

# Assessing Environmental Stewardship Motivation

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### Abstract

Environmental stewardship networks flourish across Australia. While the environment benefits, this paper looks to identify what volunteers draw from their stewardship. We adapted 16 questions that purportedly tap environmental stewardship motivation and administered them to a convenience sample of 318 university students, and then to 88 people living in rural Australia who were either active members of environmental groups or voiced concern about local environmental issues. Our results suggest that the measure consisting of these questions demonstrates acceptable internal consistency. Factor analyses support three relatively independent aspects of environmental stewardship motivation: developing a sense of belonging, care-taking the environment and expanding personal learning. Scores on the scale were not strongly correlated with well-being, suggesting that the scale measures more than general feelings of positive affect. Discussion focuses on the benefits of being able to reliably assess environmental stewardship motivation and areas for further development of the scale.

## Introduction

In many countries volunteers of all ages engage to address environmental issues either directly or indirectly, such as riparian restoration, fund raising, political activism, natural resource monitoring, community outreach and education. Such engagement has become the lifeblood of the environmental movement and has the potential to preserve, build and restore significant environmental and civic capacity of local communities (Overdevest, Orr & Stepenuck, 2004). However, while full of promise and opportunity, maintaining dynamic volunteer partnerships with environmental professionals is not without challenges as Westphal and Childs (1994) noted amongst several successful urban forestry projects in the US. Also while there tends to be considerable concern about the state of the environment, this does not translate proportionally into actual time and effort in behaviours that address these issues (Seguin, Pelletier & Hunsley, 1998). So what motivates volunteers to unselfishly contribute so much of their time and effort? This paper seeks to evaluate the psychometric properties of a set of questions compiled by Ryan, Kaplan and Grese (2001) to assess environmental stewardship motivation with the view to adapt and improve their composition for a new measure. To better understand the particular motives of volunteers in the environmental area, it is useful to review the substantial literature on volunteerism in general.

## Volunteer Motivation

This body of research is generally founded on traditional theories of motivation such as human needs (Maslow, 1970), drives (Miller, 1951), values (Stern, Dietz & Guagnano, 1995) and goal achievement motivation, both cognitive and emotional (Ford, 1992). The underlying theoretical dimensions described in these

early works have served as a springboard for the more recent motivational research into volunteerism. For example, similar motives are found in the four dimensions of altruism, social contact, personal interest and emotional need proposed by Yeung (2001) to encompass much of the previous motivational research amongst social service volunteers. Similarly consistent are the motives of egoism, altruism, collectivism and principlism described by Batson, Ahmad and Tsang (2002).

One of the most comprehensive models of volunteer motivation is the octagonal model recently derived by Yeung (2004) from their extensive phenomenological data. The octagon is made up of four dimensions; getting-giving, continuity-newness, distance-proximity and thought-action. The getting-giving dimension emerged as the strongest of the elements and incorporates the egoism and altruism motives proposed earlier (Batson et al., 2002; Yeung, 2001). The continuity-newness dimension deals with the same self-development, personal interest and learning motives previously proposed by Yeung (2001) and Clary et al. (1998). The distance-proximity dimension incorporates the social, making friends dimension previously noted by Yeung (2001) and Clary et al. (1998) and finally the thought-action dimension includes values, spiritual growth and principles previously noted by Batson et al. (2002) and Clary et al. (1998). Such dimensions are generally believed to hold true for volunteers across a wide range of settings.

#### Environmental stewardship

The motives of volunteers involved specifically in environmental projects, however, are thought to differ somewhat from general volunteers in that the product of their labours is usually so visible and involves learning. For example, evidence of the restored environment has often been noted to be important and seeing direct and

worthwhile outcome for effort and learning new ecological facts attracted volunteers in a study by Grese, Kaplan, Ryan, and Buxton (2000).

Interest in a values based understanding of environmental volunteerism was stimulated by theoretical advances in the understanding of human values and attitudes (see Schultz, 2001; Stern & Dietz, 1994). Three attitudes or values associated with environmental stewardship emerged from the work of Schultz- egoistic, altruistic and biospheric. The egoistic motives included my health, my future, and my lifestyle; the altruistic referred to community belonging, being with people and children; and the biosphere to stewardship of plants, animals and birds. These findings are clearly consistent with the dimensions of the environmental motivation research already described.

Given that the number of grassroots volunteer groups dedicated to ecological preservation and restoration continues to multiply, their motives both to commit to and maintain their input are vitally important research matters. This is of particular importance as organisations are increasingly required to submit evidence of their human capacity and sustainability to administer government grants to support long term programs. Thus, the development of models and theories of environmental stewardship motivation needs to be followed up with related assessment tools that are psychometrically sound and “user-friendly”.

#### Assessment of environmental stewardship motivation

In the 1970s and 1980s researchers in this field focused, often with minimal theoretical foundation, on scales designed to quantify environmental concern (Weigel & Weigel, 1978). However, measuring motives that drive environmental action is clearly more conceptually complex, and in an innovative study Ryan, Kaplan and Grese (2001) derived 16 questions from the literature and their earlier research data to

describe what motivates longevity in volunteerism. Long-term volunteers involved in environmental stewardship programs from three US states rated themselves on these questions and their responses factored into five dimensions; helping the environment, learning more about their physical surroundings, connecting socially, experiencing opportunities for personal reflection, and being part of a well-organised project team and organisation. The first factor, helping the environment, refers to the tangible improvements in the local environment that are a direct result of the volunteer work; learning refers to what the volunteers learn about the natural environment as a result of their activities; social connection incorporates the host of interpersonal benefits of meeting and interacting with like-minded people; personal reflection refers to the peaceful meditative experiences volunteers associated with natural environments; and finally project organisation includes the appeal and satisfaction of working in a well organised program (shown to be particularly important to long-term volunteers by Knoke, (1981). We proposed that some of these dimensions and the related questions would form a conceptual foundation for an environmental stewardship motivation scale with direct relevance to prospective, new and continuing volunteers. All of these dimensions refer to behavioural factors or experiences, all of which can be directly afforded by a volunteer program, as compared with attitudinal factors which are more difficult to influence and observe.

This article describes our efforts to develop a scale to identify motivation to engage in environmental stewardship from a “doing” perspective. The items in the scale include the motives derived and described by Ryan with the exception of the project organisation questions which are of less relevance to new volunteers and those thinking about engaging. The authors intend that the publication of a standardised scale of volunteer motivation will facilitate the identification and retention of

volunteers in natural environment projects, and assist in program evaluation studies that include participant factors.

## Method

### Participants

Two groups of participants were recruited for this study, a group of undergraduate university students (n=318) to facilitate psychometric analysis of the scale and a group of rural adults (n=88) who were either members of environmental groups or interested enough in ecological restoration to volunteer to participate.

The students were first year undergraduate students who completed the scales for course credit. The mean age of this group was approximately 19 years with 68% female.

The rural participants were recruited in three small country towns selected randomly from the list of towns with a population of less than 10,000 people within two hours drive of a city. The rural group were recruited through a number of strategies following identification of the three rural towns. One hundred surveys were distributed in each town at environmental volunteer group meetings and within central town locations (Post Office, bank, shops). The research assistant attended landcare meetings in each town, explained the purpose of the survey to members and invited them to take the survey home for self or family and friends to complete. A poster explaining the project was displayed at local shops and the surveys were openly available for community members to complete. The group consisted of 88 adults with an average age of approximately 43 years, with females comprising 61% of the sample. Participants reported that 45% had completed secondary school, 23% tertiary education and 24% had a trade or diploma. Of the sample, 38% were self-employed, 15% were students, 18% worked in industry and 7% for the government. The mean length of time living in their community was 17.4 years, ranging from 1-68 years. Twenty eight percent were born in the community in which they currently lived and

just over half (56%) lived on a rural property. When asked how many people in their community they knew by name half (50%) responded 'a few' and 44% 'almost everyone'. Forty eight percent reported liking their current community 'very much' and 33% 'a great deal'.

### *Materials*

The items compiled by Ryan et al. were adapted so as to be applicable to new or intending volunteers. Thirteen items were retained with minor adjustments to wording, 3 items were omitted because they dealt with efficiency of project organisation which was thought to be less of a concern for new or intending volunteers and 3 questions were added to strengthen the emphasis on each dimension. The resultant measure, entitled the Environmental Stewardship Motivation Scale (ESMQ), is a 16 item intention to volunteer scale where respondents rate their agreement with statements on a 5-point Likert Scale from 'completely disagree' to 'agree completely'.

The Comprehensive Quality of Life Scale (ComQol) (Cummins, 1997) was also administered to demonstrate that the ESMQ scores differed from ComQol and were not simply reflecting general feelings of well being. ComQol assesses well being within seven life domains: material well-being, health, productivity, intimacy, safety, community involvement, and emotional well-being and responses are scored on a 5-point Likert scale. ComQol has been shown to be internally consistent with Cummins repeatedly reporting satisfactory Cronbach's alpha coefficients amongst Australian samples.

### *Procedures*

The student group completed the scale on the web in their own time for course credit. All rural participants completed the scale in their own time and mailed it back in a reply paid envelope.

## Results

This project aimed to examine the psychometric properties of the newly developed ESMQ by identifying scale dimensions, assessing internal consistency and examining overlap with well being. Evidence for three reliable and distinct motivational dimensions is presented and ESMQ scores are shown to be relatively distinct from feelings of general well-being.

Responses to the 16 items by the convenience sample of university students were entered into a principal components analysis and inspection of communalities and correlation matrices for this sample indicated that the data were suitable for this analysis. This was confirmed by a KMO sampling adequacy of .83 and a significant Bartlett's test of sphericity.

Four factors with eigenvalues above 1 emerged from this analysis, accounting for 64% of the total item variance. The solution was subjected to a promax rotation. A three factor solution gave the best fit and items loading on each factor are shown in Table 1.

Insert Table 1 about here

Given the above item loadings, we labelled Factor 1 as Social Belonging, with an emphasis on sense of community and the social benefits of working together. Factor 2 was labelled Caring for the Environment encompassing themes of making an ecological contribution and a responsibility to leave something worthwhile for future generations. The final factor has been labelled Learning in regard to ecological facts and skill development.

The Social Belonging factor correlated with Environmental Caring .35 and Learning .11. Environmental Caring and Learning correlated .37.

Having established a reliable and interpretable factor structure for the ESMQ using a convenience sample, the responses of the group of adults living in rural towns or on farms were analysed. This stage of the project aimed to establish discriminant validity and some preliminary rural normative data for the scale.

Means, standard deviations and reliability coefficients for the rural sample are presented in Table 2. No significant gender effects were found.

Insert Table 2 about here

In order to investigate the sensitivity of the ESMQ, the means and standard deviation for members and non members of an environmental stewardship group or program in the rural sample were compared and presented in Table 3.

Insert Table 3 about here

Comparisons between the above means suggest that those rural people who are not involved in a voluntary natural resource management group report significantly lower scores on the environmental caring and learning dimensions of the ESMQ.

A well being scale (ComQol) was administered to gauge the degree to which volunteer motivations, as measured by the ESMQ, were merely reflections of general wellbeing or a trait-like positive affect. Pearson product moment correlations between responses to the two scales are presented in Table 4.

Insert Table 4 about here

The correlations in Table 4 suggest that there is little overlap between responses to these scales and that the ESMQ is tapping a more specific construct than general well being.

## Discussion

Through the commitment and toil of volunteers, ecological projects continue to protect and restore vulnerable environments. The crucial issue of what benefits volunteers perceive for their labour was explored by Ryan et al. (2001). Based on their work, this study presents a reliable and valid self-report measure of environmental stewardship motivation with a three factor construction. Preliminary normative data for the scale are also presented for a small group of rural Australians.

The three dimensions that emerged from the ESMQ, social belonging, helping the environment, and learning have a strong foundation in the theoretical literature. For example, they parallel the tripartite classification of environmental concerns- self, other people and biosphere proposed by Schultz (2001) who empirically demonstrated that this three factor model was stable across a range of diverse samples from 10 countries. Three clusters of environmental value orientations were suggested by Stern, Dietz & Guagnano (1995)- egoistic, altruistic and biospheric that similarly mirror the dimensions of the ESMQ. Three of the four ESMQ dimensions match those of Yeung's (2004) octagonal model. In summary, the three dimensions of environmental stewardship motivation as measured by the ESMQ are well supported within the environmental volunteer literature.

The first and strongest dimension of the ESMQ, social belonging, involves spending time with like-minded friends and having fun. The life of rural folk can often be relatively isolated without the range of social facilities available to urban residents so it is not surprising that the social belonging aspects of volunteering are strong. Social benefits were considered by to be critical to volunteer motivation by Donald (1997) although Ryan et al. (2001) found it to be less important than the other motives in the early stages of volunteering and more important to highly committed

longer term volunteers. This dimension readily incorporates other important social motives of volunteers such as building intergenerational ties within a community as noted by Austin (2002) and reflects a growing recognition that people are an important part of ecosystems (Schroeder, 2000).

The environmental biospheric factor that emerged in this study is a subset of a long recognised motivation of volunteers- to do something worthwhile (Cnaan & Goldberg-Glen, 1991). For example, helping the environment was found to be a strong motivation for forestry volunteers (Still & Gerhold, 1997) and the preventing the destruction of natural habitats for animals and birds was identified as the motive for volunteering by Grese et al. (2000). Making a difference, sense of loss and attachment toward nature are closely related themes noted by Schroeder (2000) in his review of restoration newsletters in Illinois. A wide range of research suggests the motive of leaving something worthwhile for future generations is a particularly important focus of this dimension that may merit a direct question within this scale.

The learning factor that emerged in the current study deals with expanding ecological knowledge. Individual volunteers clearly value learning more about their surroundings and the ecology and biology of everything living in it and evidence of this motivation lies in the widespread popularity of information nights on ecological topics and nature walks. Learning and sharing knowledge were subthemes of a 'personal rewards' theme found by Schroeder (2000).

One volunteer motivation that did not emerge from the analysis of the ESMQ deals with values and spiritual growth associated with the experiences of peace, reflection and meditation when in environments that connect a person to nature. Ryan et al. (2001) found this to be an important motive in environmental stewardship as did Schroeder (2000) and Schultz (2001) and more recently Dutcher, Finley, Luloff and

Johnson (2007) and Walker and Ryan (2008). However our findings here are consistent with studies that have questioned a strong association between connection to nature and pro- environmental behaviour (see Gosling & Williams, in press). Four items on the ESMQ (items 12-15) deal with values but in a rather general manner not specific enough to directly tap sense of place dimensions and nature connectivity. A consideration is that the participants in the student sample in this project may not, on average, have been at a stage where they were aware of their spiritual connections to the environment. Yeung (2004) presents persuasive data that motives for volunteer work change over time and it may be that first-year students have different priorities. Future research could profitably explore revisions to the wording of these items to ensure they refer more specifically to nature connectivity and a 'spiritual' sense of attachment, and reflect dimensions of sense of place (Scannell & Gifford, 2010). While such inclusion would refer to affective and attitudinal dimensions rather than the behaviour focus we have taken here, it would further develop and more comprehensively reflect the closely related themes and philosophical questions presented in Schroeder's review of restoration newsletters.

A final concern within the current study was the absence of scale items referring to organisational efficiency of environmental groups. This issue was found to be important to long-term volunteers by Ryan et al. (2001) and our assumption that it would not be a concern for new or intending volunteers requires further investigation.

In summary, this paper has presented a reliable measure of environmental volunteer motivation with behavioural dimensions that mirror much of the previous research into volunteerism. The value of the scale lies in its sensitivity to more specific behaviours which can be afforded by volunteer organisations, than general

feelings of well being which are less under the influence of volunteer groups. The validity of the specific components of the scale as relevant to stewardship is evident in the fact that active environmental volunteers score significantly higher than non members on two of the three dimensions. This scale could thus be a useful means of identifying potential volunteers, and indicating those behaviours and experiences that the volunteer organisation needs to afford its members to retain their engagement through linking people with projects that provide action-oriented, social and learning experiences.

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Table 1: Item loadings for student sample N=318

Item	F 1	F 2	F 3
8 See familiar faces	.84		
9 Meet new people	.81		
7 Work with a team of people	.79		
10 Have fun	.73		
6 Feel needed	.56		
11 Do something physical	.56		
13 Make a difference		.78	
2 Help restore natural areas		.72	
14 Family future		.65	
12 Feel peace of mind		.57	
15 Help others do something important		.56	
1 See improvements from my work		.56	
16 Meet landcare responsibilities		.53	
4 Learn about plants/animals			.83
5 Learn about my surroundings			.80
3 Learn from nature			.78

Table 2 Mean Scores on the Environmental Stewardship Motivation Scale

	Rural Group (n=85)	
	Mean (SD)	Cronbach Alpha
ESMQ total	59.1(7.9)	.85
Social belonging	21.1(4.0)	.78
Environmental caring	26.7(4.0)	.77
Learning	11.3(2.3)	.88

Table 3: Mean Scores on ESMQ for Members and Non-members

	Members (n=42)	Non members (n=40)	Significance of
	Mean (SD)	Mean (SD)	Difference
ESMQ total	63.6(8.3)	61.6(8.4)	NS
Social belonging	20.9(5.6)	21.9(5.0)	NS
Environmental caring	29.6(3.7)	27.7(3.7)	t(80)=-2.4, p<.02
Learning	13.0(2.0)	11.5(1.9)	t(82)=-3.4, p<.001

Table 4 Correlations between scores on ESMQ and ComQol factors (N=87)

	QOL total	Material well-b	Health	Learning	Relations	Safety	Cmty Involv	Emotion well-b
ESMQ	.28	.14	.15	.18	.13	.22	.38	.29
Social	.21	.01	.24	.11	.12	.11	.22	.21
Caring	.12	.11	-.05	.08	.01	.05	.25	.18
Learning	.21	.07	.19	.17	.08	.19	.22	.11