Critical analysis of obtaining desired outcomes from voluntary programmes

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CONTENTS

Abstract 5

1. Introduction 5

2. The multiple requirements of volunteer programmes 6

3. Experiential learning 8
- 3.1 Activity and concrete experience 9
- 3.2 Express, observe and reflect 9
- 3.3 Test the revised theories and views in action 11

4. The motivation of and benefits for volunteers 17
- 4.1 Summary of motivation of and benefits for volunteers 17

5. Voluntary participation in conservation as a leisure experience 17

6. Environmental education: changing conservation related knowledge, attitudes, values and behaviours 18
- 6.1 Environmental education 18
- 6.2 Research into the effectiveness of environmental education strategies 18
  - 6.2.1 Major variables 19
  - 6.2.2 Local area programmes 22

7. Direct interventions to change conservation related behaviour 24
- 7.1 Broad based interventions 24
  - 7.1.1 Information techniques 24
  - 7.1.2 Positive motivational techniques 25
  - 7.1.3 Coersive motivational techniques 25
- 7.2 Avoiding change 26
- 7.3 Developing sensitivity 26
- 7.4 Building relationships with the environment 27

8. Gender differences 30

9. Duration of change in pro-environmental values and behaviours 31

10. Group leadership 32

11. The selection and training of conservation staff to lead voluntary conservation programmes 33

12. Practical implications for the design and implementation of volunteer programmes 34
- 12.1 Participant satisfaction 35
- 12.2 Practical means of engendering positive changes in participants' conservation related behaviour 35
- 12.3 Developing effective experiential learning programmes 36

12.4 Staff selection and training 37

13. Implications for research 38

14. Summary of recommendations and major points 39

15. References 41

16. Appendix 1 44

17. Appendix 2 45

18. Appendix 3 47

Abstract

This literature review seeks to identify factors that promote the development of pro-conservation values and behaviours in voluntary participants in conservation programmes that are sponsored by the Department of Conservation - Te Papa Atawhai - in New Zealand. The review examines factors in the design and implementation of conservation programmes that lead to positive outcomes for participants and the governing agency.

The active participation in practical conservation projects provides an ideal opportunity for group leaders to maximise participants' learning through active experience, reflection on their experience, meaningful discussion about their experience, and revision of their knowledge and values about conservation. This conscious harnessing of the principles of experiential learning maximises the potential to increase volunteers' pro-conservation behaviours. Other factors that influence volunteers' adoption of long term pro-conservation behaviours include developing participants' knowledge of environmental issues, knowledge of environmental action strategies, environmental action skills, environmental sensitivity, spiritual attunement to the land, emotional arousal and commitment to action. Viewing voluntary participation in conservation projects as a leisure experience enables group leaders to understand the motivation of participants and hence may provide a means by which leaders can maximise volunteer motivation for continued participation in volunteer programmes.

Recommendations for the design and implementation of voluntary conservation programmes include the application of experiential learning techniques where participants are encouraged to reflect on and learn directly from their experience in the context of a cooperative collaborative group. Strategies required to maximise both participant satisfaction and long term change in participants' pro-conservation behaviour are listed and the competencies required by staff who lead such programmes are outlined.

1. Introduction

This report consists primarily of a document analysis and review. The theoretical basis for achieving desired outcomes from voluntary programmes is highlighted and observations are made on the implications of these models and theories for the design and implementation of volunteer programmes. The first sections of the report focus on setting the context for voluntary conservation programmes by examining the multiple goals of such programmes. Possible conflict between goals is explored and experiential learning - a structured process for using experience as a basis for learning - is then introduced as an integrative model for understanding behavioural change in the context of voluntary programmes. A review of "environmental education" strategies follows, with emphasis being placed on achieving positive changes in

participants' conservation related behaviour through direct interventions. The influence of gender is included here.

In the field, effective interventions call for skilled leadership and so leadership factors are examined before synthesising the implications of the literature review into recommendations for the design and implementation of voluntary conservation programmes. Finally, a brief review is presented on factors relevant to research into the effectiveness of voluntary conservation programmes. A full bibliography is presented and detailed material that supports the body of the report is placed in the appendices.

2. The multiple requirements of volunteer programmes

Volunteer conservation programmes provide an opportunity to influence participant behaviour in a pro-conservation direction but have many other goals as well. Typically, other goals of volunteer conservation programmes include:

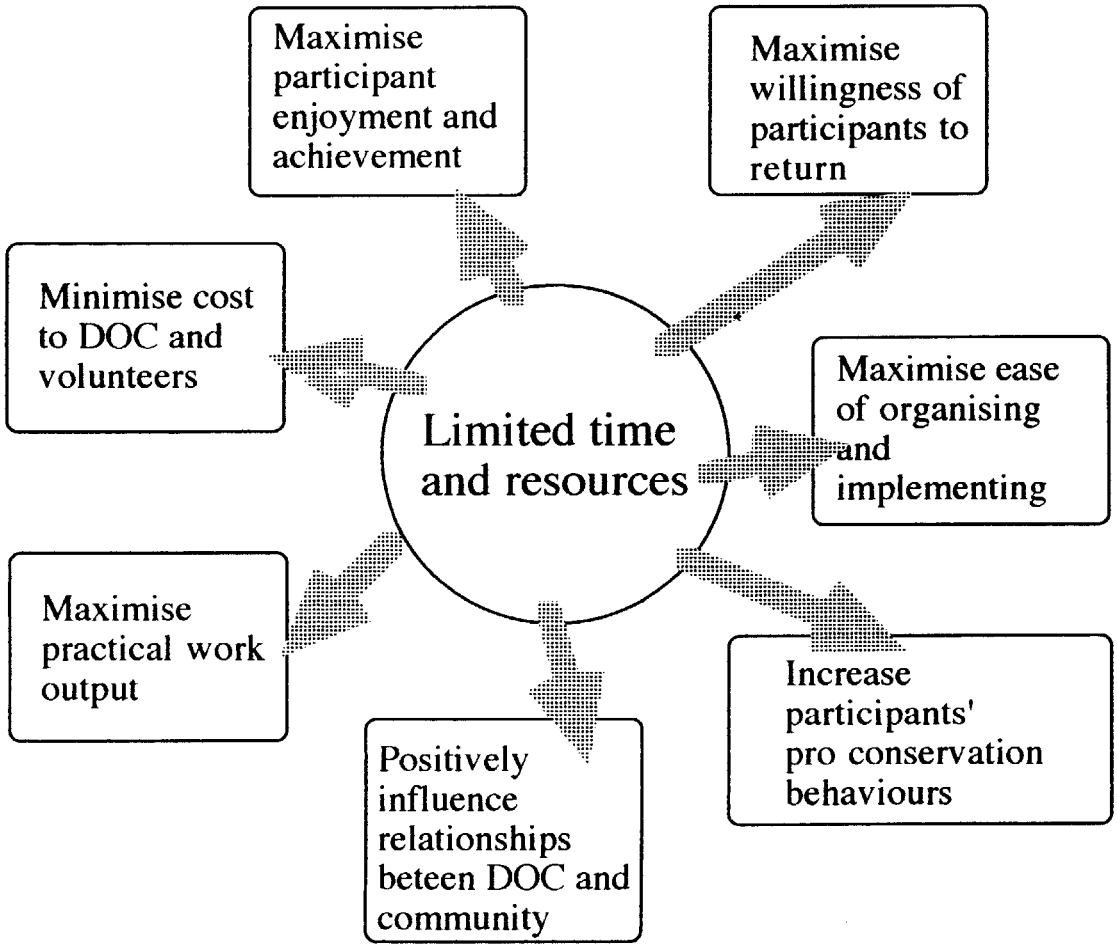
- to maximise practical work output;
- to positively influence the relationships between the conservation body responsible for the programmes and key people and organisations in the community;
- to minimise financial cost to the volunteers and to the conservation body responsible for the programmes;
- to maximise participant enjoyment and satisfaction;
- to maximise willingness of participants to return for future volunteer programmes;
- to maximise ease of organising and implementing the volunteer programme.

(Adapted from Darby 1994; Sharp 1994; and Simhauser 1991).

These other goals may require the programme to be structured in a way that reduces the impact on participants pro-conservation behaviours to below the maximum potential effect. One key aspect of this report is to identify ways in which maximum change in participants' conservation behaviour can be created whilst maintaining emphasis on other important goals. The dynamic tension between the multiple goals of Department of Conservation volunteer programmes is represented in figure 1.

Figure one illustrates that maximising outcomes for voluntary programmes is not a simple matter of deciding what outcome to maximise and then designing a programme to suit. Firstly, the choice has to be made as to the particular outcomes that are to be maximised and then a design created that involves the juggling of a complex set of interrelated factors so that the "best value" is achieved. On the surface, it seems possible that maximum learning outcomes for voluntary participants in many wildlife preservation programmes would be achieved if little menial work was carried out and most of the time was spent observing the rare species rather than taking action to preserve it or its habitat. On the other hand, it may seem that maximum benefit to the environment may

FIGURE 1 MULTIPLE REQUIREMENTS OF VOLUNTARY CONSERVATION PROGRAMMES.



be gained in a weed eradication programme if volunteers spent all daylight hours pulling or spraying weeds, yet those volunteers may not gain significantly in future pro-conservation behaviours. Fortunately, this literature review supports the view that task-related conservation work contributes both to participant satisfaction and to participant learning. The findings indicate that whilst some tension between desired outcomes will persist, leadership and management strategies are available that minimise this tension.

This report is intended to provide the reader with a basis for making "best value" decisions on the design and implementation of volunteer programmes including the need to produce ample practical work output from volunteers. The report also focuses on maximising the outcomes of:

- long term adoption of pro-conservation behaviours for voluntary participants;
- good relationships between Department of Conservation and the community;
- volunteer satisfaction;
- a willingness of volunteers to return on future programmes;
- learning and personal growth of volunteers.

Each of these outcomes is derived from the participants' personal experience of taking part in volunteer programmes. The opportunity for Departmental staff to interact with participants is greatest during the actual volunteer programme when staff and participants are interacting in the process of carrying out the conservation task(s). Staff have maximum influence on participant perception during the "thick of the action". Participants will need guidance, coaching, explanations, assistance and some reflection on their actions. This provides the ideal recipe for what is commonly known as experiential learning, where Departmental staff take the role of facilitators of the experiential learning process.

3. Experiential learning

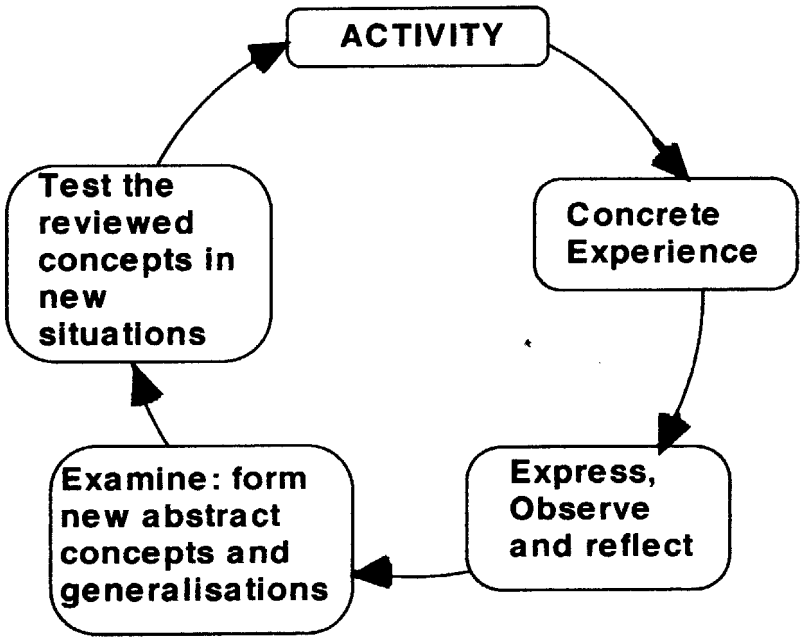
Experiential learning has been found to be a powerful means of engendering personal change (Davis-Berman 1994; Gass 1993; Hopkins 1985; Johnson 1991). Learning to behave differently, such as adopting more pro-conservation behaviours, is a form of personal change (O'Brien 1995). Increases in voluntary participants' pro-conservation behaviour can thus be maximised by skilful and effective application of the principles of experiential learning to volunteer conservation programmes. The following examination of the principles of experiential learning illustrates this point of view.

"Experiential learning can be defined as generating an action theory from your own experiences and then continually modifying it to improve your effectiveness. The purpose of experiential learning is to affect the learner in three ways. (1) the learner's cognitive structures are altered, (2) the learner's attitudes are modified and (3) the learner's repertoire of behavioural skills is expanded. These elements are interconnected and change as a whole, not as separate parts." (Johnson 1991, pp 40-41).

The practice of experiential learning can be reduced to five major components that form a cycle of spiral which involves learning from experience. The sequence shown in figure 2 illustrates this cyclic nature. An activity leads to the participant having a concrete experience. The participant observes the impact of that experience on him or her self, reflects on the experience and expresses opinions about how his or her experience compares to prior concepts of how that experience would affect him or her. This observation, reflection and expression then enables participants to examine their conceptual map of the world and to review or change the way they see themselves and the world. New concepts or constructs are created and then tested in a new set of activities. The cycle then begins again.

The contents of each of the cells in figure two are described in more detail below.

FIGURE 2 EXPERIENTIAL LEARNING (GREENAWAY 1993, KOLB 1994).



3.1 ACTIVITY AND CONCRETE EXPERIENCE

The activity components, which provide the concrete experience, occur as participants go about the practical tasks and activities involved in the voluntary conservation programme. Many different types of activity will be available depending on the exact nature of the programme. Take, for example, a cat eradication programme on an island wildlife refuge. (The author spent two weeks trapping cats on Hauturu in the Hauraki Gulf.) The concrete experiences for the participant might be finding a cold, wet and terrified kitten with a leg that had been crushed in a gin trap, or cutting tracks through dense tangled and dramatically beautiful upland rain forest.

3.2 EXPRESS, OBSERVE AND REFLECT

The critical element of this stage is for the participant to describe what happened to someone else in the participant's own words. This begins the process of constructing meaning from the prior concrete experience. The person finding the trapped cat might express both satisfaction at having achieved a part of the goal of his or her project - to eradicate cats from the island - but also describe his or her distress at seeing the kitten's pain, terror and eventual death. They might muse about the prior actions of others that made it necessary to cause pain to an animal that they normally associate with loving, caring and nurturing. In response to hacking down healthy specimens of rare trees and shrubs to clear a track, they might muse about their fear of contributing to the destruction of plant species that are already endangered. On the other hand, they may remark that such destruction seemed like the only way of getting access to a petrel nesting site that the feral cats predated upon.

Key questions that the leader or facilitator might use to assist with reflection include: *What did you do? Describe your action, thinking and feeling. What did others do? What impact did that have on you. What has happened in the past that has made your actions necessary?* At this stage in the experiential learning cycle facilitators should not make interpretations or offer explanations.

Examine the concepts and rationale for your actions and revise them if necessary: a place for theory.

In discussion with someone else, participants should work "backwards" to identify the principles they applied that led them to taking the action(s) that they did. For example, when they agreed to set the gin trap what were the underlying assumptions that led to their making that agreement? What was their thinking? What principles did they apply? What values were they influenced by? When they wielded the machete and killed protected and endangered plants, were they clear about the necessity to do that? Did they consider alternatives? How do they reconcile the conflicting values implicit in their actions?

Has this exploration to date identified any theories, models, values or beliefs that no longer serve them well? If so, this is the time for exploration to find new ways of thinking, believing or valuing. Participants should then explore new possibilities and consider how these new possibilities fit with their way of being in the world. Theory plays a vital part at this point in experiential learning. Having different theories and models to describe how people, organisations and ecosystems function enables the participant to choose the theory or model that best suits the situation at hand. One theory can not adequately explain all human, organisational and ecological phenomena. Each theory provides participants with a different "window" through which to view the world. Each window is useful in some ways but limits people's ability to see the whole picture. This stage in the experiential learning cycle enables participants to try out a number of "windows" or perspectives and select a best fit.

At this point in the experiential learning cycle, programme staff have the potential to contribute ideas, models and theories that help participants to question and revise their previously held views of themselves and the world. For example, in a discussion about weed eradication, there may be room for a more general discussion about the how exotic species will sometimes produce rampant growth and ecological damage because they do not experience the ecological constraints and "niche" requirements that limit the growth of co-evolved indigenous species. That discussion may lead to a reflection on genetic purity and hence may lead participants to pay more attention to the genetic source of native trees that they buy from nurseries for their own gardens. The discussion may lead to participants taking more care to prevent inadvertent introduction of seeds and soil when the return from overseas trips. The discussion on cutting tracks may lead to participants exploring their part in other ecological conflicts, such accepting the use of softwood timber for outdoor furniture, despite its lower durability, rather than buying New Zealand native or imported hardwoods.

3.3 TEST THE REVISED THEORIES AND VIEWS IN ACTION

This step involves the action component again, but this time participants may be trying out a different action because they have revised the premises on which their previous actions were based. There will be times during volunteer programmes that participants will have an opportunity to re-try their actions on the basis of their learning, but the learning from examples given immediately above would not be put into practice until after the participants had returned to their homes.Experiential learning can be very powerful when the consequences of a person's actions lead them to direct learning about how to behave differently (for instance starting a scrub fire by leaving a fire unattended overnight) but the consequences of many ecologically unsound practices do not appear even within a human lifespan. This factor means that the conservation programme leader must provide feedback on the participant's action to close the "learning loop". In the cases where long time spans are involved, the conservation leader uses the emotional arousal created by a powerful experience in the field to provide a "permeable" moment at which the participant will be open to reconsidering his/her values and models of the world. The participant may then return to everyday life with a new willingness to act in ways that are more pro-environmental. For example, when a participant objects to killing a kitten in a trap, the leader might say "If this kitten lived for ten years, it could be expected to kill (say) ten saddlebacks, two hundred petrel chicks, ...(etc)". In this case the participant does not actually witness the consequences of not killing the kitten. That vital - and emotionally arousing - information is provided by the leader.

The cyclic model shown in Figure 2 assists programme developers to understand the key steps in experiential learning and begins to inform them about how to design programmes to maximise participant learning. Greater detail of the components of experiential learning process was outlined by (Nadler 1993) and has been augmented by the author. This is shown in Figure three.

Maximum learning opportunities can be created by incorporating as many as possible of the above features in volunteer programmes.

Whilst not all volunteers will experience novelty in the physical setting in which the conservation programme is based, the management of the experience itself can create novelty and hence disequilibrium. Novelty and a cooperative environment can be enhanced by holding group discussions on aspects of the work, by placing unfamiliar responsibility on participants, by introducing new concepts to participants or by structuring the social system in the group in unfamiliar ways. Management of voluntary programmes can be organised so that responsibility is placed on participants to develop unique solutions to logistical and task related problems so that they are called on to develop new behaviours. The discussion of these achievements can reinforce feelings of accomplishment and assist participants to generalise their learning to other settings.

So far this discussion on experiential learning has emphasised the active, interactive and participative nature of activities that are utilised for experiential

FIGURE 3 COMPONENTS OF THE EXPERIENTIAL LEARNING PROCESS, ADAPTED FROM NADLER (1993)

The participant

experiences a state of

disequilibrium

by being placed in a

novel setting

and

a cooperative environment

while being presented with

unique problem-solving situations

which require

new behaviours

that lead to

feelings of accomplishment

which are augmented by

processing (discussing) the experience

which promotes

generalisation and transfer of learning

to future endeavours.

learning. A collaborative rather than authoritarian leadership approach is required to maximise experiential opportunities for participants. The leader must balance the need to get the job done with the need to both involve participants in the programme management and also to engage participants in meaningful discussions about the principles underlying the programme. Participants are offered an active experience and the leader provides the context for each participant to construct his or her own meaning from the event. Successful participation in an activity is appreciated and attributed by the participant to him or herself, and leads to a willingness to try new and

challenging activities in the future (O'Brien 1995). Further emphasis on the role of the leader in facilitating learning about pro-conservation behaviours was provided by environmental educators who described themselves as "constructivists".

The construction of meaning by the learner - constructivist approaches. Pilla & Tulip (1995) stated that recent studies had identified serious shortcomings of previous approaches to environmental education in that there have been a lack of demonstrable changes in learner behaviour. They suggested that personal experience is a precursor to change in attitudes, conceptions and behaviours. Pilla & Tulip proposed that a constructivist view provides a suitable framework for developing effective educational experiences. The central tenet of constructivism is that knowledge is a personal thing and each individual "constructs" his or her knowledge in a way that has meaning for him or her. Constructivists question the existence of "objective" knowledge that has a universal truth and usefulness for all persons. In contrast, objectivists believe that knowledge exists separate from the knower and that knowledge has a validity that is independent of the person who carries the knowledge. This is a philosophical difference that may seem a little too esoteric for this report, but the philosophy of "knowing" has a big impact on how learning experiences are organised.

Constructivism can be contrasted with objectivism, with each view seen as the opposite ends of a continuum. See Table one.

For persons wishing to promote pro-environmental behaviours and values in others, the main implication of a constructivist view is that the participant or learner must be given the opportunity to develop his or her own meaning from the learning experience by linking the new knowledge or experience to their own previously existing "knowing".

TABLE 1, ASSUMPTIONS INHERENT IN OBJECTIVISM AND CONSTRUCTIVISM (KLEIN & MERRITT 1994, P.15).

CONSTRUCTIVISM	OBJECTIVISM
Reality is determined by the knower.	Reality is external to the knower.
Structure relies on experience/interpretations.	Structure can be modelled.
Thought is embodied; grows out of bodily experience.	Thought is disembodied, independent of human experience.
Thought grows out of physical and social experience.	Thought reflects external reality.
Meaning is determined by the understander.	Meaning is external to the understander.
Symbols are tools for constructing reality.	Symbols represent reality.

Applying the model of constructivism to environmental education can be achieved through a multi-stage educational process.

The stages in effective conceptual change using the constructivist approach are stated to be:

1. Enabling the learner to conceptually engage with the new material. This first requires that the learner becomes conscious of his or her current knowledge or values and then aware of the limitations of their current conceptual maps. Recognising the shortfall between "real life" and the student's own way of viewing and explaining the world **creates a curiosity or openness to new information.**
2. Expansion of conceptual maps of the topic. The tutor needs to be skilled as an active listener and inquirer at this point. The tutor must provide a number of **activities that enable the learner to construct new meaning** around the new information. Activities followed by discussion and stories are two techniques that can be effective.
3. Testing of new constructs and meaning. **Learners need an opportunity to try out in practice what their recent learning means in terms of behaviours and relationships**. For a learner to adopt a new structure it needs to serve them better than an old structure. Old structures are supported by the comfort of familiarity and new structures are discouraged by awkwardness and unfamiliarity. This is a vulnerable time for new constructs and disconfirmation can easily lead a learner to reject a new construct. A supportive and attentive tutor is helpful at this stage. Positive interaction with peers helps to reinforce new constructs.
4. Consolidation of the new structure. **The learner needs time to create new routines that incorporate the new cognition, values and behaviours. Repetition of successful events involving the new structures is required** with careful attention being paid by the tutor to prevent learners developing and reinforcing new structures that are not helpful. (Emphasis added: adapted from Pilla & Tulip 1995.)

Readers may notice that the four stages in the constructivist approach very closely resemble the steps in the experiential learning cycle. For this reason, the author of this report combines the experiential and constructivist approaches throughout the remainder of this report.

The experiential constructivist approach enables leaders of volunteer groups to cater for participants with diverse backgrounds, values, learning styles expectations, needs and motivations. However, strict adherence to this approach calls for high levels of interpersonal and group skills, a sound understanding of learning principles, an appreciation of human change processes and a fair amount of time. At a practical level, some aspects of the approach advocated by Pilla & Tulip (1995) can be implemented with little extra effort. Supervisors of volunteer conservation programmes are often required to coach or instruct volunteers in practical skills. Many volunteers need to learn skills that enable them to adapt to an unfamiliar living environment (in camp settings) and to do the work for which they have volunteered. The opportunity then presents itself for supervisors to influence

participants constructs about conservation at the same time as assisting them to be competent and effective in their voluntary work.

In practice, experiential learning tends to occur in a rather sporadic and apparently random fashion, but using the model described above does enable leaders and educators enrich the design of educational/learning experiences so that learning outcomes for participants are enhanced. For example, if a group is clearing noxious weeds in a National Park, the likelihood of participants making constructive changes to their attitudes about the need for quarantine areas would be increased if those participants had a chance to reflect on, review and discuss their experience and then consider how they might play a more active part in preventing the spread of exotic species in National Parks. Constructivist experiential approaches help participants to benefit from their participation in voluntary programmes and help them to develop enthusiasm for the practical tasks required of them. Other means of improving benefits to volunteers and of developing volunteer motivation are explored next.

4. The motivation of and benefits for volunteers

Few studies have been published on the benefits to volunteers of participation in programmes. However, studies by Darby (1994) and Simhauser (1991) provide insight into volunteer motivation, expectations and the outcomes achieved for volunteers. Darby (1994) conducted a study on volunteers on social/economic projects overseas (Youth Challenge) and Simhauser (1991) analysed responses from eighty one volunteers who were involved in projects initiated by the Department of Conservation and Land Management in Western Australia. Both studies are reviewed below.

Volunteering benefits the volunteer through enjoyment, satisfaction, increased self esteem and personal development. Personal development in a voluntary international aid programme included "personal awareness and learning in the areas of interpresonal awareness, confidence and self-contentment" (Darby 1994). Other benefits that are probably derived from voluntary participation in conservation projects include: social bonding, therapeutic/healing processes, physical fitness, stimulation, independence and freedom, and better relations with nature (Schreyer & Driver 1989 - cited by Darby 1994). Volunteer programmes also benefit the host organisation through improved public awareness, increased person-power and access to specialised resources.

Paid workers are rewarded for their efforts by the receipt of their wages, salaries or fees. Volunteers seek reward in other ways and so managers of voluntary programmes need to act in ways that enable voluntary workers to obtain the particular rewards that they seek. In a study conducted on conservation project volunteers in Western Australia, Simhauser (1991, p.60), identified ten categories of motivation for volunteers, eight of which can be

influenced by programme management. In order of importance, these categories of motivation are:

1. For enjoyment, recreation, or a personal interest in the environment;
2. Personal concern for the environment;
3. To learn, to increase personal knowledge and awareness;
4. To assist the Department of Conservation and Land Management to achieve its objectives;
5. Work experience for career or study;
6. To make other people aware of environmental issues;
7. To socialise, or meet people with the same interests;
8. To improve the link between the Department of Conservation and Land Management and the community.

The most important factor, "enjoyment, recreation etc." was chosen three times as often as "to learn, increase knowledge" (which was third most popular choice). The second most important factor "personal concern for the environment" was chosen two times as often as "to learn, increase knowledge etc." **Enjoyment and personal concern for the environment emerged clearly as primary motivating factors** for Simhauser's sample of volunteers.

Women were found to be more highly motivated than men by "enjoyment, recreation, or a personal interest in the environment", "to learn, to increase personal knowledge and awareness" and "to socialise, or meet people with the same interests". Simhauser (1991, p.63) found that men were more highly motivated by a desire to obtain "work experience for career or study" and a by "personal concern for the environment".

This study points to the need for Department of Conservation personnel to maximise the potential for volunteers to experience enjoyment and to have a "recreation" experience. Department staff also need to enable participants to experience themselves as contributing to the care for the environment. Attention should be paid to gender differences and to the need for participants - particularly men - to develop their careers through participation in voluntary conservation programmes. A study by Stern, Dietz & Kalof (1993) supported Simhauser's findings. Stern *et al.* stated that there are three broad categories of value orientation that influence or motivate environmental action. For most people these three orientations combine to influence that person's pro-environmental action. The three orientations named were "... concern for the welfare of other human beings, which we call the social-altruistic value orientation; concern with non human species or the biosphere, which we call the biospheric orientation; and egoism or self interest" (Stern *et al.* 1993, p.326). Even though there are clear themes in what motivates volunteers, the diversity of goals identified also points to the need for Department of Conservation staff to facilitate volunteer programmes in a way that enables each individual to meet their own needs as much as possible. There is a danger in assuming that there is one global motivator for all participants.

4.1 SUMMARY OF MOTIVATION OF AND BENEFITS FOR VOLUNTEERS

The motivation to participate in voluntary conservation programmes varies widely between volunteers. Enjoyment and personal concern for the environment are the primary motivating factors for Simhauser's sample of volunteers. Volunteers are also motivated by a concern for humankind and by self interest. Department of Conservation staff need to have means of determining what motivates people with whom they have contact. Staff then need means of addressing the motivating factors in their clients.

Further useful information was provided by Darby's (1994) study, which identified benefits from viewing participation in volunteer programmes as a leisure experience. The role that the leisure experience has in maximising outcomes for participants in voluntary conservation programmes is discussed next.

5. Voluntary participation in conservation as a leisure experience

Participation in a voluntary conservation programme may involve aspects of leisure, education and work. For instance, participation in voluntary conservation may be a central feature in the "work" life of a retiree, but may be little more than a low cost recreational opportunity to access remote back country for a person who is in full time employment. A university student in recreation may need to participate in a voluntary conservation programme to meet educational goals.The importance of the experience depends on the participant's particular needs at the time. Darby described leisure as a personal experience, which potentially enhances a person's life, is perceived as being freely chosen and thus involves intrinsic motivation (Adapted from Darby 1994, p.36). The vital point made by Darby that is relevant to the design and implementation of volunteer programmes is that satisfaction attained by each participant will vary widely from person to person, and will depend on each person's leisure needs at the time.

Darby clearly made a claim that the experiential learning model provides a framework for understanding and enhancing the changes that volunteers undergo through their participation in voluntary programmes. He reviewed seven categories of theories relating to personal development and concluded that experiential learning was an integrative framework for viewing personal development that occurs in the context of volunteerism. The importance of experiential processes for influencing participants' behaviour, values and views of nature is supported by other writers (Fiedeldey 1989; Fiedeldey 1993 Hogan, 1992 Russell, 1994).

6. Environmental education: changing conservation related knowledge, attitudes, values and behaviours

6.1 ENVIRONMENTAL EDUCATION

Much of the literature on changing peoples conservation related behaviour is published under the subject heading "Environmental Education". In this literature review, the author uses the term "Environmental Education" to incorporate any project or programme that includes in its goals the intention to influence participants in any of the following areas:

- knowledge and awareness of environmental issues;
- concern for the environment;
- values relating to the environment;
- skills relating to dealing with environmental issues;
- ability to assess and discriminate on environmental issues;
- pro-environmental behaviour - both direct action and advocacy.

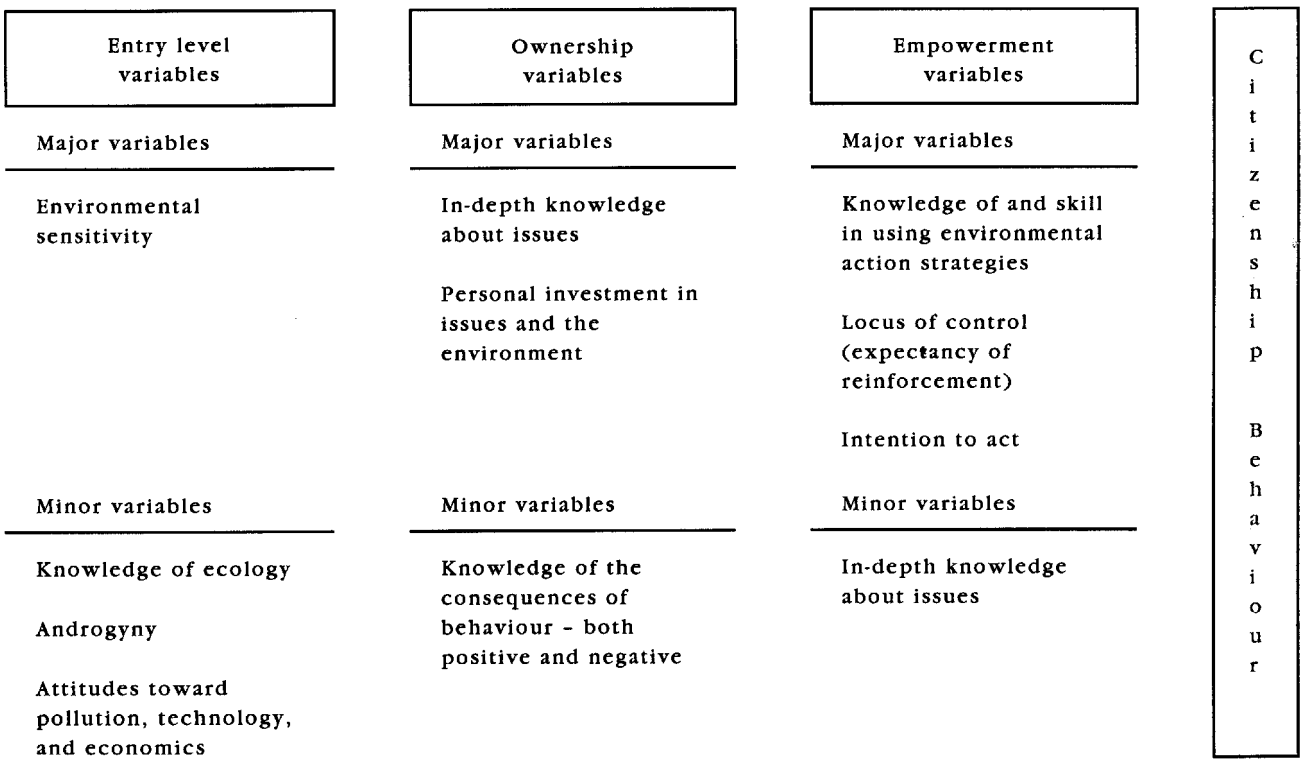
(Adapted from Hungerford & Volk 1990 and Smith-Sebasto 1992.) See also Appendix 2; *The range of goals pursued and outcomes sought in environmental education.*

The main debate in the literature appears to be about the relative roles of knowledge, affect, spirituality and experience in changing conservation related behaviour. Opinions vary from writer to writer, but the overall theme appears to be that the **strongest predictor of a person engaging in pro-conservation behaviour in the future is their emotional commitment to that behaviour and that such emotional commitment comes in part from having a strong positive experience of the natural environment.** Other writers and researchers emphasise the importance of developing relationships between people and life forms or on developing a spiritual kinship with the land.

6.2 RESEARCH INTO THE EFFECTIVENESS OF ENVIRONMENTAL EDUCATION STRATEGIES

Traditional approaches to environmental education were based on the premise that change in behaviour comes through increased knowledge, which in turn leads to increased motivation which translates directly into changed behaviour. This view has been successfully challenged by recent authors, for example, Hungerford & Volk (1990). Recent studies have attempted to identify all of the possible factors that influence pro-environmental behaviour, to categorise these variables, to identify their relative influence and to reduce them to a

FIGURE 4 BEHAVIOUR FLOW CHART: MAJOR AND MINOR VARIABLES INVOLVED IN ENVIRONMENTAL CITIZENSHIP BEHAVIOUR (HUNGERFORD & VOLK 1990).



manageable set of categories and relationships. (Hungerford & Volk 1990) identified three major categories of variable. These are "entry level variables", "ownership variables" and "empowerment variables". Each category of variable contains both major (important and influential) variables and minor (less significant) variables. See Figure three.

"Major variables" have greater impact than the "minor variables", and so are likely to be of primary interest to Department of Conservation staff who wish to utilise the findings of the Hungerford and Volk study to improve the design and implementation of voluntary conservation projects.

6.2.1 Major Variables

Entry level variables

These variables are present with persons at the point of entry to environmental education programmes. Of the factors presented in figure three, **Environmental sensitivity**, "an empathetic perspective towards the environment" is seen to be the critical **pre-requisite** for persons to become "environmental citizens".

Ownership variables

"Ownership variables are those that make environmental issues very personal. The individual 'owns' the issues, i.e., the issues are extremely important, as a personal level, to him/her" (Hungerford & Volk 1990, p.12).

In-depth knowledge "It appears that, before individuals can engage in responsible citizenship behaviour, they must understand the nature of the issue and its ecological and human implications. When individuals have an in-depth understanding of issues, they appear more inclined to take on citizenship responsibility toward those issues" (Hungerford & Volk 1990, p.12).

Personal investment "Here, the individual identifies strongly with the issue because he/she has what might be called a proprietary interest in it" (Hungerford & Volk 1990, p.12).

Empowerment variables

Empowerment variables are seen as the most important, but most often neglected, issues in educational practice. Empowerment variables enable persons to be active participants in pro-conservation behaviours. Major empowerment variables are discussed below.

Perceived skill in using environmental action strategies "Simply put, perceived skill in using action strategies can be translated as human beings believing that they have the 'power' to use citizenship strategies to help resolve issues". Students trained in action strategies also gained in self-concept. (Hungerford & Volk 1990, p.12).

Knowledge of environmental action strategies This is closely related to the skill component. The authors believe that there is a "synergistic" link between knowledge and skill.

Locus of control "Locus of control refers to an individual's belief in being reinforced for a certain behaviour. A person with an 'internal locus of control' expects that he/she will experience success or somehow be reinforced for doing something. Success, in turn, appears to strengthen his/her internal locus of control" (Hungerford & Volk 1990, p.12).

Intention to act Closely correlated with a number of other issues. If a person intends to take an action, that intention increases that chance of it happening.

In brief, Hungerford and Volk (1990) found that persons with the greatest likelihood of taking pro-environmental action were those who:

- entered a programme with sensitivity towards the environment and
- through participation in the environmental education programme
- developed in-depth knowledge about environmental issues and a personal investment in those issues. Furthermore, they
- gained a knowledge of practical strategies on how to intervene in the environment or socio-political system, they
- grew to believe that their actions could have an impact and they
- developed a commitment to action.

Hungerford and Volk (1990) emphasised the inadequacy of strategies in environmental education, but they failed to identify the importance of the learner's **experience** of participating in satisfying interactions with nature. Some aspects of the Hungerford & Volk study were supported by a study of members of Ducks Unlimited, Trout Unlimited and Wisconsin Trappers Association, (Sivek & Hungerford 1990). In an analysis of one hundred and twenty completed questionnaires they found that the most consistent predictor

of pro-environmental behaviour was "perceived skill" in using environmental action strategies and hence "Instruction in environmental action strategies should help produce environmentally active citizens... although such instruction alone is not likely to be as effective as when it is combined with other strategies" (Sivek & Hungerford 1990, p.38). Other factors found to be significant were locus of control and environmental sensitivity. Locus of control can be increased by taking part in environmental action for which participants are likely to be successful and over which they have some control. Environmental sensitivity is influenced by both positive experience of pleasant outdoor environments and negative experiences of polluted outdoor environments. In brief, Sivek & Hungerford found that **active participation in successful environmental programme provided an experience that positively influenced participants' pro-conservation behaviours.**

Links have also been found between environmentally responsible behaviour and locus of control as well as between "perceived knowledge of and skill at the use of environmental action strategies" and environmentally responsible behaviour. In two separate studies, Smith-Sebasto (1992) [seven hundred and fifty one subjects] and Smith-Sebasto & Fortiner (1994) [eight hundred and fifty subjects], reviewed the Revised perceived Environmental Control Measure, which measures the relationship between locus of control and environmentally responsible behaviour. They found that there was a significant correlation between a person's belief that they can influence the environment and that person's environmentally responsible behaviour.

Key issues for educators were identified by Smith-Sebasto & Fortiner (1994, p.28) as:

> (1) the perceptions individuals have of the condition of the environment, (2) the degree and direction of concern individuals have regarding the perceived condition [of the environment], (3) the information individuals use to arrive at their perceptions of the condition, (4) the reasons behind the degree and direction of concern, (5) the ways in which they believe that they may cause either a reversal or continuation of the perceived condition, and (6) the ways in which individuals come to hold favourable attitudes in influencing their situation.

In an earlier study, Borden & Schettino (1979) used the Maloney, Ward and Braucht scale of environmental attitudes with a sample of five hundred and thirty psychology undergraduate students to determine the relationship between affect, knowledge, actual commitment and future commitment to environmentally sound behaviours. Affect was found to be more important than knowledge and it was found that affect and knowledge added their effect. High affect did not lead to high knowledge nor vice versa (Borden & Schettino 1979). Future commitment was found to be almost exclusively a result of affect. Knowledge had little effect on future commitment. **In other words, what people say they would be willing to do in the future depends almost entirely on their emotional involvement with the importance of taking that action** (Borden & Schettino 1979). This finding is supported in part by Hungerford & Volk (1990).

In a study that compared the impact of instruction in "knowledge of environmental action" with instruction in "environmental action [strategies]",

Jordan and Hungerford & Tomera (1986) found that college students who received instruction in environmental knowledge did not achieve significant gains in **either** knowledge or behaviour [sixty two subjects]. Students who received instruction in both environmental knowledge and in environmental action strategies demonstrated significant changes in both knowledge and behaviour. The changes in behaviour reported by participants "were fairly easy to undertake, requiring neither substantial effort nor special skills" and so these findings may not be generalizable to changes in behaviour that require significant personal effort (Jordan, Hungerford & Tomera, p.20). The same authors identified that **residential experiential education or camp settings are suitable environments in which students can participate in practical activities and instruction programmes that should lead to changes in participant conservation behaviours**. Some parallels exist between residential student camps and residential or camp-based volunteer conservation programmes.

The above evidence that residential camp-based voluntary programmes are effective in changing conservation behaviours were conducted with participants who were involved in projects away from their homes. Some Department of Conservation voluntary programmes are conducted by persons in their own local environment and so may have different effects.

6.2.2 Local area programmes

in a recent study of seventy three residents' motivation to become involved in local wetland preservation issues, Syme, Beven & Sumner (1993) developed a model of motivation that was based on the premise that activism was reached through two main paths. One path involved disposition and arousal, the other involved knowledge and assessment of the seriousness of the situation. In reference to disposition and arousal Syme *et al.* wrote:

> We hypothesised that disposition will affect arousal, which in turn will influence activism. It would seem logical that those who relate most favourably to the natural environment would be more emotively aroused when viewing degradation of natural wetlands than would those who habitually did not have such a view (Syme, Beven & Sumner 1993, pp.590-591).

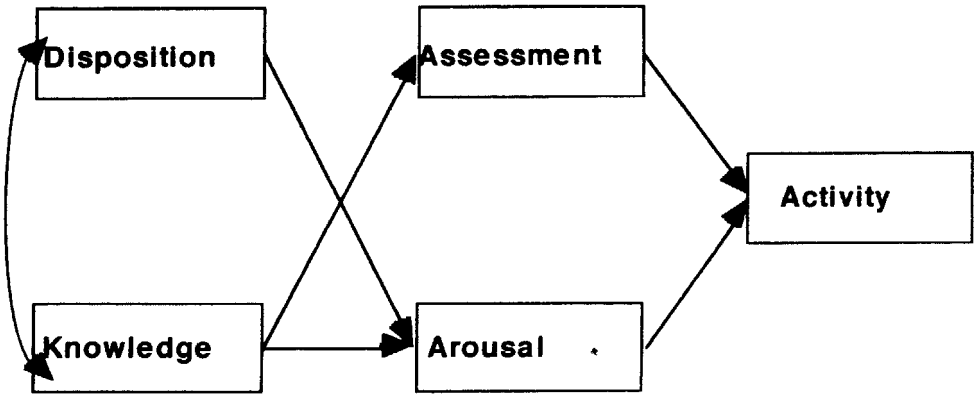
In reference to knowledge and assessment of the seriousness of the situation:

> ...increased knowledge is likely to be associated with causing activism. Like disposition, the influence of knowledge may be directed through more situation-specific variables rather than directly (Hines *et* al. 1986-1987). In the case of non-personally threatening environmental issues, therefore, we hypothesised that this influence is mediated through both assessment and arousal, which are the immediate determinants of activism. Increasing knowledge will increase arousal and assessment (Syme, Beven & Sumner 1993, p.591).

A diagrammatic view of this model is presented in Figure four.

The empirical study carried out by Syme *et al.* (1993) validated the model shown in figure four. The two-way link between disposition and knowledge was not seen by the authors to be causal, but explained in the following fashion:

FIGURE 5 PATH DIAGRAM OF BEHAVIORAL MODEL (SYME ET AL. 1993, P. 295)



> ...it seems reasonable that they [knowledge and disposition] would mutually influence each other. For example, those who cared about the wetlands might pay greater attention to information about them and thus learn more of their ecology. On the other hand, it is possible that one grows more empathetic toward a particular ecology as one learns more about it (p.603).

The authors concluded that provision of local factual information about the environmental problems facing a particular wetland would positively influence voluntary effort by assisting people to make their own assessment of the situation. Information stressing the severity of problems would increase emotional arousal and hence persons' willingness to act. The findings of this study appear to contradict previous studies which found that knowledge did not influence behaviour, but this apparent contradiction can be explained by two factors. Firstly Syme *et al.'s* study paid close attention to the application of knowledge as a means of enabling people to **assess** the significance of environmental problems. Secondly, Syme *et al.* research focused on the behaviour of persons in relation to their **local** environment.

Syme *et al.* (1993) developed their model to improve the effectiveness of interventions at a local level to reduce degradation of wetlands. The model would be applicable to volunteers on conservation projects if they experienced the location of their project as being "local" for themselves. People working on environmental projects close to their own homes or holiday locations would probably view such programmes as "local". The application of this model to persons who work on volunteer programmes remote from their homes calls for attention to be paid to how persons **identify with** a place other than their geographic home and hence make physically remote settings more "local" in an emotional or psychological sense. This topic is addressed by authors who paid attention to symbolic and spiritual aspects of pro-environmental behaviour, and is addressed later in this literature review under the heading "Building relationships with the land".

7. Direct interventions to change conservation related behaviour

One desired outcome of voluntary conservation projects is that they positively influence participants to adopt behaviours that are beneficial to the environment and that influence others to behave in ways that are beneficial to the environment. A number of studies have been conducted to determine the types of direct intervention that are most effective in influencing participants to adopt and retain pro-environmental behaviours. Many of these studies assessed participants' adoption of urban-based conservation measures like recycling and the conservation of energy and water, but some of the lessons from these studies are likely to be applicable to Department of Conservation volunteer programmes. Interventions have been organised below into two categories: broad based interventions that include a range of types of approach and spiritually based techniques that focus on enabling participants to build strong relationships with the land.

7.1 BROAD BASED INTERVENTIONS

DeYoung (1993, p.487) reviewed the literature about the ability of resource conservation and recycling programmes to increase participants' pro-conservation behaviour. He described three techniques for changing behaviour:

- information techniques
- positive motivation techniques
- coercive techniques.

7.1.1 Information techniques

Goals of information techniques are to help people understand the nature of the environmental problem they are facing, the necessary behaviour needed to resolve the problem, or the steps required in carrying out this behaviour. This approach is based on the assumption that people are ready to act but uncertain how to act. De Young (1993) advocated information techniques that are based on self-discovery and hence people undergoing a deep personal change about a certain environmental issue. That deep personal change must be insight or understanding far beyond simple awareness. De Young was not clear about how to engender this change, but other authors cited in this report indicate that experiential programmes can be a powerful source of immediate and relevant information for participants. De Young also emphasised direct experience as a powerful influence on individuals' subsequent behaviour and he cited exercises and action projects as means to achieve this powerful experience. De Young postulated that direct experience has such an influence because that

experience leads to an increase in confidence in, and clarity about participants' attitudes and expectations.

7.1.2 Positive motivational techniques

These use extrinsic techniques to make a behaviour more appealing or provide social support for those adopting that behaviour. For example, financial reward for recycling. Intrinsic motivators such as altruism may also play a part in this arena.

7.1.3 Coercive motivational techniques

These change behaviour by greatly constraining' one's choice either physically or perceptually. Such techniques include monetary disincentives, taxes, social disincentives and the use of physical barriers.

De Young emphasised the usefulness of intrinsic motivation because with extrinsic motivation, once the reward or disincentive is removed, the motivation is also removed unless the motivation has been internalised. With intrinsic motivation the effect persists and persons show a durable willingness to engage in complex problem solving behaviours (De Young 1993, p.487). The same author drew attention to the importance of involvement and ownership, which are powerful motivators for ensuring that the change succeeds. De Young (1994, pp. 492-493) also identified that "When people begin the task of changing their behaviour with a sense of challenge and purpose then both the environment and these individuals benefit".

To be effective, methods to change behaviour that can be derived from De Young's (1993) work and that can be applied to voluntary conservation programmes require:

- personal attention to be given to participants;
- a combination of internally initiated and other initiated approaches;
- programme leaders to enlist the participants' discovery process, yet often within firm guidelines;
- making more use of techniques that involve the participants' internally derived behaviour change.

De Young's study focused on urban-based recycling and consumable resource conservation and so the direct transfer of his findings to voluntary conservation programmes could be questioned. Nonetheless, the findings summarised in the bulletted list above closely correlate with the findings of other studies and so are taken by the author of this report to be useful guiding principles.

In a review of published studies on research conducted in the areas of recycling and energy conservation, Dwyer, Leeming, Cobern, Porter & Jackson (1993, p.286) found that prior commitment to change was an important predictor of actual adoption of pro-environmental change. "Prior commitment to conserve consistently resulted in behaviour change lasting more than 12 weeks". Interventions that were initiated prior to participants adopting pro-conservation behaviours were effective in producing lasting change. These interventions included modelling, goal setting and obtaining participants prior commitment. Commitment appeared to produce a more lasting change than did reward, although reward may reinforce the changes gained through commitment. The

initiation of pro-conservation behaviours requires different techniques than does engendering long term **adoption** of such behaviours and so **effective strategies are needed that both initiate and habituate pro-conservation behaviours** (Dwyer *et al.* 1993, p.317). The transfer of these findings to experiential programmes was not shown. Although Dwyer's study identified the need to find out how to motivate people who already have pro-environmental behaviours to influence others, no suggestions were made on how to develop these advocacy skills (Dwyer *et al.* 1993, p.315).

7.2 AVOIDING CHANGE

Cary (1993) examined the relationship between environmental action and the symbolic meaning that participants placed on that action. He noted that whilst many people might hold beliefs about the need to change their behaviour, **often the belief alone does not lead to pro-environmental action**. He postulated that people reduce the cognitive dissonance created by the difference between belief and action by taking symbolic actions to care for the environment. These symbolic actions are relatively inane and ineffective in their effect on the environment. For example, people are able to avoid making changes that would create more cost or inconvenience in their everyday life by taking the symbolic action of planting trees on their farms. Perhaps participants on voluntary programmes may achieve a similar outcome? By taking part in a voluntary programme they may fulfil the need for a symbolic action and then be able to return with psychological comfort to lifestyles that are based on high levels of consumption and low levels of day-to-day environmental care.

7.3 DEVELOPING SENSITIVITY

Hungerford & Volk (1990, p.14) noted that personal sensitivity to environmental concerns depended on each person's prior experience of the natural environment. "It appears that 'environmental sensitivity' is a function of an individual's contact with the outdoors in relatively pristine environments either alone or with close personal friends or relatives". Furthermore: "...it seems important that learners have environmentally positive experiences in non-formal outdoor settings over a long period of time". Some respondents to the Hungerford & Volk study said that having experience with severe environmental degradation influenced them to adopt pro-conservation values, and other respondents said that either an environmentally sensitive social environment or teachers as role models influenced them.

Programme leaders may be able to deliberately develop sensitivity in the participants of volunteer programmes. Increasing sensitivity would then positively influence pro-environmental behaviour. Pepi (1994, p.13) was of the opinion that pro-environmental behaviour can be influenced by developing nature appreciation. "Hope for significant change lies in the fact that nature appreciation can be taught. It will not be easy and I do not suppose that many people will embrace it, at least not at first". Pepi believed that direct intercourse with nature led to "felt significance" of nature. **Felt significance is vital**

" ...because once felt-significance is experienced, attitudes and actions change. During the experience, meaning and feelings combine synergistically: feelings give meanings the power for movement, and meanings give feelings a focus and therefore the power to direct rather than merely agitate" (Pepi 1994, p.12).

Developing participants' capacity to appreciate nature will achieve the goal of environmental education - "the creation of an informed citizenry willing to work actively for the maintenance of a healthy planet" (Sackof, cited by Pepi 1994). In practice, leaders of voluntary programmes need to organise the work schedule and locations so that participants have an opportunity to spend time in environments that are likely to be impactful on participants in either a positive way, a negative way, or both. Following the theme of experiential learning, this appreciation and sensitivity may be reinforced by reflection and discussion. A particular aspect of appreciation and sensitivity appears to be the participant's capacity to build meaningful relationships with their environment.

7.4 BUILDING RELATIONSHIPS WITH THE ENVIRONMENT

The importance of a person's relationship with the natural world appears in many of the above studies (Hungerford & Volk 1990; Sivek & Hungerford 1990) but is not pursued adequately in those studies. The strictly logical "scientific" nature of most studies on changes in environmental behaviour precludes spiritual aspects being taken into account and pre-disposes researches to look for direct linear and rational or emotive causality between factors. Empirical studies do achieve useful results but the empirical method of inquiry may lead to researchers to completely miss other powerful factors such as symbolism, territorial drives, and spirituality.

In New Zealand, any comprehensive study of conservation behaviours and values would need to take into account the values and behaviours of the aboriginal inhabitants, the New Zealand Maori. Most significant Maori lore is still preserved in oral tradition. Much of the most important lore cannot be written for fear of violating its sanctity, and many Maori consider that any specific lore is degraded by the very act of writing and publishing it (M. Tipene, personal conversation). Maori environmental values are an integral part of Maori spirituality (Patterson 1994), and hence both topics will be discussed as one. Although many participants on voluntary conservation programmes will not be of Maori descent, a discussion of Maori environmental values will be useful because many volunteers will have been influenced by awareness aspects of Maori culture. Furthermore, recent studies have shown that many of the same themes that pervade Maori spirituality, particularly in relation to the land, water and natural history, are common to Celtic spirituality (Stuart 1992). Despite the strong influence of the Judeo-Christian religion, Celtic themes are still present and may inform persons of European descent who are in search of a form of spirituality that honours the sanctity of the land.

Themes that are held in common by Maori and Celtic spirituality include:

- the land is sacred and is in the hands of humans as caretakers;
- dire consequences will be experienced if humans violate the sanctity of the land and the life it supports;
- humans, the land, waterways and oceans, the air and spiritual entities are all a part of an interrelated holistic system. Relationships between all aspects are vital, and disturbing one part (or relationship) will unbalance others;
- places, their history and the stories associated with them are central to people's current relationship to the land.

(Adapted from Patterson 1994, and Stuart 1992.)

Many of these holistic themes are also encapsulated in modern psychological theories such as Jungian and transpersonal psychology (Kast 1992; Rowan 1993). The danger in addressing "spiritual" issues is that many people consider spirituality to be a private concern. However, it is important not to confuse spirituality in a Jungian form with religion. Stringer & McAvoy (1992) emphasised the importance of the spiritual dimension of wilderness experiences and they considered spiritual experiences not to be ethereal and "way out", but aspects of a person's experience that:

- eluded description,
- gave the participant a sense of being a part of something bigger than themselves,
- had an intensely personal flavour,
- included a sense of connectedness with others,
- were transient, and
- involved a sense of being "held" by a greater power.

They found that participants in wilderness experiences often did not initially consider spirituality to be a part of the experience, but responded positively once they were asked about spiritual experiences. There was a strong link between experiences where participants experienced strong emotion and experiences that were described by the participants as "spiritual".

An aspect of spiritual experience that may positively influence volunteers to adopt pro-conservation behaviours is their developing a sense of "home" or personal association with a conservation site that is far from their own home. Russell (1994, pp.20-21), provided a strong argument for incorporating spiritual aspects into conservation programmes.

> Humans have become "exotics" in their own land - alienated from the land by the Judeo-Christian tradition and the subsequent logical positivism of modern science. As a means of redressing this alienation we need to become spiritually attuned to the earth. ...if one feels a profound sense of connection to other life, then damage or loss to any part provokes a very personal sense of pain. As Evernden argues, conservationists are striving for "defence of cosmos, not scenery" ...Thus I again return to my definition of conservation: at it's very core, it is about providing and maintaining options for place.

A further commonality between Russell's views and those of Maori and Celtic spirituality is the importance of relationships: "We must learn to remember and to recognise our attachments to the non-human to develop healthy and life-affirming relationships. Our hope lies in our relationships with other life" (Russell 1994, p.21). Unfortunately, the rational-empirical outlook that is

common in both the biological sciences and the physical sciences has little suitable language for describing transforming and spiritual moments in relation to the natural world or our relationships with "nature".

Michael & Grove-White (1993) described research which investigated the language that conservation staff used to communicate about conservation issues. Michael and Grove-White emphasised the need for an "I thou" relationship with nature and they indicated that this relationship can be developed through focus on language and dialogue. In their view, nature is seen as an active and interactive entity that can interact with people and communication can occur both ways between nature and people. This calls for the person to spend times in a permeable state, open to the communication from nature. Michael & Grove-White cite research in Britain showing that conservation staff need a language to communicate with each other and with the public to describe their affinity with nature. A shortage of language prevents effective communication and hence conservation staff lose a vital opportunity to communicate with each other and with the public about deeply felt conservation values and beliefs. The use of myths, metaphors and narratives are an effective way to achieve this, but western thought, philosophy and language has elevated scientific dialogue and devalued dialogue about myth, story and metaphor. This imbalance needs to be redressed (Michael & Grove-White 1993).

They suggested:

1. Commissioning of surveys of the artistic and literary work that has explored metaphors and narratives of nature;
2. commissioning reviews of academic work that has investigated the experience of nature in relation to the development of "I-thou" relationships;
3. the institution of a forum in which these ideas can be discussed and their implications for action followed through (it could take the form of regular seminars with representatives from non government organisations, poets, artists, philosophers, etc.);
4. the creation ... of "artist in residence" positions...;
5. the eventual development of programmes that not only survey people's experiences and understandings of nature (both public and expert), but also encourage the "refinement" or heightening of these experiences through the development of vocabularies that better "capture" them.

Even though the Department of Conservation may wish to implement all five of these recommendations, only the "forum" idea and the exploration of people's understanding of nature have direct relevance to field practice with voluntary programmes. The other suggestions are cultural interventions that would influence all Departmental staff and would hence only have an indirect influence on voluntary programmes.

Field leaders could introduce discussions with the volunteer group about how they perceive, appreciate and communicate about nature. These discussions could be related to the previous day's work and then generalised to how participants might communicate with other people once they return home.

In summary, the range of possibilities for addressing the non-rational, spiritual and symbolic aspects of volunteers' experience to enhance their pro-conservation behaviours and values includes:

- encouraging participants to discuss their relationship with the land;
- arranging places and events that are likely to enhance participants' sensitivity to the environment;
- relating Maori spiritual beliefs to sound conservation practice;
- assisting participants to identify with the conservation site as an alternative "home";
- encouraging dialogue in the form of stories about people's experience with nature;
- modelling an intuitive and spiritual affinity with the land.

This more spiritual and relationship-based approach could only be adopted by staff whose own values and belief were congruent with such an approach. Also, for staff members who are attracted to this approach, care would need to be taken not to alienate the more rational scientific members of the volunteer group. One means of catering for the full range of spiritual and symbolic views of participants is to engage in constructivist techniques where the leader's role is primarily to assist participants to generate their own meaning from events. In this case, the leader acts as a facilitator and role model. With adequately skilled leaders who are positively motivated to try new approaches, there appears to be great potential for the innovative application of a combination of experiential, constructivist, relationship-based and spiritual approaches. Research on the difference between men and women's approach to conservation initiatives illustrates the importance of considering more than the obvious rational and conscious aspects of conservation.

8. Gender differences

Women may not identify themselves or other women as having significantly contributed to the generation of environmental problems and hence may not be motivated to take action to remedy them (Salleh 1989). In a study of women living in a small town in Australia, Salleh found that there were two distinct groups of women who participated in her study. One group had an "ideological complacency" that stopped them from participating in a recycling project. The other group lacked self image and hence a confidence to act. If women perceive voluntary conservation programmes as being organised according to male paradigms and principles they may either consciously or unconsciously choose not to become involved. To attract women to voluntary programmes and to retain them may call for highly participatory modes of operation. Participatory action has been shown above to be an important factor for increasing the effectiveness of voluntary conservation programmes across the board.

In a more recent study, Stern *et al.,* (1993) found that when women were more active than men on environmental issues because they were more likely to make direct connections between environmental conditions and their own values. Stern *et al.* did not find that women had significantly different environmental values from men, even though "Women tend to see a world of inherent interconnections, whereas men tend to see a world of clearly separate subjects and objects, with events abstracted from their contexts" (Stern *et al.*

1993, p.340). The special needs of women are likely to be catered for by adopting participatory leadership styles for voluntary conservation programmes, modelling leadership by women and adopting constructivist approaches to learning. For lasting changes to be engendered in both men and women, these significant differences must be addressed.

9. Duration of change in pro-environmental values and behaviours

Short term change can be relatively easily engendered by extrinsic motivators such as disincentives, punishments and rewards. Long term changes appear to be more difficult to maintain. Dwyer *et al.* (1993, pp.316-317) described intrinsic controls as the only predictor of long term behavioural change. The only factor identified in their study that is a predictor of long term change in pro-environmental behaviour is whether intrinsic behaviour controls are involved. **Interventions that employ only extrinsic rewards or penalties are considered to minimise long-term effectiveness** because they impede the development of intrinsic controls (perhaps through some process like reactance). Behavioural interventions appear to successfully initiate such changes but they do not lead to lasting change. In brief, "...interventions using consequent conditions tended not to produce lasting change after the consequence was removed" (Dwyer *et al.* 1993, p.314).

Other observations about the long term effect of interventions to change participants' pro-conservation values and behaviours included Hungerford & Volk's (1990) comment that to make environmental education more lasting, follow up reinforcement is necessary, and Borden & Schettino's (1979) statement that effective programmes must influence both knowledge and affect so that they change current and future behaviours. A further concern expressed by Hungerford & Volk (1990) was that single-focus education attempts may result in people being active with that particular issue [such as water conservation] but failing to generalise to other broader and more global environmental issues. Research in the field of personal change through participation in adventure programmes clearly points to the need for long term follow up of short term experiences, involvement of families and communities from which participants are drawn, and the need for strong relationships to be built between participants and the leaders (Barrett 1994, O'Brien 1990).

Long term change requires participants to undergo a significant personal experience that is likely to result in intrinsic motivation to adopt and persist with new pro environmental behaviours. None of the articles reviewed identified a single means by which this can be achieved but the reviewer suggests utilising a combination of:

- engendering felt significance of the environment;
- facilitating the learning of knowledge about environmental problems;
- increasing knowledge about environmental action strategies; and
- facilitating a commitment to act.

The plethora of concepts, views, models and ideas that are said to lead to engendering pro-conservation behaviours in volunteers may seem to set an almost impossible task for the field-based conservation group leader. The task of the conservation group leader is indeed a daunting one. However, if the leader has the fundamental competencies required to lead enjoyable, productive groups where the participants' own experience is central to their learning, the finer nuances of promoting learning can be progressively developed by leaders over a period of time. The fundamental competencies of group leadership are summarised below.

10. Group leadership

The tasks and functions of Department of Conservation staff who organise and lead volunteer conservation programmes are many and varied. This literature review focuses primarily on how to apply experimental techniques to maximising positive outcomes for the voluntary participants, while balancing the needs of the Department in achieving work output from volunteers. The experiential/constructivist approach relies quite heavily on leaders being able to effectively facilitate groups.

Some aspects of voluntary conservation programmes strongly resemble outdoor adventure programmes that focus on learning and personal change. Ringer (1993, 1994) conducted a review of the literature on the "people skills" required by leaders of (experiential) programmes that utilise outdoor adventure for changing values, attitudes and behaviours. Requisite competencies were clustered into "roles". The findings from the literature were subsequently refined and condensed (Ringer 1995). Leadership roles that are applicable to voluntary programmes are presented in Appendix 3 (with references) and are summarised below. In the language of competency based training, each role can also be expressed as an "element" of competency.

The five elements of competency for leaders of voluntary conservation programmes, as derived from the literature on experiential group leadership are the ability to:

- set limits and manage safety;
- demonstrate experience in and enthusiasm for conservation;
- instruct, coach and train participants;
- facilitator groups;
- communicate one to one with participants.

(Ringer & Smith, in print)

The limit setter/safety supervisor role is enacted when the leader demonstrates a sound working knowledge of both physical and psychological safety in the

group. The enthusiastic experienced conservator role calls for the leader to communicate effectively to participants his or her interest in action-based conservation projects and to model exemplary conservation behaviour in the field. The instructor role is required because leaders of voluntary conservation programmes are often in the position of having to teach practical skills to participants to enable them to carry out the work, and hence require a well developed capacity as instructors, coaches, educators and trainers. Groups need leaders who can effectively facilitate an enjoyable, social (recreational) group that still effectively performs the practical conservation tasks for which it was convened. This complex function is met by a well developed group facilitator role. Finally, for voluntary conservation programmes to function effectively much one-to-one communication needs to occur~The skilled communicator role enables the leader both to communicate effectively with group members and to assist group members to communicate effectively one-to-one in times of difficulty and conflict.

Many Conservation staff members who have trained in the science of conservation rather than in recreational management or parks management may not have had opportunities for training in group and interpersonal skills and so special training may be required.

11. The selection and training of conservation staff to lead voluntary conservation programmes

Fiedeldey (1989) noted that trail rangers needed special skills in working with people:

> The author has commented on the need for the selection of trail rangers, as well as the need for specialised training of trail rangers in the handling of group interactional processes (Fiedeldey 1987). The scope for further investigation in the realm of people's inter-relationship with the natural environment remains impressive ...

As was noted earlier, voluntary programmes can be seen to have elements in common with recreational experiences for their participants. Magill, in reference to recreational land managers emphasised the shortcomings of existing conservation staff in the USA in providing for recreational experiences. Magill stated that (in the USA) natural resource managers were known to have difficulty in relating to the public and that such managers were "academically and psychologically ill prepared to deal effectively with people." He added "Effectively serving the recreational needs of people requires an understanding of who the visitors are, what they are seeking and how to communicate with them as well as an orientation toward interacting with people" (Magill 1992, p.4).

Magill referred, in particular, to persons who trained in forestry and whose training did not include adequate education in recreation and social sciences. The education of staff for the Conservation estate in New Zealand differs from that in the USA but still the need to include adequate content on scientific and technical aspects of conservation is likely to limit the amount of social science education that can be included in the basic qualification for persons who become conservation officers. Magill stated that key elements in the training of recreational managers were "sociology, social psychology, environmental psychology, political science, environmental law, business management, social ecology, philosophy (ethics and values), and communication science" (Magill 1992, p.6).

Because some persons do not have a natural ease in dealing with people, Magill suggested that persons who enjoy interaction with people be recruited for jobs that have a high level of public exposure. These recruits would already have, or would be receptive to training and education in social sciences. Department of Conservation staff in New Zealand are likely to have had significantly different training than the subjects of Magill's study. Nevertheless, careful attention should be paid to the interpersonal and group leadership competencies demonstrated by persons who are chosen to lead voluntary conservation programmes. The schedule of requisite leadership roles presented in Appendix 3 may assist managers in the selection and training of leaders for voluntary programmes.

A study on the relationship between authoritarian personality and attitudes toward the environment may have relevance to the design of voluntary conservation programmes. Schultz & Stone (1994) found that persons whose personalities were characterised by conventionality, submission to authority and aggression towards persons whom they perceived as inferiors were less likely to have positive attitudes towards the environment than persons who rated low on conventionality etc. Given the need for Department of Conservation staff to model pro environmental behaviours, staff who have a participative rather than authoritarian leadership style would be more suited to leading volunteer groups.

12. Practical implications for the design and implementation of volunteer programmes

The requirements of the Department of Conservation to achieve productive work and enhanced relationships with the public through voluntary conservation projects can be achieved at the same time as achieving the goals of positively influencing volunteer's conservation related behaviours and achieving participant satisfaction.

12.1 PARTICIPANT SATISFACTION

Volunteers are likely to experience satisfaction from their participation in projects where such projects:

- cater for a wide range of participants' motivations and needs;
- enable participants to have experiences that they perceive as high quality recreation, probably including fun, pleasure and periods of time during which they choose their own activity;
- promote participants learning about the environment and natural history;
- result in participants both making a positive impact on the environment and believing that they have personally contributed to a significant improvement in some aspect of the natural environment;
- take into account participants' wish to contribute to making decisions about how the work is to be done.
- Participants will also be likely to feel positive about the Department if they have an enjoyable time and they experience the project as genuinely useful to the environment. This provides a benefit to the Department of improved relationships with volunteers and hence the public. A second benefit to the Department of participant satisfaction is that volunteers will be more likely to return for future projects and influence their friends to volunteer.

12.2 PRACTICAL MEANS OF ENGENDERING POSITIVE CHANGES IN PARTICIPANTS' CONSERVATION RELATED BEHAVIOUR

Participants' learning about the environment is likely to influence their future pro-environmental behaviour and so meet the other goals of the Department. In the following table predictors of positive outcomes for participants are shown in the left hand column and means of achieving each outcome are shown on the right. Factors in the left hand column (such as sensitivity to the environment) were identified as significant factors in influencing people to adopt pro conservation behaviour by authors whose work was reviewed for this report.

Staff who lead voluntary conservation programmes need to take practical action to implement the strategies listed in the right hand column of Table 2 in addition to providing the conditions named above for participant satisfaction. A central theme to all the strategies is their compatibility with constructivist based experiential learning in the context of a collaborative cooperative group environment as shown below.

TABLE 2 MEANS OF ACHIEVING LONG TERM POSITIVE CHANGES IN PARTICIPANTS' CONSERVATION RELATED BEHAVIOURS.

OUTCOME SOUGHT	MEANS OF ACHIEVING THE OUTCOME
Sensitivity to the environment.	Providing positive experiences of healthy environments or negative experiences of degraded environments.
Personal investment in the environment.	Making links between participants' own wellbeing and the wellbeing of the environment through written and verbal information as well as discussion with staff and peers.
Knowledge of environmental problems and knowledge of how to take effective pro-environmental action	Interactive/experiential learning opportunities provided during voluntary programmes.
Participants' internalised belief about their own ability to make positive changes in the environment.	Education about environmental issues and criteria; experiential, discussion, coaching and direct instruction.
Intention to act.	Discussion and developing a "public" commitment to action.
Intuitive, spiritual and emotional sense of connection with the land and being in relationship with the natural world.	Through emotional arousal and having powerful positive emotive/evocative experiences in a natural environment.
Participants develop language to talk with others about their concern for the environment.	Modelling on the part of departmental staff and other volunteers.

12.3 DEVELOPING EFFECTIVE EXPERIENTIAL LEARNING PROGRAMMES

Anecdotal data suggests that some Department of Conservation staff already implement many of the principles of constructivist based experiential learning. The stages in the experiential/constructivist learning process are reviewed below and practical means for the researchers to work with the departmental staff are suggested:

1. Participants carry out a conservation related task or a day's work in a conservation programme;
2. They are encouraged to talk about their actions, experience and their thinking about the impact of what they had been doing;
3. They are encouraged to identify their underlying beliefs, abstractions and concepts in relation to the task they have completed, as well as their feelings about the topic. Here Department of Conservation staff may contribute relevant knowledge. Participants then have the opportunity to re-formulate their views;
4. Participants are invited to test their re-formulated views so that they may take a different approach to a task that they will complete in the near future;
5. They complete a new task and the cycle begins again.

The essence of this "experiential learning" cycle is that it engages the participants' thinking, feeling and concepts in relation to a practical meaningful task, in a cooperative and collaborative environment. In practice, the experiential learning cycle is seldom as structured or visible as indicated above, but the principles outlined can be used to enhance participant learning in most settings and with most activities.

The experiential learning approach enables Department of Conservation programme leaders to be facilitators of learning whereby they enable participants to construct their own learning and meaning from their involvement in the voluntary project. In this way, staff are guides and coaches who cater effectively for the full range of participant diversity. Whilst staff may also be called on to provide "expert" information, their primary role is not that of "teacher" or a "boss". To effectively facilitate experiential learning staff need to be open about their own opinions, values and feelings without necessarily expecting others to adopt those views.

The practical details involved in implementing these recommendations can be explored in subsequent stages of this research project. The researchers will become involved with Department of Conservation staff in the process of designing and implementing actual voluntary conservation programmes. This approach will enable the practical limitations experienced by field staff to moderate the implementation of the principles that were derived from the literature. Furthermore, the extensive knowledge of experienced field staff will add an essential pragmatism to the application of the theoretical material included in this report.

12.4 STAFF SELECTION AND TRAINING

Department of Conservation staff need to be skilled in interpersonal and group leadership behaviour to design and lead voluntary conservation programmes to implement the recommendations of this report. Staff need also to have some understanding of volunteer motivation, human change processes and learning styles. This has clear implications for the recruitment and training of supervisory staff for volunteer programmes. Unfortunately, no studies were found that investigated the point of view of staff who ran voluntary conservation programmes. This staff perspective is very important and should be investigated.

Voluntary conservation programmes need to be designed and conducted by multi-skilled individuals or teams. Leaders need to be skilled in both the practical task-related aspects of the programme and also skilled in facilitating collaborative cooperative ventures to achieve maximum changes in participants' pro conservation behaviours. These multiple requirements can be achieved with leadership style characterised by openness and discussion. Voluntary programmes need to be run with clear attention being paid to the need for reflection, discussion, "time out" and the creative exploration of conservation issues in a purposeful group environment. Staff who lead such specialised programmes need to have both a predisposition towards working with people and adequate training in the specialist techniques required.

13. Implications for research

Department of Conservation field staff already have an impressive pool of experience and knowledge in the area of leading voluntary conservation programmes. This resource can potentially add great value to the information contained in this report. Combining the field-based wisdom of existing staff with the principles contained in this report could create a very valuable resource. Research to date is not adequate and so there is an opportunity to make an important contribution to the design and implementation of effective voluntary conservation programmes.

Most of the papers reviewed stated the need for further research into means of engendering lasting positive change in participants conservation related behaviour. "There is a compelling need for expanding our knowledge of internally initiated change techniques. These techniques offer hope. Internally derived techniques may offer ... a future where individuals are satisfied by, even enjoy, the process of forging a conserving society" (DeYoung 1993, p.501). Darby (1994) also emphasised the need for research processes that measured actual changes in participants' observable behaviours and he advocated observation of participants as they go about the activity that is the subject of the study. This is supported by Robertson (1994) who advocated the application of more constructivist oriented approaches to research in environmental education.

There is a need to find interventions that result in lasting change and a need for research that determines longitudinal effects. A particular factor that deserves study, is the means by which people internalise "environmental ethics" and "environmental life-styles" (Dwyer *et al.* 1993, p.317). The development of a theoretical system for predicting intervention effectiveness should also be explored.

DeYoung (1993) listed the following criteria for evaluating the effectiveness of techniques used to change conservation behaviour:

- Reliability: does it keep working on the same individual time after time?
- Speed of change: how quickly does this technique engender change in behaviour?
- Particularism: is this technique applicable over a wide range of people and a wide range of settings?
- Generalizability: do attitudes, behaviours and knowledge learned in this programme spill over into the rest of the person's life, or do they stay connected only with that experience?
- Durability: how long do the changes incurred in this programme last?

The level of understanding about the particular nature of interventions that engender specific changes in which participants under what conditions is still in its infancy. There is considerable room for original research that helps to shed light on the practical aspects of making voluntary conservation projects work for all stakeholders.

14. Summary of recommendations and major points

This section consists of a highly condensed summary of the major observations and recommendations from the body of the report:

- promote lasting increases in the pro-conservation behaviour of participants;
- maximise practical work output;
- positively influence the relationships between the conservation body responsible for the programmes and key people and organisations in the community;
- minimise financial cost to the volunteers and to the conservation body responsible for the programmes;
- maximise participant enjoyment and satisfaction;
- maximise willingness of participants to return for future volunteer programmes;
- maximise ease of organising and implementing the volunteer programme.

Conservation programme leaders can utilise the principles of experiential learning to maximise the outcomes above. Experiential learning occurs when:

1. An activity leads to the participants having a concrete experience;
2. The participants observe the impact of that experience on themselves, reflect on the experience and express opinions about how their experiences compare to prior concepts of how that experience would affect them.
3. This observation, reflection and expression then enables participants to examine their conceptual map of the world and to review or change the way they see themselves and the world.
4. New concepts or constructs are created and then tested in a new set of activities. The cycle then begins again.

The experiential learning process is enhanced by placing emphasis on the learner creating meaning from their own experience, rather than the leader interpreting the meaning for them. An important part of experiential learning involves reflecting on success experiences and hence developing confidence to act in the future.

Motivation of participants to take part in voluntary programmes is important and needs to be addressed and catered for by leaders. Common sources of motivation for volunteers include:

- for enjoyment, recreation, or a personal interest in the environment;
- personal concern for the environment;
- to learn, to increase personal knowledge and awareness;
- concern for other human beings.

Enjoyment plays an important part in volunteer motivation and so leaders need to cater for the need of participants to achieve a recreational or leisure experience as well as achieve productive work and develop pro-conservation behaviours.

Engendering changes in participants' pro-conservation behaviours, values and beliefs requires a multi-focus approach. Components of this approach include developing:

- in-depth knowledge of environmental issues and action strategies, with a consequent ability to make judgements about the severity of environmental problems;
- a belief in the person's own ability to make a difference, sometimes achieved through taking part in a successful environmental protection or enhancement programme;
- knowledge of practical means of enhancing the environment;
- a belief that acting to enhance the environment will be beneficial to the individual;
- intrinsic motivation to enhance the environment;
- intuitive sensitivity to the environment - often through personal experience and appreciation of pristine environments or exposure to degraded environments;
- a sense of ownership of, personal investment in, and affiliation with the land through geographic location or an intense spiritual experience with the land ("felt significance");
- language that enables participants and leaders to talk about the importance to themselves of conservation;
- emotional arousal about the state of the environment;
- an intention to act.

In practice, this translates into the need to utilise practical action based (experiential) methods which involve:

- personal attention being given to participants;
- a combination of internally initiated and other initiated approaches;
- programme leaders enlisting the participants' discovery process, yet often within firm guidelines;
- making more use of techniques that involve the participants' internally derived behaviour change;
- both initiate and reinforce pro-conservation behaviours;
- paying close attention to the non rational aspects of human experience, such as spiritual affinity with the land.

Conservation group leaders need to have a wide range of interpersonal skills, of which the main components are to:

- set limits and manage safety;
- demonstrate experience in and enthusiasm for conservation;
- instruct, coach and train participants;
- facilitator groups;
- communicate one to one with participants.

The next step in the research project requires the researchers to work alongside field staff so that experienced staff have a chance to contribute their already extensive knowledge in a collaborative venture that results in an improvement in the design and implementation voluntary conservation programmes.

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16. Appendix 1: The consultant's brief

Conduct a review on literature that explores factors influencing the impact on the conservation behaviour and values of participants in experiential volunteer programmes (with a conservation theme) - with particular reference to:

1. factors peculiar to volunteers and volunteer programmes;
2. the identification of and development of one or more conceptual models relating to changes in behaviour and values for participants in conservation projects;
3. previous research findings that identify factors in the success or failure of previous programmes in their ability to influence conservation related behaviours and values or participants;
4. programme and leader and organisational characteristics and factors that are predictive of success in voluntary conservation projects.

An attempt will also be made to identify survey and research instruments that measure respondent's conservation values and behaviours.

other topics that are seen by the reviewer to be useful in the design, implementation or evaluation of volunteer conservation projects will be either included in the body of the review or noted for future reference.

17. Appendix 2: The range of goals pursued and outcomes sought in environmental education

Goals in environmental education: Hungerford & Volk (1990) named four major levels of environmental goals that are used, throughout the world to guide environmental educators. These are contained by a superordinate goal.

Superordinate goal: ... to aid citizens in becoming environmentally knowledgeable and, above all, skilled and dedicated citizens who are willing to work, individually and collectively, toward achieving and/or maintaining a dynamic equilibrium between quality of life and quality of the environment.

Goal level I: The ecological foundations level. This level seeks to provide learners with sufficient ecological knowledge to permit him/her to eventually make ecologically sound decisions with respect to environmental issues.

Goal level II: The conceptual awareness level - issues and values. This level seeks to guide the development of a conceptual awareness of how individual and collective actions may influence the relationship between quality of life and the quality of the environment and, also, how these actions result in environmental issues that must be resolved through investigation, evaluation, values clarification, decision making and finally, citizenship action.

Goal level III: The investigation and evaluation level. This level provides for the development of the knowledge and skills necessary to permit learners to investigate environmental issues and evaluate alternative solutions for solving these issues. Similarly, values are clarified with respect to these issues and alternative solutions.

Goal level IV: Action skills level - training and application. This level seeks to guide the development of those skills necessary for learner to take positive environmental action for the purpose of achieving and/or maintaining a dynamic equilibrium between quality of life and quality of the environment.

Hungerford & Volk (1990) also identified five major domains of change that may occur in participants of environmental education programmes. Although voluntary conservation programmes are not strictly "environmental education", enough parallels occur for the outcomes of environmental education to be provisionally applied to voluntary conservation programmes. These domains are:

> **Awareness** - to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems [and/or issues].
>
> **Sensitivity** - to help social groups and individuals gain a variety of experiences in, and acquire a basic understanding of, the environment and its associated problems [and/or issues].

Attitudes - to help social groups and individuals acquire a set of values and feelings of concern for the environment and motivation for actively participating in environmental improvement and protection.

Skills - to help acquire skills for identifying and solving environmental problems [and/or issues].

Participation - to provide social groups and individuals with and opportunity to be actively involved at all levels in working toward resolution of environmental problems [and/or issues]. (Hungerford & Volk, 1990, pp. 8-9).

Smith-Sebasto (1992, p.25) identified five categories of environmentally responsible behaviour. They are:

1. Eco management, or any physical action taken by an individual or a group aimed at directly maintaining or improving existing ecosystems, for example, reforestation. Landscaping, installing bird boxes.
2. Consumerism (changed to economic action by Champeau), or an action similar to either an economic threat by an individual or group aimed as some form of behaviour modification in business or industry, for example, boycotting, or some conservative mode of behaviour with respect to consumption of goods and services, for example, purchase of recycled materials.
3. Legal action, or any legal/judiciary action taken by an individual and/or organisation aimed at some aspect of environmental law enforcement or a legal restraint preceding some environmental behaviour perceived as undesirable, for example, lawsuits, injunctions.
4. Persuasion, or an effort to verbally motivate human beings to take positive environmental action as a function of modified values, for example, argumentation, debate, speech making, letter writing.
5. Political action, or an effort at persuading an electorate, a legislator (or legislature), or an executive governmental agency to conform to the values held by the person or persons taking the action, for example lobbying, voting, supporting candidates.

18. Appendix 3: Interpersonal and group work skills for the leader of voluntary conservation programmes

The five key roles for leaders of voluntary conservation programmes, as derived from the literature on experiential group leadership are the limit setter/safety supervisor, the enthusiastic experienced conservator, the instructor/coach/educator/trainer, the group facilitator and the skilled communicator.

18.1 THE LIMIT SETTER/SAFETY SUPERVISOR

Often safety is treated as though it is independent of other issues. Yet safety in groups depends on the leader(s) setting and enforcing limits. Leaders need to have a sound understanding of the physical and environmental dangers that face group participants, but an often neglected aspect of safety is that many leaders fail to understand the importance of psychological safety. Even in voluntary conservation groups, some participants need protection from excessive shaming, fear and exposure of incompetence.

The limit setter/safety supervisor is the role that is informed by judgement. Judgement alone is not enough, it needs to be acted on (Cain 1990; Priest 1990a; Rawson 1990; Stich 1993). The appropriate setting and management of limits is required to manage both physical and psychological risk, and to promote participant involvement (Ewert 1989; Johnson 1991; Whitaker 1989).

To achieve this, the leader:

- describes limits of physical and psychological safety to the group. Describes reasons where appropriate;
- negotiates with the group to set some of the limits;
- reminds participants of the limits when they are or may be transgressed;
- notices own misgivings and acts on them;
- trusts own judgement;
- enforces limits quickly where serious danger is present;
- reviews the effectiveness of the limits from time to time;
- re-defines limits when the context changes;
- communicates effectively with other practitioners about safety issues;
- has knowledge of safety limits that are defined by professional practitioners and regulatory authorities;
- has knowledge of laws regarding safety, injury and liability.

18.2 EXPERIENCED ENTHUSIASTIC CONSERVATOR

The leaders' own enthusiasm for conservation activities is a core requirement for success. Why? Because there must be congruence between the sense of self and hence "professional identity" of the practitioner, and the form of activity being led by that practitioner. A leader of a voluntary conservation project group who has no personal passion for the activity will not provide the conditions for a quality experience (Hunt 1989). Additionally, effective educational experiences are best facilitated by persons who have "faith" in themselves and the processes they are using (Freeman 1993; Neville 1989).

This role of experienced enthusiastic conservator is demonstrated when the leader:

- describes conservation activities to others with life and enthusiasm;
- acts with flow and confidence while performing conservation activities;
- has memories of many conservation related experiences;
- acts in accordance with having learned from being in a wide range of conservation related situations, some enjoyable and some not so enjoyable;
- demonstrates a willingness to engage in further conservation activities;
- has experienced the benefit to self of participation in conservation activities;
- believes in the potential value to others of conservation activities;
- tells stories of own adventures and activities and listens with interest to others' stories;
- motivates others by building a picture so others can imagine themselves doing the activity. (Passes on information and links with prospective participants).

At this point we have a leader who can provide adequate physical and psychological safety and can foster inspiration and liveliness in a group. In some cases this is enough, but without developing the skills of the group members, the action remains totally dependent on the leader doing all of the technical activities. This can be disempowering for participants and where participants must learn skills, another leadership role is called for.

18.3 I NSTRUCTOR/COACH/EDUCATOR/TRAINER

The instructor/coach/educator/trainer role is present when the leader:

- has a thorough knowledge of the steps required to successfully complete an activity;
- communicates the steps required in language and actions that match the experience, ability, and fear level of the participants;
- engages the interest and attention of participants;
- proceeds with the learning task at a pace that allows successful learning for participants;
- makes use of the instructional capabilities of group members;
- "teaches" successfully by a number of methods: didactic, demonstration, coaching, discovery learning, and experiential learning;
- matches the teaching/learning method(s) with the situation;

- presents the learning experience so that it is integrated with other aspects of the programme. That is, the learning experience has meaning to participants;
- works interactively with learners i.e., responds to their verbal and non verbal communication;
- presents learning opportunities that are enjoyable and satisfying;
- performs "task" and "maintenance" functions with the group during the learning experience;
- presents only information that is interesting, useful or relevant to participants at the time;
- has practical and theoretical knowledge that is at least one level beyond that currently being taught;
- observes and acts on information about own role state and the state of the group.

The leader who has all four of the above roles well developed is in a position to lead most well motivated conservation groups with a reasonable degree of success. However, if the purpose of the group includes the goal of positively influencing participants' pro-conservation behaviour, or if the group members are reluctant participants, two more roles are required. They are the "group facilitator" and the "expert communicator/relator."

18.4 GROUP FACILITATOR

Adequate management of all but self-motivated conservation groups requires a working knowledge of group process and an ability to use these principles to assist the group in achieving its purpose (Whitaker 1989). In particular, facilitation assists the development of group cohesion, motivation, resilience and the transfer of learning from the conservation activity to the participants everyday life (Gass 1993; Kerr 1987; Priest 1993; Raiola 1986; Rawson 1990).

The generalised role of the "group facilitator" is present when the leader:

- has basic knowledge of group work theory;
- manages self in times of stress and duress;
- creates a group environment of mutual interdependence with clear boundaries;
- constantly acts in ways that assist the group to reach its goal;
- encourages group members to build their own skills;
- coaches group members in appropriate ways to behave in groups;
- behaves in accordance with the group context, stage of group development, group purpose, etc.
- models behaviour that is appropriate for participants;
- provides variety and freshness in the facilitation process;
- encourages balanced participation from group members;
- establishes and maintains limits in the group to promote psychological safety and a participatioe working environment;
- promotes fun and enjoyment in the group;
- responds to participants in ways that promote the development of useful ways of being in their everyday world;

- plans activities that are likely to set the scene for growth promoting action and interaction;
- intervenes when participants act in ways that seem to lead to development or behaviours or reinforcement of behaviours in participants that are not useful;
- acts in ways that are compatible with the ethnicity, gender and culture of participants;
- maintains a constant watch on own emotional and intuitive responses as well as words and actions, and checks for interference from own unresolved issues;
- maintains curiosity in the moment about the whole group process;
- observes participants functioning and compares observations with known frameworks for human behaviour, then develops action plans.

All of these competences relate to the group as a whole. Yet many of the exchanges between leader and participant in voluntary conservation groups occur on a one-to-one basis (Chase 1990). One-to-one communication competencies are described under the role of the expert communicator.

18.5 EXPERT COMMUNICATOR

Similar to the facilitator competencies named above, quite unsophisticated communication techniques suffice for leaders of well motivated groups, but as the level of difficulty of group rises and the goals approach education or personal development, so does the need for competence in communicating on a one-to-one basis. The continuum of one-to-one communication ranges from conversation, through interviewing and on to counselling where crises have occurred (Ivey 1987). Research on outdoor leadership competencies identified the need for basic interpersonal skills (Phipps 1986; Priest 1987; Raiola 1992) and the parallels between leading outdoor adventure groups and conservation groups are sufficient to hypothesise that similar skills are required by leaders of educational and developmental voluntary conservation programmes.

The role of the expert communicator/relator is manifested when the leader:

- establishes empathy with participant;
- states own needs clearly and appropriately;
- reflects back participant's thinking and feeling and meaning of verbal and non-verbal communication;
- uses physical space in ways that are appropriate to the participants, the leader and the setting;
- deals with conflict in ways that lead to task completion and maintenance of the relationship where possible or termination of the relationship with minimum trauma;
- manages own disturbances and distress;
- discloses own thinking and feeling in ways that are helpful to the relationship, the participant and self,
- varies style to match the participants, setting and context;
- acts as model for constructive interpersonal behaviour to participants.

(Adapted from Ringer 1993, 1994 and 1995).

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