

Sense of Place — A Tool to Assist the Meaningful Engagement of Communities in Protected Area Management

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Abstract

This study used 'sense of place' as a research tool to help understand the relationship between a community and their local protected area, Brisbane Forest Park. To establish an indication of the community's relative degree of sense of place, we considered and measured both the strength (intensity) and orientation (focus) of sense of place. We developed a new method to measure sense of place that considers and measures the elements constituting sense of place, independent of one another, utilising qualitative data collected in in-depth semi-structured interviews.

Exploring both the strength and orientation of an individual's sense of place provides a way of exploring the desired nature of community involvement in the management of the Park. It was found that the stronger an individuals' sense of place, the greater their place dependence and commitment, and the greater their desire to be involved in management. Analysing the strength and orientation of sense of place illustrated that there is a high degree of diversity in how individuals perceive and feel about area, and their desire to be involved in management. The type of information obtained in this study is important and useful to the management agencies if they are to successfully engage the community in meaningful ways.

Keywords

Sense of place, measurement, community, protected area, Brisbane Forest Park

Introduction

Appropriate community engagement in protected area management requires an understanding of how community members experience the protected area as a place and the nature of their desired involvement. We hypothesise that the desired role in the management of a protected area will vary from person to person and will be, in part, a reflection of an individual's sense of place. We recognise that a variety of other factors, such as financial capacity, may influence the degree of engagement that is sought by individuals, but here we focus on the influence of sense of place on engagement. Sense of place is a way of describing the emotional relationship that an individual has with a particular area. It is a value-laden concept that encapsulates a person's feelings, perceptions, attitudes and behaviour towards a place (Shamai 1991).

Community participation in the management of their local protected area

A protected area is a component of the greater biophysical and social landscape, and should not be considered in isolation from its surroundings (Stolten and Dudley 1999). As a conservation measure and as a resource these areas have the potential to offer great benefits to local communities. They can contribute to the quality of life and the social and economic well being of local residents and other stakeholders. However the creation of protected areas often comes at great expense to local residents and community with few associated benefits (West and Brechin 1991; Wells et al. 1992; Ghimire and Pimbert 1997).

Protected areas are commonly public lands, however historically these areas have been separated from people, and the public has been given a minor role in their management. Policies and management strategies have been based on a protectionist mentality to safeguard these areas from misuse and degradation (Hales 1989). Management is subsequently defined and administered by an external body, with little power allocated to the local community. In Australia the government (usually the state-level) is the central control and management agency for the vast majority of protected areas, representing power of the outsider over the local community (Williams and Stewart 1998). This management approach can have negative implications including the loss of feelings of ownership and responsibility by local populations for the protected area (Borrini-Feyerabend 2002).

However, this situation is changing. Community participation in conservation has been a significant trend in nature conservation since the 1990s (Thackway 1997). This is reflected in the growing acknowledgement of the need to involve local communities in protected area management. It is no longer considered acceptable to declare and manage a protected area without community consultation and involvement. Effective conservation management should go beyond park perimeters and local communities should be involved within the park boundaries. Public participation is important on a number of different levels; as a management tool for accomplishing pre-determined management objectives, winning support and compliance for protected area policies, and reducing conflict between neighbours and management. It is also a way of facilitating the involvement of local people in their surrounding environment, increasing their ownership and connection to the area and decreasing the social cost of conservation to them (Orlove and Brush 1996).

In protected area planning and management the 'local community' is often considered as a homogenous entity. Consequently, it carries with it a weight of assumptions of collective geographic and social units with shared interests, needs and desires. Management regimes often use this simple interpretation and tend to overlook the individuals and groups that make up communities. It is generally implied that this 'community' exists in a coherent form, with a collective or shared interest and consensual decision-making process and that they want to be involved in the management of their local protected area

(Jeanrenaud 1999). In reality however, 'community', is a complex and loaded term (Worah 2002). Communities in all their diversity consist of individuals with plural interests and a diversity of perceptions, needs, values and desires. Community participation is important, but it can not be assumed that all members of a community will want to participate at the same level and intensity, or at all.

Sense of place

Sense of place is not simply a way of describing the way a person perceives a place. It is a value-laden, multidimensional concept, related to an individual's emotional and symbolic identification with a place (Stefanovic 1998). Sense of place is a mixture of conscious and subconscious feelings and perceptions. It is a rich concept that incorporates how people perceive, experience, express and give meaning to a place. An individual's sense of place will influence their attitudes and behaviour within that place (Shamai 1991). Sense of place is a concept that has been used in a variety of contexts, scales (from setting to landscape) and disciplines including humanistic geography (Tuan 1974; Relph 1976), psychology (Hay 1998a; Stefanovic 1998), architecture, and landscape and garden design (Pfeiffer 1999). Sociologists, anthropologists and cultural historians are also concerned with sense of place (Cuba and Hummon 1993).

Sense of place is a dynamic bond to a place that an individual develops as a result of: place attachment, place awareness, belonging, satisfaction, and commitment to a place (Shamai 1991; Kaltborn 1998). Place itself is difficult to define, as it is a dimensionless concept that incorporates the combined human and physical environment (Shamai 1991). Sense of place involves abstract distance between the self and the place that allows the place to be appreciated (Tuan 1980). A physical space (of any scale) by itself however will not create a sense of place; it develops through interactions between people and the place and between people themselves (Pretty et al. 2003). Sense of place occurs because people value their place for much more than purely functional and economic reasons.

The holistic, emotive, social and contextual quality of the concept has meant that it has remained ill-defined and elusive (Williams and Stewart 1998). Despite the lack of a strict definition, an individual or a group's sense of place can be researched and interpreted (Shamai 1991; Hay 1998b; Cantrill 1998). Examination of sense of place in particular localities has promoted a greater understanding of place by revealing meanings and feelings that influence attitudes and behaviour (Williams and Stewart 1998). This has encouraged recent advocacy of the incorporation of sense of place into natural resource management. Previous researchers have used the concept to investigate and develop a greater understanding of a community's relationship and commitment to a place (Shamai 1991; Hay 1998b; Kaltborn 1998).

We believe that developing an understanding of how a community perceives and feels about a place is important for effective and sustainable natural resource management. It is the community that ascribes meaning to a place; management can therefore have a detrimental effect on an area if it fails to consider local connections. Sense of place links individuals and a place, it fundamentally influences the way people behave and perceive natural resource policies (Williams and Stewart 1998, Cantrill 1998).

The intensity of sense of place

Sense of place occurs at various intensities depending on the individual, their history and experience within the place. No two people will have the same perceptions, values and feelings about a particular place in space and time (Norton and Hannon 1997). The intensity of an individual's sense of place will be reflected in the individual's attitudes and behaviour; it will be expressed in how they identify with that place, how strongly they are attached to it, their level of commitment, and their feelings of belonging to the place (Kaltenborn 1998). The stronger a person's sense of place, the deeper connection with the place they will feel.

Although the way a person senses a place is an individual expression of place, there are often shared meanings, beliefs, symbols, values, or feelings that individuals associate with particular locality (Williams and Stewart 1998). Therefore there will be shared attitudes and behaviour. It is the commonly felt elements of sense of place that often lead to the creation of groups. Shamai (1991) suggests that the level of a person's sense of place will affect their participation in place related activities.

Measuring sense of place

Sense of place can be investigated through empirical studies. Shamai (1991) developed a scale to measure an individual's sense of place. The augmentation of this approach by various researcher's (Cantrill 1998; Kaltenborn 1998; Hay 1998) has clarified the elements associated with the concept and aided the development of sense of place as a usable concept in practical and meaningful ways.

The level or phase of a person's sense of place is a reflection of a multitude of elements that are epitomised in their feelings, relationship and commitment to a place. Some authors (Shamai 1991; Kaltenborn 1998; Hay 1998b) propose that sense of place occurs on a continuum from weak to strong, depending on the strength and depth of an individual's sense of place. Shamai (1991) identified three phases in which sense of place occurs: belonging to a place; attachment to a place; and commitment to a place. He used these three phases in an ordinal sense of place scale to empirically measure the strength of an individual's sense of place. Each phase consists of different elements, which were defined and incorporated into a scale to empirically measure the strength of a sense of place.

This scale assumes that sense of place occurs on a progressional scale of strength, measured by use of a closed response survey approach format (i.e. are you connected to the place — no, agree, strongly agree etc.) (Shamai 1991). This research study adopts the position underlying Shmuel Shamai's 1991 empirical sense of place research, to reveal and rank sense of place intensity.

Shamai's (1991, pp. 349-50) Sense of Place Scale:

- 0 Not having any sense of place — it cannot be assumed that everyone has a sense of place
- 1 Knowledge of being located in a place — but do not feel connected
- 2 Belonging to a place – feeling of togetherness
- 3 Attachment to a place – emotional attachment, area considered special
- 4 Identifying with place goals — loyalty and allegiance with place
- 5 Involvement in a place – active role, investment of human resources
- 6 Sacrifice for a place — deepest commitment

This paper will outline a new methodological approach to examining and measuring sense of place. We developed a method to measure both the strength and the orientation of sense of place that considers and measures the elements that constitute sense of place, independent of one another, utilising in-depth qualitative data. Both strength and orientation are measured empirically and provide a way of describing commonalties within and between the identified groups. The results gathered in the orientation and the strength measurements are considered individually and then analysed together to see how orientation, considered here to be the driving force of sense of place, influences the intensity of sense of place.

Research approach

A mixed method case-study approach (qualitative and quantitative) was adopted for this research. Primary data were gathered through in-depth interviews with selected members of the case-study community. The Shamai sense of place scale is dependent upon closed surveys; however sense of place involves tacit feelings that may not consciously be recognised. Therefore we utilised in-depth interviews because they have the potential to provide a greater insight into the personal meaning and perspective participants hold and experience that is not accessible through closed surveys or other quantifiable methods.

The interview construction was developed based on previous sense of place research and literature (e.g. Shamai 1991; Cantrill 1998; Hay 1998b; Relph 1976);. Interview topics included: place attachment; place awareness; place connection; environmental perception; social perceptions; and, place organisation. Additional questions were asked in relation to management perceptions and actual and desired involvement (of social and environmental nature) in the area.

Content analysis of the transcribed interviews was the initial stage of analysis. Categories were based on those developed and described by previous researchers and theorists, and others were developed inductively as terms and concepts emerged from the data. From this process the themes related to the intensity and the orientation (focus) of sense of place were elicited and a scale for measuring these was devised.

Analysing sense of place on a quantitative scale may appear the antithesis of the nature of sense of place. The way a person senses their place can never be completely revealed and is highly subjective, especially as it is a dynamic state of being in time and space. However, by reducing sense of place to its main elements (recognised by previous research), it provides a way of understanding the multidimensional nature of the place (social and physical). It has the ability to reveal the richness of perceptions, the orientation of individual feelings towards an area, and collectively felt place meanings across individuals and groups.

Case study: Brisbane Forest Park

The study area was Brisbane Forest Park (BFP), a multi-tenured and multiple purpose protected area. The Park is bordered by an extensive community of diverse neighbours, ranging from urban residential blocks to semi-rural farms. BFP has a strong history of active community support; its formation in the early seventies was influenced by community pressure (Organ-Moore 1995).

Brisbane Forest Park Administration Authority (BFPAA) is the governing body of BFP. It is a state government body formed in the 1970s to plan, develop and manage nature-based recreational, educational and tourism services of public lands north-west of Brisbane. When it was established, the park was superimposed over 28,500 hectares of previously existing public land: national parks, state forests and council reserves.

BFP's formal volunteers program, 'Go Bush Volunteers', attracts a variety of participants from around Brisbane. This is a major component of the Park's management. Sense of place is not a concept limited to local residents, "It is not the possessors of meaning that are local, but the meanings themselves" (Williams and Stewart 1998, p. 19). In this study the Go Bush volunteers are considered a component of BFP's local community because of their high level of involvement in the area.

The BFP community is diverse in its needs and expectations. This case-study provided an opportunity to examine a diversity of community members and their perceptions and desires for involvement in management in relation to their sense of place. Within this case-study a sample group was selected and in-depth qualitative data-collection undertaken.

Participants

Three groups within BFP's community were purposefully selected for investigation. The first two groups, a Mountain group and a Valley group, were composed of local residents, the majority of whom share a boundary with BFP. The third group was composed of Go Bush volunteers who reside throughout Brisbane.

From these three groups, twenty-six people, purposefully selected, were interviewed over a six-week period. The age of the respondents ranged from twenty-eight to sixty-six years. Length of residency or time as a volunteer varied from one year to over sixty years (for residents). There was a large diversity of lifestyles and occupations; amongst the residents approximately half commuted daily to work, others worked from home, or relied on their property or the park for their living. The majority of respondents were married, and under half had dependent children. The sample is not statistically representative of the entire BFP community but external validity was not the primary objective. This sampling procedure was employed to obtain a rich diverse sample of people in relation to the nature and intensity of their interaction with BFP. This made it possible to examine sense of place, involvement and perception of management across a broad spectrum of respondents.

Measuring Sense of Place

Sense of place was considered and measured in two ways. The intensity or strength of sense of place was summarised into a criterion sheet and measured for each individual respondent. In addition the orientation or the focus of the individual's sense of place was also considered and measured. These two approaches provide for a richer insight into sense of place.

Measuring the intensity of an individual's sense of place

To capture the richness and depth of sense of place, a system was developed to summarise and measure each identified element of sense of place strength and provide an overall strength score for each respondent. The nature of our research and the broad ranging nature of our data meant that a scale such as Shamai's (1991) was not applicable. We felt that a more appropriate scale was one in which each sense of place element was weighted equally and no assumptions of progression implied.

The assessment table (see Table 1) was developed to reduce the interview information into the individual elements of sense of place that have been identified by previous researchers (Cantrill 1998; Hay 1998; Kaltenborn 1998; Shamai 1991). These are: belonging to place, place attachment, commitment and awareness. Shamai (1991) used these elements in his scale, but looked at them directly (i.e. are you connected to the place — no, agree, strongly agree, etc.). Our scoring draws on data from the whole interview not closed survey questions. We feel this provides a more accurate representation of an

individual's sense of place. In addition the scoring system we developed does not suggest or assume that sense of place occurs in a series of phases; instead it considers the elements as individual theme areas made up of a variety of attributes.

The elements of sense of place used in the scoring system were:

- **belonging** to the place is focussed mainly on social aspects, but not confined to them
- **place attachment**, the degree to which an individual is attached to a place encompasses the respondent's residential or volunteer stability (their preparedness to remain involved in the area), time spent in the protected area recreationally or socially, and the degree to which they consider the area special or unique
- **place commitment**, the feelings of responsibility and commitment to the maintenance of the greater area's social and ecological health (outside their own property or management headquarters)
- **place awareness**, an individual's awareness of the place was considered broadly; it was not confined to their knowledge of the places attributes and history, but incorporated their environmental perceptions and knowledge of the threats facing the area.

In this system each of these elements contributes equally to the intensity of an individual's sense of place. The attributes that make up the elements are specified in Table 1. They provide standardised parameters for measurement and enable a more accurate and comparable summary of each element.

Table 1. Scoring table for assessing the strength of sense of place

| Elements (in bold) and attributes | Strength | Reason | Score |
|---|----------|--------|----------------------------------|
| 1. Belonging | | | total/6 = score between 0 - 3 |
| General (general sense of belonging) | 0-3 | | |
| Friendship network | 0-3 | | |
| Member of community | 0-3 | | |
| Community involvement | 0-3 | | |
| Feelings of togetherness / common destiny | 0-3 | | |
| Community satisfaction | 0-3 | | |
| 2. Place attachment | | | Total/3 = score between 0-3 |
| Residential/volunteer stability | 0-3 | | |
| Time spent in area (recreation/social) | 0-3 | | |
| Area is special/ unique | 0-3 | | |
| 3. Place commitment | | | Total/3 = score |
| Involved | | | |

| | | | |
|---|-----|--|--------------------------------|
| Greater area — community | 0-3 | | between 0-3 |
| Greater area — BFPAA | 0-3 | | |
| Responsible — ecological health | 0-3 | | |
| 4. Awareness of place | | | Total/5 = score between 0-3 |
| Environmental perceptions | | | |
| Importance of natural environment | 0-3 | | |
| Positive perception | 0-3 | | |
| Concern for physical environment | 0-3 | | |
| Place knowledge | | | |
| Knowledge of place strength | 0-3 | | |
| Knowledge of place history | 0-3 | | |
| Total = belonging + attachment + commitment + awareness = sense of place (0-12) | | | |

For each respondent the attributes for each sense of place element were given a weighting: absent = 0; low = 1; medium = 2; and high = 3. Attributes were assigned a score based on emphasis, reference to the subject and direct responses. A total score for each element was then calculated out of three. The scores for each of the four elements are added to give a final score out of twelve, providing an indication of the strength of an individual's sense of place.

Data used for analysis were not question specific as the interviews were semi-structured and frequently did not follow the prepared question order, reflecting the nature of interview subject. The questioning method itself was indirect and did not always refer specifically to terms associated with sense of place as previous researchers have done. Responses had to be interpreted and then scored, rather than slotting the responses into strict categories. The subjective nature of this interpretation means that it is not appropriate to present a definitive criterion for each factor. Therefore the interviewee may have provided this response in reply to a direct question (do you have a friendship network) or it may have been part of a response to another question (i.e. when discussing the community).

For example, as part of belonging, the individuals friendship network was considered; responses for each score included:

- None (0):** 'No, it's not a social club'
- Low (1):** 'We've found it very difficult to make friends here, we know a few people but it's so hard'
- Medium (2):** 'Oh yes we've made quite a few friends'
- High (3):** 'Definitely, we're a really tight group up here'

To validate this process, responses and rationale for the rating such as direct quotes for each of the respondents were put into the table. This provided verification of the respondent's score and a reference point in which to double-check the scoring system.

Factors such as time, use of the area for income and type of knowledge (explicit or inherent) were not calculated as part of the scoring system. These factors, although they may contribute to an individual sense of place, assume a connection or relationship. The use of these in the scoring system we feel would have favoured long-term residents and therefore skewed the results.

It is important to note that no score is better or worse than another, a person who scores 11 does not have a 'better' sense of place than an individual who scores 4, it is just an indicator of how they 'sense' their place.

Measuring the orientation of sense of place

The orientation of an individual's sense of place can be considered the driving force of sense of place development. Sense of place orientation is something that has not, to our knowledge, been measured in sense of place research before. The actual orientation descriptors were established inductively after open coding had been conducted so that they would reflect this particular sample group and their relationship to the place in question.

Three orientation descriptors were developed; they include: the underlying theme of responses, place motivation, and place dependence, each calculated on a scale from zero to one. The way in which these were considered and assessed is described below:

- **Underlying Sense of Place Theme:** The underlying theme of each response was categorised according to whether it was of a predominately social or environmental nature. This scale was constructed by assessing each individual response to the interview questions and giving respondents one point for each time the answer was either socially or environmentally oriented. Questions requiring a direct environmental or social answer were excluded from this process as they would have skewed the results. A total score was calculated and reduced to a zero (being entirely environmental) to one (being entirely social) continuum. Therefore if a person scored greater than 0.5 their sense of place was more socially than environmentally oriented.
- **Place Motivation:** Place motivation refers to the reason the individual wants to stay or remain involved in the area, for the setting (any similar setting would meet their needs) or because of a felt commitment to the place (no other place would meet their needs). The scale ranged from place setting (0) to place commitment (1). To assess where the respondent fell on the scale their place involvement and intention to stay in the area was measured. Place involvement included a variety of involvement types, not just those that are directly connected to the protected areas management body (BFPAA).

The degree a person is involved with the area was calculated using four variables: community involvement (community groups, recreational groups); environmental involvement; personal property restoration and maintenance; community maintenance (e.g. Volunteer Fire Brigade); each was worth an equal rating of one. The score for intent and involvement were combined and reduced to a score between zero and one and placed on the place commitment to place setting continuum scale.

- **Place Dependence:** Place dependence was calculated along a continuum from independent of place (0) to dependent on place (1). This was measured by considering the respondent's place focus and the type of connection they have to the place. Place focus measured the concentration of the respondent's interests from locally focussed (i.e. own property or Park headquarters) to broadly focussed (person is concerned and involved with the greater area). Place focus was calculated using four elements each contributing equally to the final score. Place connection was used to indicate the depth of connection the respondent has to the area considering both social and economic dimensions. Clearly due to the nature of their involvement with BFP, Go Bush volunteers will not be able to be completely place dependent as they do not work in the area. This is not a bias as one end is not preferable or better than the other, it is merely a way of depicting the nature of the place-person relationship. Place focus and connection were combined and the total score placed on the continuum indicating the level of their dependence on BFP.

Results: The connection between sense of place strength and orientation

A hierarchical cluster analysis was conducted to assess the connection between the strength and orientation of sense of place. The cluster analysis used a Ward linkage strategy based on Euclidean distance between scores (Belbin 1995). It groups individual respondents according to strength of sense of place, and sense of place orientors: place dependence, place commitment and social orientation.

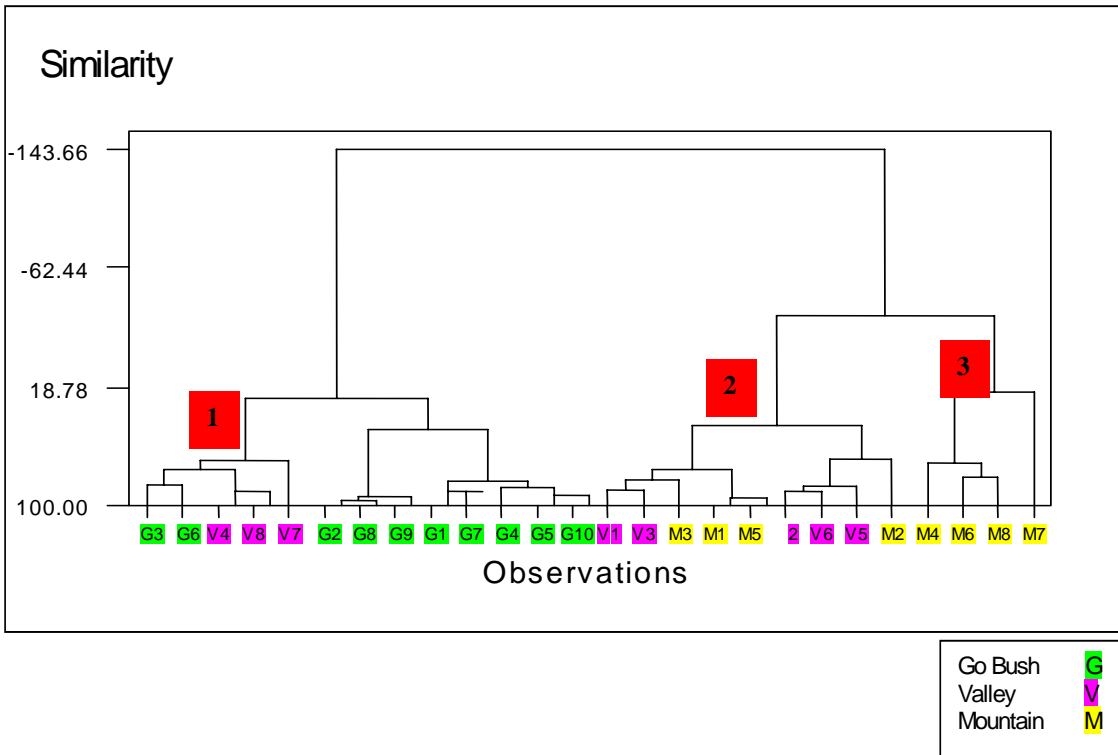


Figure 1. Hierarchical cluster analysis of observations: Strength and orientation

The cluster analysis shows the formation of three distinct groups. The volunteers all fall within Group 1 along with three Valley residents; Group 2 consists of Mountain and Valley residents; and the third grouping consists of only Mountain residents.

Group 1 comprises all the Go Bush volunteers and three Valley respondents. All members of this grouping are people who are socially and economically independent of the area. A medium strength of sense of place rating was expressed in this group, ranging between 4.67 and 7.9, the average score being 6.35 (out of 12).

On the social to environmental orientation continuum, the range of scores fell between 0.125 and 0.375 (environmental = 0, social = 1), the average score was 0.25, therefore more environmentally than socially oriented. They were motivated to remain connected to BFP because of its setting, all scored 0.125 on the place commitment continuum (setting = 0, to commitment = 1). Respondents in this group had limited interaction with the whole of the BFP area beyond their own property (residents) or the Go Bush program. The Valley members of this group commuted to work and all socialised away from the area.

Any other similar setting would meet their needs (socially and environmentally) if it offered the similar opportunities.

There was little if any concern mentioned within this group for the health of the surrounding landscape, and none participated in maintaining the environment beyond their own property or management's headquarters. Generally members of this grouping did not desire greater involvement in management. The Go Bush volunteers were satisfied with their role, often responding that they already have a job. This reflects the fact that their involvement in the area is a recreational and social experience. "I'm happy playing the role I do" (GB1), and, "management means policy level and as a volunteer you have limited scope in that area but input as in having a say...if a volunteer has special skills they could be used more in depth and detail and help management more but otherwise no" (GB6).

The Valley residents in this group did not desire to be involved in the management of land outside their own property. One of the respondents believed community involvement in BFP's management would be detrimental: "if the community got into involvement you just don't know whether the ones on motor bikes would start pushing and then suddenly it would be open to motor bikes or something like that (power of lobby groups?) Yes that's right (V14)". When asked how the community should be involved in management, responses consisted of looking after own block, feedback and consultation and watchdogs. The former response was given by the Valley residents in this group and volunteers gave the latter responses.

This group is therefore defined by a medium strength of sense of place rating (average score being 6.35 out of 12) and a low desire to be involved with management beyond their current role. The volunteers did however appreciate the opportunity to voice their opinions, and the Valley residents commented that they would like that opportunity.

Group 2 is comprised of a mixture of Mountain and Valley residents. The strength of their sense of place was higher on average than Group 1; it ranged between 6 and 8.5 (out of 12), with an average of 7.21. Collectively the group displayed a high sense of place.

In terms of orientation, the respondents in this group are generally place dependent and motivated to remain connected to BFP because of the setting, or fall in the middle of the orientation continuum between setting and commitment. They are more committed to the area than Group 1, their average place motivation score being 0.4 (setting = 0, commitment = 1).

They were generally moderately place dependent (on the place dependence orientation continuum), with scores ranging between 0.375 and 0.75 and an average of 0.6 (dependence = 1). Respondents either

worked from home and/or socialised locally. All were involved in the community in some way, through involvement in the local residents association, formal environment or social group, or even through activities such as writing regularly to the local paper. Respondents falling within this grouping all expressed concern for the greater area of BFP but were not always actively involved in protecting it. They often expressed dissatisfaction or frustration with the social environment.

In terms of desired involvement in BFP, unlike Group 1 this group displayed a mixture of responses. Those that express a desire for a greater role in management: this is limited to communication and consultation. They want to be informed of management decisions and given an opportunity to voice their opinion. Five of the respondents were not concerned with being involved with BFP, "we've never had anything to do with any of them and no reason to" (VI6). They saw that it was not their role and were more concerned with development on private land in the Valley and on the Mountains. "Up there it's far enough away from me I know it's secure...what I am interested in is what the council is going to do around me...trampling over my rights here as a landowner" (VI3). The Mountain residents in this group commented that they would like to be consulted on management issues in regard to the Park, and to have more say and control over private land development.

Group 3 stands out from the others due to its small size and the distance between it and Group 2. All members of this group possessed a very high sense of place. The average strength of sense of place for this group was 10.4 (out of 12), ranging between 9.02 and 11.3.

Members of this grouping are motivated to stay in the BFP area because they feel committed to the place, both the social and physical environment. Place motivation scores fell between 0.625 and 1, with an average of 0.84 (setting = 0 and commitment = 1). They expressed views that no other place would satisfactorily meet their needs. The respondent in this group who rated the lowest score was a long-term resident who had resided in the area his whole life with strong ties and commitment but he felt the community had changed over the years in a negative way. This respondent was however still strongly involved in the community, and was mentioned by a few of the other respondents as a community elder with great knowledge of the place. The other respondents had very positive perceptions of the community.

Members of Group 3 were more economically and socially dependent on the place than the other two groups; the range was between 0.75 and 1 on the dependence continuum (dependence = 1), with an average of 0.84 in contrast with Group 1's average of 0.125. All members were deeply involved in the local community and used BFP recreationally and/or as a way of earning their income. Not all members of this group worked locally. One respondent had been in the area for only two years and commuted to

work each day. However they had deliberately chosen to move to the BFP area because of the social and physical environment, with the intention of becoming involved in the area and its community.

All expressed concern for the health of the greater area and were involved with protecting it through weed and fire management. In addition, all respondents in this grouping were very involved with the maintenance of the greater area and were concerned about the maintenance of the community.

In terms of desired involvement, the members in this grouping felt that the community should play a central role in the management of the area. One respondent felt that this role was fulfilled through community groups such as the local environmental group, "we help the community in their attitudes towards the park" (MI7). This respondent did however stress the need for the community member on the BFP board to be a local member of the community. There was a belief in this group that a formal point of contact between BFPAA and the local community be formed. "I'd like to see the community being more involved it would be good if we had an annual visit from BFP manager to tell us what the issues are and what's happening keeping us up to date" (MI4) and "there's a need here for a form of management that is much more community partnership based" (MI8).

Discussion

The creation of this scale of sense of place is not infallible and does not claim to provide a precise reflection of the respondent's sense of place. However this methodology provides an effective way to capture the richness and depth of sense of place. By utilising information gathered in a semi-structured interview rather than a closed survey we are able to gain insight into an individual's tacit and demonstrated sense of place rather than just the sense of place they are able to articulate. The application of this approach to the case study demonstrates that it is able to identify new groupings that display similarities in their actual and desired involvement in the protected area. This has the potential to assist managers in determining the most appropriate and effective way to engage the community in its diversity.

Shamai (1991, p. 354) believed his scale could serve as "a standard scale to measure sense of place in different places at different times". While we agree that there can be a development in the intensity of an individual's sense of place we do not agree that this necessarily occurs in a particular order. Sense of place occurs in a less structured way and, due to its complexity, richness and individualistic nature, it can occur in any order, therefore requiring in-depth methods to reveal its nature. Although sense of place elicited in this research did not always follow the suggested order of Shamai's scale, different intensities of sense of place were clearly evident.

The use and application of this research tool for engaging communities in management

This research tool provides an effective method for assessing sense of place and improving the way we engage the local community, in all of its diversity, in the management of the protected area system. The use of the scoring system to assess strength and orientation of sense of place provides a way of identifying groups with different needs and desires.

The case study of BFP demonstrated that the application of this methodology identified unique community groupings that have similar desired ways of participating in the management of the area. The stronger an individual's sense of place, the more they are involved with the Park (although not directly through the management body BFPAA), and the more they want to be involved with the Park. This also coincided with the level of their place dependence and place motivation.

Analysing the strength and orientation of sense of place illustrated that, even within the relatively small defined groups that this research utilised, there is diversity in how individuals perceive and feel about a place, and how they want to be involved in management. Therefore they are not necessarily "...amenable to simple market segmentation practices so often employed in the promotion of policy" (Cantrill 1998, p. 312).

Exploring and measuring both the strength and orientation of an individual's sense of place utilising this methodology has provided a greater understanding of the diversity of a local community and a way of determining the desired nature of community involvement. This methodology has the potential to be used as a community engagement tool for protected area management and natural resource management in general.

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