular emphasis.

6.2.1 Community Researcher Model

The Community Researcher Model used by the Alcoa Research Centre for Stronger Communities is a process that engages local people (community researchers) in evaluating their community. In this case the focus was on biodiversity issues. The researchers play a key role in developing a questionnaire, which they then use to survey the broader community. The ten community researchers and the Local Facilitator, Therese Bell, attended two workshops as part of the process. The first gave the researchers the opportunity to learn more about biodiversity and provided the biodiversity education team with more insight into the community's perceptions about biodiversity issues. The information gained from this workshop helped guide the content of the draft questionnaire. At the second workshop the draft questionnaire was critically assessed and tested by the researchers and their feedback was incorporated into the final questionnaire. Each researcher then took the questionnaire to 10 other community members and surveyed them. Survey results, once analysed, are critical to the development of key messages and the resultant implementation plan.

The biodiversity community researcher process helped the team gain an understanding of the community's attitudes, aspirations, preferred activities, knowledge base, needs, priorities, passions, and opportunities with regard to biodiversity.

This technique also provides baseline data for monitoring and evaluation of the biodiversity education program. As indicated earlier, the questionnaire developed during the process can be used after the implementation phase to assess the community's understanding of and attitude to biodiversity related issues and to develop a program of activities that are appropriate.

As well as community evaluation the community researcher process is effectively a biodiversity education exercise in its own right. Biodiversity materials of relevance to the community were prepared utilizing locally relevant examples and expertise. The ten community researchers were presented with biodiversity information and they then essentially became biodiversity ambassadors and carried this information into the community. The survey process itself therefore raised the level of biodiversity interest and consideration amongst the community researchers and interviewees. In summary, we found that asset mapping builds community capacity through the engagement of local people and the process also builds the communities interest and focus on biodiversity issues.

As indicated earlier, for the pilot implementation project in the Western Fitzgerald Biosphere we chose to employ a Local Facilitator, Therese Bell, to assist us with the community researcher model. This is primarily because we did not live and work in the pilot area therefore did not have a thorough understanding of the local networks or the relationships required to successfully engage, work with and support ten community researchers. Consequently, the local facilitator needs to be a trusted, well connected, valued member of the community who has excellent communication and organisation skills and a commitment to the success of a biodiversity education project. Therese Bell, who was selected for this position in the Western Fitzgerald Biosphere region, proved invaluable during the asset mapping process. Her local knowledge and her enthusiasm were integral to the success of the project.

During the Western Fitzgerald Biosphere community researcher process we also invited both the Natural Resource Management Officer from within the region, Samantha Rayner, and from a neighbouring region (Bella Bamford from the Albany Eastern Hinterland Group) to attend as observers. This mentoring process increases the regions capacity to implement the process in other areas of the SCRIPT region.

6.2.2 Summary of findings

The return of 104 completed surveys was an excellent outcome. It needs to be stressed that this is not a comprehensive survey but rather a 'temperature take' of the pilot site. The study sought information on perceptions of place, activities in place, environmental activities on public and private land, understanding of and importance of biodiversity, attitudes to the environment – which environmental messages work and which ones are tired – sources of information about the environment and preferred ways of increasing environmental awareness.

An overview of the report findings portrays people involved in this study as having an overall appreciation for the beauty and uniqueness of their local environment, a strong connectedness to place and a desire to preserve it for future generations. In terms of reach, the sample provided a good representational mix of age (with the exception of young people under 25 years), sex, educational attainment and employment status. Likewise, there was also a good mix of medium to long term residents as well as new arrivals to the area. There is proportional coverage of each of the 8 designated sections of the pilot area. When these sections are translated into type of land holding, the majority of respondents are rural, followed by urban then peri-urban dwellers.

The difference in landholding impacts on both the relevance of the survey and the responses. For rural landholders central concerns relate to soil salinity, weed and water management, whereas urban and peri-urban landholders predominantly identify off road access, litter on beaches and development in and around town sites. Nevertheless, there are shared concerns around feral animals, introduced flora and land clearing. In terms of involvement in managing environmental concerns, time and money are identified as the key barriers to participation. However, other barriers relate to a lack of 'know how' to address issues, rather than a lack of willingness. The study identifies that the preferred means of learning about environmental management is through practical hands-on opportunities delivered for local people by local people.

Overall, the research project was a very positive and informative exercise – which evidenced high levels of appreciation for the beauty of place and good levels of understanding about environmental matters within current contexts as well as the necessity to sustain the environment into the future. As an entry point, it is hoped that the findings of this study contribute to a better understanding of the social aspects of people and place within the Western Fitzgerald Biosphere and will contribute to decision making about biodiversity education activities in that region.

6.2.3 Asset Mapping – Key Outcomes and Opportunities

The following snapshot of some of the key data for the survey results highlights some opportunities for targeting specific demographic groups or focusing on particular issues. This data will be “filtered” as part of the process for determining context specific activities as part of the Implementation Plan (refer notes below).

Demographics

Relatively high level of educated people – 25% with university degree High proportion with children – 83% - many with young children (47% under with children under 11)

Connection to Place

Reasons for living in the region – family 62% and environment (58%)

Major social activities (sport 45%)

Recreation activities – beach 86%, fishing 75%, walking 57%, bird watching 37% with most of these activities undertaken in the region, particularly at Bremer Bay

What is special about local environment – marine/coastal 25% and landscape 17%

Key landcare/environment issues – different for those in the urban/peri urban and catchment areas. In rural areas it is salinity weeds and water management, for urban people it is off road access beach litter and development; whilst they have common concerns for feral animal, introduced flora and land clearing.

Important issues in life – older people, particularly those over 46, rate the environment highly, so do those with trade technical or tertiary qualifications

Whilst close to half the sample have lived in the area for more than 20 years, 25% have arrived within the past 3 years, particularly in urban and peri-urban areas

Large numbers belong to an NRM organization, particularly the FBG

Many have worked on publicly owned land – weeding and feral animal control predominate.

Barriers to NRM landcare work – time (65%) and money (34%) although 23% felt that they didn't have the knowledge or skills.

Biodiversity

Many didn't know what biodiversity means

Benefits of biodiversity – preservation for the future (32%), protecting wildlife (23%) and maintaining restoring land and water (23%)

Problems arising from biodiversity protection – feral animals, land-use management and financial concerns and weeds dominated.

Attitudes to the Environment

A fairly large majority (63%) either agreed with the statement that the area's biodiversity is well enough protected in national parks or neither agreed no disagreed.

Nearly half (47%) either agreed or neither agreed or disagreed with the statement that it is the government's responsibility to protect the environment.

71% felt that it was very important that destruction of habitat results in the loss of wildlife 69% saw it as very important that what happens in the catchment could lead to a loss of water quality and fish numbers in the Bremer River

58% saw it as very important that the local area has high levels of biodiversity and is one of the world's most important and endangered environments.

Information Sources

Sources of advice – FBG (42%), DAF (40%) and DEC (31%) dominated. Local knowledge from people such as farmers (18%) was also quite high.

Awareness/Usefulness of organizations – again FBG dominated, but DEC, Greening Australia, the Shire Council, the Bremer River Catchment Group, SCRIPT and the Wellstead Estuary Management Group rated high on an aggregate of these 2 scores

FBG and DEC were the most trusted sources of information

Environmental Awareness

The most effective educational approaches were clearly hands on learning, field days, bush visits with experts, workshops and assistance with field research.

Most people find information on environmental issues in the local press and local radio.

6.2.4 Key lessons: planning for activity

A preliminary analysis of the outcomes of the asset mapping process has determined that the following questions are important in the context of any planning for activities in the pilot region.

Is there a potential for family involvement?

Is there a potential for a connection to a sporting activity or organisation?

Does this connect to issues associated with fishing/beach recreation?

Does this address concerns about ferals/weeds?

Does this address land clearing?

Is there a potential for collaboration with the Fitzgerald Biosphere Group?

Is there a potential for collaboration with Department of Environment and Conservation?

Does this address the need to highlight the value of off-reserve biodiversity?

Does this address the need to highlight that it is an individual responsibility to deal with biodiversity protection?

Does this address concerns in relation to habitat destruction?

Can this activity be promoted through local newspapers/radio?

Does the activity involve hands on or field-based learning

These questions will be used as part of the “filter process” during the “implementation planning” phase of the pilot project. Refer to the Guiding Principles Section of this package

6.3 Photo-Voice Project - Kids and Kin with Cameras

As part of the asset mapping exercise, local schools were engaged to undertake a photo-voice project, which would complement the work being done by the community researchers.

Photovoice is a research tool that hands cameras to people who act as recorders and potential catalysts for social action/change within their own communities. By using photographs and accompanying stories the vision and experiences of a vital source of expertise – local people in place – are captured. These viewpoints offer a different perspective from the traditional imaging of the world.

Photovoice is a novel data collection approach that:

- enables people to record and reflect their community's values and perspectives in relation to the local context;
- promotes local dialogue about important issues through photographs and stories; and
- values local knowledge as a vital source of expertise.

Kids and Kin with Cameras involved families taking photographs of aspects of the landscape that they most or least enjoy and describing the significance of the photograph. By encouraging a range of family participants across generations, it was hoped that the wider

community would be able to see through the eyes and hear the voices of a wide range of local people.

The photographs and narratives formed the backdrop of a public display and release of data about the asset mapping project. Computer images of photographs were also made available to research participants and presentations were made at each of the participating schools.

6.4 Community feedback

Presentation to the Community

The results of the survey and photo-voice project were released at a public forum in Jerramungup on Tuesday 17th October, which was attended by community researchers, some of those who were surveyed and representatives of local NRM groups. A formal presentation will be made to SCRIPT staff early in 2007 but in the interim, a copy of the report has been made available through the SCRIPT website for those wishing to get more detailed information.

Feedback from Local Facilitator

Therese Bell, the Local Facilitator, who was employed to work in the Western Fitzgerald Biosphere pilot region felt that the asset mapping exercise was well worth doing and that the information was “very valuable for the people in the region”. She felt that the major shortcoming in the process was the length of the questionnaire, which meant that the time taken by the community researchers was well beyond expectations. She also commented that it would be interesting to do a snapshot of attitudes at different times of the year as she felt that seasonal conditions and the different time pressures at different times in the agricultural cycle affected people’s attitudes.

Therese was also responsible for the photo-voice project with local schools and she felt that this had been a great success. She felt that the schools had enjoyed the experience and that the photos and captions reflected the children’s differing attitudes to the environment.

Community Feedback

Feedback from the community researchers involved with the asset mapping project was obtained through a formal evaluation questionnaire and some of the key findings from that survey are outlined in Appendix 1. This sort of feedback is crucial in the context of the ongoing delivery of this biodiversity education project. As indicated earlier, the pilot project is designed to trial a range of techniques for use in the rollout of the program across the South Coast region and the asset mapping process is an important aspect of the process.

6.5 Fauna Survey

During the workshop sessions, which were held as part of the asset mapping project, the community researchers expressed a desire to be involved with a proposed fauna survey near Jerramungup. Whilst the methodology for this project highlights the need for careful analysis of local issues and community expectations together with careful planning, there is also a need to be opportunistic and respond to particular circumstances. The fauna trapping program is a good example of this opportunistic approach.

The fauna survey was carried out on the Powell farm just south of Jerramungup using trap lines set in 1993 as part of the Fitzgerald Biosphere Project. Well-known local biologist Angela Sanders coordinated the week’s program with Greening Australia project coordinator Amanda

Keesing, and Natasha Moore, SCNRM's Biodiversity Implementation Officer for the Fitzgerald Biosphere.

This year's exercise was exciting for the addition of several more species to the list of fauna found on the block since the end of the first survey in 1994. Combining the survey results from 1993 and 2006, we have found 78 species of birds, 11 species of mammals, 7 species of frogs, 1 turtle, 5 species of gecko, 1 species of legless lizard, 2 species of dragon lizards, 9 species of skink, 1 species of monitor lizard and 3 species of snakes.

This fauna survey highlighted an important fact that is critical to the biodiversity education project, that remnant vegetation on farms is a critical refuge for a range of wildlife. Biodiversity is not just found in national parks!

Another important outcome from the week long trapping program was the involvement of a wide range of community members with local knowledge and expertise in a range of biodiversity issues. We were especially delighted by the strong support from local Noongar people. During the course of the week a number of Noongar people from the region came to Jerramungup to assist with the fauna trapping and to share stories about their connection to the land. It was great to witness this sharing of scientific, traditional and community knowledge and to see that everyone came away from their experience with new stories to tell about the rich biodiversity in this part of the world.

This knowledge sharing was also of enormous benefit to the 27 community members, 54 schoolchildren and 15 teachers who came from the local community and schools to be part of the fauna survey and to learn about the local wildlife. Feedback through Evaluation Forms was very positive with most people rating the event as good to excellent. Some of the most positive comment related to the involvement of the local Noongar people and the opportunity to learn about their connection to that country.

6.5.1 Comments on the fauna survey experience

Angela Sanders, who provided the technical knowledge and coordination for the project provided the following comments after the completion of the week of fauna surveying:

Successes:

- Wide variety of participants from different areas of the South Coast
- Natasha Moore and local women did a great job of organising the non-trapping side of the week
- Involvement of Noongars and their interaction with me and the participants
- Walking the trapline then meeting at the shed for activities worked very well
- Running the event on private property was great as it showed the importance of remnants on farms
- Having different speakers present biodiversity information to the school children and adults
- Having Carol and Lynnette organising activities for the children

The event could be improved by:

- Better structure of the trap checking with Noongar input at strategic points along the way (so everyone gets to hear everything and also to ask questions).
- More time on the weekend (maybe providing lunch) for people to ask questions and network afterwards. Saturday and Sunday could be whole days with afternoon walks

etc on different themes. This would make it worthwhile for people to stay locally over the whole weekend.

Natasha Moore, Biodiversity Implementation Officer for the Fitzgerald Region, who provided the local coordination for the event provided the following comments:

Overall Impressions:

- Genuine interest and desire from community and local primary schools to participate in such events
- Genuine desire from Noongar elders to share knowledge and experiences with local community/ NRM officers
- Fred Powell would like to see a permanent monitoring plot on his block for future trapping programs to tell “the other” story – biodiversity on private land re Gov. Reserves.
- I thoroughly enjoyed organising the week and participating in the week

Positives:

- Noongar Elders have much to contribute to both community and environmental officers working in the field here
- The flow of information is in both directions
- Capacity building local community
- Serves as point from which information can be distributed face to face to community from project managers
- I love working with Angela

Sort of Negatives

- HUGE time investment required to plan/coordinate/execute such events
- Fauna trapping is fraught with ethical dilemmas brought about by weather and bad luck. It takes excellent management skills by fauna handlers (I have to add here that Angela is the best in her field that I have had the pleasure to work with) to ensure that the public have a positive experience.
- These events need to be coordinated with the “local” calendar (this week clashed with harvest) and local schools need to be notified at the BEGINNING of the school year to ensure the continuation of a good working relationship.

Outcomes

- As a result of the success of this week and requests for more events like that one, Eugene Eades and I have planned a calendar of events, with Angela’s assistance, to take place during 2007 at Nowanup. Although the program is largely targeting the local schools, it will also be open to the public.
- I believe that due to the huge influx of new residents to the Hopetoun/Ravensthorpe communities that this program should be developed and offered there in 2007.

Glossary

action competence – ‘competence’ is associated with being able, and willing, to be a qualified participant; actions are characterized by the fact that they are done consciously and that they have been considered and are targeted.¹³² Action competence is inherently linked to the concept of democracy. In this context actions are viewed not as reactive behaviour or lifestyle changes but rather as an active exercise of democratic participation in society. The action should be undertaken intentionally and voluntarily. Action competence occurs when citizens:

- have critical and holistic knowledge of the issue;
- are committed, motivated and driven;
- can envision a sustainable solution; and
- have experience taking successful concrete action.

Action competence is seen by some as a crucial outcome for environmental education because it brings together the processes and practices of education with the need to develop democratic citizenship skills and values, and with the nature of the ecological, social and environmental crises facing the world.¹³³

action learning is a process designed to build capacity using a form of reflection and assessment. The improvement of practice is the ultimate goal. The process involves the participants developing an action plan, implementing the plan and reflecting on what they have learnt from this. A facilitator and/or mentor assists the participants in developing their plan and learning from their experiences.¹³⁴

action research can be used as a collaborative research tool. It is often represented as a four-phase cyclical process of critical inquiry – plan formation, action, outcome observation and reflection. It aims not just to improve, but to innovate practice. It views change as the desired outcome and involves participants as researchers of their own practice.¹³⁵

biodiversity – (short for biological diversity) is everywhere organised into three levels. At the top are the ecosystems, such as rainforests, coral reefs and lakes. Next are the species, composed of organisms in the ecosystem, from algae and swallowtail butterflies to moray eels and people. At the bottom are the variety of genes making up the heredity of individuals that compose each of the species.¹³⁶

Biodiversity is all living things and the processes and interactions that connect and sustain them.

For further discussion of the language of biodiversity, see Box 5.2.3 in Part 5, Guiding Principles.

capacity building – increasing the ability of individuals, groups and organisations to plan, undertake and manage ventures and other initiatives.¹³⁷

envisioning and futures thinking – envisioning a better future is a process that engages people in conceiving and capturing a vision of their ideal future. Envisioning, also known as ‘futures thinking’, helps people to discover their possible and preferred futures, and to uncover the beliefs and assumptions that underlie these visions and choices. It helps learners establish a link between their long term goals and their immediate actions. Envisioning offers direction and energy and provides impetus for action by harnessing peoples’ deep aspirations which motivate what people do in the present.¹³⁸

ecosystem – a functional unit of energy transfer and nutrient cycling in a particular place such as an estuary, a forest or a lake. It includes all the relationships within the biotic (living) community, and between the biotic components of the system.¹³⁹

ecosystem functions and processes – ecosystem functions can be defined to include nutrient cycling, hydrological cycles, soil development and primary and secondary production, while ecosystem processes consist of pollination, predation, competition, patterns of resource acquisition/utilization and regeneration.¹⁴⁰ The terms tend to be used interchangeably.

endemic – used to refer to an organism which is native to a particular place or region.¹⁴¹

facilitation – means ‘to make easy’. Facilitation is the glue – often invisible – that holds a group together. It’s different to leadership, although good leaders are invariably good facilitators. Attributes of a good facilitator include establishing an atmosphere that supports respectful, informed, equal exchange and discussion; ensuring that efforts are rewarded and achievements celebrated; and supporting the expression of new knowledge and points of view.¹⁴² Facilitation and mentoring approaches, which have appeared recently in community environmental education, redefine the teacher’s role to that of a facilitator and encourage learning to be driven by the learner.¹⁴³ The facilitation approach also equips the community with the necessary skills and knowledge to take action and participate in community change and decision-making.¹⁴⁴

Greening Australia (WA) – a non-government organisation that operates large revegetation programs and provides vegetation management and environmental education services to regional and urban communities.

habitat – the place where an organism normally lives; habitats are measurable and can be described by their vegetation and physical characteristics.¹⁴⁵

mentoring – mentoring relationships are dynamic, reciprocal, personal relationships in which a more experienced person (mentor) acts as a guide, role model, teacher and sponsor of a less experienced person (protégé). Mentors provide protégées with knowledge, advice, counsel, support, and opportunity in the protégé’s pursuit of full membership in a particular profession.¹⁴⁶

natural resource management (NRM) is defined in the SCRIPT Regional Strategy as ‘the ecologically sustainable management of land, water, marine and biodiversity resources for the benefit of existing and future generations and for the maintenance of the life support capability of the biosphere. It does not include mineral resources.’¹⁴⁷

peri-urban – a small holding of less than 20 hectares that is close to an urban setting.

SCRIPT – the South Coast Regional Initiative Planning Team Inc. is an independent, non-profit association. Its role is to co-ordinate a working relationship between community and government agencies for the purpose of natural resource management in the south coast region. It is funded through the WA State Government and the Australian Government’s Natural Heritage Trust and the National Action Plan for Salinity and Water Quality.

stakeholders – those people or organisations that are vital to the success or failure of a project to reach its goals. The primary stakeholders are:

1) those needed for permission, approval and financial support, and

2) those that are directly affected by the activities of the organisation or project. Secondary stakeholders are those who are indirectly affected.¹⁴⁸

sustainability and sustainable development – The idea of *sustainability* owes a great deal to the United Nations which in 1983 set up the *World Commission on Environment and Development* and promoted quality of life for present as well as future generations. The key goals of sustainability are to live within our environmental limits, to achieve social justice and to foster economic and social progress.¹⁴⁹

systems thinking is a type of thinking methodology based upon a critical understanding of how complex systems, such as environments and ecosystems, function by considering the whole rather than the sum of the parts. Systems thinking provides an alternative to the dominant way of thinking, which emphasises analysis and understanding through deconstruction. In comparison, systemic thinking offers a better way to understand and manage complex situations because it emphasises holistic, integrative approaches, which take into account the relationships between system components. Systems thinking offers an innovative approach to looking at the world in a broader, interdisciplinary and more relational way. Closely related to holistic and ecological thinking, systemic approaches help us shift our focus and attention from 'things' to processes, from static states to dynamics, and from 'parts' to 'wholes'.¹⁵⁰

values clarification – an educational approach employing a variety of strategies, which enables learners to clarify and critically examine their own values, particularly those which are unconscious or inarticulate. This process helps learners uncover how culture, ideology, gender, socioeconomic background and religion shapes ones deepest help personal beliefs and values and assists learners in determining how ones own values coincide or conflict with others.¹⁵¹

vascular – a plant which possesses tissue for the transmission or circulation of water, sap and nutrients e.g. ferns and flowering plants. These plants have roots, stems and leaves.

References

Please note: in reference listings for each Part, the first citation of a reference is listed in full; second and subsequent citations of that reference are presented in a shortened form.

Introduction

¹ South Coast Regional Initiative Planning Team, *Southern prospects 2004-2009, South Coast regional prospectus for NRM*, Albany. Available at http://www.script.asn.au/documents/publications/SouthProsp_Prospectus_web.pdf. [Accessed 26 March 2007].

² Examples include the former Water and Rivers Commission's Ribbons of Blue program and community history publications; educational events run by Friends of Fitzgerald River National Park, the Malleefowl Preservation Group and Green Skills; annual wildflower shows across the region; the exhibitions and information service provided by the museum network; and many others, as discussed further in Part Two.

Part One: Project Background

³ N. Myers, R.A. Mittermeier, C.G. Mittermeier, G.A.B. da Fonseca and J. Kent, 'Biodiversity hotspots for conservation priorities', *Nature*, vol. 403, 2000, pp. 853-858.

⁴ N. Myers, R.A. Mittermeier, C.G. Mittermeier, G.A.B. da Fonseca and J. Kent, pp. 853, 858.

⁵ S.D. Hopper and P. Gioia, 'The Southwest Australian floristic region: evolution and conservation of a global hot spot of biodiversity', *Annual Review of Ecology, Evolution and Systemics*, vol. 35, 2004, pp. 623-650.

⁶ SCRIPT, email, 31 August 2006. The survey, commissioned by SCRIPT, was conducted by Synovate in March-April 2006.

⁷ A. Buckley, *Baseline survey report – South Coast biodiversity awareness project*, Alcoa Centre for Stronger Communities, Curtin University of Technology, October 2006.

⁸ 'Strongly agree' and 'Agree' ratings have been combined for each of the statements listed.

⁹ Woolcot Research, *Urban wildlife renewal "Growing Conservation Urban Communities"*, NSW National Parks and Wildlife Service Research Report, NSW NPWS, Sydney, 2002, p. 21. Available at www.nationalparks.nsw.gov.au/urbanwildliferesearch [Accessed 26 March 2007].

¹⁰ P. Horwitz, 'Connections in Nyungar boodja: an essay, and a story', paper presented to the Australian Association for Environmental Education, Bunbury, 3-6 October, 2006; D. Sobel, *Place-Based Education: Connecting Classrooms and Communities*, The Orion Society, Great Barrington, 2005.

¹¹ R.G. Davies, L.M. Webber and G.S. Barnes, 'Urban wildlife management – it's as much about people!' in D. Lunney and S. Burgin (eds) *Urban wildlife – more than meets the eye*, Royal Zoological Society of NSW, Mosman, 2004, p. 40.

¹² R.G. Davies, L.M. Webber and G.S. Barnes, p. 41.

¹³ Taken from notes recorded in small group discussions.

¹⁴ A. Buckley, p. 24.

¹⁵ 'People' could include householders, private landholders and farm advisors; 'organisations' describes government departments, shire councils, companies and community groups.

¹⁶ See D. Tilbury and K. Cooke, *A national review of environmental education and its contribution to sustainability in Australia: framework for sustainability*, Canberra: Australian Government Department of the Environment and Heritage and Australian Research Institute in Education for Sustainability, 2005, pp. 6, 10.

¹⁷ See, for example, L. Robinson and A. Glanzing, *Enabling EcoAction: a handbook for anyone working with the public on conservation*. Humane Society International, WWF Australia, World Conservation Union, Sydney, 2003, p. 26.

¹⁸ L. Duxbury and N. Arrowsmith, *Watershed Torbay: successes and learnings*, Land & Water Technical Report, 2006, p. 5.

Part Three: Achieving Change

¹⁹ The key references were: Environment Canada, *Learning through real-life experiences: case studies of biodiversity initiatives in Eastern Ontario*, Biodiversity Convention Office, Environment Canada, March 2002,

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Appendix 1

Community researchers evaluation of the asset mapping process

- a) All ten community researchers were sent a questionnaire seeking feedback on the asset mapping process. Nine of the ten returned the questionnaire and the results set out below are based on their responses.

What were the reasons for participating?

The most common reason provided for participating was being 'interested in contributing to community' (n = 8). This was followed equally by being 'encouraged to participate by friends/community members' and being 'interested in local environment' (n = 3). Two participants were 'interested in future planning for the area' and one participant identified that they 'had the spare time to be involved'. In the category other, one participant noted that it was 'a chance to meet other like-minded people'

How important was it for you to be paid for this work?

Of the 9 participants, 6 indicated that it was 'not important' to be paid for their involvement while for 2 it was 'important'. Sitting astride both positions, one participant responded that it was both 'important' (travel costs covered) and 'not important' (to have time paid for).

Would you have participated as a researcher if it was unpaid (voluntary)?

All 9 respondents answered 'yes' to this question.

In what way could the first information session have been improved?

The following statements describe the participants' responses to how to improve the first information session:

- *Both sessions were well run (I thought) and organised, the food, company & scenery superb.*
- *I think it worked well.*
- *Possibly a brief of content prior to meeting.*
- *Closer to me (150 km).*
- *I like it probably provided more information.*
- *I think it was spot on i.e., Angela's presentation.*
- *Three participants made no suggestions to this question.*

In what way could the second information session have been improved?

The most common area of identified improvement was to allow more time for the community participants to examine the survey, refine the instrument and practice interviewing. Indeed this finding applied to around a quarter of respondents. For one participant, a suggestion was to hold 'one session in Bremer and one in Jerry', to alleviate travelling time and make the process fairer. Four participants made no response to this question.

What are the positive things about researching your community?

The following comments describe the positive aspects to researching their community:

- *You find out that your community has a good knowledge about biodiversity*
- *It was very interesting to see what other peoples' thoughts and ideas were. To find out what they felt the attractions and problems were in the area.*

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- *Got to meet people in the community, enable us to discuss relevant topics.*
 - *Networks, community feedback, increased community knowledge.*
 - *Having more contact with neighbours than just hello.*
 - *Better knowledge of attitudes and capacities of community members*
 - *Chance to talk about our local environment - which we probably don't normally do.*
 - *Meeting people in their own homes. Discovering what they actually do and don't know about the environment and local resources.*
 - *Getting an excuse to talk to the neighbours.*

What are negative things about researching your community?

- *Community respondents identified the following negative aspects to researching their community:*
- *Distance to travel when surveying.*
- *Disliked harassing people.*
- *Getting negative responses.*
- *Time – finding the right time to conduct research, and feeling that it imposed on people's time*
- *Belief that people felt obliged to participate rather than wanting to voluntarily contribute.*
- *Experiencing depression when finding out how little people knew.*
- *Repetition – getting similar surveys from various groups.*
- *Time management to meet objectives.*
- *Two participants reported no negative aspects.*

What were the good things about the survey?

The following summary looks to the good things about the survey instrument:

- *Had some interesting conversations about various topics related to the survey - was a good conversation starter – interviews took between 20 minutes and 3 hours*
- *Made me (and others) actually think about what is around us.*
- *Allowed expression of opinion to some extent.*
- *It interested people about what they were up to in there farms/homes.*
- *Easy to deliver.*
- *It was interesting and gave us an insight to other people's ideas about the environment.*
- *Interesting to survey people with different opinions, generally enjoyable.*

What was wrong with the survey instrument?

The main weakness identified by participants was the length of the survey with 7 of the 9 community researchers describing it as too long. Three of the 9 participants described the survey as 'repetitive'. Two viewed some questions as ambiguous. Other comments included:

- *Not being about what the community really wants or how they want to approach the issue.*
- *Irrelevance to town residents.*
- *Not being inclusive for the new generation of landowners/ custodians of this country.*

What feedback do you have about conducting the survey?

The following points provide feedback from the community researchers in regards to conducting the survey:

- *A few research respondents commented that they would have preferred to do the survey in their own time - didn't really need me (community researcher) to be there! e.g., sent out by the post.*
- *Good community cooperation, good interest from people, more knowledge out there than I originally anticipated.*

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- *If I wanted the man of the house to fill out the survey, then I had to leave it for them.*
 - *Negative connotations associated with survey and government authorities.*
 - *Some felt that the questions were too general and open; need provision for leased land in area.*
 - *People easy to contact and survey.*
 - *Had to help with some questions and words regarding biodiversity.*
 - *Only one community researcher identified no problems in conducting the survey.*

Would you describe the process overall as ...

The community researchers generally found the overall process to be 'a positive learning experience', 'a positive way to meet others' and 'a way of learning about your community needs' (5 responses for each). Two participants stated that the process was 'more challenging than they had anticipated'.

b) Demographic profile of community researchers

How long have you lived in the south coast area?

The length of time in which the community researchers had resided in the south coast area ranged between 3 years to 43 years.

What is your age range?

The most common age ranges for the community researchers was 35-44 and 45-54 (3 participants in each age range). Two participants were aged between 25-34 years, and 1 was aged between 65-74.

Please indicate your sex

There were 7 females and 2 male respondents to the community researcher feedback questionnaire.

Other comments

Two of the community researchers provided additional feedback about the project:

- I hope we really do a good follow up on this. It's all so important.
- Feedback is important to participants probably in documented form. Action on outcomes, not just more research, is a high priority.