Strengthening community capacity to undertake conservation work

Sharing conservation skills and knowledge

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Anna Johnson and Mariska Wouters

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ABSTRACT

Working with communities to achieve conservation objectives is a key focus of the Department of Conservation (DOC). This report addresses how DOC can most effectively support communities to develop skills to carry out conservation work, particularly through sharing scientific and technical information. The study began with an international literature review. The results of this review were used to inform four case studies of successful practice of DOC working with communities. Finally, an action research approach was used to work with DOC to interpret the findings from the case studies and literature review and to identify actions to respond to the results. The results of the literature review were six best practice principles for working with communities as part of skill sharing. The case studies strongly supported the six principles identified in the literature and identified two further principles. The two action research forums supported the findings from the first two stages of the research and identified potential actions that could be explored by both DOC and community organisations to improve information and skill sharing.

Keywords: conservation with communities, skill sharing, technical skills, scientific knowledge, evaluation, monitoring, planning, participation, collaboration, experiential learning, community involvement, action research

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1. Introduction

Working with communities to achieve conservation objectives is a key focus of the Department of Conservation (DOC), and is specifically addressed under the appreciation outcome in DOC's Statement of Intent 2006–2009 (DOC 2006).

The objectives and approach for working with communities to enhance conservation outcomes is outlined in DOC's Conservation with Communities Strategy (DOC 2003a). This strategy emphasises the importance of DOC understanding and building relationships with communities. It discusses a variety of ways that DOC can work with communities; for example, by leading projects that offer communities opportunities for involvement in conservation work; by developing partnerships with community organisations and tangata whenua to undertake conservation projects; and by supporting other organisations undertaking work that contributes to shared conservation outcomes.

The type of community-based conservation initiatives that are promoted by DOC depend on the conservation issues that are most important for the particular DOC conservancies and localities where the projects are based. For example, the Bay of Islands Conservation Programme focuses on predator and pest control, whereas the Motutapu Island Conservation Programme (Hauraki Gulf) assists with habitat restoration as well as work to reinstate the island's cultural and natural landscape.

One of the key methods identified by which DOC can support community conservation initiatives is through the sharing of conservation skills and knowledge in areas such as monitoring, pest control and habitat restoration. Methods currently used for sharing expertise include the provision of written information (such as pamphlets), tailored on-site training programmes, and large-scale knowledge-sharing events (such as the Kiwi Hui).

This study explores New Zealand and international research on working with communities as part of natural resource management to identify the current opinion on 'best practice' conservation skills training and capacity development. It then explores four case studies identified as 'success stories' of DOC working with communities to develop community capacity to undertake conservation work. These case studies are analysed in light of the literature to determine the key principles that DOC needs to follow when building conservation skills within communities. The case studies are discussed in terms of different models for how DOC can work with communities. Areas requiring attention that were identified in the case studies are also highlighted. The case studies are followed by action research which further explores the key principles identified in the case studies, areas requiring attention and potential actions to address these issues.

2. Literature review

The question addressed by this research is 'how can DOC most effectively support communities to develop skills to carry out conservation work, particularly through sharing scientific and technical information?

In order to address this question, a literature review was conducted. This set out to identify international best practice in working with communities, and what lessons it has for DOC in working with communities on conservation projects. The particular focus was how to effectively share skills and knowledge. The literature review was based on a broad search for material that could be relevant to addressing the research question. This search included keyword searches on the Internet, academic article databases (EBSCO host and the Web of Science/ Social Sciences Citations Index), as well as a 'snowball' method of identifying information sources through the reference lists of the documents reviewed. The final material reviewed included books, journal articles and Internet-based information on theory, best practice guidance and case studies in the following fields:

- Communication
- Adult education
- Environmental education
- Science communication
- Rural extension
- Collaborative and community-based conservation/natural resource management

In addition, several earlier DOC publications were reviewed, including those that addressed 'volunteering' or community conservation projects (CCPs).

For the purposes of this literature review, the various literatures on working with communities as part of 'rural extension', 'land management', 'wildlife management', and 'conservation' are sometimes referred to, collectively, as 'natural resource management'.

Once the review got underway, it quickly became apparent that looking at the practice of skills and knowledge sharing with communities in isolation missed some of the most important points that were being raised in the literature about how to best work with communities to build their capacity to undertake conservation work. Supporting communities to develop skills to carry out conservation work is more than just finding the best way to 'teach' skills or to impart scientific or technical information. It is about finding the most effective ways to work with communities to enable and encourage participation, commitment, learning, and practice.

Therefore, a broader approach was taken to identify the key principles which contribute to effectively supporting communities to develop skills to carry out conservation work. In the end, six interlinked themes or principles consistently emerged across the various types and sources of information reviewed:

Principle 1	The importance of careful planning and setting clear objectives
Principle 2	Understanding your audience
Principle 3	Information and knowledge sharing as a collaborative learning process
Principle 4	Using a variety of communication and participation methods
Principle 5	Using best practice group management and communication techniques
Principle 6	The importance of continuous learning through monitoring and evaluation

These principles are outlined in the following sections.

2.1 THE IMPORTANCE OF CAREFUL PLANNING AND SETTING CLEAR OBJECTIVES

The first best practice principle for supporting communities to develop skills to carry out conservation work is the importance of careful planning, including the setting of clear objectives.

This principle is closely linked with:

- Principle 2—*Understanding your audience*. An important aspect of developing an effective communication plan is understanding the audience you are trying to reach (Section 2.2).
- Principle 6—*The importance of continuous learning through monitoring and evaluation.* Setting clear objectives is also important in enabling you to effectively evaluate your work as part of a continuous learning process (Section 2.6).

Principle 1 transcends the literature reviewed and is applicable to both:

- The development of specific educational/skill development activities
- The process for working with communities on conservation projects

2.1.1 Planning your communication strategy

Firstly, from the point of view of communication theory, Jacobson (1999) emphasises the importance of good planning and outlines a process for planning, implementing, and evaluating a communications programme (see Box 1).

Jacobson (1999) also discusses the importance of undertaking strategic research as part of the plan development process. This includes:

- Defining constituent audiences or stakeholders, including their common interests, needs and behaviours
- Considering the accessibility of the audience and appropriateness of different communication media to both the public and the message
- Determining appropriate message strategies and selecting the communications media for target audiences (see Section 2.2).

Box 1. A process for planning, implementing and evaluating a communications program (adapted from Jacboson 1999, p. 84).

Planning
- Review the mission of your organisation and the goals for the communication campaign
- Identify target audiences
- Determine specific objectives
- Identify resources and constraints
- Assess potential approaches and activities

Implementation
- Pre-test tools and messages
- Develop and implement selected activities
- Monitor and complete the communications programme

Evaluation
- Compare results with the objectives
- Make decision regarding programme changes and continuation

A UK guide on science communication (People Science and Policy Ltd and Taylor Nelson Sofres 2002) suggests setting objectives with the following questions:

- Why am I (or my organisation) doing this?
- What do I/we want to achieve?

This guide also adds that these objectives must be realistic, of high importance and measurable:

> *The twin pitfalls are setting objectives that you believe are important, but against which you can't measure your success and setting objectives because you know they are measurable, but are actually of little importance.*
> (People Science and Policy Ltd and Taylor Nelson Sofres 2002, p. 4)

A useful guide to setting clear objectives which comes from the evaluation literature is that objectives should be SMART:

Specific
Measurable
Achievable
Relevant
Time-framed

The importance of careful planning based on clearly defining the purpose and objectives of the programme, as well as understanding the needs of your audience and evaluating your performance, is also emphasised in the education theory and best practice guidance reviewed (see, for example, Findsen 1996).

2.1.2 The importance of careful planning for achieving success in conservation with communities projects

In addition to its role in communications and educational activities, the importance of careful planning and setting clear objectives is also a major principle in working with communities on conservation projects.

The importance of programme planning in the development and the successful implementation of conservation with communities projects is outlined in the DOC guide '*From seed to success. Ruia te kākano, kohia te kai rangatira. Guidelines for community conservation partnerships*'. (DOC 2003b). This report states (p. 29): 'organisation is the key to success' and outlines the content of a good plan, which includes:

- The community and the environmental results wanted (your vision, goals and objectives)
- Actions that will be taken
- What needs to be done first (priorities)
- What resources are required
- How resources will be provided
- Who will take which roles and responsibilities
- How coordination, communication and decision-making will take place
- Timelines
- How progress will be monitored

In a later guide on developing effective partnerships between DOC and community groups, Wilson (2005) emphasises the importance of, as part of project planning, ensuring the roles of DOC and the community group are clearly stated and regularly reviewed, and being direct with community groups about the level of involvement and support that DOC can offer.

The importance of careful planning and the setting of clear objectives are also highlighted in much of the other literature on working with communities as part of natural resource management. For example, Gooch (2003, p.10), in a study of catchment volunteers in Queensland, Australia, recommends that 'clear goals, processes and procedures should be articulated so that individuals and groups are aware of the goals towards which they are striving.' Gooch (2003) also notes that 'using a calendar to schedule time commitments can help reduce the likelihood of burnout'. Likewise, Campbell & Vainio-Matilla (2003, p. 426) discuss community-based conservation in developing countries and highlight the importance of setting programme goals with communities. They cite several examples where this has not been done and the ensuing failure of community development and community-based conservation projects. These projects suffered poor design (particularly from a socio-economic perspective), a lack of attention to local circumstances, a lack of buy-in and support for the conservation effort and actions to undermine the projects (by poaching, for example). The authors state:

> *… the concerns for the urgency of conservation activities cannot preclude the importance of community control over these activities. To lock the community into a passive, object-like role in the discourse on conservation will directly undermine the long-term sustainability of conservation activities.* (Campbell & Vainio-Matilla 2003, pp. 428–429).

Unfortunately, past research indicates that planning has been an area of challenge in DOC's work with communities. For example, in a study of volunteer involvement in DOC projects, poor quality of organisation and management and failure of training or educational opportunities to match participants' expectations is identified by Cosslett (1997, cited in Bell 2003) as a significant disincentive to volunteers. In the same study, Bell (2003) also finds that because DOC sometimes needs to move from a role as leader in a project to one of partner or supporter, it is important that skills training is provided not only in conservation, but also in general project planning, organisation and project management.

2.2 UNDERSTANDING YOUR AUDIENCE

The second principle is the importance of understanding your audience. Once you have identified who your audience is/will be as part of programme planning (Section 2.1), it is important to find out a bit about that audience to understand how conservation programmes need to be shaped, not only in terms of what you say (message) but also how you communicate it (method/technique).

Important things to find out about your audience include:

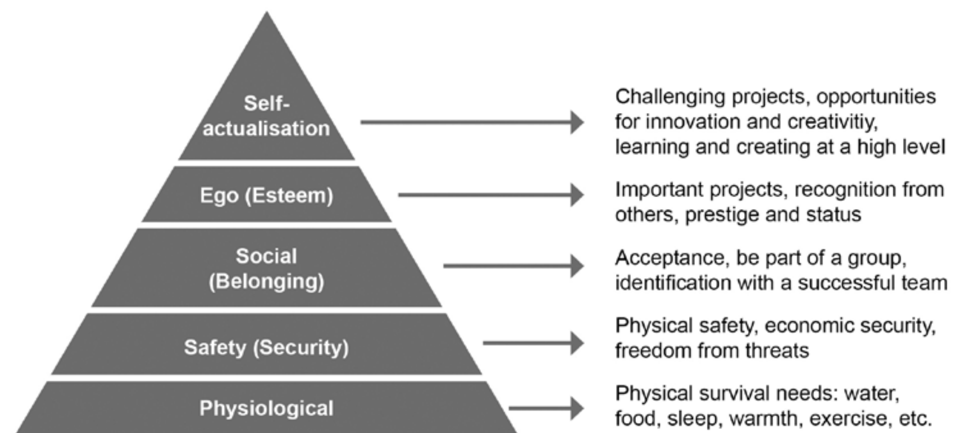
1. Which messages are likely to 'hook' your audience and inspire them to act? For example, what will make them get involved in a programme or change the way they currently manage pests? To discover this you must have an understanding of their interests, attitudes and motivation.
2. What does your audience want to know? What information or skill development activities are required?
3. What are their learning styles? What types of methods and techniques are likely to work best with them?

2.2.1 Knowing which messages are likely to 'hook' your audience and inspire them to act

The first part of understanding your audience is understanding which messages are likely to 'hook' them and inspire them to act; for example, to get involved in a programme or to change the way they currently behave. Social psychologists have noted that opinion is usually determined by self interest. A communication will affect public opinion primarily if its relationship to the audience members' interests is clear. Therefore, if a conservation organisation is wishing to influence public opinion, it must ask, 'what is in this for the individuals whose opinions we are trying to change?' (Jacobson 1999, p. 15). In other words:

> *Communicators must deal with the real needs and desires of their target audiences if they expect to achieve their conservation goals.* (Jacobson 1999 p. 16)

Figure 1. Maslow's hierarchy of needs (based on a figure in *www.ruralhealth.utas.edu.au*).



Maslow's Hierarchy of Needs is shown above. The pyramid illustrates the five levels of human needs. The most basic are physiological and safety/security, shown at the base of the pyramid. As one moves to higher levels of the pyramid, the needs become more complex.

One way of identifying the key messages that might link into the perceived interests is to better understand the nature of needs. Jacobson (1999) discusses Maslow's hierarchy of needs (see Fig. 1). According to this theory, there is a hierarchy of human needs in which the primary physiological needs for food, warmth etc. and then safety and security need to be satisfied before people will be concerned with satisfying their higher-order needs for social belonging, self-esteem and, ultimately, self-actualisation.

Jacobson states:

> *Knowing where your target audience fits in this hierarchy can help you develop appropriate messages to influence their attitudes. A wildlife refuge offers recreational opportunities that may appeal to someone seeking to meet needs for esteem or fulfilment, while opportunities for hunting could appeal to needs for food or safety for subsistence hunters or a sense of belonging or esteem for sport hunters. Framing messages to appeal to people's specific needs can reinforce positive attitudes about your conservation agenda.* (Jacobson 1999, pp. 15–16)

A similar point is made in the literature on science communication. For example, Weigold (2001, p. 184) points to the need for science journalism to 'provide more background information and provide perspectives on what a story implies for broader society. Effective science journalism should provide new information and connect science to everyday life'.

In terms of participation in conservation activities, an important part of understanding your audience is understanding the motivation of people involved in conservation activities. There have been a few studies in New Zealand that have looked at participants' reasons for being involved in such activities. For example, in a study of conservation expectations of Aucklanders, James (2001a) found that participants' reasons for being involved in conservation activities tended to stress personal, social and cultural reasons, rather than just wanting to achieve environmental outcomes. She found that reasons could be summarised as:

- Recreational opportunities
- Personal satisfaction
- Skill development
- Doing something that would benefit the community
- Doing something that would benefit future generations

Two other studies (Cosslett 1997 and Bayliss 2000, both cited in Bell 2003) of people who volunteer for DOC also discussed these and other reasons for people volunteering. The reasons included:

- Enjoyment, recreation (the opportunity to spend time in attractive outdoor settings) or personal interest in the environment
- A personal concern for the environment/conservation
- A desire to improve the environment for the future so that future generations can enjoy it
- A desire to improve an amenity that the volunteers do not currently use, but may wish to in the future, or that they would like others to have the opportunity to use
- A chance to learn new skills and increase personal knowledge and awareness

- To assist DOC to achieve its objectives
- To contribute to the community they live, work, and play in (to give something back)
- For work experience for career or study
- To keep mentally stimulated and physically fit
- For a sense of achievement
- To make people aware of conservation issues and to teach others about conservation
- To socialise, meet people with the same interests, to develop a sense of group identity, for companionship
- To improve the link between DOC and the community

2.2.2 Determining what information or skill development activities are required: what people want to know

The importance of understanding your audience is also discussed in the rural extension literature. For example, Andrew et al. (2005, p. 3) outline a number of strategies for fostering involvement in skill-sharing activities, including the importance of identifying what people want to know:

- Understanding what the audience wants to know and expressing the benefits of learning in terms that have meaning for the audience. The value placed on the learning opportunity must be such that other demands are put aside in order to participate.
- Identification of opportunities should come through an understanding of how different communities interact and communicate.
- Localising learning in terms of issues, organisation and responding to communities' time and relevance demands, through involving local people in the development of learning opportunities.
- Building up relationships over time to develop a genuine understanding of what the communities want to know.
- Monitoring the situation and adapting to changes in circumstances.

Wilson (2005) also emphasises the importance of identifying what skills training and resources specific community groups want.

2.2.3 Understanding how to best communicate with people by understanding how different people learn

Another key theme in the literature is the importance of understanding how different people learn. Mills (1996), in reference to the experience of adult learning, states:

> *First, even when two people are engaging in the same learning task, in the same setting and at the same time, their experience will be unique at an interactive, perceptual, cognitive and affective level. Second, a person's learning experiences from one learning event to the next may have little in common with each other. In other words, learning must be viewed as individually and contextually situated.* (Mills 1996, p. 287)

Similarly, Webb et al. (2006), in their review of learning theory, conclude:

> *… individuals have different learning styles, and therefore the methods and means by which they learn best will depend largely on factors relating to learning styles and preferences.* (Webb et al. 2006, p. 32)

Boyle's (2005, cited in Webb et al. 2006) concise typology of influences on learning styles, based on his review of the learning theory, is particularly useful for understanding how different people learn. Boyle describes six elements in people's preferences for learning, which differ from person to person. These are:

- Perceptual elements
- Sociological elements
- Psychological elements
- Physiological elements
- Environmental elements
- Emotional elements

The essential aspects of the first three of these are summarised by Webb et al. (2006):

Perceptual elements affect the way we learn and retain information. Individuals tend to have personal preferences or strengths in one or more learning styles (see Fig. 2).

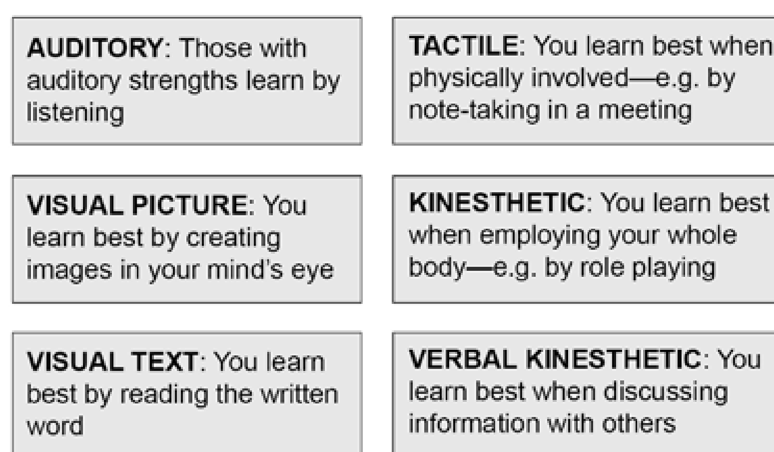


Figure 2. Perceptual Elements of learning styles (taken from Webb et al. 2006).

Sociological elements refer to people's preferences for learning with others and strengths in terms of working as part of groups and include preferences for:

- Working or learning alone
- Working or learning alone but then interacting with others after having had time to think things through
- Working in pairs
- Working in small groups or teams
- Working under the guidance of a supervisor and being critical of peers
- Working with an expert (authority-oriented)
- Varied preferences

Psychological elements refer to the different ways in which people absorb information and include two variations:

- Analytic processors—learn facts sequentially, with one fact following the other
- Global processors—require the big picture and a real-life application

and

- Impulsive processors—are likely to shout out the answer as soon as they think they know it
- Reflective processors—need time to think about and reflect on their answer before sharing it

2.3 USING EXPERIENTIAL AND COLLABORATIVE LEARNING PROCESSES

Much of the literature on working with communities as part of natural resource management emphasises that information and knowledge sharing works best when it is:

1. Experiential
2. Part of a two-way collaborative learning process

2.3.1 Experiential learning

The theoretical roots of this principle are grounded in educational and learning theory, particularly the experiential learning approach developed by John Dewey, David Kolb and others and the related (participatory) action research (Kurt Lewin, Paulo Friere, Antonio Gramsci) and action science approaches (Chris Argyris). Briefly, these theories advocate an approach to learning/research based on a cyclical process of planning–acting–reflecting.

Experiential learning is different from traditional models of teaching, as it encourages 'participants to make sense of and learn from their own experience rather than casting staff in the role of expert or teacher' (Ringer & O'Brien 1997, p. 6).

It does this by encouraging 'learning by doing' through a learning cycle which includes experience, express, examine and evaluate, as illustrated in Fig. 3.

Kolb (1973) describes the cycle in the following way:

> *Immediate concrete experience is the basis for observation and reflection. These observations are assimilated into a 'theory' from which new implications for action can be deduced. These implications or hypotheses then serve as guides in acting to create new experiences.*
>
> (Kolb 1973, p. 2, cited in Webb et al. 2006, p. 31)

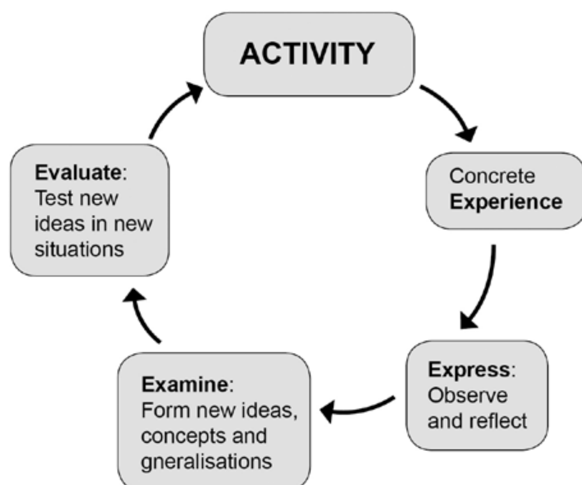


Figure 3. Experiential Learning Cycle (taken from Ringer & O'Brien 1997.

Kolb's learning cycle became an important theoretical construct for several authors working in the area of organisational learning. They saw that, in order to be successful, organisations had to learn to become adaptive 'learning organisations' which encouraged and supported employees to reflect on their experiences and adapt to changing circumstances.

The learning cycle has its roots in a constructivist interpretation of learning. The theory of constructivism is attributed to Jean Piaget, who argued that knowledge is created by learners through experience in two processes:

- *Assimilation*—occurs when individuals' experiences are aligned with their internal representation of the world. They assimilate the new experience into an already existing framework.
- *Accommodation*—is the process of reframing one's mental representation of the external world to fit new experiences. Accommodation can be understood as the mechanism by which failure leads to learning. When we act on the expectation that the world operates in one way and it violates our expectations, we often fail. By accommodating this new experience and reframing our model of the way the world works, we learn from the experience of failure (see, for example, http://en.wikipedia.org, keyword: Constructivism).

In a similar way to experiential learning, Participatory Action Research (PAR) integrates the information creation process (research) with the process of taking action to change the situation. It also adds the principle of community empowerment to the concept of cyclical learning.

While the idea of PAR has been around for several decades, it is only relatively recently that it has been applied in the context of natural resource management (Lambert & Elix 2003). McTaggart (1999, cited in Lambert & Elix 2003) outlines three key attributes which distinguish PAR from conventional research:

- Shared ownership of research projects
- Community-based analysis of social problems
- Oriented towards community action

In PAR, the normal distinction between researcher and subject is removed and the researchers/experts engage collaboratively with the subjects/stakeholders in the process of inquiry, with the purpose of not only understanding the situation being studied, but also making positive change to the situation (Mordock & Krasny 2001). One of the benefits of this approach is that:

> *Individuals who are usually disenfranchised in a knowledge-based society may experience personal transformation and become knowledgeable catalysts of social change by participating in knowledge generation or research.* (Sohng 1995, cited in & Krasny 2001, p. 16)

2.3.2 Collaborative learning and action

The learning theories discussed above were used by several authors to argue for change in the way agencies work with communities. The approach whereby agency staff are seen as the 'experts' who provide information to members of the community needs to change to one where agency staff work *with* communities in a more facilitative role, helping to engage with them in a process of collaborative learning and action.

This new model reflects a change in the way of thinking about generating information, sharing information, and learning, and has implications for how community conservation programmes are conducted. According to this model, both problems and answers are identified through a collaborative process of information exchange, and scientific information is only one part of the exchange.

This contrasts with the traditional linear model of information exchange, where information on the 'problems' and the 'answers' is delivered from the experts to the community. Furthermore, in the new model, the process of creating information is integrated into the process of acting on the problem. This makes the stage of 'sharing scientific skills and knowledge', as conceptualised in this research project, difficult to distinguish and disentangle from the broader issue of how to work with communities to undertake conservation work; as the process of undertaking the work is part of the overall learning cycle.

For example, writing from the perspective of collaborative learning and collaborative management, Will Allen and Margaret Kilvington and others discuss the importance of working together with communities as part of collaborative learning, in which 'many viewpoints and sources of information can be shared among the different parties involved, and integrated to find solutions that will guide the way forward' (Allen & Kilvington 1999, p. 2). Working with communities to develop solutions collaboratively is important to not only finding the best solutions but also to ensuring the community 'buys into' and feels ownership over the solutions and their implementation. Allen & Kilvington (1999) emphasise that doing this successfully requires aspects of relationship-building, facilitation and conflict management. Allen et al. (2001) describe this collaborative approach as an 'Integrated Systems for Knowledge Management approach' which involves the following steps:

- Entry and contracting—scoping the goals and objectives
- Collaborative planning—iteratively accessing the relevant data, information and knowledge (science and local knowledge) and undertaking a community dialogue for (1) shared understanding and (2) development of action and monitoring plans
- Information capture and dissemination
- Implementation
- Ongoing feedback and problem reformulation

This perspective challenges the idea of 'information sharing' and, instead, reformulates it in terms of collaborative information creation through research and dialogue as part of a collaborative planning model. It also recognises the contextual nature of information where information is derived from a particular social, economic, and ecological setting as well as filtered through the information creator's personal world view. Allen et al. (2001) use an example to illustrate this:

> *An important consideration in designing field control operations is determining the appropriate spacing to use between traps. In this case study scientists suggested suitable grid spacing to ensure that the ferret's home range was well covered with control traps. However, North Canterbury farmers pointed out that a grid design for trapping may not be the most practical and cost-effective method in a commercial situation, where trapping often has to be combined with other farm operations. Both groups are correct in the context in which they are working.* (Allen et al. 2001, p. 6)

The papers and reports written by Will Allen and Margaret Kilvington provide a number of points or principles that are helpful in understanding how to work with communities as part of a collaborative learning process. They discuss how community dialogue is important for addressing and resolving debates and is an important part of the learning process. They state:

… negotiating through a conflict over differing viewpoints expands peoples' perspectives on the problem, leading to more lateral solutions. (Allen & Kilvington 1999, p. 3)

This is because access to a wide range of information and perspectives increases stakeholders' range of options, and the basis for comparing these options.

However, they also note the following points:

- While science is 'a main contributor', local knowledge also needs to be drawn upon.
- Stakeholders must develop a common language, but in a way which accommodates different viewpoints. This process can take time when stakeholders come from different (technical or cultural) backgrounds and/or draw on different types of knowledge.
- Michael (1995), cited in Allen & Kilvington (1999, p. 4), makes the following point: 'Accepting new information that challenges the way we think and the things we do, even with the best of wills, [is] difficult to undertake, to accomplish, and to sustain.' It is important, therefore, to create a supportive environment for those undergoing change.

A similar perspective is taken by Campbell & Vainio-Matilla (2003), who discuss the importance of valuing local knowledge and understanding existing relationships between communities and the environment in the context of community-based conservation in developing countries. They review the potential role of historic and culturally-specific management systems as part of species and habitat conservation, concluding:

The implication for community-based conservation is that knowledge that has been produced through long, mutually adaptive processes of human communities interacting with their environment can be valuable to conservation efforts. (Campbell & Vainio-Matilla 2003, p. 426)

Campbell & Vainio-Matilla (2003) point out that part of the problem is the 'normal professionalism' amongst conservation organisations and natural scientists who strongly rely on scientific information and consider it superior to local knowledge, as well as their lack of consideration of and skills in understanding community structure and issues.

The importance of establishing effective collaborative relationships, as key components to working with communities as part of land management, is also discussed in the rural extension literature. Rural extension involves communication and learning activities for rural people led by professionals from different disciplines, for example agriculture, environmental protection, or business. It often focuses on the transfer of new practices and scientific knowledge. There is extensive literature available on the experience with rural extension in Australia (Curtis 1998; Cary & Webb 2001; Lambert & Elix, 2003; Andrew et al. 2005) and other countries (such as the work of Moyo & Hagmann (2000, in Zimbabwe), relevant to this research. For example, Curtis (1998, p. 571) states: 'The community-agency partnership is a fundamental element of Landcare, and nurturing an effective, enabling relationship is critical to program success'. In his conclusions, Curtis highlights the following aspects of successful partnerships:

- Groups and agency staff have effective working relationships based on trust and a shared sense of purpose

- The agency has a firm commitment to establishing effective partnerships with groups
- Agency staff show respect for the skills and knowledge of most group members
- Agency staff have good levels of communication and technical skills
- Agencies provide adequate support in terms of information and advice
- Agency staff provide adequate coordination of on-the-ground activities

Similar conclusions are reached in a report by Allen & Kilvington (2002) on sustainable development extension practice in New Zealand. This report, which is based on extension theory, the authors' experience, and case study research on four examples of extension practice in New Zealand, stresses the benefits of taking a collaborative learning approach, including:

- Appropriate information flows that combine local and science knowledge
- Full involvement of different stakeholders in learning about the system in question
- Interaction between stakeholders to contextualise and develop a shared understanding of the information
- Creation of a favourable social environment which is open to different viewpoints
- Building trust between the different players and well-developed networking paths across the community and between communities and agencies.

The importance of agencies taking a collaborative approach to working with communities in conservation and land management is also widely recognised in the literature because of its important influence on the experience of volunteering for community members. For example, Gooch (2004), in research on the experience of volunteers in catchment management groups in Queensland, Australia, states:

> *… empowerment leading to personal confidence by undertaking new or challenging tasks can boost self-esteem and lower rates of depression, ultimately improving the quality of life for volunteers, their friends and families. Empowerment through group learning and sharing skills, which are passed on to new members, can lead to positive and long-term environmental outcomes.* (Gooch 2004, pp. 11–12)

Gooch emphasises the importance of empowerment though genuine partnerships that are transparent, inclusive and based on negotiation. This includes:

> [fostering] *relationships among volunteers and between groups and agencies … based on understanding, appreciating and utilising the range of different perspectives, knowledge, skills and experiences held by individuals.* (Gooch 2004, p. 13)

Finally, the benefits of taking a collaborative learning approach have been raised in several DOC publications. Fitzgerald (1999) discusses the recognition within DOC, as far back as 1994, of the need to develop more effective strategies for working with communities. Fitzgerald's own research, (which utilised an action research approach to develop and implement an effective strategy for working with a case study community on pest control) advocates the use of a community-based approach. He states that:

> *Community-based action implies working **with** the people of a particular area or district to address a problem or issue which **they** recognise, consider important, and feel the need to respond to **themselves**. To do this successfully with such a motivated community or group the outsider has to work through a process with the community (Chamala & Mortis 1990) to:*
>
> - *identify its real problems and needs;*
> - *develop a shared vision of what to do about these problems;*
> - *build the capacity necessary to achieve the desired changes – including leadership, skills, and processes and organisational arrangements that enable people to be genuinely heard and to participate;*
> - *initiate and maintain action; and*
> - *monitor and evaluate action* (Fitzgerald 1999, p. 54.)

As part of this type of approach, Fitzgerald recommends the following principles for working with communities:

- Embracing, fostering and facilitating community action
- Valuing local knowledge and skills
- Working in a spirit of trust, respect and cooperation
- Being flexible and innovative in terms of methods

Another DOC publication—Ringer & O'Brien (1997, p.6)—advocates use of an 'experiential learning framework' as the best method for enabling DOC staff to influence participants to adopt pro-conservation behaviours as a result of their involvement in DOC experiential programmes.

The need for improved communication and building stronger relationships with community organisations and iwi was also raised by James (2001a) in her study of conservation expectations of Aucklanders and highlighted by Bell (2003), who states:

> *Education is more than information provision. For it to be effective it needs to integrate local knowledge, be action oriented and build on local ways of learning. In this sense, it is a partnership between volunteers and the department.* (Bell 2003, p. 35)

Like Ringer & O'Brien (1997), Bell (2003) recommends using a collaborative approach to information sharing, based on an experiential learning approach.

The arguments for a collaborative approach are also explored in a report by Forgie et al. (2001) on facilitating community-based conservation initiatives (CBCIs). This report makes several of the same points discussed above, including the value of:

Participation

- Builds local skills, interests and capacities that are on-going
- Improves outcomes by extending the range of values and inputs
- Increases the probability of acceptance and successful implementation
- Results in the people who participate in decision-making being more likely to implement any resulting solutions

Collaboration

- Builds trust
- Shares responsibility and increases resources

Forgie et al. (2001) also advocate a collaborative approach, which includes two-way information exchange, stating:

> *… collaborative efforts are handicapped in situations where experts only provide a one-way flow of information in the form of technical expertise and advice. Ideally agency representatives should provide interactive exchanges of information to different levels of their own organisation and the wider stakeholder groups.* (Margerum 1999, p. 187, cited in Forgie et al. 2001, p. 73).

Furthermore, this approach is reflected in DOC's guide to developing effective partnerships with community groups (Wilson 2005), which recommends:

- Providing community groups with the opportunity to come together and share their experiences
- Inviting community groups to participate in DOC presentations, workshops and training opportunities, thus acknowledging the value in existing conservation knowledge from locals and/or experienced volunteers

2.4 USING DIFFERENT COMMUNICATION AND PARTICIPATION METHODS

A number of the reviewed reports discuss the best practice principles for choosing appropriate communication and participation techniques or made suggestions about useful techniques.

In terms of general principles, Wilson (2005) suggests sharing research findings and other technical information in accessible and user-friendly ways; for example, through community meetings or hui. Allen & Kilvington (1999) also advocate use of in-person information sharing, stating:

> *The richer the media of communication (e.g. face to face rather than printed material) the deeper the sharing, and the greater the potential for learning and behaviour change.* (Allen & Kilvington 1999, p. 3)

Fitzgerald (1999) recommends using a variety of communication techniques, particularly in workshop or group situations, including visual and non-verbal methods to foster inclusion and participation. These specific methods include, but are not limited to: mapping, drawing diagrams (e.g. Venn diagrams); modelling, matrix ranking and scoring, group brainstorming, and SWOT analysis.

Campbell & Vainio-Matilla (2003) also discuss a number of techniques for working with communities, including:

- Community mapping
- Transecting
- Sorting and ranking
- Venn diagrams
- Rapid Rural Appraisal (RRA)
- Participatory Action Research (PAR)
- Participatory Assessment, Monitoring and Evaluation (PAME)
- Participatory Learning Approach (PLA)

Finally, Allen et al. (2001) discuss the potential usefulness of the Internet as an information exchange medium. They argue that the highly fragmented and

constantly evolving body of relevant information (conservation knowledge) presents challenges to traditional extension practices and published guides and makes Internet-based information useful because of its ability to be updated easily. They also found the Internet to be a useful medium because of its ability to allow people to create, link and share a variety of types of information (including text, graphics, images, audio and video).

There are a number of resources which cover in detail various methods and techniques that can be used to inform, consult with, actively involve, and collaborate with the community. This information will not be summarised here.

Overall, the literature advocates use of a variety of techniques, with at least some interpersonal face-to-face communication. In line with the discussion in section 2.3, there is also a strong emphasis in the literature on the use of experiential and collaborative research techniques, particularly those that combine information creation/learning with taking action, such as PLA, PAR, and PAME. These techniques reflect the best practice principles discussed in section 2.3 by actively involving community members and other stakeholders in the process of research design, collecting information and deciding how to use information to achieve conservation outcomes.

As part of Community Conservation Projects (CCPs), PAR can be used in a variety of ways; for example, to gather monitoring information (e.g. conservation species numbers, pest numbers, other pressures) to:

- Understand the conservation issues affecting an area and identify the problem to be addressed and potential responses
- Explore the effectiveness of current conservation management practices
- Reflect on the processes used to achieve conservation outcomes, including partnership, communication, networking and skill sharing

2.5 USING BEST PRACTICE GROUP MANAGEMENT AND COMMUNICATION TECHNIQUES

Another key principle linked to the need to use a variety of communication and information-sharing methods is the importance of learning and using best practice group management and communication techniques. This principle overlaps with Principle 1: Understanding your audience.

Ringer & O'Brien (1997) provide guidance and examples of effective techniques that can be used for communication and group management as part of an experiential learning process within DOC. These techniques are summarised into six essential group skills in Table 1.

The significance of principles such as those in Table 1 to achieving positive outcomes in supporting communities to undertake conservation work is highlighted in a study of volunteer involvement in DOC projects by Cosslett (1997, cited in Bell, 2003), who found that poor group management and communications techniques were a significant disincentive to volunteers. Poorly managed volunteer groups where characterised by:

TABLE 1. SIX ESSENTIAL GROUP SKILLS DISCUSSED BY RINGER & O'BRIEN (1997).

GROUP SKILLS	CRITICAL ELEMENTS
Telling important stories	Stories should: • Be relevant to the topic • Be related to the location being addressed/visited • Have an element of conflict to add interest, where appropriate • Provide a 'buzz' experience and capture the imagination of listeners • Be likely to influence pro-conservation behaviour • Be used at all stages of experiential learning process
Forming the group	An important part of forming the group is clarifying group boundaries and relationships, including: • Defining the purpose of the group and the task to be completed • Setting boundaries: when will the group be 'on-task' and when can they relate in a social way? • What is the task 'territory'? What restraints will there be on the use of different physical spaces? • What roles will people have? What responsibilities and authority will they and other group members have?
Being responsive	For group leaders, important aspects of being responsive include: • Building trust and emotional safety, so that each group member feels safe from attack or being shamed or ridiculed, and believes their needs will be acknowledged, and not dismissed • Demonstrating interest and curiosity in participants' points of view • Ensuring that, when communicating with group members, all relevant information is gathered (e.g. what is the speaker saying? How are others reacting? What do your instincts tell you?) • Reflecting back to a speaker what you took as the 'meaning' of what they were saying • Linking responses to individuals back to the purpose of the group • Assisting the group or individual to refine their activities to steps that are small, achievable, and identifiable
Modelling enthusiasm and commitment	The commitment, enthusiasm and integrity demonstrated by a group leader will, in part, determine the commitment, enthusiasm and integrity demonstrated by the group
Informing—passing on the facts	The key elements of being a successful informer for a group are: • Assessing the motivation and key interest of the group members • Assessing the group's current knowledge levels • Being clear about your own interests and the limitations to your knowledge • Encouraging group members to teach each other • In the case of voluntary conservation projects, describing how learning can assist the group in achieving its practical task
Coaching—passing on the skills	The basic steps in coaching include: • Gaining agreement to proceed (based on a common goal or purpose) • Assessing the learner's competence and learning needs • Providing new information • Allowing time for assimilation and practice • Re-starting the learning cycle for new tasks

- Insufficient sense of achievement
- Non-interesting, menial or pointless work
- Inadequate interpretation for volunteers on the relevance of the project to conservation
- Unfriendly or unwelcoming treatment by DOC staff
- Insufficient recognition of volunteers' contributions
- Personal discomfort about other people working on volunteer programmes
- A lack of fun

2.6 THE IMPORTANCE OF CONTINUOUS LEARNING THROUGH MONITORING, EVALUATION AND FEEDBACK

The last theme that was revealed in the literature review was the importance of continuous learning through monitoring, evaluation and feedback. This was a pivotal concept within the discussion on best practice information and skill sharing. It is, most importantly, an information- and skill-sharing tool in its own right, as highlighted in the continuous learning approach discussed in section 2.3. An example of this is where stakeholders are involved in active learning through an iterative process of collaboratively creating an action plan, implementing the action plan, gathering data, reflecting on the success of the actions and, finally, using lessons learnt during the process to redesign their action plan.

Speaking about the importance of monitoring and evaluation in the context of sustainable development extension practice (but equally applicable to conservation practice), Allen & Kilvington (2002) state:

> *Science alone is unable to deliver complete answers to many of the complex questions of interaction between ecology and production, and land managers and policy makers cannot rely on a unidirectional information system to provide answers to their management questions. Managers therefore need a learning process that involves finding out about complex and dynamic situations, followed by taking action to improve them, and evaluating the results of this action. How sustainable a system is ultimately becomes a measure of the learning capacity of the community in relation to its environment.* (Allen & Kilvington 2002, p. 35)

This continuous learning cycle is a critical aspect of the adaptive management process which has been advocated by several authors as the best way to approach natural resource management. The process of adaptive management has been equated with the concept of 'learning by doing' and has been developed by ecologists to address uncertainty and complexity in ecosystem management. Walters & Hollings (1990, cited in Lambert & Elix, 2003) state, in relation to adaptive management, that:

> *… its premise is that knowledge of the system we deal with is always incomplete. Not only is the science incomplete, the system itself is a moving target, evolving because of the impacts of management and the progressive expansion of the scale of human influences on the planet. Hence the actions needed by management must be ones that achieve ever-changing understanding as well as the social goals desired.* (Walters & Hollings 1990, cited in Lambert & Elix 2003, p. 5)

Monitoring and evaluation is also an important component of the action research approach discussed in section 2.3.

Finally, monitoring and evaluation should also be a critical aspect of evaluating the effectiveness of the information- and skill-sharing activities themselves. As will be discussed in the next section, while a great deal has been written about 'best practice' approaches to information and skill sharing as part of conservation and other natural resource management activities, there has been very little research to empirically and objectively test the methods and tools being

advocated. Monitoring and evaluation have a very important role in building the information base about 'what works, for whom, in what circumstances' in terms of conservation information and skills sharing.

To this end, it is important to define a set of indicators which can guide the collection of monitoring and evaluation data to help explore the effectiveness of different methods of communicating in various contexts. James (2001b) provides a number of generic performance indicators and performance measures to monitor the effectiveness of conservation advocacy programmes in increasing public awareness. Further work is underway in DOC to develop guidelines and resources that can be used to evaluate CCPs. Appendix 1 provides a list of basic indicators for evaluating conservation skills sharing activities.

2.7 SUMMARY OF LITERATURE REVIEW

Six interlinked themes or principles for information and skill sharing with communities as part of conservation were identified in the literature review:

Principle 1 The importance of careful planning and setting clear objectives

Principle 2 Understanding your audience

Principle 3 Information and knowledge sharing as a collaborative learning process

Principle 4 Using a variety of communication and participation methods

Principle 5 Using best practice group management and communication techniques

Principle 6 The importance of continuous learning through monitoring and evaluation

Overall, the recent theory, commentary and case study research on working with communities and sharing information and skills as part of conservation and other natural resource management projects is heavily influenced by the philosophies of collaborative and experiential learning. This influence reflects the 'shifts in communication theory from viewing data and information as commodities, towards viewing data and information as socially constructed knowledge' (Carr 1995, p. 1). On the basis of what appears in the literature, it seems that collaborative learning has largely taken on the role of a normative theory through its association with ideas of community empowerment (see, for example, Gooch 2003, 2004).

While, internationally, there has been a great deal of commentary and a few primarily self-reflective case studies of collaborative learning-based approaches as part of community-based conservation, there has been very little objective empirical research or critical reflection on the positives and negatives of this type of approach in the community-based conservation context.

Nonetheless, there are compelling ethical arguments for using a collaborative approach to information and skill sharing in conservation with communities projects, based on its inclusive approach. Furthermore, the evidence for the benefits of experiential learning is strongly established in other contexts; for example, in the field of environmental education (see, for example, Orr 1992;

Culen & Volk 2000; Volk & Cheak 2003). Likewise, the benefits of agencies (such as DOC) working collaboratively with communities has been widely defended in the research literature (see Wondolleck & Yaffee 2000 for a useful overview).

This study addresses (in part) the paucity of empirical research and critical reflection on collaborative learning-based approaches by exploring the following question: 'how can scientific skills and knowledge most effectively be shared by DOC to strengthen community capacity to undertake conservation work?'

Section 3 describes the approach used in this study to explore how well the six principles identified earlier are being implemented in four DOC community conservation projects. It will also explore how relevant these principles are for DOC, by assessing the factors which affect the success of the four case study projects from the point of view of DOC staff and community participants.

3. Methodology

3.1 CASE STUDIES

The first part of the case study research examined four projects involving conservation skills transfer to identify any key learnings that could be used to provide guidance on a 'best practice' approach to conservation skills transfer. The findings from the case studies were compared with the information gathered in the literature review to identify any similarities or differences in the themes identified, as well as to highlight any information that was not covered in the literature review.

A number of DOC offices were contacted and asked for examples of successful conservation with communities projects (some were self-nominated, some were nominated by others). The key DOC staff person involved with each project was contacted and asked some introductory questions about the project. Eventually, four case studies (which best fitted the project requirements[1]) were chosen. These are summarised in Table 2. The key DOC staff member for each project was also asked to nominate two key community people involved in the project. In some cases, they provided contact details for only one community participant, in which case the second community participant was identified by the first community participant. The four case studies used four different approaches or models for conservation skills sharing.

The data collection methods for the case studies included:

- A review of any relevant programme documentation
- Semi-structured open-ended interviews with DOC staff and two community participants (in the case of the Lake Alexandrina case study, only one community representative could be successfully contacted).

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[1] The projects that were not used as case studies were rejected because the work with the communities had not progressed far enough to allow an evaluation within the timeframe of the research.

TABLE 2. SUMMARY OF CONSERVATION WITH COMMUNITIES CASE STUDIES.

NAME OF CASE STUDY APPROACH	LOCATION	DESCRIPTION OF CONSERVATION SKILLS SHARING
Case study 1: Lake Alexandrina Conservation Group	Lake Alexandrina, South Canterbury	DOC officer facilitates development of a new conservation group/work (using a collaborative process) and provides conservation skills training in association with workdays as well as advice on trust formation and group management. Officer leaves the group after a couple of years, at which time the group has ownership of the project and access (as required) to technical support from the local DOC office.
Case study 2: Kiwi Hui	Hui held in one location, projects spread throughout the country	DOC facilitates nation-wide networking and skills sharing across a particular area of work (in this case, kiwi recovery programmes) by organising, and providing staff time and financial support to, a national Hui for people working on these programmes. The Hui uses a conference-type programme with speakers, workshops and demonstration events.
Case study 3: Tongariro Natural History Society	Tongariro National Park, central North Island	The technical support officer from the local DOC office provides on-going support to a community trust either directly to volunteers or through a full-time director.
Case study 4: Otamatuna, core of the Te Urewera mainland island project and Puketi Forest Trust	Demonstration site: Northern Te Urewera National Park	Community conservation workers visit a successful DOC habitat restoration/species recovery project to gain inspiration on what can be achieved and to learn about techniques used to achieve the outcome.

The research examined the overall approach and specific processes (methods, techniques) used in the case studies to share skills and knowledge, and identified:

- How the approach compared with the principles identified in the literature review
- The perceived overall strengths and weaknesses of the approach used, from the perspective of both DOC staff and participants

A copy of the interview schedule for DOC staff and community participants is included as Appendix 2.

Each interview was summarised and the summary forwarded to the interviewee to ensure that it was an accurate reflection of their views and the discussion that had been held. A copy of each case study summary was also forwarded to research participants to enable them to review how the information they provided was used and to clarify any of the points made.

Section 4 presents the results of each case study. Section 5 provides a discussion of the findings from the research, including an analysis of how the results from this research compare with the literature reviewed in section 2. The discussion (section 5) also addresses other issues that were raised by respondents in the course of the case studies, which were not directly related to the conservation skills transfer process in the case studies. This includes issues relating to the different types of relationships that exist between various DOC offices and communities, and wider issues to do with DOC staff and other resources.

3.2 ACTION RESEARCH

The second part of the research involved a type of 'action research' where we worked with DOC, and other community-based conservation workers to explore the findings of the four case studies, including the six previously identified key principles for information and skill sharing with communities, as well as current aspects of DOC's practice requiring attention and potential actions. This took place in two processes:

- Working with a small group of DOC staff from around the country in a workshop held in Wellington in November 2006
- Holding a similar workshop with people working on kiwi recovery as part of the Kiwi Hui in April 2007

The focus of the action research stage (the two workshops) was on:

- Discussing the findings of the six key principles identified during the literature review (addressed in section 2). Encouraging these principles to be used as part of the community conservation project that the workshop participants were involved with
- Discussing examples of good and bad practice and potential actions to improve conservation skills sharing

4. Results of case studies

4.1 CASE STUDY 1: LAKE ALEXANDRINA CONSERVATION GROUP

4.1.1 Introduction

Lake Alexandrina is a small lake in South Canterbury. It is a popular holiday area, with 165 huts in three settlements around the lake shore and a camping ground.

The people interviewed for this project were the DOC officer responsible for setting up the community group and facilitating its conservation tasks for a two-year period; and one of the volunteers who has been involved from the start as part of the group's committee.

The DOC officer was employed on a two-year contract which started in April 2002. He was tasked with setting up a number of community conservation projects (CCPs) in the South Canterbury area. Initially, he carried out more than 20 feasibility studies. These eventually resulted in the establishment of three community projects at Lindis Pass, Lake Ohau and Lake Alexandrina. The Lake Alexandrina Conservation Group is the subject of this case study.

The objectives of the Lake Alexandrina project were to raise awareness amongst hut owners and regular campground users of the need for conservation work in the area, and then to form a community group to undertake this work. In addition, the DOC officer wanted to increase community knowledge about the natural history of the area and provide community members with an enjoyable

conservation experience. The conservation outcome of the project was to protect and enhance wetland areas around the lake shore through activities such as weed (especially briar, *Rosa rubiginosa*) control, and the protection of areas of fish habitat.

Setting up the group

In order to start the project and 'get buy-in' from the community, the DOC officer designed a questionnaire survey which was sent to all residences in the area, asking people for information such as:

- The number of times they visit the area
- How long they stay per visit
- Whether they would be interested in learning more about the natural history of the area
- What topics they were particularly interested in
- Whether they would be interested in taking part in a community conservation programme
- Feedback on the best way to involve the community in protection of Lake Alexandrina
- Whether they would be able to attend a meeting to discuss further
- What types of protection activities they would be interested in doing
- Whether they volunteer for other groups
- Whether they have any other comments

There was a good return rate (75%) for the surveys. The next stage was to hold a half-day workshop for community members to discuss setting up a community group, the aims of the group, possible tasks, and how to set up a committee.

The first meeting arranged by DOC was not well attended. After this meeting, the community representative interviewed for this case study reported that she and her husband were alone in thinking that the project was a good idea. To build support, they canvassed the people they knew in the area who were reasonably physically active and arranged a second meeting with DOC which was held at their home. This was better attended, and a committee was formed at this stage. She is part of this committee.

She explained that the poor reception to the initial DOC advances was due to a strong perception in the community that DOC would go ahead with their own agenda regardless of what the residents wanted. Most of the people in the area are fishermen and were worried that DOC or Fish & Game New Zealand wanted to stop or restrict their fishing opportunities. However, after this initial hurdle, the DOC officer reported that the committee demonstrated a high level of enthusiasm for the project.

The role of DOC staff

The first task for the DOC officer was to undertake a feasibility study. This covered several issues, including:

- The degree of training required for the community group to undertake specific tasks
- A potential work schedule

- The conservation values of the area
- The types of tasks that could be carried out to protect these values
- The local community characteristics and possible sources of volunteers
- Possible conservation outcomes
- A detailed procedure for developing the community group
- Explanatory maps and photos of the area

In the early stages of the project, the DOC officer attended every meeting of the community group committee and guided the process. He helped the committee set objectives and realistic goals. He also provided them with information on how to apply to become a charitable trust, and developed a memorandum of understanding between DOC and the community group.

The DOC officer saw his role in this project as facilitating the setting up of the community group and getting the group to a stage where they could be self-sustaining, requiring minimal input from the local DOC office. Other DOC staff were also involved in advisory roles.

The DOC officer described his role as being one of a facilitator, 'to make sure that expectations were realistic, and to provide advice'. The objectives for the group were decided through an iterative process building on the work that was completed by the DOC officer. The original feasibility study prepared by the DOC officer included a set of objectives. These were then refined by other DOC staff. The final set of objectives was then presented to the organising committee of the community group for final comment and agreement. The DOC officer and committee then determined the conservation tasks to be done in the area and the skill-sharing requirements and developed a programme around them.

Conservation skills training and workdays

The training provided by the DOC officer as part of this project included:

- Health and safety
- Administration
- Practical conservation tasks e.g. removing briar/wilding pine
- Project management training, including how to fill in grant applications, and organise and run meetings

McKenzie District Council was also involved in providing health and safety advice.

The conservation skills training was primarily delivered in conjunction with volunteer conservation 'workdays'. During the tenure of the DOC officer, there were roughly five community workdays each year. About 30 people would attend each workday. The training consisted of a 15–20-minute session covering the reasons why they would be working on a particular area that day, and any hazards to look out for. The approach was informal, and volunteers were free to ask questions.

Training on practical conservation skills was delivered using a 'hands on' approach where the DOC officer would demonstrate a procedure, answer questions (and the officer commented that often there were many), and then the volunteers would carry out the procedure with DOC staff on hand to help or advise as necessary.

Upon completion of the workday, the DOC officer would also run an interpretive activity, such as a talk on the history of the area. He also organised a barbeque at the end of the day to allow for informal social interaction and to show appreciation for the effort and time the participants had given.

In between the workdays, the DOC officer sent out a newsletter every eight months to keep them informed of workdays, projects pending, and progress. Community members were also invited to submit material for the newsletter.

Programme evaluation

No formal evaluation of this project was undertaken by the DOC Officer; however, at the end of each group workday, he would gather data on the number of people attending, type of work done, area covered (maps), number of hours completed, and feedback from volunteers. He would also meet briefly with the committee to discuss what they would do next time and how they thought the workday had gone.

Where is the project now?

Overall, the project has been successful. This is demonstrated by the community group continuing to be active in undertaking conservation work after the DOC officer's two-year contract finished. Today, the group has a good relationship with staff at the local DOC office in Twizel, who provide support when required. The group also works with Fish & Game, which calls on their conservation skills from time to time. The three organisations are working together closely to improve the Lake Alexandrina area.

4.1.2 Key learnings

This case study confirmed a number of the six key principles identified in the literature review for working with communities and sharing conservation skills; in particular:

Principle 2 Understanding your audience

Principle 3 Information and knowledge sharing as a collaborative learning process

Principle 4 Using a variety of communication and participation methods

Principle 5 Using best-practice group management and communication techniques

Two other key learnings were also highlighted:

- The importance of creating opportunities to build social capital
- The importance of DOC staff having key skills and personal attributes

Understanding your audience and using a variety of communication and participation methods (Principles 2 and 4)

The importance of understanding your audience came through as a key theme for the DOC officer in this case study. In terms of forming the group, he stated that it is important to get to know the volunteers as soon as possible. He felt that the questionnaire he sent out initially helped in achieving this, as it enabled people to give a lot of information about themselves. Identifying how much and what

type of help community groups need is also important. The DOC officer found that he had to be quite intensively involved with the committee at the beginning of the project, attending every meeting, and providing advice as needed.

He saw this initial involvement as helpful for focusing his conservation skills training, stating that it was important to be able to 'read' the group to see what sort of learning approach they would prefer and adjusting the teaching method accordingly. If he felt people were keen on reading information, he would provide them with written material; others, however, preferred the hands-on approach. He tried, therefore, to use a mixture of approaches to cater for these different needs.

Information and knowledge sharing as a collaborative learning process (Principle 3)

The DOC officer appeared to recognise the importance of taking a collaborative learning approach while working with communities by:

- Highlighting his role as a facilitator when helping the group to develop a programme of work, rather than telling them what to do
- Encouraging a two-way flow of information by asking a lot of questions of the community to find out what people were interested in and encouraging participants to ask him a lot of questions as he went through the conservation skills training process

Using best practice group management and communication techniques (Principle 5)

Building on the importance of 'understanding your audience', this case study also highlighted the necessity of using best practice group management and communications techniques. In discussing this project, the DOC officer reflected all of the best practice group management skills outlined in the literature review, including:

- Telling stories
- Forming the group
- Being responsive
- Modelling enthusiasm and commitment
- Informing—passing on the facts
- Coaching—passing on the skills

In particular, the DOC officer discussed the importance of treating volunteers with respect and empathy, and valuing their local knowledge. He discussed how, at the first meeting, he admitted that he did not know the area well. This admission provided a good starting point, as the group very quickly opened up and started to talk about the issues. The DOC officer's humility gave the community a sense of ownership of the project from a very early stage, and helped build trust. He also highlighted that being open about lack of knowledge or familiarity with places when fronting-up to local people was a skill acquired with time and experience.

The DOC officer also highlighted the importance of making community workdays social and fun events. He felt it was really important for them to be informal and for the volunteers to have a really good time. In order to achieve this, he would run an interesting activity such as a talk on the history of the area at the end of each workday, followed by a barbecue.

Other group management principles he discussed included:

- The importance of showing a positive attitude towards the work of the volunteers and appreciation of the effort and time they were giving
- Keeping things informal and simple and not throwing too much information at people at one time
- Having other DOC staff present on workdays to help share the work and to provide more interest for the volunteers by making a variety of skill and knowledge areas available to them

Creating opportunities to build social capital

The importance of the social aspect of community conservation emerged as a strong theme in this case study. The evidence from this project strongly supports the potential role of conservation projects in building social capital.

For example, the community representative interviewed felt strongly that being involved in the project had been a very positive experience for her, with a steep learning curve. One of the most positive outcomes, from her perspective, has been that people from huts in different parts of the lake area now know each other better because they have been working together, and they are making a real difference to the area in conservation terms.

The success in building social capital in this case was recognised as being partly due to the efforts of the DOC officer in ensuring that there was a social element to the workdays, by providing a barbecue and trying to make sure that people enjoyed themselves.

The importance of DOC officers having key skills and personal attributes

Some of the personal strengths the DOC officer felt he was able to bring to his position were:

- His 20 years working with conservation volunteer projects, plus three years of polytechnic teaching in Australia, which gave him experience in understanding different audiences and how best to engage with them
- His ability to build up trust with the community and be respectful of their ideas and local knowledge

The positive personal attributes of the DOC officer, including his knowledge and enthusiasm, were also highlighted by the community representative.

4.1.3 Areas for attention

Three areas requiring attention were raised by the DOC officer. These were: timeframe, training schedule and print resources. The community representative interviewed for this case raised the issue of community perceptions of DOC.

Time frame

The DOC officer commented that he felt it would have been better if he had had more time. He felt that he had to 'cram things in' as he was on a two-year contract. However, it was not too much of a problem in this instance because the committee members were 'very good'. The community representative also reflected that she was sad to see the DOC officer go at the end of his contract.

Training schedule

Another thing that the DOC officer thought he might change was the schedule of training, so that only one skill/subject was taught on each workday, rather than three.

Print resources

Another area for improvement that the DOC officer noted was the need for a more helpful volunteer booklet. He felt that the existing booklet is very complicated for what it achieves and should be cut back.

Community perceptions of DOC

An issue that came up in this case study and in some of the others was the negative attitudes towards DOC that sometimes exist within communities; in particular, that DOC does not listen well to what community people want or to community ideas. This was highlighted by the community representative who said that at the start of the project many people were reluctant to get involved because of perception that 'DOC would go ahead with their own agenda regardless of what the residents wanted'.

She felt that this attitude was responsible for the initial poor reaction from the community to DOC's advances to set up a community project in the area and it was only after she encouraged people to give it a chance that people came around. Having a community 'champion' in this way may have been critical to the success of this community group. Without this support at an early stage, the idea for a community group may have not have been realised.

She also thought that because most of the people in the area are fishermen, they were worried that DOC or Fish & Game wanted to stop or restrict their fishing opportunities. The DOC officer also felt that a key to his success was in building-up trust with the community and being respectful of their ideas and local knowledge.

4.1.4 Summary—the overall usefulness of this model

The DOC officer who set up the project was employed on a two-year contract to get the group to the point where it could be self-sustaining. As a model, this worked very well, as he did a good job in getting community buy-in (with the help of some members of the community) and was then involved in enough workdays to pass on key conservation skills. In terms of the sustainability of the trust, it is possible that the strong social aspect will help to ensure that it continues to attract volunteers and carry out conservation work. The community representative interviewed felt that the DOC officer who helped set up the project was really supportive and excellent to work with. She had no suggestions for improvements to the process or to the transfer of skills and knowledge. Overall, she felt that all the DOC staff involved in the project were fantastic and she was very sad when the DOC officer who set the project up did not have his contract extended.

4.2 CASE STUDY 2: KIWI HUI

4.2.1 Introduction

There has been a growing realisation that community groups involved in kiwi management were keen to adopt a best practice approach their work and that it would be useful for DOC to meet regularly with them to discuss kiwi management issues. The first Kiwi Hui was organised in 2003 and the Hui has been an annual event since then.

In this case study, one of the DOC officers responsible for organising the annual Hui was interviewed, along with two of the community representatives attending the Hui.

The role of the Hui is to bring together everyone involved in kiwi management and recovery programmes. Hui are usually the first port of call for newly formed trusts to get the information they need to run kiwi programmes and are therefore critical in transferring information to the community groups and trusts to enable them to run their own kiwi management and recovery programmes.

The Kiwi Hui usually runs over four days, and has different themes for each morning and afternoon session. There are usually three presenters per session, formally presenting for half an hour each. After every talk there is a 5–10-minute programme update from one of the community trusts.

A hui format was selected because there is a strong oral tradition within DOC and it was felt that information could be best passed on by gathering people together for formal sessions and also providing the opportunity for more informal conversations and networking.

The annual Kiwi Hui, along with the Kiwi Best Practice Manual (available from www.savethekiwi.org.nz), are the main ways in which DOC communicates information and technical skills associated with kiwi management to community groups and trusts. Other methods include telephone advice from key DOC staff involved in kiwi management, and by communication between trusts.

Approximately 70 people attended the first Hui in 2003. In 2006, when this case study was carried out, there were 140 people.

The role of DOC staff

The Kiwi Hui is organised by two DOC officers. A mailing list of all previous attendees is kept, and when a new Hui is being planned, an email is sent out to the people on the mailing list asking for expressions of interest in attending, and also asking for topics that they would like the Hui to address. The planning for the Hui is therefore two-way, with community volunteers and DOC staff having the opportunity to request topics that will be useful to them.

A programme is then organised and speakers invited to attend. The organisers aim for a range of speakers from different backgrounds; for example, community members might talk about their experiences developing a trust and raising funds, and researchers might talk about new techniques for kiwi management. Other areas covered in recent Kiwi Hui include egg handling, kiwi first aid, sustainability of programmes, funding of infrastructure and new advances in telemetry. There are also practical sessions; for example, at the 2006 Hui there was a practical transponder insertion exercise using chickens.

Transfer of skills/information

The Hui uses a range of methods to transfer skills and information. These include:

- Formal presentations with question and answer sessions
- Workshops and discussions
- Hands-on demonstrations and practical sessions (tried for the first time at the 2006 Hui)

In addition, skills and information are also exchanged informally through conversations at break times and in the evenings.

Programme evaluation

So far, no formal evaluation of the Hui has been undertaken. However, the organisers do track numbers of people attending the event and seek (informally) both positive and negative feedback from attendees. This feedback is used to design the following year's Hui.

Where is the project now?

One of the respondents in this case study raised concern over the fact that, in recent years, DOC managers have seemed to be reluctant to fund the Kiwi Hui, questioning whether the benefits are worth the costs. However, this respondent (a community group representative) felt that, from a community point of view, the Hui are crucial and that it would be a disaster if they stopped running. The knowledge transfer that takes place with community groups ensures far greater success with kiwi management programmes, and stops local DOC offices from having to repeatedly address the same questions.

4.2.2 Key learnings

This case study confirmed a number of the six key principles for working with communities and sharing conservation skills, in particular:

Principle 2 Understanding your audience

Principle 3 Information and knowledge sharing as a collaborative learning process

Principle 4 Using a variety of communication and participation methods

In addition, this case study also highlighted the two other key principles that were identified in Case Study 1:

- The importance of creating opportunities to build social capital
- The importance of DOC staff having key skills and personal attributes

Understanding your audience (Principle 2)

The DOC officer highlighted the importance of targeting information and training so that it is accessible to people from a wide range backgrounds and with different education levels. The organisers are careful to brief presenters on this and request that they avoid or explain any technical terminology. The presenters are also carefully selected for their good presentation skills.

One community representative volunteered that he felt that the format was good and not too formal—'it is pitched at the right level'. This makes it 'accessible to many people at many levels'.

Collaborative learning (Principle 3)

The Kiwi Hui provide a good example of a collaborative learning process. Although there are experts presenting information at the Hui, many of the smaller community groups are also encouraged to give a 10–15-minute presentation on progress or issues within their group. This encourages community groups to reflect on and evaluate their own projects, and then share what they have learnt with a wider audience. Often, a lot of follow-up takes place between people who have made contact with each other at the Hui, which furthers the collaborative learning process.

Both of the community representatives interviewed highlighted the significance of the Hui in providing opportunities for them to have contact with 'top kiwi scientists'—to hear presentations and to be able to ask them questions.

The community representatives felt that while a lot of kiwi research takes place, the findings are not widely communicated—often being transferred only internally within DOC. However, having researchers present at the Hui provides a very effective way for people from community groups to catch up with the latest best practice regarding specific kiwi management issues, as this is changing all the time.

Both community representatives said that the Hui was 'a brilliant way' to get information. It provides a good opportunity to ask questions, 'get into the network' and get the right information, most of which is not available in written form.

Using a variety of communication and participation methods (Principle 4)

The Hui presents an excellent example of the value of using a variety of communication and participation methods. For example, one of the community representatives interviewed said that the mixture of approaches was essential, because different people are comfortable with different formats. 'For example, some people are not comfortable in the public forum where there may be over a hundred people, and might only open up when they're taking blood from a chicken or holding a beer'. This variation in people's learning style preferences was also highlighted by the other community representative interviewed who said that, personally, he preferred the formal presentations as 'you can learn a lot in a short time from the experts'. On the other hand, he did not feel that he got a lot out of the workshops.

Creating opportunities to build social capital

One of the most important learnings from this case study was the potential role that this type of event can have in building social capital. All of the people interviewed raised the importance of the Hui for getting people together to motivate, share experiences and learn from each other and the experts. 'The presentation of information is a good excuse for getting everyone together so that the really important part of exchanging information over a beer can take place'.

This highlights that, apart from providing specific skills or information, one of the most important outcomes of the Hui is building and renewing relationships and networks—keeping the people involved in conservation feeling that they are part of a wider social network; in other words, building the social capital around conservation.

For example, one of the community representatives interviewed commented that it is really good meeting up with people doing similar projects, and learning about approaches that people have found to work and those that do not work. He comes away feeling 'inspired and motivated' through this contact. The other community representative said that the 'big kiwi family approach' was one of the strengths of the Hui. People who work in isolation (and are too busy the rest of the year) get the chance, through the Hui, to meet up with others working on similar programmes. This 'revs you up again', and helps motivate those who are easily isolated from their peers because of the nature and often rural location of their work. He also felt that the Hui was a good way to learn from others and to tell others what you are doing and that it also provides an opportunity to showcase your successful outcomes to the funding organisations who attend.

Another aspect of the Hui process which was seen to build social capital is the acknowledgement given to community groups through this type of event. For example, when inexperienced people present material, they get a standing ovation, which creates a powerful feeling of community support, shared experience and positive acceptance.

The importance of DOC officers having key skills and personal attributes

In this case study, the individual skills and personal attributes of the DOC officer interviewed appeared to contribute significantly to the success of the project, in particular:

- The DOC organiser described himself as the 'glue' bringing the Hui together. To achieve this he aims to be a good listener, to reflect what people say, and to act on what people say they want.
- He also feels that he is good at problem solving and believes that being honest and saying what other people are too afraid to say helps in finding solutions to conflicts or problems.

The officer's communication skills and personal attributes were also discussed by one of the community representatives, who said of the DOC organiser: 'he says what the thinks, rather than what he thinks he should say, which is nice'. The community representative also highlighted that the officer made an effort to know everybody and know about their projects and that his 'taking an interest' in this way can be very encouraging for community groups. The other community representative said the DOC organiser was very proactive and inclusive, and provided good, positive leadership.

4.2.3 Areas for attention

Ensuring there are continued opportunities for small group and one-on-one interaction

The organisers of the Hui recognise that a potential problem with the hui approach is that the number of people attending might put some people off asking questions or presenting information themselves. In fact, one of the community representatives interviewed commented that he is quite shy, and would not want to ask a question in front of everyone in case he 'made a fool of himself'. However, he said this did not matter, because it is always possible to ask questions afterwards. Therefore, as this event grows, it is probably important to ensure that opportunities for one-on-one or small group interactions are retained.

Ensuring that the information presented is balanced

The other community representative said that there was a lot of concentration on hands-on monitoring of kiwi, rather than less labour-intensive hands-off monitoring approaches such as listening surveys. He felt this was because DOC focus on hands-on monitoring, but that this monitoring is often far more expensive than, for example, the trapping programmes which benefit kiwi populations by reducing predator numbers. For community groups with limited resources, it would be helpful if DOC could bear this in mind and be more balanced in the information they present on monitoring, to ensure it covers both hands-on and more economical hands-off monitoring approaches.

4.2.4 Summary—the overall usefulness of this model

Both of the community representatives interviewed, as well as another respondent from the Puketi Trust (Case Study 4), who had also been to this event, were extremely supportive of the Hui as a mechanism for conservation skills and information exchange. They thought the Hui was good for both the range of information provided and the opportunities for information interaction between people working in this area. They particularly highlighted the importance of this event for building networks and relationships and for inspiring and motivating people.

The community representatives felt that, from a community point of view, the Hui are crucial and it would be a disaster if they stopped running. The knowledge transfer that takes place with community groups ensures far greater success with kiwi management programmes, and stops local DOC offices from having to repeatedly address the same questions.

4.3 CASE STUDY 3: TONGARIRO NATURAL HISTORY SOCIETY

4.3.1 Introduction

Tongariro National Park is New Zealand's oldest national park and is located in the centre of the North Island. The Tongariro Natural History Society (TNHS) was set up as a memorial to five people (four of whom were park rangers) who

died in a helicopter crash in the area in 1982. In 2000, to give the group more direction, TNHS appointed a full-time salaried volunteer co-ordinator paid for from the Trust's funds. As a result of this appointment and changes that were made subsequently, the group now actively undertakes conservation work in the park. Group members have tended to work on the projects which DOC staff want to have done, but which are not high enough on the DOC priority list to be implemented by DOC itself. Working together, TNHS and the technical advisor from the local DOC office break these projects down into smaller segments which then make good community projects.

For this case study, the DOC technical officer who often works with the TNHS was interviewed, along with the TNHS's director and one of the volunteers who visits the project several times a year from her home on the Coromandel Peninsula.

The relationship between DOC and TNHS is covered by a memorandum of understanding. The THNS has its own constitution which contains aims and objectives, and uses this as a guide when deciding what work to undertake. If work proposed by DOC (or others) meets with their aims and objectives, they will usually take it on. Projects are community-led but with expertise provided by DOC. The director indicated that TNHS would not do anything without checking with DOC first, 'as the land belongs to DOC and we don't want to get it wrong'.

The TNHS reports back to DOC on progress with projects, and DOC uses this information to decide whether projects are worthwhile in conservation terms.

The TNHS operates a large volunteer programme, with 40–50 activities planned throughout the year. One of the roles of the TNHS director is to attract volunteers, which she does through various channels. For example, information on the volunteer programme is sent to existing TNHS members, and is also placed in DOC information centres, local backpackers' hostels, and on the TNHS website. The website has started to be very important in attracting longer-term international volunteers, who come for up to six months to stay and work on projects. These long-term volunteers work alongside the local volunteers, but tend to do more jobs that involve multiple days. A significant number of the local volunteers are not, in fact, local—many come regularly (two or three times a year) from all over New Zealand to undertake conservation work. For example, as previously mentioned, one of the community representatives interviewed has been volunteering for the TNHS for around five years, and lives on the Coromandel Peninsula.

The role of DOC

DOC technical officers act as advisors on the different TNHS projects. The DOC officer interviewed in this case study is the 'Technical Support Officer—Flora' (hereafter referred to as 'the DOC officer'). He is working with TNHS on a wetland project. His role is to help TNHS with planning projects, prioritising actions, and reviewing programmes. He also provides technical support and advice and helps to devise programmes for the volunteers.

In 2000, TNHS asked DOC to come up with conservation projects for the Trust to implement. Initially, the DOC officer involved thought each volunteer could take ownership of a small project, but this only worked with one of the projects, because of problems with continuity.

The next strategy used by the DOC officer was to design and plan the Waimarino Wetland Project for TNHS to manage. The project was ready for a volunteer from TNHS to 'pick up and run' with in 2005, for a trial period. The DOC officer felt that the trial was successful and, following on from it, developed an operation plan for TNHS to use during 2006/07, including priorities and when/how/where to complete various tasks.

In terms of conservation skills sharing, DOC staff would either demonstrate the conservation procedure to the TNHS director who would then pass it on to the volunteers, or DOC staff would work with both the director and volunteers at a training session.

Programme evaluation

There did not appear to be any formal evaluation undertaken as part of this project; however, the project was showcased locally and nationally (see below).

Where is the project now?

The project is progressing well. Recently, TNHS was able to showcase the project to representatives of the funders, DOC, the regional council and a neighbouring landowner. This event was organised by the DOC officer. The officer thought the presentation went 'very well'. The project was also showcased to the New Zealand Conservation Authority when they visited the conservancy. They were also impressed by the partnership between TNHS and DOC.

The technical advisor from DOC has started to withdraw his support slowly from the project as TNHS has increased its capacity and ability to undertake the project. Setting up the wetland project as a standalone project to be managed by the TNHS and volunteers is part of this process. However, TNHS and the local DOC office continue to work closely. The offices are closely located, which encourages this process.

4.3.2 Key learnings

Case Study 3 confirmed a number of the six key principles for working with communities and sharing conservation skills, in particular:

Principle 2 Understanding your audience

Principle 3 Information and knowledge sharing as a collaborative learning process

Principle 4 Using a variety of communication and participation methods

Principle 5 Using best practice group management and communication techniques

In addition, this case study also highlighted the two further key principles also identified in Case Studies 1 and 2:

- The importance of creating opportunities to build social capital
- The importance of DOC staff having key skills and personal attributes

Understanding your audience (Principle 2)

The DOC officer interviewed explained that he has established his own principles for working with volunteers, which are based around keeping volunteers interested and involved, and thinking about the experience from their point of view; i.e. if he were volunteering, what would he want to get out of it? Before he worked for DOC he volunteered himself, and had some amazing experiences. One of his motivations, therefore, is to pass on this positive experience with conservation to the volunteers he is currently working with.

The DOC Officer tries to find out what skills the volunteers have by asking what jobs they do/have done in the past, and then sets out to utilise these skills by assigning tasks appropriately. For example, when making cages to protect certain plants, he sets the process up like a production line, as some people are better at certain stages in the cage making (e.g. men tend to be better at bending the wire, women might be better at tightening the cage at the end), so that everyone is working together efficiently. Or, if people have specialised skills, such as experience in orienteering, he might ask a couple of them to work on developing the map for the project. He feels it is important to pick the right people for the job, and that people get greater enjoyment from working in this way.

The DOC officer also talks to the volunteers during lunchtime to break the ice, and tries hard to get everyone involved, approaching people who are on the sidelines and asking them what they would like to do. He has had some non-English speaking volunteers and he makes a special effort to help them understand the background to the project and to help them join in. He feels this is really important, as he wants people to enjoy the experience and to come back again.

Information and knowledge sharing as a collaborative learning process (Principle 3)

Experiential learning or 'learning by doing' is a key aspect of effective skill sharing in the experience of the DOC officer interviewed, and is one of the key ways in which he passes on information.

For example, he will explain a conservation task and demonstrate it at the same time so people can see exactly what he means, and then he will watch them complete the same task and make sure they are doing it in the right way. In this type of activity, he sees his role as to supervise and encourage participants.

Using a variety of communication methods (Principle 4)

The DOC officer reported that he uses a variety of communication techniques to provide background information on conservation issues, in addition to presenting information orally.

For example, he has used PowerPoint presentations for some projects. For one project, he sent out written information beforehand so that people knew what to expect, as this project required particular levels of endurance and fitness and he needed people to be prepared. He received very positive feedback from the participants, who found it very useful to receive background and preparatory information.

In terms of the communications undertaken by TNHS, the director commented that their website has started to be very important tool for attracting longer-term international volunteers who come and stay for up to six months to work on projects.

Using best practice group management and communication techniques (Principle 5)

The DOC officer in this case discussed a number of group management and communication techniques he finds important for successfully engaging volunteers, including:

- *Explaining the background to the work that is needed*, e.g. why a certain species is threatened and why it needs to be protected. He believes it is important to explain the conservation objective at the start like this to get buy-in from the volunteers and to motivate them.
- *Encouraging two-way communication*. As noted by some of the other respondents, the DOC officer highlighted the importance of encouraging people to participate during the information- and skill-sharing activities so that it is more of a discussion than a one-sided presentation. He does this by encouraging people to interrupt if they have questions, rather than waiting until the end of the activity.

Many of these principles were also highlighted by the community volunteer interviewed, who discussed specific training that she had received from DOC on vegetation monitoring. This training involved her going with the DOC technical advisor when he was undertaking vegetation monitoring, to learn the process by watching and helping him. She said he explained a lot of the background first, which she felt was really important, because it 'means you understand what you're doing'. She also found the DOC officer very easy to get along with, as he shared a lot of knowledge, was enthusiastic and a lot of fun to be with.

In terms of her own work, she was also responsible, on occasion, for taking volunteers out on workdays. She tried to emulate the DOC officer's approach by always explaining the background to the activity so that people felt they were learning something. She found that, in general, volunteers were always interested and keen to learn. She also tried to give volunteers a variety of experiences and highlighted that it was important to show them appreciation, as they are giving up their own time to help.

This volunteer also commented that her experience in this project had been very enjoyable, and had definitely improved her knowledge about the conservation issues in the area and what she can do, practically, to improve the situation.

Creating opportunities to build social capital

The importance of building social capital as part of volunteering on conservation projects was also highlighted in this project. For example, the director commented that the conservation outcomes are fantastic, but when people are working together with other people with a common aim, the social aspect can be extremely important. 'For some of the members it is a reason to get up in the morning'. Both community representatives felt that working on the project met their expectations and provided a great experience: 'it is an amazing environment to be in; just beautiful'.

The importance of DOC officers having key skills and personal attributes

As in the previously described case studies, the individual skills and personal attributes of the DOC officer appeared important to the success of this case study, in particular:

- Being enthusiastic and enjoyable to work with
- Having an extensive knowledge of the background to many conservation issues, and being able to communicate this to volunteers
- Knowing when the group is ready to start managing projects themselves with less input from DOC, and being able to choose and design suitable projects
- Being able to maximise the skills existing within a group of volunteers
- Being able to get everyone involved, and to ensure they have an enjoyable experience

The importance of building trust and relationships

This project also highlighted the importance of DOC building strong relationships and trust in order to have a successful working relationship with a community organisation. The TNHS director commented that 'the wetland project would not have begun if the TSO and Director of Tongariro Natural History Society did not have trust in each other pulling off their part of the project commitments, and Tongariro Natural History Society did not have committed volunteers. In other words, people relationships are crucial in the community conservation projects'.

4.3.3 Areas for attention

Working more closely with local contractors

The DOC technical advisor suggested that TNHS pay the local contractor to supervise volunteers, rather than actually doing the work (weed removal). He believes this is a win-win situation for TNHS and the local contractor.

The local contractor is a specialist and has been working in the area for a long time, plus he will most likely be staying in the area and therefore will have a level of continuity with the project.

Providing a more regular training schedule

The THNS would like to see the training provided by DOC carried out on a more organised basis. At present, the training is reactive; when there is a need for specific work then DOC will train those volunteers that are available, and the training can take place at quite short notice. TNHS would rather have DOC technical staff do more proactive training at regular intervals that could be part of the activity programme throughout the year. However, TNHS are aware that DOC staff are presently so busy that reactive training is likely to be the most realistic option for the foreseeable future.

4.3.4 Summary—the overall usefulness of the model

This model—of having a DOC officer act in an advisory role providing training as required for a community organisation—is similar to the model discussed in Case Study 1. This present case study also supports the usefulness of this model as an effective way of working with communities and to provide conservation information and skills. However, in this case study, working with the TNHS is just one of many tasks the particular DOC officer undertakes, and his involvement is motivated by his personal interest in the project and his wanting to see it succeed. This differs from Case Study 1, where the main part of the DOC officer's role was to work with the community. As such, this case study highlights the importance of the particular skills and attributes of the relevant DOC staff.

Another difference between this case study and the previous two was the TNHS having a paid director who could act as a liason person between DOC and the TNHS. This appeared to work well in this case and perhaps made it easier for volunteers to put forward information and ideas, because the director was able to act as a link between them and DOC. It also made it easier for DOC to pass on information and skills to the community by training the director first—a 'train the trainer' approach. This takes pressure off the DOC officer to some extent, and allows for a sharing of responsibility for conservation skills training.

In terms of how the society works with DOC, the DOC officer commented that while TNHS had been reliant on him in the past to provide support on workdays, he now felt that they could become more self managing. Earlier on, he tried to encourage TNHS to work more independently by coming up with conservation projects for them to implement, where each volunteer could take ownership of a small project. However, this only worked with one of the projects. Because most of the volunteers are not local, this means it is hard to have continuity, and this could be why the ownership idea did not work. Now, the DOC officer is trying to provide guidance that the TNHS can 'pick up and run' with through the Waimarino Wetland Project.

These comments raise some interesting questions about the need for DOC to be clear about the nature and length of their involvement with communities and to ensure they plan an 'exit strategy' when both parties feel it is appropriate to hand over more responsibility to the community.

4.4 CASE STUDY 4: OTAMATUNA MAINLAND ISLAND PROJECT/PUKETI FOREST TRUST

4.4.1 Introduction

The Otamatuna Mainland Island is one of five core areas in the Te Urewera Mainland Island project. These core areas are where continuous intensive control of other animal pests in addition to possums is undertaken. The Te Urewera Mainland Island was implemented in the northern end of the Te Urewera National Park, in the central North Island, in 1996. The park is unique in that it contains the full complement of North Island native forest birds apart from weka. (see www.doc.govt.nz > *Conservation* > *Land + Freshwater* > *Conservation on land* > *Mainland islands A–Z* > *Te Urewera Mainland Island* (viewed 6 May 2008)). Te Urewera National Park holds the largest managed population of kokako (*Callaeas cinerea*)

in New Zealand. The Otamatuna core area, the largest of the five core areas, has a remarkable population of kokako—in 1994 there were 8 pairs; there are now more than 90 pairs.

The Puketi Forest is an ancient kauri forest located in Northland. The Puketi Forest Trust was formed in 2003 and aims to to restore Puketi to a complete living forest essential to spiritual, cultural, historic, economic, and social well-being of communities, and maintain it for future generations. Central to the restoration project is long-term pest and weed control. This involves reducing predators to a level where they no longer threaten bird populations, and preventing colonisation by exotic weeds (see www.doc.govt.nz > *Parks + recreation* > *Places to visit* > *Northland* > *Bay of Islands* > *Puketi + Omahuta Forests* and www.doc.govt.nz > *Getting involved* > *In your community* > *Community conservation projects* > *Northland* > *Puketi Forest Trust* (viewed 6 May 2008).

Interviews for this case study were held with a DOC officer from the Opotiki Area Office of Bay of Plenty Conservancy (Programme Manager—Biodiversity Threats), who offers site visits to the Otamatuna Mainland Island project, and two members of the organising committee of the Puketi Forest Trust. The Trust members have visited the Otamatuna site and worked with the DOC officer in setting up their own trapping system for Puketi Forest.

The DOC officer interviewed for this case study offers site visits to Otamatuna (the core area of the Northern Te Ureweras mainland island project) to community groups. On the site visits, he demonstrates a trapping technique he has spent 5 years developing on this site, so that pests such as rats (which harm native bird life) can be controlled without the use of poisons.

The trapping technique has been successful, with the number of kokako on this site having increased from 8 to more than 90 pairs in the last 10 years.

The trapping technique was developed to provide an alternative poison-free method of pest control. This is significant, given the controversy over the use of poisons such as 1080 within many communities and with iwi.

The site visits consist of an overnight (or longer) trip to the site. The DOC officer either walks with the visitors to the DOC hut located on site, or, if the visitors are older, flies them there by helicopter. If they walk there, he shows them the traps on the way, and talks to them about the project and how it works. The visitors then stay the night in the hut, and discuss issues to do with the project, and what their ideas are for their own areas. In the morning, they walk around the tracks and get an idea of the layout of the traps. The DOC officer supplements this site visit with on-going advice and help via telephone calls and emails.

This case study looked at how the Puketi Forest Trust, which is one of the community groups that have participated in this demonstration, had become involved in this programme. Two members of the Trust participated in the demonstration, along with their pest control contractor. The two Trust members were interviewed.

Programme evaluation

No formal evaluation has been done of the site visit programme; however, the DOC officer does have a follow-up discussion with people who have visited, to see how they are progressing, and gets any feedback at this time.

4.4.2 Key learnings

This case study confirmed several of the six key principles for working with communities and sharing conservation skills, in particular:

Principle 2 Understanding your audience

Principle 4 Using a variety of communication and participation methods

In addition, it highlighted one of the other key learnings identified in the three previous case studies:

- The importance of DOC staff having key skills and personal attributes

Understanding your audience (Principle 2) and using a variety of communication and participation methods (Principle 4)

The DOC officer feels that the best feature of the site visit/demonstration approach is that community members who participate leave inspired and motivated by what they have seen. This is because it gives them a real-life example of how their own vision—to return the bush to its natural state by controlling pests—can be achieved.

He believes that it is really important for people to spend the night on site, as 'in the morning the dawn chorus is spectacular with kokako jumping around and this can be very inspirational for visitors, and can help them understand that what they want to do is actually achievable'. He feels that this type of approach is successful because, by the time they leave, participants are inspired and 'fired up' about what can be achieved and can take this message back to their communities.

The importance of this approach was echoed by the community representatives interviewed. Both visited the site, along with the Trust's trapping co-ordinator. One of the community representatives commented that his visit was very useful and quite inspiring, as this mainland island restoration project was a lot further down the track than their project. He said it was good to see that the method worked, especially when a lot of people had said to him that the approach would not work, that predator control by trapping could not be done. The other community representative said the visit was a 'fantastic experience, really inspiring'. They stayed the night in the hut and the dawn chorus was amazing. They came away really motivated about what could be achieved. He also feels he has learnt a lot on the job, and the DOC officer has spent 'hours and hours' on the telephone and sent through useful written information, where this is available.

The importance of DOC officers having key skills and personal attributes

This case study also demonstrates the importance of DOC staff having key skills and personal attributes. Firstly, the DOC officer in this case demonstrated significant expertise that the community group could tap into. One of the community representatives commented about the DOC officer: 'no-one knows more about rats'. He is the acknowledged expert.

Secondly, the DOC officer demonstrated a high level of enthusiasm and dedication to helping community groups achieve their goals. This was demonstrated by the comments from the community representatives on how much support and time

the DOC officer had given them over the phone and by email and through an early site visit to help them lay out the trap lines. This included support both in terms of expertise, and keeping the group motivated and inspired to achieve their goals. The community representatives interviewed highlighted how this level of commitment and positive support contrasted with other experiences they had had with DOC staff who, they felt, could sometimes be obstructionist and difficult.

4.4.3 Areas for attention

Targeted workshops and talks

Based on his experience with working with communities and transferring skills and information, the DOC Officer has found that targeted workshops for community volunteers are an effective approach. In his experience, people are very hungry for knowledge. He has given talks to groups, and found this can also work well, although there are limitations to the amount of information you can present. However you can always leave them with a contact number and locations of other sources of information. He feels that DOC could be more proactive in organising local workshops.

Improved written information

The DOC officer interviewed feels that DOC needs to improve the written information that they have available for the community. There is best practice information on the DOC Intranet for all sorts of conservation methods, but this is quite deliberately focussed on DOC staff and not designed or intended for the community to use. He spends a lot of time giving out the same information by telephone (e.g. trap supplier details), and it would save a lot of time if DOC developed some 'how to'-style leaflets or booklets. Some are available (e.g. from the National Possum Control Agency), and Darren Peters (DOC National Predator Officer) has set up a website for stoat control, but the DOC Officer believes that a more comprehensive approach is needed.

4.4.4 Summary—the overall usefulness of this model

Site visits to the Otamatuna mainland island project in the Urewera Ranges to observe the effectiveness of a good trapping system in protecting native birdlife appears to be a very useful way of showing community volunteers what can be achieved. Both community representatives found this experience motivating and inspirational. The site visit also helps community representatives to understand how the trapping system works and is operated. This understanding can then be applied to the design and management of their own systems.

The ongoing support provided by the DOC officer (who developed the trapping system) in the form of telephone conversations and visits to their site, were also reported to be invaluable.

In terms of conservation outcomes, the trapping model that has been used in Puketi Forest is based on the DOC officer's experience in the Urewera Ranges. The Puketi Trust has been trapping mustelids and feral cats over an area of 5000 ha, primarily aimed at kiwi (*Apteryx* sp.) protection. The Trust also has a core area of 400 ha where 1500 rat traps have been installed. Since the Trust started trapping, they have reversed the decline in kiwi numbers in the area of the forest they are working in, and small birds in particular have really benefited. The

community representatives commented that the 'difference is amazing in terms of the amount of birdlife and birdsong now in this area'.

Overall, the site visit/demonstration approach appears to be a very successful model for conservation skills transfer because of its ability to inspire and motivate people by demonstrating to them what success looks like and how it can be achieved. However, it is important that any site visit is backed up by on-going advice and support. The skills and personal characteristics of the DOC officer also appear to be important to the success of this type of approach.

4.5 SUMMARY OF CASE STUDY FINDINGS

The findings of the four case studies strongly support the principles identified in the literature review, but also highlight two further principles—the importance of DOC staff having the right skills and attitudes and the importance of providing opportunities to build social capital in communities. The case studies showed that there is no one preferred method or technique for sharing conservation skills with communities. Rather, there are a range of approaches or models DOC can use when working with communities to share conservation skills. Which model or approach is most appropriate will depend on the project context, including local community needs, the nature of the DOC-community relationship, the context of the project (DOC-led or community-led), DOC resources available, as well as a number of other factors.

4.6 ACTION RESEARCH

The purpose of the action research phase of the project was to work with DOC to interpret the findings from the case studies and literature review and to identify the actions required to enable DOC to respond to the results.

4.6.1 Internal DOC workshop

The first part of the action research was an internal workshop with DOC staff from around the country who had an interest or expertise in conservation skills sharing. The purpose of the first workshop was to present the findings of the literature review and case studies, and to discuss what the research findings mean for DOC in terms of sharing skills and knowledge. Overall, there was broad support for the findings from the literature review and there was active discussion of the draft key areas for attention and possible actions that were presented to the group. The workshop participants particularly identified with the concepts of experiential and collaborative learning, and that it is important to have fun. There was also support for the draft recommendations identified.

Some of the key points raised in the group discussion are as follows:

Models for working with communities

- All the six key principles identified are needed, but how you use the principles will vary across projects.
- Following the principle of collaborative learning will change the way that DOC works.

- It is important to look at the bigger picture of what sort of relationship DOC wants to have with the community.
- There was general agreement with the findings of the research that there is not one preferred method or technique for sharing scientific and other conservation skills with communities but, rather, a number of models that can be used.
- Case study models may reflect different points in a spectrum.
- Different project stages may require different models. A goal may be to increase the self-sufficiency of community conservation work, in which case a strategy to achieve that should be agreed between parties and all of the appropriate skills transferred.

DOC structure/skills

Even with really motivated staff, there can be improvements in the way knowledge is transferred.

- Often success is based on key individuals driving things along.
- It is important that all DOC staff have skills to work with communities, not just certain staff.
- There are support systems for DOC for staff working with communities—such as the community relations network—however, there is still a disconnection between networks (e.g. between biodiversity and community staff). Internal information sharing needs to tap into a range of networks.
- A lot of discussion took place about who should be doing the communication with communities. In some cases, working with communities is taken up by community relations staff, or by technical staff. Ideally, community groups want technical people who are good at communicating. Overall, it needs to be recognised that community members value people's technical skills, attitudes, and enthusiasm. It is not only about having the specialist communications person, but also the technical person, supported by the right networks. A key question is whether DOC's technical staff have adequate support for working with communities. Generally, there was agreement that it is better for all DOC staff to have a range of skills (including ensuring that technical staff are also good at communication), rather than relying on specialist communication staff.
- It is important to ensure that job descriptions ask for the right attributes to support working with communities, and that these attributes are part of performance appraisals.
- There was recognition that '*From seed to success*' (DOC 2003b) is an important training resource that should be made available to all DOC staff.
- There is still concern that some people within DOC do not see the need for DOC to be involved with communities. In addition, some DOC staff believe that communities cannot do conservation work to the right standard. Community conservation involves a teaching role—it takes time to teach volunteers new to conservation how to be involved effectively. Success should not only be measured by how well a job is being done, but by what people in the group have learnt in the process.

Methods and tools for communication

- The Internet was seen as a valuable source of information, but too great a reliance on it runs the risk of DOC becoming faceless
- Bringing everyone together to share their varied perspectives is really important, and can offer significant advantages over many separate meetings, e.g. with Iwi and other stakeholders

Relationship-building and collaborations

- It is important to start relationship-building early, especially with Tangata Whenua. DOC needs to recognise that project timeframes can be long.
- The collaborative approach is also important, as community groups can also teach DOC a lot.
- Some community groups do not want DOC to be involved. It may be useful for DOC staff to contact those groups to better understand the issues that exist and look for opportunities to work through them.

The importance of planning and evaluation

- There is a need to improve project planning.
- It was recognised that projects often start with a 'hiss and a roar', then falter. Strategic planning is then carried out, and the project takes off again. It was agreed that better planning at the start of project is necessary to avoid projects falling apart half way through.
- Participants recognised the importance of DOC and community groups reaching an early agreement on the outcomes for the project and how they would work together. The '*From seed to success*' manual (DOC 2003b) has recently been updated to reflect the importance of prioritisation.
- It was agreed that not all community groups undertake planning. Some participants asked if there is an opportunity for DOC to provide proactive training opportunities for communities (but not in lieu of working with communities). This is done by DOC in some areas but is not done nationally on a consistent basis.
- Effective evaluation requires all parties to participate voluntarily and the community needs to be part of deciding the objectives for evaluation and the methods used for collecting data.

What skills/information do communities need?

- Communities need a range of skills, not just those related to conservation. For example, for projects to be successful, participants require skills in project planning, leadership and fundraising. It is also important to recognise that work with communities is likely to involve different phases, all of which have different skill-transfer requirements.
- How to set up a trust is a particular area where it would be helpful for DOC to make information available to community groups. This may be a simple matter of referring groups to existing information provided by other agencies.

Recognising the social outcomes of DOC's work with communities

- There was discussion around the theme of social capital building. It was thought that this was something that is poorly acknowledged and valued within DOC. There was general support for the findings from the research that more value should be placed on the role DOC has in building community capacity and 'social capital' in its support for community conservation work.

4.6.2 Kiwi Hui workshop

As for the internal DOC workshop, the purpose of the Kiwi Hui workshop was to present findings from the literature review and case studies and to discuss what the research findings mean for DOC in terms of sharing skills and knowledge and, more broadly, for how DOC works with communities. However, this workshop involved a range of participants from the Kiwi Hui, including DOC staff, community Trust representatives, paid conservation workers and volunteers.

Workshop discussion

After the presentation of the workshop findings, respondents were asked to reflect on:

- What works well? e.g.
  - Other examples of successful models for conservation skill sharing
  - Other principles for DOC supporting communities to build conservation skills
- What could be improved?
  - Suggestions for ways of improving how DOC works with/supports communities to build conservation skills

While we attempted to focus people's discussion as far as possible on 'what works well', including successful models for conservation skills sharing, most of the discussion focused on personal experiences, both positive and negative, that Hui participants had experienced working with DOC.

The following is a summary of the points raised by participants in this workshop. The implications of the points will be discussed further in Section 5.

A number of Hui participants from the community shared examples of successful experiences they had had working with DOC. These reflected the importance of the personal dedication of the DOC staff involved in helping the community conservation workers, in terms of sharing expertise, providing resources, and creating opportunities to learn through mentoring-type approaches. A key theme here was the importance of respecting and nurturing community skills and expertise in a way that leads to community conservation workers gaining more independence and responsibility and the ability to share in or sometimes take over the decision-making. As one participant commented, 'it is not just about people getting skills, but also letting people use them'. The Port Charles, Coromandel, Brown Teal protection programme was given as an example of a project that was originally led by DOC, but which is now run successfully by the landowners. Another example of a successful community project was Bushy Park near Wanganui.

The role of community-based conservation projects in building communities and 'investing in the future' and 'building a foundation so that the work will last generations not just a few flitting years' was also raised, and the Waipoua Forest Trust was given as a successful example. This reinforces the principle of building social capital that was identified in the case studies.

Several people raised the issue that sharing skills and expertise goes two ways and gave examples of situations where DOC staff had approached them for their expertise and/or local knowledge. An example was DOC going to members of the Ornithological Society to learn how to handle birds. There needs to be greater recognition that conservation skills sharing is a two-way process.

Perhaps the largest amount of discussion focused on people's personal challenges working with DOC on conservation projects. However, given the number of positive experiences that were shared by many people, this did not appear to reflect an overall negative view of DOC. Rather, participants saw the workshop forum as an opportunity to raise some of their concerns in a constructive way.

A major frustration was the 'red-tape' and bureaucracy encountered when dealing with DOC; for example, in trying to get assistance or gaining permits for projects (particular examples cited included OSH requirements and the bureaucracy involved in kiwi transfers). Another was a perceived lack of cooperation demonstrated by some DOC staff. For example, one participant referred to DOC as the conservation 'bottleneck' because legislation means that everything has to go through DOC. As a result 'if someone is busy or lazy, you can't get progress'. Another participant described the process of getting permits as 'hitting their heads against a brick wall'. Another person provided an example of having to go to the Conservation Minister because of frustrations they were having with some DOC staff. There was a real concern that these delays and frustrations can have a substantial impact on communities' support for and enthusiasm in doing conservation work.

On the other hand, other community and DOC participants provided another perspective, citing reasons for the need for DOC to behave cautiously with its decisions, including the Cave Creek tragedy, as well as the risks associated with some activities. For example, if bird translocations go wrong, there could be serious negative outcomes on the bird populations involved. It was also pointed out by one participant that sometimes community groups can be impatient and 'if anything goes wrong, it is DOC who will carry the can'. They felt that both DOC and community conservationists need to work through these issues better and avoid conflict.

A suggestion that arose out of this discussion was that DOC needs to appoint a senior person for community groups to go to if they are having problems. Furthermore, information on who to contact when problems arise needs to be widely advertised. However, it was also pointed out that there are already people in DOC that community groups can contact, such as the Area Manager and Community Relations Manager.

A related issue was the lack of DOC resources and time available for working with communities in some areas. One person stated, in relation to building up the volunteer base (discussed in more detail below), that there are already too

many people wanting to help DOC who can't because of the lack of resources for working with communities. A couple of participants made comments about the fact that communities are demanding more from DOC and that DOC needs to allocate more time for staff to work with community groups.

Another issue that was discussed was the problem of DOC having a bad image and bad relationship with communities and key groups, including landowners, in some parts of the country. This was mostly due to actions taken by DOC under other responsibilities that might be seen as taking away economic opportunities, or curbing resource use or personal freedoms. Positive examples of where DOC staff had become part of the community through volunteering in their own time and becoming active in community networks were given as examples of what DOC staff should be doing in these smaller communities.

Another theme that arose during the discussion was the need for DOC to do better accounting of the conservation outcomes that are achieved by the community so that more value is placed on community efforts. Several examples of successful community projects were raised (e.g. Bushy Park). It was pointed out that there are more people in the community doing conservation work than there are staff in DOC. DOC needs to work better with these resources and recognise their value.

Another discussion took place around the need to pay attention to the replacement of existing volunteers. Several people pointed out how many conservation volunteers are older or from overseas and that some conservation areas have very weak or non-existent volunteer programmes.

One participant, who was formerly a teacher, discussed the lack of an environmental education syllabus in schools and why it was necessary, therefore, for both DOC and community conservation groups to work with schools to ensure the conservation message gets passed on, as 'this is where we change behaviours'. She suggested that many local school teachers would welcome working with conservation groups on an environmental education programme, though it is important to contact principals first and allow enough time for things to be assimilated into the curriculum. An example of a successful environmental education programme on Aroha Island, Northland, was provided.

Another participant talked about generating excitement about conservation in the wider community by using local stores, pubs etc. to contact different societal groups, and that a wider variety of people are now becoming involved in conservation.

A related issue was the need for DOC to be more visible in communities. It was commented that many DOC offices are 'tucked away down back streets'. The positive example of the new DOC Visitor Centre in central Wellington, which has high visibility, was noted.

Feedback form

In addition to recording notes from the workshop discussion, we gave a questionnaire 'feedback form' to all Kiwi Hui participants. The questionnaire had two purposes—to collect data for this research and information that would assist in planning next year's Hui, thus implementing the principle of continuous learning through monitoring and evaluation.

The respondents to the feedback form included people who described themselves as: 'DOC staff' (24), 'other paid conservation worker' (13), 'volunteer' (14); and 'other' (13), including people from kiwi captive-rearing facilities, community trusts, Iwi, trap manufacturers and other technology developers.

The questionnaire asked respondents about:

- Their reasons for attending the Kiwi Hui
- The usefulness of the sessions that they attended
- The sessions that they found most useful
- The overall usefulness of the Hui
- The most valuable aspects of the Hui
- The overall styles of information/training that were preferred
- Any suggestions for how DOC can improve the sharing of conservation skills with volunteers and communities

Two additional questions were included about requirements for future hui.

The results of the questionnaire are summarised under the following three subsections.

Reasons for attending

Respondents were asked to indicate, in response to an open-ended question, their main reasons for attending the Hui. The most commonly cited reasons included:

- Getting updates on other projects, learning about the 'big picture'
- Learning new techniques, getting new ideas, learning about 'new developments' and 'new technology'
- Finding out about the latest research
- Networking with people, meeting others working in the area, learning from others, making contacts
- Inspiration, connecting with like-minded people
- Sharing information with others
- Representing their group, collecting information to take back and share with others in their community project
- Discussing current issues with others

Usefulness of the Hui

The respondents were asked to rate the overall usefulness of the Kiwi Hui as well as the usefulness of the different sessions that they attended on a scale from 1 (not useful) to 5 (very useful). The average score for the usefulness of the Hui 'overall' was 4.3, indicating that, on the whole, people found the event very useful.

The average scores were also high for all the individual sessions, with individuals' different interests reflected in the different score ranks:

- Session 1: 4.3
- Session 2: 4.0
- Session 3: 3.7
- Session 4: 3.8

In addition to being asked about the individual sessions, respondents were also asked the following question: 'thinking about the entire two days you spent at the Hui, not just the formal sessions, what aspects of the Hui did you find most valuable?' This question was specifically designed to examine the value of both the formal and open time parts of the Hui.

As expected, based on the case study results, most respondents (45 out of a total of 64) indicated the 'time to network' or time for informal discussion as one of the most valuable aspects or (more commonly) the most valuable aspect of the Kiwi Hui for them. The importance of providing time for networking was also reflected in some of the suggestions for changes or improvements.

Reflecting the findings from the case study interviews, one respondent said: '[one] of the most valuable aspects of this Hui is that it re-energises me. I spend most of the year working alone—it's good to see the big picture once in a while'. This indicates that the networking opportunity provided by the Kiwi Hui has motivational and morale-building as well as practical benefits for conservation workers.

Preferences for different skill-sharing activities

Respondents were asked to rate, on a scale from 1 (don't like that much) to 2 (pretty good) to 3 (excellent, like a lot), six different methods for sharing conservation information. Respondents only rated those styles that they had an opinion about. The results are presented in Table 3.

Demonstrations received the highest score, followed by presentations/talks, but all the methods, except supervised work, were rated above average.

TABLE 3. PREFERENCES FOR SKILL-SHARING METHODS.

METHOD	NUMBER OF RESPONDENTS*	AVERAGE SCCORE†
Presentations/talks	64	2.4
Demonstrations	60	2.6
Workshop discussions	63	2.2
Case studies	60	2.3
Site visit	53	2.3
Supervised work	48	1.9

* Out of 64 who indicated method.

† 1: don't like that much; 2: pretty good; 3: excellent, like a lot.

5. Discussion and conclusions

This section provides an overview of the results of the research in light of the six principles identified in the literature review. It also discusses the two other key principles which emerged from the research, as well as a number of issues or 'areas for attention' that were raised in the course of the research.

This discussion includes findings related to the case studies, as well as other comments made by various respondents in the course of the case study interviews and in the action research workshops.

Overall, the findings strongly support the six principles identified in the literature. In particular, they reinforce the point made at that start of the literature review that:

> *Supporting communities to develop the skills they need to carry out conservation work is more than just finding the best way to 'teach' skills or to impart scientific or technical information. It is about finding the most effective ways to work* ***with*** *communities to enable and encourage: participation, commitment, learning, and capacity-building.*

The results show that there is no one preferred method or technique for sharing conservation skills with communities; rather, there are a number of principles that should be followed. The case studies highlighted a range of approaches or models for DOC working with communities in order to share conservation skills. Which model or approach is most appropriate will depend on the project context, including local community needs, the nature of the DOC–community relationship, the context of the project (DOC-led or community-led), DOC resources available, and a number of other factors.

The discussions from the internal workshop added to this finding the idea that different project stages may require different models. In some projects, a goal may be to increase the self-sufficiency of community conservation work, in which case a strategy to achieve that should be agreed between parties and all of the required skills transferred (including management skills such as project management, fundraising, etc.).

The importance of transferring not only skills but also responsibility, wherever possible, is strongly supported by the comments from several community participants. However, as raised in the Kiwi Hui workshop, there are still issues of risk that need to be closely managed by DOC, as DOC will ultimately be held responsible if things go wrong.

5.1 HOW DID THE FINDINGS REFLECT THE BEST PRACTICE PRINCIPLES IDENTIFIED IN THE LITERATURE?

5.1.1 Principle 1: The importance of careful planning and setting clear objectives

The first principle for effectively supporting communities to develop skills to carry out conservation work is the importance of careful planning and setting clear objectives. This principle is applicable for both:

- The development of specific educational and skill-development activities
- The process for working with communities on conservation projects

The issue of careful planning of skill-development activities did not receive attention from any of the DOC officers in the case studies. However, the importance of undertaking thorough background research on communities was highlighted in Case Sudy 1 (Lake Alexandrina). The DOC officer in this study also discussed how one of the areas of training he provided to the community group was project management, also identified as a need under this heading.

Furthermore, two DOC officers talked about the importance of having clear goals when working with communities. One felt that DOC needs to be clear about what it wants to achieve, so that the community can be steered towards something achievable in conservation terms. The other felt it was important, when facilitating the setting up of groups, to go in with no expectations. His view was that volunteers should be encouraged by DOC staff in whatever they want to achieve, even if it does not fit in exactly with DOC objectives.

The question of how much pre-planning DOC should do when working with communities was also reflected in comments made by community representatives, with concern expressed about some DOC officers trying to exert too much control over planning and not letting community groups have a say in setting goals, even when projects involved community group money.

There was a contrast in this respect between Case Study 3 (TNHS) and Case Study 4 (Puketi Forest Trust). The community representatives interviewed from TNHS reported quite a top-down approach to planning and decision making, with DOC making most of the decisions and TNHS happy with this arrangement, as DOC are seen as the experts and the work is taking place on their land. However, in Case Study 4, the community group found it hard to get DOC to let them take more responsibility for decision making and planning, which they had been keen to do. Clearly, the influence of different personalities comes into play, but it is worth recognising that DOC needs to be flexible and responsive to the varying requirements of different community groups. This issue is also discussed under the themes of 'the importance of DOC officers having key skills and personal attributes', and the key area for attention 'how DOC and communities work together'.

The limited discussion on project planning in the case studies does not mean that this is not an important principle. Rather, it may highlight an area of weakness in DOC's work with communities. This was raised as an issue in the internal workshop held in Wellington (section 4.6.1)

5.1.2 Principle 2: Understanding your audience

The second principle identified from the literature review was the importance of understanding your audience. This includes understanding what motivates people and what people want to know, and the different ways in which people learn.

The importance of understanding your audience was raised in all four of the case studies. The DOC officers involved in these all emphasised the importance of understanding how to motivate and inspire volunteers. In Case Study 1 (Lake Alexandrina), the officer focused on providing a social element to the work days and ensuring that people felt valued, encouraged and appreciated. He also strove to model enthusiasm. The officer in Case Study 3 (TNHS Trust) described a similar approach to trying to create a positive experience for volunteers.

The importance of having a 'social element' to conservation work was also emphasised in Case Study 2 (Kiwi Hui), where the respondents noted that the informal social networking that occurred at this event was as important for motivating people as the more formal skill-sharing activities. Case Study 4 (Puketi Forest Trust) emphasised the powerful inspiration and motivation that can come from seeing what a successful outcome looks like.

The officer in Case Study 1 emphasised the importance of finding out what people want to learn. Case Study 2, in particular, confirmed how people vary in the learning styles they prefer, and the importance of providing for this.

5.1.3 Principle 3: Information and knowledge sharing as a collaborative learning process

Principle 3—Information and knowledge sharing as a collaborative learning process—was a broad principle that covered a number of themes, including the importance of experiential approaches (learning by doing), two-way collaborative learning approaches (learning together or from each other), as well as the importance of developing effective collaborative relationships (working together) for building capacity for conservation work within communities.

Case Study 2 (Kiwi Hui) provided a useful illustration of the value of collaborative learning (learning together or from each other). In this model of conservation skill sharing, DOC experts, other scientists and community-based conservation practitioners are all placed on equal footing in an interactive environment that encourages respect for and sharing of all forms of expertise and experience.

The importance of encouraging a two-way information flow was also discussed by the DOC officers in Case Study 1 (Lake Alexandrina) and Case Study 3 (TNHS Trust).

The importance of experiential learning (learning by doing) was also evident in the case studies (particularly Case Studies 1 and 3, which relied heavily on demonstration and supervision as the primary skill-sharing techniques.

Despite some use of collaborative processes in the case study projects, it is important to note that collaborative learning and practice has yet to become established in DOC. Collaborative processes reflect a new way of thinking about generating information, sharing information, and learning. Incorporating collaborative approaches into processes has implications for how DOC conducts

community programmes. According to the collaborative model, both 'problems' and 'answers' are identified through a collaborative process of information exchange, within which scientific information is only one part. This contrasts with the traditional linear model of information exchange, where information on the 'problems' and the 'answers' is delivered from the 'experts' to the community. Furthermore, in this model, the process of creating information is integrated into the process of acting on the problem. This makes the stage of 'sharing scientific skills and knowledge', as conceptualised in this research project, difficult to distinguish and disentangle from the broader issue of how to work with communities to undertake conservation work, as the process of undertaking the work is part of the overall learning cycle.

5.1.4 Principle 4: Using a variety of communication and participation methods

Principle 4 outlined the importance of:

- Using a variety of techniques for sharing information with communities
- Maximising the use of person-to-person information sharing

This principle was supported by the case study findings. All of the case studies strongly supported the importance of face-to-face and personal support for developing conservation skills and providing the emotional support necessary to keep volunteers motivated.

Other useful techniques highlighted by the case studies included:

- *Demonstrations*—DOC staff explaining and then demonstrating a skill to small groups of volunteers in conjunction with workdays is perhaps the most common approach used for conservation skills transfer and is generally very successful.
- *Workshops* were seen as a useful way of encouraging interaction between DOC and community members and between different community groups.
- *Site visits* can be an effective way of teaching conservation skills and inspiring and motivating community people, as illustrated by Case Study 4 (Puketi Forest Trust).
- *Presentations and talks* to groups were seen to work well, although there are limitations to the amount of information that can be presented.
- *Written information* was considered to be a useful supplementary tool for transferring information in some instances; however, concern was raised about the complexity and usefulness of some of the current materials. There is scope for provision of additional materials, e.g. 'how to' guides.
- *The Internet* did not play a major part in skills transfer in any of the case studies examined, but was seen as a useful way to attract volunteers. The potential for the internet is not adequately covered by the case studies examined. One of the community representatives mentioned that DOC has a good internal Intranet resource and it would be helpful to have something similar that community groups could access.

Case Studies 2 (Kiwi Hui) and 4 (Puketi Forest Trust) also highlighted the importance of techniques which enable knowledge sharing between projects and showcasing of success (either on or off site). These techniques were seen by community participants as crucial in their ability to motivate and inspire

community volunteers about what was achievable, giving them a sense of belonging to a bigger family of practitioners. On-site demonstrations were particularly good for engaging all the senses—allowing visitors to see, hear, smell and experience what a restored environment can be like.

5.1.5 Principle 5: Using best practice group management and communication techniques

The fifth principle identified in the literature was the importance of using best practice group management and communication techniques. Specific skills that are useful in working with groups that have been identified in the literature include:

- Telling important stories
- Forming the group
- Being responsive
- Modelling enthusiasm and commitment
- Informing—passing on the facts
- Coaching—passing on the skills

The case study results strongly supported the importance of these skills to successfully working with community groups. They did this by providing positive examples of the skills in practice. In particular, the DOC officers in Case Studies 1 and 3 discussed the importance of:

1. Providing community volunteers with information on the background to the conservation issues and why what they were doing was important
2. Showing personal enthusiasm for the project and the work that needed to be done, working with the group to identify achievable steps
3. Coaching the participants so that they gained the skills necessary to eventually be self-sufficient

The importance of being well organised was also raised.

However, negative examples of where these skills were not demonstrated by DOC staff were also discussed. One DOC officer noted that not being organised when people arrive for a workday indicates a lack of respect for those volunteering their time. People want to get straight into the work, and do not want to wait while DOC staff sort out equipment. He felt that DOC staff should try hard to prepare the day before, although he also recognised that they are sometimes very busy, which can make it hard for them to be prepared in time.

The importance of practicing these skills was also raised by one community representative who commented that it is really important for DOC to show their appreciation to volunteers, as people are giving up their time. DOC staff can demonstrate appreciation by regularly thanking people, and trying to give them what they want (such as a variety of experiences) and enabling them to learn by giving good explanations.

Another community representative commented that giving thanks and acknowledgement is an area that some DOC staff needed to work on, saying that DOC could work more effectively with community groups if they gave more support. This means moral as well as financial support. This aspect can sometimes be overlooked by DOC, but is very important to community groups.

5.1.6 Principle 6: The importance of continuous learning through monitoring and evaluation

None of the case studies reported having done any formal programme evaluation apart from recording outputs (such as the number of people involved), and DOC staff listening to and making some effort to act on both the positive and negative feedback that people might make about a programme or event. Within DOC, there seems to be a reliance on using output measures (such as number of people involved) as surrogate measures of success; however, this is bad practice. In order to understand the effectiveness of a project, it is necessary to measure outcomes. Outcomes can include both conservation outcomes (pests eradicated, for example) and social outcomes for the communities involved (such as increased social capital). Measuring outcomes is also necessary for integrating a continuous learning approach into these programmes and transferring lessons between programmes.

5.2 OTHER KEY PRINCIPLES IDENTIFIED IN THE RESEARCH

In addition to the original six principles that were identified in the literature review, a further two principles emerged:

- The importance of DOC staff having key skills and personal attributes
- The importance of creating opportunities to build social capital

While these were covered to a certain degree in Principle 5, their importance in the case studies indicates that they warrant special attention, and should be included as further principles (Principles 7 and 8).

5.2.1 Principle 7: The importance of DOC staff having key skills and personal attributes

A key theme identified in all of the case studies and in the action research (internal and Kiwi Hui workshops) was the importance of DOC staff having certain skills and personal attributes.

In terms of key skills, several of the case studies highlighted the value of staff having expertise in the conservation issues being addressed. Having this expertise meant that DOC officers were able to provide enough background information to enable volunteers to understand why the issues were important and the best ways of addressing them. Having expertise (or not) also appeared to affect the esteem in which the officer was held.

For example, one of the community respondents commented that if staff working with volunteers do not have sufficient scientific knowledge, i.e. understanding of 'the big picture', then it can be hard for them to carry out the important step of explaining the background of the work being done to volunteers. The quality of the volunteers' experience is negatively affected by this lack of knowledge.

The case studies also highlighted the need for DOC staff to have communication and relationship-building skills. Several of the community respondents raised points related to the nature of relationships between DOC staff and community representatives (Section 4).

This theme was also raised in the action research component of this study (Section 4.6.2), where the issue of a 'split' between DOC community relations and biodiversity staff was raised as a challenge that needed to be addressed in working with communities.

5.2.2 Principle 8: Creating opportunities to build social capital

The second key theme that arose from the case studies and action research (that was not adequately addressed in the six key principles identified in the literature survey) was the importance of creating opportunities to build social capital as part of working with communities to build their conservation skills. For the purposes of this discussion, social capital is defined as:

> *... the attitude, spirit and willingness of people to engage in collective and civic activities and the value of social networks that people can draw on to solve common problems. The benefits of social capital flow from the trust, reciprocity, information, and cooperation associated with social networks. Over time, social capital builds what may be termed as social infrastructure*[2].

For example, in Case Study 1 (Lake Alexandrina), the importance of the workdays used in this project for building networks within the community was discussed. This network building was facilitated by having a social aspect incorporated at the end of the workdays to enable people to get to know each other. This case illustrates the importance of building these new community networks of people interested in conservation, and then providing them with the skills to form an organisation or trust and to organise and conduct conservation projects. This ensures the sustainability of a community conservation project and allows DOC to gradually move from the role of leader to that of partner or, further, to an 'as-needed' advisor. The importance of the social aspect of community conservation projects, including the ability to meet and work with 'like-minded' people was also raised in Case Study 3 (TNHS Trust).

On a much larger scale, the Kiwi Hui (Case Study 2 and action research workshop) provided an example of the importance of creating social networks between projects in order to raise the overall social capital needed to better-address conservation issues within New Zealand. The results from this case study highlighted the value that community-based people, in particular, place on the role of networks between practitioners and groups for keeping people informed, motivated and inspired. Attendees at this event created a compelling picture of the importance of the event to them in 'recharging their batteries', providing inspiration and making them feel that they were part of a bigger movement—'the kiwi family'.

The importance of creating opportunities for networking for the building of social capital is well-known within the grass roots environmental movement, as well as in other social movements, who recognise the value of social networks for building people's commitment to a movement and their motivation to participate.

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2 Adapted form definitions provided in 'What is social capital?' (www.masternewmedia.org/2004/05/06/what_is_social_capital.htm (viewed 6 May 2008)).

During both the internal DOC and Kiwi Hui action workshop discussions, the issue of whether the Kiwi Hui model should be extended to other species recovery programmes was raised and has been added to the list of actions that require further investigation.

In addition, from some of the comments made by respondents in this research, it appears that the social outcomes of conservation with communities work are sometimes undervalued by DOC and, potentially, the wider community. Therefore, we also suggest that further work be carried out on DOC's role in building social capital within communities.

5.3 KEY AREAS FOR ATTENTION

The following sections summarise the key themes that arose in the course of the research in relation to areas that need attention or improvement in order to improve how DOC works with communities on conservation.

5.3.1 Improving project planning and evaluation

A key area for attention raised in the DOC internal workshop was the need to improve project planning on community conservation projects. It was recognised that projects often start with a 'hiss and a roar', then falter because there is no project plan. A parallel issue raised in both workshops was the need for DOC and community groups to reach early agreement on how they will work together and the usefulness of their developing a memorandum of understanding (MOU).

A linked issue is the need to improve programme evaluation. None of the case studies examined had undertaken any formal evaluation and it is clear from the literature that evaluation is a key step in any continuous learning process.

5.3.2 How DOC and communities work together

All four case studies demonstrated the importance of DOC building strong relationships and trust in order to have successful working relationships with community organisations. The significance of this principle was stated most clearly by the TNHS director, who commented:

> *The wetland project would not have begun if the* [DOC] *TSO and* [the] *Director of Tongariro Natural History Society did not have trust in each other pulling off their part of the project commitments … people relationships are crucial in the community conservation projects.*

However, along with the numerous stories of success highlighted in the case studies and workshop discussions, a number of frustrating experiences were also raised. These can be categorised under three key themes:

1. The perceived 'bureaucratic' nature of DOC
2. DOC not having a good reputation in some small communities, which makes its working with communities on conservation projects difficult
3. How DOC and communities share responsibility within projects

The first theme related to the perceived 'bureaucratic' nature of DOC. For example, one community representative interviewed discussed how he contacted DOC because a group he was involved with was interested in translocating birds into the group's mainland-island-style project area. He told the story of how DOC had asked them to fill in a large application form, which involved a lot of background work, such as finding a source population, estimating its size, and monitoring both the source and sink populations after the translocations. DOC offered assistance to catch and move birds on the day; however, the group was hoping for more involvement and help from DOC. Overall, because of the application requirements and because he felt they were given 'a relatively lukewarm reception from DOC', the group gave up on the idea.

Several other stories of frustration with the 'bureaucracy' encountered when working with DOC were also expressed at the Kiwi Hui. However, other community and DOC participants at this event provided another perspective, citing reasons why DOC needs to be cautious with its decisions. These include the Cave Creek tragedy, as well as the risks associated with some activities (such as bird translocation) which, if they go wrong, could have serious negative outcomes on the bird populations involved. It was also pointed out that 'if anything goes wrong DOC will carry the can'.

Overall, it appears that there are differing perspectives on this issue and there is perhaps a lack of understanding between the two parties (DOC and community groups) of the reasons behind each party's position. Therefore, there needs to be greater attention to ensuring good communication between DOC and community groups, including a willingness to listen to and try to understand each other's needs, aspirations and constraints; and to identify mutually agreeable solutions.

A second issue was some general concern expressed in the interviews and workshops that DOC does not have a good image in some communities and this makes work on conservation with communities programmes difficult. In these cases, public attitudes reflect the multiplicity of DOC's roles, which include administration, enforcement and advocacy. Actions taken by DOC relating to one of its responsibilities can interfere with its ability to to do things in other areas. However, it was also noted that by becoming active members of the community, DOC staff have been able to work successfully in some small communities.

Overall, it appears that DOC staff in small communities (where they have multiple roles) face particular challenges. Actions to improve this situation that could be investigated include ensuring that job descriptions clearly articulate the skills required for these types of positions, including good facilitation, mediation and community-building skills; and making sure that new staff taking up positions in small communities are made aware of the unique challenges they face and are given special training and mentoring.

The next major theme was how DOC and communities share responsibility for projects. On the one hand, some community group respondents felt that DOC was not giving them enough responsibility and was holding on too tightly to the control of projects. For example, one of the community respondents said that he felt it would help if the local DOC office would give their Trust more responsibility. He agreed DOC should still have some control, but felt that (in his case) DOC was 'reluctant to hand over the keys', and this creates barriers to the two organisations working together effectively.

One of the community representatives expressed the view that, in any shared project, taking over the decision-making process can happen because of the distance between people in the partnership, and it can be necessary to do this with 'day-to-day' issues, so that projects can make progress. It can also depend on the personalities of DOC staff—some are very easy to work with, others less so. He commented, though, that 'it's a two-way street, and relationships are formed in two directions'.

On the other hand, a DOC officer who works with community groups reported that he found it difficult to get the community organisations to take on more responsibility and felt that they were too dependent on him.

Another DOC officer gave examples of ways of sharing responsibility with communities which he believed represented good practice in supporting the community to undertake conservation work. These included:

- Where DOC is leading the project (i.e. it is DOC's work), and the community are supporting DOC, then there should always be a competent DOC person supervising practical work, making sure it is being done correctly.
- Where it is a community conservation project, then DOC's role should be greater in the early stages—helping the community group get financing and to draw up a plan and passing on any conservation skills—then stepping back and offering support when needed. He thought a good example of this was work DOC staff were doing in Taupo to control pests with traps. Some of the local residents started showing an interest, and DOC asked them if they wanted to put down some of the traps in people's back gardens. This worked well, and the residents then said they would be happy to take the whole project on. Initially, DOC gave a lot of support in terms of training, advice, and so on, but now the group is self-funding, runs the project, and has been very successful in controlling pests.

One of the community respondents said it is important when working with DOC to have an MOU in place, as it makes the work more 'official', meaning that DOC can redirect resources and include the work in their business planning.

The importance of ensuring that the roles of DOC and the community group are clearly stated and regularly reviewed was highlighted in Principle 1—the importance of careful planning. This area probably requires greater attention within DOC than it presently receives and reflects the findings of early research on DOC practice (Bell 2003).

In addition, the use of collaborative learning and management approaches (Principle 3) for building stronger relationships between DOC and community groups should be explored. The evidence from the literature indicates that collaborative approaches are more likely to result in community support for conservation programmes (as well as maximising learning opportunities for both the community group and the government department involved) than approaches that do not provide for community participation.

Finally, as was highlighted above (especially section 4.6.1), a goal in some projects should be increasing the self-sufficiency of community conservation work. This should include identifying training needs and developing strategies for sharing all necessary skills. It also means identifying a strategy to move the relationship between DOC and the community group from one of a DOC-managed volunteer programme, to an active collaboration, then to a true partnership, and sometimes further, to an independent community-led initiative.

5.3.3 DOC staff skills and personal attributes

The importance of DOC having key skills and personal attributes was raised in the case studies and added as a key principle for sharing skills with communities. However, it is also a key area for attention by DOC, based on some of the concerns raised by respondents in the case studies and workshops.

While most DOC staff were seen to be knowledgeable, helpful and supportive towards conservation with communities work, some stories of bad experiences were also shared. For example, one respondent talked about experiences he had had with certain DOC staff being protectionist about the conservation work 'in their patch'. They possibly saw volunteers as taking away their work. He felt that this type of person would prefer a 'closed shop' rather than sharing the work between DOC and the community.

Some of the interviewees also discussed their ideas for solutions. One community respondent felt that DOC staff generally needed more training on how to work with communities. Another community respondent suggested that it would be good if the community groups were given a 'third person' within DOC to go to if they had problems with local offices or individuals so that DOC can investigate these sort of problems. A similar suggestion was made by a couple of community people at the Kiwi Hui.

Our research provides evidence that training more DOC staff in key skills (such as the training provided through the '*From seed to success*' programme) is needed to improve skills sharing and work with communities.

In terms of the second point raised above, while there are some channels that community members can already use to raise concerns (for example, by discussing them with the local Community Relations Manager, Area Manager and/or Conservator), the process at present is not clear. A clearly communicated process for conflict resolution needs to be implemented. Contact details for a senior manager that community members can contact if they are having difficulties with a local DOC staff person need to be provided.

5.3.4 Resources provided for conservation with communities

Several community people and some DOC staff expressed concern that staff are often over-stretched and some conservancies lack resources for working with communities. This is particularly the case for biodiversity staff, whose expertise is often highly valued by community groups.

Overall, there is evidence that DOC staff in some regions are unable to meet the increasing community demands for their time. As an organisation, DOC needs to better measure the value added by conservation with communities work (in terms of both conservation and broader social outcomes) and consider if and how it can increase or more efficiently distribute resources to this area of work.

Two DOC officers provided ideas on ways in which DOC could provide greater (and more efficient) support for the community. These included:

- Providing more volunteer programmes, so there are more opportunities for people to get involved.
- Being more proactive in organising local workshops and skill-sharing activities, rather than being reactive only.

- Providing better-written resources for communities, including:
  - 'How to' leaflets/booklets/packs, to reduce the amount of time some DOC staff spend giving out the same information by telephone. Some resources are already available (e.g. from the National Possum Control Agency and the website set up by DOC's National Predator Officer). However, a more comprehensive approach is needed.
  - An overall improvement in the written information available for the community. There is best practice information on the DOC Intranet for all sorts of conservation methods, but this is for DOC staff and is not in an appropriate format for the community to use, apart from the fact that the DOC intranet is not available to the public.
  - The volunteer booklet is very complicated for what it achieves and should be more focused.

One community representative also commented that there is a 'huge amount of information in the department and it is great that DOC staff will hand it over when asked, it is a pity though that it is not more accessible, for example through a website'.

The necessity for more and better information to support conservation skills development, as well as methods to make accessing and sharing information easier, needs to be explored.

6. Recommendations

There are a number of potential actions that should be explored to build on the best practice principles for working with communities that have been identified in this study, and to address the challenges to working with communities that were also identified. In particular:

- DOC staff should receive more training in the skills required for working with communities, including:
  - Project planning and evaluation
  - Communication and relationship-building skills
  - Different techniques for working with communities
  - Different models for working with communities

  Such training could be done through an expanded roll-out of DOC's '*From seed to success*' programme, and consideration should be given to including community groups as well as DOC staff.
- All staff who work with communities, not just community relations staff, should have access to the above training opportunities, as well as internal support networks.
- Key skills and personal attributes that support working with communities should be added to DOC job descriptions and performance appraisals.
- More resources (including technical staff time) should be provided for community conservation programmes.

- Greater opportunities for community building across all areas of conservation work (e.g. Kiwi Hui, awards, showcasing[3]) should be provided.
- Further research and evaluation of DOC's role in building social capital within communities, (including networks and skill bases) is required.
- Better accounting systems are needed so that the value of conservation work undertaken by communities can be measured.
- Improved information resources for community projects are needed. Such resources might include:
  - An information portal for community conservation projects where community members can access information in one place. This could include opportunities to share stories and ask questions, and should have links to training opportunities.
  - A training calendar providing opportunities for community conservation groups and volunteers to access training opportunities.
  - Updated print resources.
  - Training in a variety of skill areas in addition to traditional conservation skills (e.g. fundraising[4], project management, setting up trusts, recruitment, and advocacy).

  Development of such a portal needs to be carried out collaboratively between DOC and key community organisations.
- A process for conflict resolution is needed. It would be helpful if this included details of a senior manager that community members could contact if they were having difficulties with a local DOC staff member.
- More work with schools is needed (by both DOC and community groups) to ensure that there are replacements for the current crop of adult conservation volunteers, to broaden community support for conservation, and to improve behaviour that can have an effect on conservation values (e.g. controlling pets).
- DOC and community groups need to improve project planning and evaluation. For example, participatory monitoring and evaluation should be used to explore the success of different conservation methods, and the techniques required to achieve and maximise their conservation and social outcomes.

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[3] See Queensland Government (2004) guide to community engagement showcasing events for further information: http://www.getinvolved.qld.gov.au/share_your_knowledge/resources/documents/pdf/guide_showcasing.pdf (viewed 6 May 2008).

[4] An example fundraising seminar was discussed at the Kiwi Hui.

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Appendix 1

INDICATORS FOR EVALUATING INFORMATION- AND KNOWLEDGE-SHARING ACTIVITIES

CRITICAL SUCCESS FACTORS/PROCESS PERFORMANCE CRITERIA	INDICATORS	DATA SOURCE
Information provided to the participants was appropriate, adequate and effective	• Participants' perception of: – How easy the information provided was to understand – The suitability of the length of the information – The relevancy of the information – The adequacy of the information in terms of the type/detail provided – The accuracy/credibility/trustworthiness of the information – How well the information added to their understanding of the subject • Sample of target audience who report having received the information • Information provided in all languages of key stakeholders	• Participant questionnaire • Participant interviews • Survey of target audience • Document analysis
Information provided in a timely manner	• Information provided according to organisational standards or project milestones	• Document analysis
Presenters appropriate	Participants' perception of: • The usefulness of the information presented • How interesting and informative the speakers were	• Participant questionnaire • Participant interviews
The style of activity was appropriate for the audience	Participants' preference for: • The style of presentation (e.g. presentation, demonstration etc.)	• Participant questionnaire • Participant interviews
OUTCOME PERFORMANCE CRITERIA	INDICATORS	DATA SOURCE
The activity resulted in increased knowledge about X	• Participants' perception of: – What they learnt from the activity – Their awareness of X being raised as a result of the information – Their understanding of X being raised as a result of the information • Before and after testing of participants' (or target audience's) awareness/understanding	• Participant questionnaire • Before and after survey of target audience
The activity resulted in increased support for conservation programmes	• Participants' perception of: – Their support for a particular conservation issue being raised as a result of the activity • Participants' reporting of support for a particular conservation issue before and after activity	• Participant questionnaire • Before and after survey of target audience
The activity resulted in increased action to support conservation	• Participants' self reporting of changes to their behaviour • Before and after testing of participants' (or target audience's) behaviour	• Participant questionnaire • Before and after survey of target audience

Appendix 2

INTERVIEW QUESTIONS—DOC STAFF AND VOLUNTEERS

A2.1 DOC staff

Questions about the overall community conservation project

1. Could you tell us a little bit about the project, including:
    - The (conservation) purpose of the project
    - the role of DOC staff in the project
    - the role of community volunteers/organisations in the project
    - the role of other organisations in the project (e.g. local government/other agencies/private sponsors etc.)
2. Can you describe the history of the project, especially how you worked with community members to plan and develop the project?

    For example:
    - How the project started?
    - How DOC and the community got involved in the first place?
    - How were objectives decided?
    - When were objectives decided?
    - Who was involved in deciding objectives/priorities?
    - How was the 'action plan', including roles and responsibilities, developed?

Questions about conservation knowledge- and skill-sharing aspects of the project

3. What role did knowledge/skill sharing (involving DOC staff) have in the project? including:
    - Did you have any training on information/skill sharing?
    - What were the objectives for knowledge/skill sharing (what information/skills were you trying to teach/share/develop)?
    - Who was the 'target audience'?
    - How did you decide what the key requirements for knowledge/skill sharing were (for example: audience needs, project needs)?
    - Who was involved in making these decisions?
4. What approach(es) did you use to share information/skills, including:
    - Which methods, techniques or tools did you use for information/skills sharing? (For example: group exercises, demonstrations, written information etc.)
    - Why did you choose this approach? (for example, appropriateness for audience/preference for technique, past experience etc.)
    - What (if any) role did 'learning by doing' (experiential learning) have in the project?

- What (if any) role did discussion and sharing of personal or local experience/ knowledge between community participants and DOC staff have in the project?
- Who was involved in making these decisions?

5. Have you done any formal or informal evaluations (e.g. group debriefs) of your conservation project, including:
   - How have you involved the community volunteers in this process?
   - Have you specifically discussed any issues related to information and skills sharing?

Your evaluation of the project

6. Thinking about the project and, in particular, thinking about the role of information and skill sharing within the project and DOC's role in supporting communities to develop skills to carry out conservation work,

please tell us:

- what you think worked best
- what you think could have been done better
- what were the main challenges (factors outside of your control)

Sharing your experience

7. From your experience with this and other projects, what do you think are the best ways for DOC to support communities to carry out conservation work (monitoring, pest control, restoration etc), particular in relation to sharing information and skills?

   For example: important principles/lessons/techniques for information and skills sharing.

A2.2 Interview questions—volunteers

1. How long have you been involved in the project and what have you been involved in (including project planning and management as well as on-the-ground activities)?
2. What initially got you interested in taking part in the project?
3. Did your experience working on this project meet your expectations?
4. Overall, did you find it an enjoyable experience?
5. Has taking part in the project helped you learn more about:
   - the conservation issues facing the area?
   - how you could practically make a difference to improve the situation?
6. Thinking about the project and, in particular, thinking about (if not addressed above)
   - volunteers putting forward information, ideas or issues
   - how information and conservation skills were passed on to volunteers from DOC

   Please tell us what you think worked well and what you think could have been done better.
7. Overall, what were the best aspects of working on this project for you?
8. Overall, what would have improved the experience?

What are the most effective ways to share conservation skills with communities?

One of the main ways DOC can support community conservation initiatives is by sharing conservation skills and knowledge. This study explores New Zealand and international research to identify the current 'best practice' for conservation skills training and capacity development. Four case studies identified as 'success stories' of DOC working with communities are analysed in light of the literature to determine the key principles for building conservation skills within communities. Two action research forums identified ways information and skills sharing between DOC and community organisations could be improved.

Johnson, A; Wouters, M. 2008: Strengthening community capacity to undertake conservation work: sharing conservation skills and knowledge. *Science for Conservation 287*. 74 p.

New Zealand Government