

ENVIRONMENTAL VOLUNTEERING: MOTIVATIONS, MODES AND OUTCOMES

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Environmental Volunteering: Motivations, Modes and Outcomes

Thomas G. Measham and Guy G. Barnett¹

ABSTRACT

Volunteers play a key role in natural resource management: their commitment, time and labour constitute a major contribution towards managing environments in Australia and throughout the world. From the point of view of environmental managers much interest has focussed on defining tasks suitable to volunteers. However, we argue that an improved understanding of what motivates volunteers is required to sustain volunteer commitments to environmental management in the long term. This is particularly important given that multiple government programs rely heavily on volunteers in Australia, a phenomenon also noted in the UK, Canada, and the USA. Whilst there is considerable research on volunteering in other sectors (e.g. health), there has been relatively little attention paid to understanding environmental volunteering. Drawing on the literature from other sectors and environmental volunteering where available, we present a set of six broad motivations underpinning environmental volunteers and five different modes that environmental volunteering is manifested. We developed and refined the sets of motivations and modes through a pilot study involving interviews with volunteers and their coordinators from environmental groups in Sydney and the Bass Coast. The pilot study data emphasise the importance of promoting community education as a major focus of environmental volunteer groups and demonstrate concerns over the fine line between supporting and abusing volunteers given their role in delivering environmental outcomes.

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INTRODUCTION

Volunteering is at the heart of democracy (Verba et al., 1995). In Australia, it plays a vital role in our political, social and economic systems, yet until recently remained 'underestimated, under-researched and undervalued' (Warburton and Oppenheimer, 2000). Volunteering can be defined as pro-social behaviour, done of one's own free will and without monetary reward, to benefit another person, group or cause (Penner, 2004; Cordingley, 2000; Noble, 1991). It represents an important means of participating in civil society, and has been suggested as an indicator of societal health, with research suggesting positive relationships between levels of voluntary activity, physical health and life satisfaction (Whiteley, 2004). A key area of growing interest is the role that environmental volunteers play in natural resource management (Ryan et al., 2001; Byron and Curtis, 2002; Hunsberger et al., 2005). In this paper we explore this question through two avenues. First, we discuss the motivations driving environmental volunteers and present them in a series of categories. Second, we explore the range of activities that environmental volunteers conduct in urban and peri-urban areas and present these as a set of 'modes' of environmental volunteering. The rationale for this approach is to improve understanding of environmental volunteering in general and to avoid mis-match between volunteer expectations and the objectives of environmental programs in which they are involved. This is particularly significant given the reliance on volunteers by agencies responsible for managing and researching natural resources (Foster-Smith and Evans, 2003).

The increased prominence of environmental volunteering stems in part from the benefits for the volunteers themselves. Generally, volunteering helps people to think they can make a positive difference in the world and this feeling can help

people feel good about themselves (Mirowsky and Ross, 1989). Environmental volunteering has been linked to improved social networks, and an enhanced sense of place (Gooch, 2005). A more critical view is that government agencies have been decreasing their own participation in NRM and shifting the onus of environmental monitoring to the voluntary sector to save costs (Hunsberger et al., 2005; Savan et al., 2003). Reflecting trends in countries such as the UK and Canada, the context for increased involvement of volunteers in environmental management has involved a shift towards devolution of responsibility for NRM and support for environmental stewardship in Australia, as demonstrated by such programs as Landcare and the National Heritage Trust (Carr, 2002; Abrahams, 2005). Volunteer groups are conducting many of the tasks that were previously the responsibility of governments or fulfilling the role of low cost service providers for state run programs, especially given the necessity for monitoring under various national and international legal obligations (Harvey et al., 2001).

Some researchers have raised questions about data quality and methodological comparability when it comes to relying heavily on volunteers for labour (Fore et al., 2001; Newman et al., 2003). Other authors have been concerned about the effect on volunteers themselves, in some cases leading to the phenomenon of burnout (Byron and Curtis, 2002). Whether environmental volunteering is an expensive way to meet legislative obligations or a constructive way to help individuals to bond with the environments around them, what emerges from this background is a situation where natural resource management initiatives rely heavily on volunteer labour, and thus the task of managing and maintaining volunteer commitment becomes an important issue (Ryan et al., 2001; Byron and Curtis, 2002; Reidy et al., 2005).

Whilst we focus on recent interest in environmental volunteering, it is important to note that there is a long history of involving volunteers in various activities which we would today call environmental management. Though they may have been called naturalists or amateurs in their day, volunteers have contributed to ecological understanding for centuries through collecting botanical specimens (eg. for Kew Gardens) and participating in monitoring programs such as the bird banding programs or the National Audobon Society Christmas Count (Fore et al., 2001; Gouveia et al., 2004).

FACTORS AFFECTING VOLUNTEERING PARTICIPATION

Based on a national survey of voluntary work by the Australian Bureau of Statistics (ABS), it is estimated that 32% of the adult population in Australia participate in volunteer activities including community welfare, sport and recreation and emergency services. (ABS, 2001). This represents a similar figure to both Germany (34%) and Canada (27%) but less than the UK (48%) and the USA (44%) (Penner, 2004). There are many factors that influence volunteering behaviour.

In Australia volunteer rates recorded by the ABS (2001) vary slightly overall between women and men (33% and 31% respectively). This is similar to the United States where females are slightly more likely to volunteer than men, and represents a small difference to Europe where no overall gender difference occurs (Wilson, 2000). Within individual categories the variation between genders in Australia tends to increase, for example more men volunteer in the category of emergency services and more women volunteer in community welfare (ABS, 2001).

Human capital has been proposed as a major influence on volunteering. In particular, education and income are consistent predictors of volunteer activity, such

that affiliation with voluntary groups generally increases with these forms of human capital (McPherson and Rotolo, 1996; Penner, 2004). Time has also been linked to volunteering, particularly for the employed, such that part time workers tend to volunteer more than full time workers, the lowest rates of volunteering are found amongst the unemployed. Age has been linked to the nature and degree of voluntary activity, as the stock of human capital varies throughout life (Verba et al., 1995; Wilson, 2000).

Whilst volunteering occurs at all ages and throughout society, certain life stages in particular are associated with increased volunteering (Wilson, 2000; Zappalà, 2000). The highest rate of volunteering occurs during middle age (Churchman, 1987; Menchik and Weisbrod, 1987). These findings are supported by Australian ABS data which show that highest rate of volunteering in the ABS survey (2001) was for the age range 35-44 years (40%). For many this is a time of raising children and interestingly Wilson and Musick (1999) found that people with children in their households are likely to remain in the volunteer workforce for longer. Another important life stage concerns retirement. Research has shown that retirement does not draw additional people into the volunteering labour force, however it does increase the number of hours dedicated towards voluntary work amongst existing volunteers (ABS, 2001; Wilson, 2000).

MOTIVATIONS FOR ENVIRONMENTAL VOLUNTEERING

Until recently there has been very little research into the factors that motivate people to participate in environmental volunteering (Ryan et al., 2001). Much of our understanding is thus drawn from the literature on volunteering in general and this research demonstrates that there are multiple reasons why people volunteer.

According to Penner (2004), the decision to volunteer is a complex one that must be considered in the broader context of personal attributes, circumstances, social pressure, as well as the particular characteristics of the organisation where the voluntary activity takes place. Snyder et al. (1999) propose a functional approach to understanding volunteer motivation, emphasising that the act of volunteering fulfils different functions for different individuals. Furthermore, motivations can change over time, such that the reasons for the initial decision to volunteer may differ from those sustaining continued voluntary action (Penner, 2004). Others argue that volunteering is a pro-active approach to empowerment and to bring about social action. For example, Bell (1999) argues volunteering is a tool for societal change, rather than a benevolent mode of service delivery.

Several studies have grouped volunteer motivations in different sectors into various categories (see for example, Hwang et al., 2005; Rehberg, 2005; Snyder et al., 1999; ABS, 2001). These categorisations have up to twelve different factors, with considerable overlap between categories developed for specific contexts. We argue that these relatively large numbers of similar categories are of limited value when it comes to categorising motivations, and have synthesised the groupings from existing literature into four broad areas. The first of these is helping a cause, concerned with assisting others or giving something back to the community. The second is social contact - building social capital by meeting new people and making friends. The third broad area is personal development – such as learning new skills, gaining experience and building self esteem. The final area that arises across multiple categorisations is some manifestation of pursuing personal interest, for example developing a greater understanding of an issue or discovering new ideas in

the field of volunteering entered into (Hwang et al., 2005; Rehberg, 2005; Snyder et al., 1999; ABS, 2001).

In adapting this broad categorisation for environmental volunteering, it is important to note that the number of studies focussing specifically on environmental volunteering is relatively small; however the motivations they describe are broadly consistent with the four themes that characterise volunteer motivations in other sectors presented above (Ryan et al., 2001). For example, Gilmour and Saunders (1995) offer a suite of reasons why people engage in the long-running Earthwatch program emphasising care for the environment, curiosity, personal development and social contact. In addition, Gooch (2003) found that an attachment to a particular local environment represented a motivating factor for a majority of her participants, uniting an interest in caring for such a place and developing an improved understanding of the place. A study by Wearing (2001) on people who combined tourism with volunteer environmental restoration found that motivations fell roughly into seven overlapping areas concerned with the altruism, personal growth, professional development, cultural exchange, learning, travel and adventure. He noted that many of the volunteers he surveyed had previously been involved in other volunteer activities.

In considering the general motivations affecting volunteering and the specific dimension of environmental volunteering, we propose the following set of six factors motivating volunteers in an environmental context:

1. Helping a cause
2. Social interaction
3. Improving skills

4. Learning about the environment
5. General desire to care for the environment
6. Desire to care for a particular place

The first three of these, helping a cause, social interaction, and improving skills, stem directly from the broad factors discussed above which feature in all categorisations reviewed for this paper. The fourth, learning about the environment, is proposed as an environmental variation on the theme of developing personal interest in a given area (Rehberg 2005), and relates to the role of volunteering as a mechanism for experiential learning which is so important for learning about our environment (Measham 2006). The fifth factor, a general desire to care for the environment, was included based on findings of Gilmour and Saunders (1995) and the final factor, a desire to care for a particular place, was included based on findings by Gooch (2003). In the next section we expand on environmental volunteering in general and distil five modes of volunteer activity.

MODES OF ENVIRONMENTAL VOLUNTEERING

We propose there are five principal modes of environmental volunteer activity: activism, education, monitoring, restoration and sustainable living (Table 1). This is based on a review of predominantly Australian volunteer activity but situated within an international context. Whilst the framework gives examples of specific groups, it is important to emphasise that any single volunteer program or group may engage in more than one mode of activity in any given context. Each of these modes is discussed in further detail below.

Activism

In the words of one author, volunteering lies 'at the core of social action in civil society', and represents a pro-active approach to bring about change and empowerment (Bell, 1999). As such a key category of environmental volunteering is concerned with protecting environments, stopping environmental destruction and saving wildlife. At its most political, this mode of environmental volunteering can even be linked to malicious activity (Marris, 2006). More generally, global scale major international activist groups such as Greenpeace and Friends of the Earth draw on volunteers to raise funds and campaign for causes including climate change and the use of genetically modified organisms. At the local scale, multiple 'action groups' rely on volunteers to campaign on a myriad of topics, from improving local water ways (Fien and Skoien, 2002) to urban development pressures (Costello and Dunn, 1994). The local example presented in Table 1 involves a group of residents who campaigned to protect a former defence site from property developers and preserve it as a conservation reserve because of its relevance as an example of a Cumberland Plains ecosystem (Caldwell, 2001).

TABLE 1 ABOUT HERE

Education

A second major type of environmental volunteering concerns community education on a given topic. For example, the Volunteers for Environment and Education Program (2006) in Nepal are a charity organisation which works with skilled volunteers to assist rural communities learn about and address environmental issues such as waste management and tree planting. A series of education oriented volunteer groups fall under the banner of 'Friends of' groups. For example, the

Friends of the Australian National Botanic Gardens (2006) aim to 'increase community awareness of the scientific, educational, recreational and conservation functions of the Gardens' through volunteer guided tours and through organising community presentations and events. In many cases, education occurs in association with another mode of environmental volunteering, such as monitoring or restoration, discussed below. For example, the Reef Environmental Education Foundation involves volunteers in environmental monitoring as part of their education activities (Pattengill-Semmens and Semmens, 2003). In a related way the Friends of Lane Cove National Park are focussed on community education through the use of interpretive displays and hosting workshops, in addition to their interest in ecological restoration discussed below (Reidy et al., 2005).

Monitoring

Another major category of volunteering groups is focussed on environmental monitoring. The importance of volunteer groups as human capital for carrying out environmental monitoring has been broadly recognised (Jacoby et al., 1997; Carr, 2004). Many volunteers work in association with major government organisations such as the US Environmental Protection Agency which maintains a national directory of over 700 volunteer monitoring programs (Savan et al., 2003). One of the largest and most successful organisations engaging volunteers to help collect data is Earthwatch (Gilmour and Saunders, 1995). Whilst the aims of this organisation are to support scientific research in general, an important area involving volunteer labour is long term monitoring which can be difficult to fund through other mechanisms (Earthwatch, 2006). An important way that volunteers can contribute is filling information gaps in broader monitoring processes, such as the NSW National Parks and Wildlife Service Fauna Atlas. In particular, volunteers contributed records from

privately held lands which would have otherwise been under-represented (Lunney et al., 2000).

Restoration

A fourth area of focus for volunteer groups is ecological restoration. Generally, the involvement of volunteers in environmental restoration focuses on removal of noxious weeds, replanting of vegetation and providing habitat for wildlife (Reidy et al., 2005; Gill, 2005; Measham, 2007). For example, the international Earth Restoration Service (2006) engages volunteers in rehabilitating degraded ecosystems throughout the world. Volunteer contributions to local community groups to environmental care and restoration is usually justified and evaluated in terms of improvements to environmental quality (Fien and Skoien, 2002). An Australian example is the Friends of Lane Cove National Park (2006) which operates a volunteer initiative under the 'Bushcare' program to overcome the deterioration of the National Park due to urban development, with a major emphasis on weed control. Volunteers have also been engaged extensively in restoration through Coastcare (Harvey et al., 2001), for which restoration includes a focus on managing access through the construction of walkways and other facilities that reduce impact whilst fostering recreation opportunities.

Sustainable Living

This most recent mode of environmental volunteering relates to recent interest in reducing ecological footprints by implementing effective modes of energy use and reducing waste at the household level (Hobson, 2006b). For example, the Sustainable Living Foundation (2007) engages volunteers in designing and promoting ways to 'reduce, reuse, recycle' energy and material goods. Similarly, the

Green Volunteer Network of Singapore promotes practices such as recycling, eco-labelling and sustainable transport use (Hobson, 2006a). Still developing as a distinct genre of environmental volunteering this mode overlaps strongly with both the activism and education modes due to its strong focus on campaigns to promote uptake of specific practices and the education mode through its linkages with formal school programs and environmental festivals. An Australian example is the Watershed (2006) in Sydney which describes itself as a resource centre where volunteers provide information and materials to local citizens to reduce their environmental impact through improved refuse management such as re-useable shopping bags, and training on energy and water use efficiency around the home.

PILOT STUDY OF URBAN ENVIRONMENTAL GROUPS

A pilot study was designed to develop and refine the categories of volunteer motivations and modes of volunteering that were developed from literature review. The pilot study involved a total of 32 individual participants across two sites, metropolitan Sydney and the Bass Coast near Melbourne, Victoria. Urban and peri-urban locations were a condition of the funding available for the pilot study research. It is important to emphasise that the aim of this pilot study was not to 'test' the set of motivations and modes on a random selection of groups, rather it was to refine these categorisations with a view to developing a larger quantitative survey as a future research project. The groups were purposefully selected with the aim of having at least one group engaged in each of the modes of volunteering proposed and are listed in the acknowledgements section of this paper. In April 2006 twelve interviews were conducted involving the leaders of each group, involving a total of 16 participants.

The topics explored in the interviews were: the environmental issues addressed by the group; purposes and goals of the group; motivations of individual volunteers; and the outcomes of volunteering initiatives (including environmental and social outcomes). Of particular interest was to explore the extent to which the different modes of environmental volunteering overlapped, for example the extent to which groups we approached for their role in environmental monitoring also engaged in education. In the first instance, interviewees were asked to describe their motivations and modes of volunteering in their own words, so as not to pre-dispose their responses towards the factors identified by the literature review. Subsequently the participants were asked about the factors in the classifications, to assess their relevance. The interviews were transcribed, grouped into themes and cross checked by different members of the research team. The results of this initial analysis were developed into a project report and distributed to the research participants who were invited to provide feedback on the initial findings.

Following the interviews, a second stage of the pilot study was conducted in June 2006 in the form of two focus groups, involving volunteer group members who did not take part in the first stage of interviews. The first of these was conducted in the Bass Coast and involved twelve participants. The second was conducted in Sydney and involved four participants. The aim of the focus groups was to go deeper into the themes addressed in the interviews; to assist the research team to develop a survey from the interview data.

Volunteers' Motivations

Initially, participants were invited to describe their motivations in their own terms. Subsequently, participants were invited to comment on each of the motivating

factors presented in our proposed set of motivations based on the literature. When presented with these groupings, all six motivating factors were relevant across the Sydney interviews and four factors were relevant across the Bass Coast interviews (Table 2).

TABLE 2 ABOUT HERE

Relating to the issue of helping a cause, several of the Bass Coast interviewees described a general desire to make the world a better place. This related to doing something for the future and it was most commonly mentioned in relation to retirees giving something back to the community.

“You’ll get down there and you’ll do a good day’s work for the community. You’re working for others and you’re having a really good time... You get home [and] you crack open with relief. You have a warm, fuzzy feeling in your heart.” BC5

Social interaction was considered much more important by the Bass Coast volunteer groups than by the Sydney volunteer groups, with five of the six groups noting this as an important motivator. In the Bass Coast study, meeting new people and socialising came through in many of the interviews in various ways: as a way to draw people out to events, or as a way of sustaining the volunteers:

“Socialising with other people who are into the same kind of things. Yeah, chatting about whatever interests them.” BC5

The factor which stood out as a motivating factor in all interviews was a desire to care for the environment generally, as demonstrated by the following comment,

“...there are a lot of people who have genuine concerns about what’s going on with the environment. If they feel that they can do something to help, then they can sleep easy at night.” Syd3

Desire to care for a particular place was important across all the Bass Coast interviews and half of the Sydney interviews. For example:

“I think probably more often than not...there’s a sense of ownership, I think, to a degree for the local people, even if it is just owning the view.”

Syd6

One variation on a general desire to care for the environment concerned expunging a sense of guilt and wanting to do something to make oneself feel better:

“I think it is a feeling of guilt...and a feeling of being able to do a quick fix...If they can get rid of their guilt by doing something simple, great.”

Syd2

Modes of Volunteering

In both sets of interviews there was a spread of core purposes across the proposed modes, including activism, education, monitoring, restoration and sustainability. Each mode was listed as a main purpose by at least one group. Eleven of the groups listed more than mode that was applicable to them (Table 3).

TABLE 3 ABOUT HERE

As the most frequently encountered mode of environmental volunteering, education was in some cases concerned with the specific topic of interest (such as information about a particular species, practice or habitat) and in other cases strongly related to another main mode of volunteering identified by the interviewees.

For example, some participants described educating for a political outcome (activism):

“... it is community education....people are more savvy now about western Sydney’s environment than they probably were ten years ago or at least five or six years ago... there was activism there.” Syd 1

Other modes of education included providing information on effective ways to remove weeds (relating to restoration), providing practical advice towards reducing waste (relating to sustainable living), or sharing the insights from monitoring exercises.

“We’re... involved with monitoring and, as far as we can, with education and restoration...by education I include... getting people into the appreciation and enjoyment...” BC 2

Interviewees also described a number of different education mediums they engaged with including websites, written articles, brochures, as well as formal seminars and courses. Targeted groups for educational activities included fellow volunteers, society members, school groups, retirees, local residents and other members of the general public.

When asked if any major roles were missing from the proposed set of modes, representatives of three groups, all from the Bass Coast, named social interaction as a further purpose or role of their group. Amongst the Sydney groups, one added that providing training for young people was also a key role of their organisation

Outcomes for Volunteers

Volunteers described a range of social outcomes, in particular meeting people and a sense of engaging with urban environmental challenges in a meaningful way. Participants described perceived environmental outcomes focussing on reducing weeds and re-vegetating creek lines as well as general rubbish removal. They also described political outcomes, most notably as preventing or reducing the impact of residential development as well as influencing the type of development that occurred. Some participants emphasised specific, local change, such as a removal of weeds from an area of native vegetation. Others described a general sense of raising awareness of environmental issues or contributing towards installing infrastructure and amenities which helped to preserve areas whilst allowed appreciation of them, such as raised walkways.

The Sydney groups tended to emphasise social outcomes before environmental outcomes, particularly about raising awareness of the issues the organisation was interested in, or building the membership base of the society, and generating a feeling that their efforts had made a difference. One group in particular emphasised that just keeping the doors open and providing access to people off the street was an important achievement. Another emphasised that the key achievement is doing the ecological restoration work that 'would never get done' by the private sector or government agencies.

Ten of the twelve groups interviewed (five from each location) believed that volunteering led to learning. Overall volunteers learned about themselves, their communities and their environment. This included learning technical knowledge and skills (eg for animals, plants and bush restoration); social skills such as community

engagement, effective activism, media engagement; and sustainable living skills such as energy efficiency in the home.

With the exception of one group in Sydney, all groups believed that volunteering led to stronger friendships. Overall, most people emphasised positive change, personal satisfaction and focus in their lives as a result of volunteering. One participant suggested that volunteering activity had negatively affected personal relationship. A minority of participants also noted concerns about the abuse of volunteers due to increasing reliance on volunteer labour:

“They are handing it more and more to us.... ask more and more. But it’s a fine line ...of how far do you push it before the volunteers feel like they are being used... and the morale of the volunteers goes downhill...it’s a very, very fine line.” BC1

DISCUSSION AND QUESTIONS FOR FURTHER RESEARCH

The pilot case studies essentially confirmed the classifications developed from the literature review with some important qualifications. It is important to emphasise that the pilot case studies were not designed as a rigorous ‘test’ of the classifications so much as an initial exploration. We set out to locate groups that on prima facie evidence mirrored the modes in two locations and found that this was readily achievable. Considering the categories of motivations, the pilot case studies suggest that helping a cause is generally applicable, as it is with volunteering in other sectors. Social interaction was strongly supported in the Bass Coast but not Sydney. Interestingly, improving skills and learning about the environment were present but not widely applicable, suggesting a need for further research to explore these as possible difference between environmental volunteering and volunteering in

other sectors. A general attachment to environment was by far the most powerful motivator for environmental volunteering in this study. Attachment to a specific environment was more common amongst the peri-urban Bass Coast groups than the highly urban Sydney groups. An issue for further research would be to explore in greater detail the extent to which attachment to specific environments varies according to urban and rural differences.

Given that we purposefully selected groups for the pilot study based on our set of modes of volunteering, it is not surprising that all the groups fitted readily into this framework. However even this led to some interesting findings. First, eleven of the twelve groups fitted into more than one mode of environmental volunteering. Second, all but one of the groups included education as one of their modes of volunteering. Further research would be required to determine if this is an anomaly of sampling or if there is something different about education as a key mode of environmental volunteering in general. One of the Sydney groups added that skills development (for volunteers) was a central activity of their organisation, suggesting that this mode could be expanded to include volunteer training as well as community education. Some further consideration is required of the sustainable living mode of volunteering. Our research suggests this is an emerging area and that the volunteers have a younger demographic profile. Finally, an important task for further research is to explore the framework with a larger sample to see how useful it is for environmental volunteering in general.

As discussed in the Introduction, several authors are concerned about government agencies relying too heavily on volunteer labour (Savan et al., 2003; Hunsburger et al., 2005). This concern was shared by some of the participants in this study, particularly amongst volunteer organisers who were concerned the 'fine

line' between supporting and abusing volunteers. However the pilot study demonstrated that the positive outcomes for individuals were stronger than negatives. Participants described a sense of self empowerment, developing social cohesion and developing a sense of making a difference. We suggest that a clearer representation of volunteer motivations can assist organisers manage this 'fine line' by better understanding the volunteers themselves.

Only a minority of individuals described measurable ecological impacts, in terms of area of restored landscape. Moreover, some groups raised concerns about the potential for unintended negative ecological impacts of their efforts. An important area for further research would be to more systematically measure the impacts of environmental volunteering from an ecological point of view. We encourage volunteers in environmental restoration activities, and those who coordinate them, to think carefully about what is realistically able to be restored, in terms of ecosystem function or species composition, for the former may be more viable than the latter.

Above all, we emphasise the relevance of considering volunteer motivations in the design of environmental programs and to be aware of outcomes for volunteers themselves (Evans et al., 2005). As one of our participants suggested, volunteering comes from a 'personal place' and an interest in desire to share knowledge and experience. In this context, an important example is represented in the Earthwatch program which fosters learning amongst and between researchers and volunteers. This approach helps to make the monitoring process more fulfilling for volunteers which can in turn encourage people to engage in future environmental volunteering programs (Gilmour and Saunders, 1995).

CONCLUSIONS

Volunteers play an important role in natural resource management and are likely to do so into the future. Volunteering forms an important part of civil society and plays a crucial role in natural resource management. Much of the literature discussed in this paper has focussed on defining tasks suitable to volunteers – eg. providing labour in monitoring programs or similar. However, environmental managers should recognise that labour alone is unlikely to match with volunteer motivations, and this could be one factor in explaining the phenomenon of burnout. The literature reviewed in this paper clearly demonstrates the importance of volunteering activity to promoting social capital and developing understanding amongst volunteers in their chosen fields of activity. We conclude that there are five principle modes of environmental volunteering – activism, education, monitoring, restoration, and sustainable living. The pilot study data suggest that, at least in urban and peri-urban areas, self education is relatively less important as a motivation for environmental volunteering compared to other sectors. By contrast, community education seems to be a major focus of environmental volunteer groups.

Due to increasing reliance on volunteers to carry out tasks such as monitoring and restoration, there is some concern over the fine line between supporting and abusing volunteers. We argue that environmental programs which allow volunteers to pursue their interests, increase social contact and feel like they are making a difference, are more likely to be successful in the long term. An important question for further research is to compare environmental volunteering in urban and rural locations.

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REFERENCES

- Abrahams, H. (2005) Devolution enhances integration. *Australasian Journal of Environmental Management* **12**(sup): 57-61.
- ABS [Australian Bureau of Statistics] (2001) *Voluntary Work, 2000 Cat. no. 4441.0*. Commonwealth of Australia, Canberra.
- Bell, M. (1999) Volunteering: underpinning social action in civil society for the new millennium. In *Civil society at the millennium*. M. Akuhata-Brown and CIVICUS (Association) (eds.). Connecticut: Kumarian Press, West Hartford, 27-41.
- Byron, I. and Curtis, A. (2002) Maintaining volunteer commitment to local watershed initiatives. *Environmental Management* **30**(1): 59-67.
- Caldwell, P. (2001) Emus and bulldozers: St Mary's ADI site. *National Parks Journal* **45**(3): 5-7.
- Carr, A. (2004) Why do we all need community science? *Society and Natural Resources* **17**(9): 841-49.
- Carr, A. (2002) *Grass Roots and Green Tape: principles and practices of environmental stewardship*. Leichhardt, NSW: Federation Press.
- Churchman, A. (1987) Can resident participation in neighbourhood rehabilitation programs succeed? In *Neighborhood and Community Environments*. I. Altman and A. Wandersman (eds.). New York: Plenum Press, 113-162.
- Cordingley, S. (2000) The definition and principles of volunteering. In *Volunteers and Volunteering*. J. Warburton and M. Oppenheimer (eds.). Leichardt, NSW: Federation Press, 73-82.

- Costello, L. and Dunn, K. (1994) Resident action groups in Sydney: People power or rat-bags? *Australian Geographer* **25**: 61-76.
- Earth Restoration Service (2006) *Home page*, available online at: <http://www.earthrestorationservice.org> (accessed 14 March 2006).
- Earthwatch (2006) *Home page*, available online at: <http://www.earthwatch.org/> (accessed 14 March 2006).
- Evans, C., Abrams, E., Reitsma, R., Roux, K., Salmonsens, L., and Marra, P. (2005) The neighborhood nestwatch program: participant outcomes of a citizen-science ecological research project. *Conservation Biology* **19**: 589-594.
- Fien, J. and Skoien, P. (2002) "I'm learning ... how you go about stirring things up in a consultative manner": social capital and action competence in two community catchment groups. *Local Environment* **7**(3): 269-282.
- Fore, L.S., Paulsen, K., and O'Laughlin, K. (2001) Assessing the performance of volunteers in monitoring streams. *Freshwater Biology* **46**: 109-123.
- Foster-Smith, J. and Evans, S.M. (2003) The value of marine ecological data collected by volunteers. *Biological Conservation* **113**(2): 199-213.
- Friends of Lane Cove National Park *Homepage*, available at: <http://users.bigpond.net.au/folcnp/> (accessed 14 March 2006).
- Friends of the Australian National Botanic Gardens (2006) *Homepage*, available online at: <http://www.cpbr.gov.au/friends/> (accessed 14 March 2006).
- Gill, N. (2005) Slag, steel and swamp: perceptions of restoration of an urban coastal saltmarsh, *Ecological Management and Restoration* **6**(2): 85-93.
- Gilmour, J. and Saunders, D.A. (1995) Earthwatch: an international network in support of research on nature conservation. In *Nature Conservation 4: The Role of Networks*. D.A. Saunders, J.L. Craig and E.M. Matisse (eds.). Sydney: Surrey Beatty and Sons 627-33.
- Gooch, M. (2005) Voices of the volunteers: an exploration of the experiences of catchment volunteers in coastal Queensland, Australia. *Local Environment* **10**(1): 5-19.
- Gooch, M. (2003) A sense of place: ecological identity as a driver for catchment volunteering. *Australian Journal of Volunteering*, **8**(2): 23-32.
- Gouveia, C., Fonseca, A., Cãmara, A. and Ferreira, F. (2004) Promoting the use of environmental data collected by concerned citizens through information and communication technologies. *Journal of Environmental Management* **71**(2): 135-54.
- Harvey, N., Clarke, B.D. and Carvalho, P. (2001) The role of the Australian Coastcare Program in community-based coastal management: a case study from South Australia. *Ocean and Coastal Management* **44**(3-4): 161-181.
- Hobson, K. (2006a) Enacting environmental justice in Singapore: performative Justice and the green volunteer network. *Geoforum* **37**(5): 671-81.
- Hobson, K. (2006b) Environmental psychology and the geographies of ethical and sustainable consumption: aligning, triangulating, challenging? *Area*, **38**(3): 292-300.

- Hunsberger, C.A., Gibson, R.B. and Wismer, S.K. (2005) Citizen involvement in sustainability-centred environmental assessment follow-up. *Environmental Impact Assessment Review* **25**(6): 609-27.
- Hwang, M., Grabb, E. and Curtis, J. (2005) Why get involved? Reasons for voluntary-association activity among Americans and Canadians. *Nonprofit and Voluntary Sector Quarterly* **34**(3): 387-403.
- Jacoby, C., Manning, C., Fritz, S. and Rose, L. (1997) Three recent initiatives for monitoring of Australian coasts by the community. *Ocean and Coastal Management* **36**(1-3): 205-226.
- Lunney, D., O'Neil, L., Mathews, A. and Coburn, D. (2000) Contribution of community knowledge of vertebrate fauna to management and planning. *Ecological Management and Restoration*, **1**(3): 175-84.
- Marris, E. (2006) In the name of nature. *Nature* **443**(5): 498-501.
- McPherson, J.M. and Rotolo, T. (1996) Testing a dynamic model of social composition: diversity and change in voluntary groups. *American Sociological Review*, **61**(2): 179-202.
- Measham T.G. (2006) Learning about environments: the significance of primal landscapes. *Environmental Management* **38**(3): 426-434.
- Measham T.G. (2007) Building capacity for environmental management: local knowledge and rehabilitation on the Gippsland Red Gum Plains. *Australian Geographer* **38**(2) [in press].
- Menchik, P.L. and Weisbrod, B.A. (1987) Volunteer labor supply. *Journal of Public Economics* **32**(2): 159-183.
- Mirowsky J. and Ross C. (1989) *Social Causes of Psychological Distress*. New York: Aldine de Gruyter.
- Newman, C., Buesching, C.D. and Macdonald, D.W. (2003) Validating mammal monitoring methods and assessing the performance of volunteers in wildlife conservation- "Sed Quis Custodiet Ipsos Custodies?" *Biological Conservation* **113**: 189-197.
- Noble, J. (1991) *Volunteering: a current perspective*. Adelaide: Volunteer Centre of South Australia.
- Pattengill-Semmens, C.V. and Semmens, B.X. (2003) Conservation and management applications of the Reef Volunteer Fish Monitoring Program. *Environmental Monitoring and Assessment* **81**(1-3): 43-50.
- Penner, L.A. (2004) Volunteerism and social problems: making things better or worse? *Journal of Social Issues* **60**(3): 645-666.
- Rehberg, W. (2005) Altruistic individualists: motivations for international volunteering among young adults in Switzerland. *Voluntas: International Journal of Voluntary and Nonprofit Organizations* **16**(2): 109-122.
- Reidy, M., Chevalier, W. and McDonald, T. (2005) Lane Cove National Park Bushcare volunteers: taking stock, 10 years on. *Ecological Management and Restoration* **6**(2): 94-104.

- Ryan, R.L., Kaplan, R. and Grese, R.E. (2001) Predicting volunteer commitment in environmental stewardship programmes. *Journal of Environmental Planning and Management* **44**(5): 629-648.
- Savan, B., Morgan, A.J. and Gore, C. (2003) Volunteer environmental monitoring and the role of the universities: the case of citizens environment watch. *Environmental Management* **31**(5): 561-68.
- Snyder, M., Omoto, A. and Crain, A.L. (1999) Punished for their good deeds. *American Behavioral Scientist* **42**(7): 1171-1188.
- Sustainable Living Foundation (2006) *Homepage*, available at <http://www.slf.org.au/> (accessed 5 January 2007).
- Verba S., Schlozman, K. and Brady H. (1995) *Voice and equality: civic volunteerism in American politics*. Cambridge: Harvard University Press.
- Volunteers for Environment and Education Program, Nepal (2006) *Homepage*, available at <http://www.veepnepal.org.np/> (accessed 6 March 2006).
- Warburton, J. and Oppenheimer, M. (2000) *Volunteers and Volunteering*, Leichardt, NSW: Federation Press.
- Watershed (2006) *Homepage*, available at <http://www.marrickville.nsw.gov.au/csc/environment/watershed/about.htm> (accessed 15 December 2006).
- Wearing, S. (2001) *Volunteer tourism: experiences that make a difference*. Wallingford, UK: CABI Publishing.
- Whiteley, P. (2004) *A Health Check for British Democracy: What do we know about participation and its effects in Britain?* UK: ESRC.
- Wilson, J. (2000) Volunteering. *Annual Review of Sociology* **26**(1): 215-240.
- Wilson, J. and Musick, M.A. (1999) Attachment to volunteering. *Sociological Forum* **14**(2): 243-272.
- Zappalà, G. (2000) *How many people volunteer in Australia and why do they do it? Research and Advocacy Briefing Paper No. 4*. Sydney: The Smith Family.

Table 1. Modes of environmental volunteering

Modes of volunteering	Description	International Examples	Australian Examples
Activism	<p>Politically motivated environmental campaigning</p> <p>Includes titles like save the..."</p>	<p>Greenpeace</p> <p>Organises major campaigns on issues such as global warming, biodiversity loss</p>	<p>"Save the St Marys ADI site"</p> <p>Lobbies against urban development at a former Defence site due on the edge of Sydney due to its ecological value</p>
Education	<p>Sharing information about particular species or environments, raising awareness of environmental issues</p>	<p>Volunteers for Environment and Education Program, Nepal</p> <p>Provides environmental training to remote communities</p>	<p>Friends of the Australian National Botanic Gardens, ACT</p> <p>Provides botanical information and organises community education events at the National Botanic Gardens, ACT</p>
Monitoring	<p>Monitoring of plant and animal species and communities</p>	<p>EarthWatch</p> <p>Organises large scale monitoring of species around the world including longitudinal studies</p>	<p>Westernport Bird Observers Club (Vic)</p> <p>Monitors bird populations on the Bass Coast, Australia</p>
Restoration	<p>Ecological rehabilitation and restoration projects in degraded habitats, installation of infrastructure to reduce visitor impacts</p>	<p>Earth Restoration Service</p> <p>Organises rehabilitation projects throughout the world</p>	<p>Corinella Foreshore Committee of Management.</p> <p>Weed control, revegetation and path maintenance at Corinella Foreshore, Victoria</p>
Sustainable Living	<p>Implementing sustainability in everyday life through design projects, and distribution of technologies to reduce resource consumption and promote re-use and recycling</p>	<p>Sustainable Living Foundation</p> <p>Organises large-scale behavioural change projects</p>	<p>The Watershed</p> <p>Promotes energy efficiency and waste reduction in inner Sydney, Distributes recycling bins and composting systems</p>

Table 2. Principal motivations for different volunteer groups

	Bass Coast (n=6)	Sydney Metropolitan (n=6)
Helping a cause	5	4
Social interaction	5	1
Improving skills	0	1
Learning about environment	0	2
General desire to care for the environment	6	6
Desire to care for a particular place	6	3

Table 3. Modes of environmental volunteering by interview group

Group	Activism	Education	Monitoring	Restoration	Sustainable Living
BC 1				√	√
BC 2		√	√		
BC 3		√		√	
BC 4		√			√
BC 5		√		√	√
BC 6	√	√			
Syd 1	√	√			
Syd 2		√			
Syd 3		√	√		
Syd 4		√			√
Syd 5		√		√	
Syd 6		√		√	
Total	2	11	2	5	4