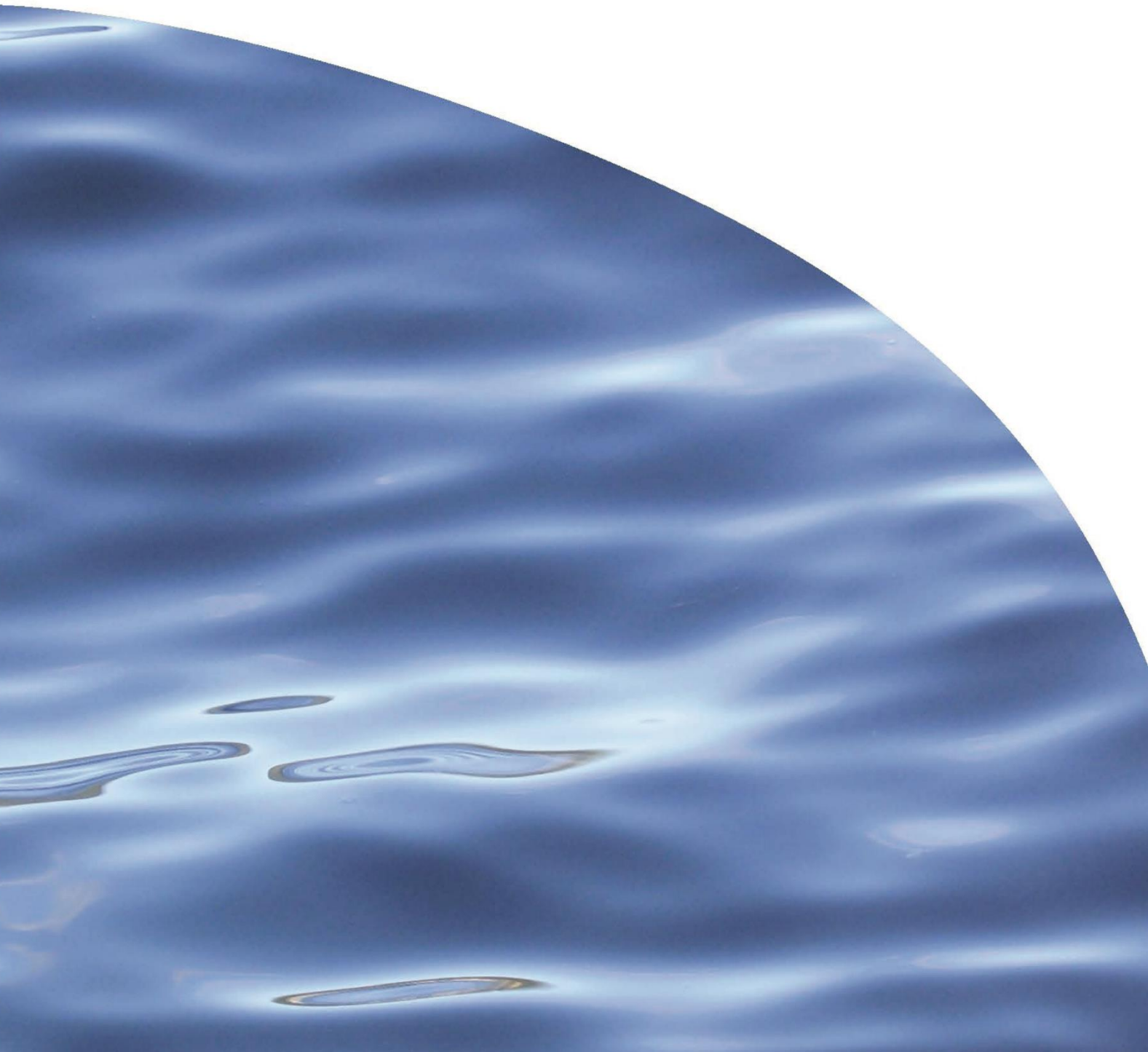




REPORT NO. 2983

**CONSIDERING SENSE OF PLACE IN
FRESHWATER PLANNING**



CONSIDERING SENSE OF PLACE IN FRESHWATER PLANNING

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1. INTRODUCTION

The Greater Wellington Regional Council (GWRC) has established citizen-based whitua committees to make recommendations on the implementation of the National Policy Statement for Freshwater Management (NPSFM). The Ruamāhanga Whitua Committee is tasked with delivering recommendations for land and water management in the Ruamāhanga catchment, which comprises most of the Wairarapa region. Formed in 2013, the committee has representatives from Ngāti Kahungunu ki Wairarapa, Rangitāne o Wairarapa; Masterton, South Wairarapa and Carterton district councils; GWRC and the Wairarapa community.

The Ruamāhanga Whitua Committee has identified what it termed 'connection to water' as one of the issues it would like to better understand. In a general sense, all aspects of the social impact assessment being done for the Ruamāhanga Whitua process involve consideration of people's connection to water, whether it be through their recreation, employment, or cultural heritage. This report takes a somewhat narrower perspective and explores connection to water in terms of the social science literature on 'sense of place', which focuses on peoples' feelings of deeper connection, comfort, belonging, and attachment to places that are special to them.

Sense of place is of interest for two main reasons. First, increasing people's sense of place may be an objective in its own right for some committee members, i.e. to improve sense of place by improving the health of local waterways, by boosting the local economy, etc., in order to lift people's emotional wellbeing. To increase sense of place, we want to understand how sense of place would be affected if there were changes to how the water bodies were managed.

Second, developing sense of place may also motivate changes in land and water use practices. That is, improving people's sense of place in relation to local waterways might lead them to be more careful in their land and water use.

This short report was commissioned to provide a brief overview of connections to water as they relate to freshwater management.

While the report touches upon how sense of place differs between cultures (Section 4), it does so by drawing predominantly from a Western-scientific literature and perspective. It is not our intention to impose our understanding of sense of place upon non-Western cultures. However, for the purposes of this paper we apply a more general conceptualisation of sense of place in order to help the Ruamāhanga Whitua Committee consider how they might seek to improve connection to water through freshwater planning.

2. THE CONCEPT OF CONNECTION TO WATER

2.1. Definitions and criteria

There is a wide literature on human connections to places, landscapes, and natural features, and this writing is generally couched in the concept of 'sense of place' or 'place attachment'. While not attempting to summarise this extensive literature here, some key ideas are briefly presented in order to better understand what exactly is meant by sense of place or related concepts. Key components of sense of place discussed below are **place identity** (or **place attachment**), **place dependence**, and **place satisfaction**.

At a general level, sense of place is the meaning attached to a spatial setting by a person or group (Jorgensen & Stedman 2001). Williams and Roggenbuck (1989) presented sense of place as comprising two dimensions: place identity and place dependence. In essence, **place identity** (sometimes referred to as **place attachment**) describes the psychological connection between the self and the physical environment (Proshansky 1978). Place identity and place attachment describe an emotional attachment to a place. The connection may comprise a complex mix of conscious and unconscious ideals, beliefs, preferences, feelings, values, and goals.

Place dependence refers to the extent to which people perceive a place as providing opportunities to undertake activities they care about. Place dependence is a functional attachment to a place. This includes physical characteristics which, in the case of a waterbody, may be characteristics such as flow, water quality, 'swimmability', odour, colour, depth, people, riparian vegetation, and so on, any of which can contribute to the suitability of a place for the activities people want to do there.

Place identity and place dependence are not always correlated. That is to say, an increase in one does not necessarily lead to an increase in the other. Kyle et al. (2003) found differential effects on place identity and place dependence in their study of an iconic walking trail in the United States. They found that a management action such as adding toilet facilities can reduce place identity while increasing place dependence. Similar responses have been observed in other studies (Bricker & Kerstetter 2000; Kyle et al. 2003).

A third concept, **place satisfaction** has also been suggested as an important component of sense of place (Stedman 2003). Place satisfaction is essentially an overall judgement of the perceived *quality* of a place. An overarching theme of sense of place research, and most of that discussed above, is that sense of place is a social construct that exists only in the minds of people and the collective consciousness of societies. The quality of the physical environment, however, has also been shown to be a predictor of sense of place (Stedman 2003).

Sense of place may also incorporate a community dimension (Manzo 2003). That is in addition to natural features, the strength of community connections and other social interactions can contribute significantly to sense of place. Raymond et al. (2010) contend that attributes of the physical and social setting cannot be viewed in isolation of the highly personalised emotions formed in these settings, which we refer to as the personal context of place attachment. Accordingly, they propose extending the two dimensional model of place attachment (comprising place dependence and place identity) to include four dimensions: place identity, place dependence, nature bonding and social bonding (with family and friends).

A related concept to sense of place is connection to nature, which is concerned with 'how people identify themselves with the natural environment and the relationships they form with nature' (Restall & Conrad 2015 p. 1). This is a similar but lesser studied concept to sense of place. In their literature review, Restall and Conrad (2015) found more than ten times more articles on 'place attachment' than they did when using search terms related to 'connection to nature'.

In summary, sense of place is about the psychological and functional connections between people and places. While there are many conceptualisations of sense of place, the most common has two primary dimensions: place attachment (i.e. place identity) and place dependence. Evidence of a social dimension is also strong, and should be considered in any efforts to enhance sense of place.

2.2. Measuring connection to water

One method of measuring sense of place is psychometric testing. Several psychometric tests have been developed for sense of place, and these essentially involve a number of statements that relate to one of the dimensions of sense of place. Survey participants are asked to rank on a Likert scale (e.g. 1 to 5) the extent to which they agree or disagree with statements such as:

Place attachment

- The Ruamāhanga River means a lot to me
- I am very attached to the Ruamāhanga River
- I identify strongly with the Ruamāhanga River
- I have a special connection to the Ruamāhanga River and the people who come here

Place dependence

- I enjoy coming to the Ruamāhanga River more than any other place
- I get more satisfaction out of visiting the Ruamāhanga River than from visiting any other place

- Coming to the Ruamāhanga River is more important than any other place
- I would not substitute any other place for the type of recreation I do at the Ruamāhanga River (modified from Williams & Vaske 2003).

As part of the psychometric approach, additional questions can be asked about the types of activities that people undertake and associations that people have with a place or feature. For example, a range of attributes have been shown to contribute to sense of place including, for example, the natural and cultural environment, family and social activities, history, and traditions (Kaltenborn 1997). Statistical analysis can then be used to determine which activities and associations make the strongest contribution to sense of place. This would guide policy planners about the types of things that could be done to improve sense of place. Qualitative research can also be used to gain insight into meanings that places possess, using techniques such as free association tasks, in-depth interviews, and focus groups (Lewicka 2011).

Another method of measuring sense of place is photo-elicitation. This technique has been used by several sense of place researchers (e.g. Stedman et al. 2004; Amsden et al. 2010). As an example, in the study of Amsden et al. (2010) twenty-five people participated in a photography exercise about the creation and maintenance of sense of place in a tourist town. Researchers analysed photographic images taken by local residents that both showed and described specific details of the places of importance to them. Interviews were conducted to elucidate the content of the photographs, and the social, cultural, and ecological importance contained therein.

Sense of place may also be measured and mapped using public participatory geographic information systems (PPGIS) and related crowd-sourcing mapping methods. Rendering sense of place on a map makes it more useful for planning and decision support. For example, policy scenarios can be assessed for how they affect the specific places that are important to people and that contribute to sense of place. Repeated studies could assess changes over time in sense of place, as this can change over the course of a person's lifetime or as places themselves change (Brown et al. 2015).

3. RELATIONSHIP BETWEEN SENSE OF PLACE AND BEHAVIOUR

The effect of sense of place on pro-environmental behaviour has been the subject of many studies, and many instances of positive correlations have been observed. For example, Kaltenborn (1998) surveyed 300 residents in Spitsbergen, Norway, finding a significant positive relationship between strength of place attachment and willingness to participate in pro-environmental behaviours, such as cleaning up shorelines

affected by oil spills. Vaske and Kobrin (2001) found that encouraging an individual's connection to a natural setting facilitates the development of general environmentally responsible behaviour. They observed that as place dependence increases, place identity also tends to increase. Then, as place identity increases, self-reported pro-environmental behaviour increases.

In a study of 355 adult visitors to national parks in Canada, Halpenny (2010) found that strength of place attachment was a useful predictor of place specific pro-environmental behaviour, such as volunteering to protect a specific park, and of general pro-environmental behaviours such as reducing energy consumption. Perkins (2010) surveyed 261 tourists in Gold Coast, Australia, and found that a stronger connection to nature can result in a higher interest in pro-environmental behaviour such as buying environmentally friendly products and voting for pro-environment politicians.

A commonly observed consequence of a strong sense of place is its predictive power on place-protective behaviours. Essentially, people with higher sense of place are more likely to engage in place protective behaviour. For example, Devine-Wright and Howes (2010) discussed with and surveyed 488 local villagers about a proposed 750MW offshore wind farm in North Wales. They found that the project threatened the identities of people who held a strong place attachment, and thus contributed to negative attitudes and behaviours towards the project (Devine-Wright & Howes 2010). Other studies have also found a similar relationship between place attachment and lack of acceptance of new projects (e.g. Vorkinn & Riese 2001; Stedman 2002). Stedman (2002), for example, found that a positive emotional and identity-based attachment to a place strongly influenced the intentions of seasonal and full-time residents of a Wisconsin county to engage in place-protective behaviours. Stedman explains:

...we are willing to fight for places that are more central to our identities and that we perceive as being in less-than-optimal condition. This is especially true when important symbolic meanings are threatened by prospective change. (Stedman 2002, pp. 576-577).

Conversely, Devine-Wright (2011) found that place attachment predicted *increased* community *support* for a local tidal electricity generation development in a study of 271 residents at two villages in Northern Ireland. By finding a positive relationship between place attachment and acceptance of development, the study broke new ground in a literature that had consistently found the opposite. The reasons for this were hypothesised by Devine-Wright:

[physical] change to places is not inevitably disruptive, but may enhance place attachments in situations of good 'fit' between symbolic meanings associated with both place and project. It also

demonstrates two principles... first, that it is not the form of place change per se that is important, but how it is interpreted and evaluated (Nash et al., 2009); second, that responses to change differ by context... (Devine-Wright 2011 p 341)

In a further example of the complex relationship between sense of place and pro-environmental behaviour, Scannell and Gifford (2010) observed that attachment to natural places was related to pro-environmental behaviours, but this was not the case for attachment based on social characteristics of place. When sense of place is separated into place dependence and place attachment, the picture becomes more complex again. For example, place identity was found to be positively related to support for a fee programme on use of public lands, while place dependence was not (Kyle et al. 2003). That is to say, as place identity increased and people's attitudes toward the fee programme became more positive; and support for spending fee revenue on facilities and service development, environmental protection, and environmental education also increased. However, support for the fee programme was not influenced by place dependence (Kyle et al. 2003).

These apparent contradictions can be at least partly explained by the fact that sense of place is but one of many influences on pro-environmental behaviour. Other factors that influence behaviour can include psychological factors such as childhood experiences; knowledge and education; personality; perceived behavioural control; values, attitudes, and worldviews; felt responsibility and moral commitment; norms and habits; goals; and many demographic factors (Gifford 2014), as well as contextual factors such as social networks, institutions and legal frameworks, culture, governance structures, rational choice, and resources (Jackson 2005).

The complexity of influences on pro-environmental behaviour was compiled into a simplified model presented at a Ruamāhanga Whaitua Committee workshop in 2016 (Kilvington et al. 2016). The model proposes that the motivation for environmental behaviour is a function of three main elements: people's understanding of an issue; their ability to overcome geographic, physical, technological and financial barriers; and a host of other factors, including sense of place, which affects their imperative to act (Figure 1). This simplifies to the equation: Motivation = Understanding + Ability + Imperative.

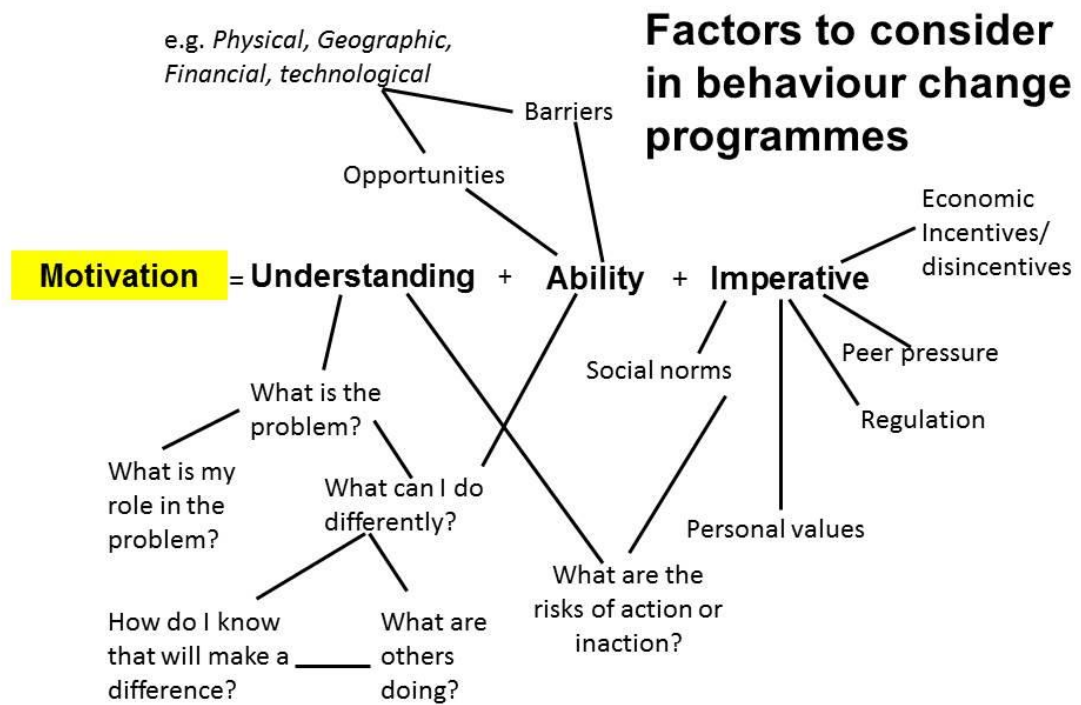


Figure 1. Factors to consider in behaviour change programmes (Kilvington et al. 2016, p 10).

Given this broad range of influences on pro-environmental behaviour, policies targeted at increasing sense of place *may* result in pro-environmental behaviour change. In fact, on the basis of the many studies cited above, increased sense of place or place attachment will likely invoke place protective behaviour and/or pro-environmental behaviour. But, then again, it might not. This will depend on other key influences on place protective and pro-environmental behaviours, which might vary across individuals. On the basis of such complexity in pro-environmental behavioural influences, any policy that aims to achieve behaviour change should be broad, and should attempt to continuously ‘seed’ or catalyse change through a wide variety of mechanisms (Brook Lyndhurst 2006). Indeed, in a connectedness to nature literature review spanning 2002-2011, Restall and Conrad (2015) corroborate the need for more social and psychological strategies to promote conservation behaviour.

4. DEVELOPING A CONNECTION TO WATER

There are many tools that can promote an increase in sense of place. While the following list is not exhaustive, it provides a high level overview of a few common

approaches. For example, in their literature review Kudryavtsev et al. (2012a) found that place attachment can be forged through place experiences such as:

- direct engagement with a place over long periods of time or frequent place visits
- participation in environmental stewardship activities at sites that are being restored, or to natural areas in general
- social interactions at a place
- learning place meanings from written, oral, and other sources, including communication with other people
- the cultivation and sharing of place meanings through, e.g. stories, myths, literature, promotional materials, folklore, paintings, music, films, history, casual conversations, and memory (Kudryavtsev et al. 2012a).

Some of the strongest connections to place develop during childhood, and these connections typically endure and often significantly contribute to an adult’s identity. Further, the strength of childhood place connections increases as more time is spent at that place, and the connections can continue to grow throughout adulthood (Hay 1998a). Morgan (2010) found that repeated positive experiences in an environment during childhood creates a long-term bond to that environment, i.e. as place attachment (Figure 2). Morgan also found that only people who succeed in developing place attachment in early childhood will be able to develop emotional bonds with places in later stages of life. The relevance for policy makers and planners is that the provision of places for children to play, explore, interact, and enjoy provides the foundation for the development of long-term place attachment.

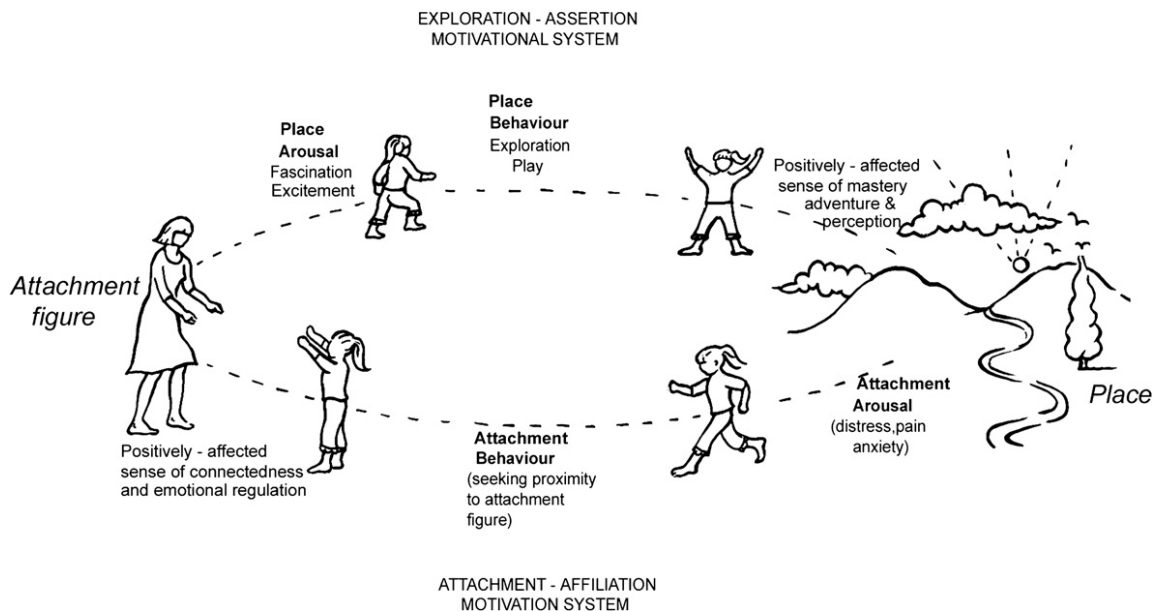


Figure 2. Arousal-interaction-pleasure pattern as generator of place attachment (from Morgan 2010, p 5).

Sense of place also develops with time spent at a place. This includes intergenerational time—with the nature and strength of sense of place being passed between generations. In a study of 270 local residents of Banks Peninsula and 80 adult tourists, Hay (1998a) assigned people into one of five sense of place ‘developmental stages’—superficial, partial, personal, ancestral, and cultural—based on their residential status. Hay also defined three ‘age stages’¹ of sense of place based on the observation that people become more connected to places as they age. The first stage is ‘embryonic’, progressing through ‘commitment’, and on to the final ‘culmination’. Progression through the sequential stages in the development of a sense of place were most evident among those who were raised in the place and spent most of their lives there: embryonic (childhood to adolescent); commitment (early to mid-adulthood); and culmination (mid-adulthood to old age). Further, people whose ancestry and/or culture had existed in a place for multiple generations tended to develop a stronger sense of place than others. At the same time, Hay notes that sense of place may remain less developed in today’s world due to modern society’s high levels of residential mobility, particularly in urban areas.

The strength of sense of place can be different between (and among) different groups, such as cultural groups or interest groups, due to the different meanings and associations that groups hold for those places. This is particularly relevant for New Zealand’s cultural landscape wherein different meanings and interpretations of places, and therefore different factors comprising sense of place, exist between different cultures (McCreanor et al. 2006). For instance, in Māori culture, identity is deeply connected to the land, waterbody and mountain according to tribal affiliation as well as to the natural world beyond tribal boundaries—a connection that includes mystical and sacred relationships unique to Māori cosmology. A strong personal awareness of the cultural significance of sense of place is held by many Māori, even when they reside far from their tribal lands (Hay 1998b). The relevance for freshwater planning is discussed by Teddy et al. (2008),

Place attachment for groups such as Māori is complex because it encompasses all social relationships past and present. The implication for those working with Māori is to take seriously the wider connotations of place when talking to Māori about marae, traditional homelands, and their land (Teddy et al. 2008 p.1).

Additionally, it may in some cases be possible to develop place attachment without ever having visited a place. This could occur if, for example, people think a place may afford a unique setting in which to achieve their goals (White et al. 2008).

¹ Which refer to the *intensity* of sense of place.

Sense of place has also been shown to relate to the level of experience and investment of adult recreationalists. In a study of 1,226 white water recreationists, Bricker and Kerstetter (2000) found a relationship between place attachment and level of involvement (as determined by, for instance, experience, financial investment, and skill level) in whitewater activities. Further, highly involved people were more likely to agree with the importance of place identity than people who were less involved. This aligns with other studies that have shown that place attachment develops in recreationists over a long period of time and with repeated visits (Fishwick & Vining 1992; Moore & Graefe 1994 as cited in Bricker and Kerstetter 2000).

Environmental education can, but does not always, result in an increased sense of place. Kudryavtsev et al. (2012b) found that urban environmental education programmes—which engaged urban high school students in environmental stewardship, recreation, environmental skills development, and environmental monitoring in the Bronx, New York—were successful in nurturing ecological place meaning, but did not strengthen students’ overall place attachment.

Sense of place also can be increased by improving the physical environment of the place of interest. However, environmental changes can be perceived differently by different people, and therefore a change that increases one person’s sense of place may diminish another person’s. Drenthen (2009) cites the study of Buijs et al. (2004) who studied changes in landscape appreciation following a recently ecologically reconstructed river in the Netherlands. Buijs interviewed both locals and visitors about how the environmental changes affected their appreciation of the landscape and their place attachment. While nearly all respondents considered the landscape changes to be an improvement, there were discrepancies between locals and visitors in their assessment of the ‘naturalness’ of the modified landscape. The authors considered that this was due to differences between locals’ and visitors’ sense of connection to the area. Essentially, visitors’ sense of place was unchanged, while locals’ sense of place was diminished following environmental changes (Buijs et al. 2004 as cited by Drenthen 2009). This begs the question: improvements for whom? Unless the physical environmental changes improve those aspects of the waterbody with which people connect and identify, changes will not necessarily result in an increased sense of place.

Drenthen (2009) proposes three approaches to enhance, or to avoid a decline in, sense of place resulting from ecological (or other) reconstructions to places. The first approach is to strictly confine landscape management efforts so as to prevent the destruction of natural and anthropic historic landscape features that enable humans to live meaningful ‘placed’ lives. In this way, sense of place is protected and preserved in landscape developments. The second approach takes the perspective that the

development of ‘new nature’² along rivers is an opportunity to revitalise, deepen, and increase peoples’ sense of place. In this approach, science and indigenous creation stories, for example, can be used to tell a deeper story of the river that can be understood by others who do not share those experiences. There is a risk in creating new nature, however, in that it can destroy or degrade valued places, resulting in a reduced sense of place. But that might be a time-constrained factor as, through education and new associations with that place, some people adjust to and accept those changes.

The third approach focuses on ‘re-wilding’ nature—an idea that has gained attention in the popular press in recent years (see Monbiot 2013 for an example). According to Drenthen (2009), this approach requires appreciating nature as wilderness that is both fundamental to and apart from our everyday lives:

Instead of appropriating the meaning of a river, we let the otherness or wildness of the river enrich our lives again – as a mysterious place where one can be alone and encounter the unruly. In this perspective, we cherish a certain degree of estrangement with nature as part of who we are (Drenthen 2009 p 25).

To conclude, increasing sense of place can be done via a range of methods, and there are many factors planners and policy makers may wish to consider when choosing interventions. For example, environmental education can increase sense of place in children and adults, but this can occur in different ways and have different longer term implications for sense of place. Improving and changing places can enhance sense of place, but any planner or policy maker considering changes to riverscapes must first ask what kind of improvement will achieve the greatest gains, and who decides what constitutes improvement.

5. CONNECTION TO WATER AS A CRITERION FOR DECISIONS

Increasing sense of place provides three main benefits for communities. These are that sense of place can contribute to personal psychological identity and wellbeing, increase pro-environmental behaviour, and foster a shared sense of community purpose, wellbeing, and unity.

For ‘connection to water’ or ‘sense of place’ to be factored into decisions, some fundamental questions should be considered. If an increase in sense of place is the

² i.e. creating new natural features, changes, and/or improvements to the landscape.

desired outcome, the question arises as to what is the current sense of place in the population of interest, and why do we want to increase it?

Questions could also be asked about *whose* connection to water we want to increase. For example, management decisions for place-attached, involved, or committed recreationists will require consideration of what it is about their activity that arouses feelings of personal relevance (i.e. the connection between the activity, site, or service provider and the self) (Kyle et al. 2003). Likewise, different interventions might be necessary to increase sense of place in children as opposed to adults, between different cultural or ethnic groups, and so on. This helps to identify place characteristics that could be enhanced to strengthen those feelings.

If there is a small set of characteristics or determinants, these can be targeted for interventions and policymakers could have some confidence that improving these factors would lead to improvements in sense of place. If, however, the factors are many and diverse, there may be little point in trying to promote sense of place as a separate objective—rather; it could be seen as the summation of all the things that matter to people in the catchment. Improvements in other specific objectives will collectively contribute to increased sense of place.

Alternatively, policy and management decisions that seek to increase sense of place in order to promote pro-environmental behaviours may wish to consider the merits of targeting key people within the community versus applying general interventions that increase the wider population's sense of place. To be successful at changing behaviour, such policy initiatives would also need to consider the many other influences on behaviour.

6. SUMMARY AND CONCLUSIONS

The Ruamāhanga Whaitua Committee has identified connection to water as one of the issues it would like to better understand. This report explores connection to water in terms of the social science literature on sense of place. Much of the literature describes sense of place as comprising two dimensions: place identity (sometimes referred to as place attachment) which focuses on people's emotional attachment to a place; and place dependence, which refers to how much a person depends on a place for certain activities. These two elements are not always strongly correlated, i.e. one can be high when the other is low.

Some of the strongest connections to place develop during childhood, and these connections endure—often playing a significant role in adult identity. Some studies suggest that only people who develop place attachment in early childhood will be able

to develop emotional bonds with places in later stages of life. Management interventions can improve sense of place by enhancing the physical environment, thereby making people's experiences more positive, and through environmental education and other initiatives to encourage more people to undertake activities in that environment.

The RWC may wish to improve sense of place as an objective in its own right, as an element of people's wellbeing, and may also see improving sense of place as a means of promoting pro-environmental behaviour.

The relationship between sense of place and behaviour is complex. There are many influences on behaviour, broadly summarised as factors affecting understanding, ability and imperative. Sense of place can form part of the imperative to act and is generally associated with pro-environmental behaviour, but this is not always the case. For example, the two main elements of sense of place (place attachment and place dependence) can have opposite effects on behaviour in some circumstances.

In considering sense of place as a factor in decision-making, the RWC could consider the following questions:

- What do we know about the current sense of place in the Ruamāhanga catchment?
- Are we interested in sense of place as an objective in itself, or as a means of promoting pro-environment behaviour, or both?
- Whose sense of place do we want to increase and why?
- What activities do these people engage in and what characteristics of place are likely to increase their place attachment?
- Are there relatively few freshwater characteristics that are likely to significantly increase sense of place that can be effectively targeted, or are there many characteristics; if the latter, then sense of place might best be seen as the summation of all the things that matter to people about how the Ruamāhanga catchment is managed?
- If behaviour change is being targeted, how are various factors that influence behaviour being addressed, e.g., understanding, ability to change and imperatives to change?

7. ACKNOWLEDGEMENTS

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