



Becoming Place in a Changing Climate: The Sunshine Coast, Queensland

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Becoming Place In A Changing Climate:
The Sunshine Coast, Queensland

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Abstract

The past two centuries of industrialisation have been signified by the emergence of the Anthropocene, a period of unprecedented human development coupled with immeasurable degradation to the life-supporting biosphere. Of these anthropogenic influences, climate change represents an immense challenge, not only are there practical challenges in terms of settlements and infrastructure, but also cause for deeper reflection on the ecological tradeoffs entwined with the pursuit of human progress. At the core of this challenge is our sense of place - the lived experience, meanings, and values that imbue the spaces we inhabit and define what it means to be human. This study presents a constructive critique of sense of place as a foundational strategy for adaptive capacity and climate action by examining the general assumption that there is a link between sense of place and climate change adaptive capacity.

The Sunshine Coast is a region in Australia with a rich history of human settlement founded on the availability of abundant and highly valued natural amenities. These amenities, combined with an amenity migration during the latter part of the twentieth century, sparked a development boom resulting in the present-day peri-urban transformation of the region. This study was framed by an existential phenomenological approach to examine the interplay between residents' sense of place and their adaptive capacity to climate change. Chain-referral sampling produced forty-three semi-structured interviews. Respondents were also invited to present images that most represented their sense of place as well as observed landscape change within the region. The use of visual methods aided the elicitation of personal and emotional meanings associated with respondent's sense of place. Interview transcripts were subjected to interpretative phenomenological analysis to identify super- and sub-ordinate themes to answer the research questions.

Respondents are emotionally invested in their sense of place, value the ecological and cultural amenities of the region, and are very concerned about the impacts of encroaching urbanisation on the long-term sustainability of the region. Respondents are also altogether aware of climate change, however acceptance of the phenomena and the perceived need to take action vary across individuals. This discrepancy is attributed to a general sense of confusion brought about by conflicting information, divergent political leadership, and an overall sense of uncertainty about the future. Consequently, respondents are not confident that institutions with bestowed responsibility to care for the public good will implement plans designed to limit the potential effects of climate change. Respondents, as individuals, are generally confident that they can adapt to climate change, but feel their adaptive capacity is strengthened by collective action.

This thesis argues that building adaptive capacity is contingent on making clear connections between sense of place and climate change at the local scale to make the phenomenon more

meaningful for residents. Adaptation underpins the transformation of space into place. Consequently, climate change adaptive capacity is contingent on the intentional adaptive transformation of places today into becoming climate-adapted places in the future. Through a pragmatic sense of place, place-based strategies bring the local into focus by leveraging existing care and value of the natural environment together with place-specific attributes, engaging citizens and local knowledge, building trust through dedicated leadership, and involving local residents in decisions that affect them most. In this way, the everyday practices of adaptive strategies become embodied and the genuine becoming of place and becoming climate-active is manifest.

Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signature:

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke extending to the right.

Date:

4 September 2014

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This study is a part of the South East Queensland Climate Adaptation Research Initiative (SEQCARI) comprised of the partnership between the Australian and Queensland governments, the CSIRO Climate Adaptation National Research Flagship, Griffith University, the University of Queensland, and the University of the Sunshine Coast. The purpose of the Initiative is to provide research knowledge to enable the region to prepare and adapt to regional climate change. I am especially grateful for the financial support of CSIRO Collaboration Fund Scholarship. It has been an honour to be a member of group of high caliber academics undertaking diverse research of regional and global significance.

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1.0 INTRODUCTION

1.1 Framing The Study

Anthropogenic influences on biosphere processes have converged to produce the climatic phenomenon that poses uncertain consequences for humanity and the planet. Societies around the world are collectively beginning to grasp the complex dynamics of climate change and what it means for the future of humanity. Sense of place is the intermingling of time, space, and landscape together with human interaction and the formation of cultural practices that are ultimately linked to our relationship with the biosphere and emerging understanding of climate change. The concept of place is used as the core framework for understanding how people perceive and assign meaning to the environments they inhabit. This study is situated within human geography and informed by the philosophical tradition of existential phenomenology, which together espouse the importance of dwelling, home, and care for the natural environment as being important features of sense of place. These notions of place have been critiqued as being too idealistic and out of step with the post-modern world. Furthermore, the emergence of climate change brings into focus the importance of places while at the same time calling into question the cultural practices that are linked to anthropogenic climate change. Consequently, the study also draws inspiration from Pred's (1984) notion of the becoming of places whereby the biosphere and humanity are entwined and continually evolving. Therefore, as climate changes, humanity responds and adapts, and in turn, so too do places change. The concept of becoming has been developed as a framework for describing the range of experiences and categories and their interconnections as a method for answering the research questions.

The place framework (constructed in chapter 2) serves as a mechanism for exploring how people understand their relationship and effect on these environments with particular focus on the current state of planning and development on the Sunshine Coast, Australia, coupled with their understanding of climate change and perceived need to adapt. Using this framework, the study explores how the notion of place is linked with the capacity of a community to adapt to perceived changes in its locale. In particular it focuses on the extent to which the concept of place might be leveraged to facilitate the adaptive capacity of a community to climate change. Studies of place are characterised by investigations of the relationships between people and their environment, including a focus on community engagement, that if disrupted may compromise the resilience and adaptive capacity of a community (Cataldi and Hamrick 2007; Parry et al 2007). Scholars from a range of disciplines have interrogated the notion of place and raise concerns about the limits to climate change adaptation and the lack of strategic place-based initiatives by the public sector.

Climate change has been described as the paradox of modern humanity as it brings into question the cumulative meanings of society associated with progress and development (Urry 2010). Formulating an understanding and response requires both ontological and pragmatic perspectives to inspire and initiate action. For over twenty years the International Panel on Climate Change (IPCC) has coordinated efforts to examine the scientific aspects of climate change, however there has been comparatively less work undertaken that examines the social dimensions of climate change, particularly within the existential realm.

This study presents a constructive critique of sense of place as a foundational strategy for adaptive capacity and climate action by examining the general assumption that there is a link between sense of place and climate change adaptive capacity (Adger et al 2005; Relph 2008; Newman et al 2009; Green 2010). The study also examined how constructs of place help shape social and cultural identities, how these identities relationally inform understandings of place, and ultimately how these personal connections with the environment may be a factor in community engagement, sustainability, and climate change adaptive capacity.

1.2 Research Purpose and Questions

This study was part of the South East Queensland Climate Adaptation Research Initiative (SEQCARI) under the umbrella of the Commonwealth Scientific and Industrial Research Organisation and National Climate Change Adaptation Research Flagship. The study grapples with the interconnection between sense of place and climate change. The purpose of this study was to critically analyse the theoretical and practical application of sense of place as a springboard for conversations about understanding climate change and the perceived need to adapt. More specifically, the research examines connections and constraints between respondent experiences and constructs of place with a focus on the peri-urban transformation of the Sunshine Coast region and how expanding development affects their sense of place and perceived capacity to adapt to climate change.

The study was framed by three questions that examine the notion that sense of place may facilitate climate change adaptive capacity.

1. How do respondent's construct/experience their sense of place on the Sunshine Coast?
2. How do respondents experience/understand climate change adaptation (climate action) on the Sunshine Coast?
3. What are the links between sense of place and climate action/adaptation on the Sunshine Coast and more globally?

1.3 The Study Area

The Sunshine Coast, Queensland, Australia is a rapidly growing coastal settlement that has been identified as being vulnerable to climate change due to the combined effects of extreme weather, coastal processes, and increased development and population pressure (IPCC 2007; Wang et al 2010). This research focused on the Sunshine Coast for several key reasons:

1. Research by Carter et al (2007) revealed that images of place-identity imposed by the globalising forces of development and tourism are inconsistent with resident's sense of place.
2. A sea change migration that began in the early 1990s has led to a peri-urban transformation making the Sunshine Coast one of the fastest growing regions in Australia.
3. The majority of development is occurring in the coastal zone, which is naturally dynamic in terms of biological, climatic, and geo-physical processes that altogether pose potential risks to human settlements and a need for decision-makers and residents to think about adapting to climate change.
4. Climate change is projected to exacerbate these natural coastal processes.

1.4 Significance and Contribution to the Discipline and Collaborative Research Project

The research was designed as an investigative exploration of the complex inter-play between sense of place and climate change adaptive capacity. This study was conceptualised and designed to make three core contributions to theoretical and practical applications to disciplinary research.

1. This study sought to better understand the relationship between sense of place and climate change adaptive capacity. Although there is a general assumption that sense of place may be a motivating factor for people to engage in activities that preserve and protect the ecological and social attributes of a given locale, the connection has not yet been extensively examined within the context of climate change adaptation.
2. The study augmented the findings of Carter et al (2007) with in-depth interviews and visual methods to conduct a qualitative investigation of sense of place. Although visual methods have been used by a number of disciplines (geography, anthropology, sociology, cultural studies), it remains on the periphery of the social sciences research compared with other tried and tested methods (Harper 2002; Van Auken 2010). Therefore, the study findings also contribute to previous work that employed

visual methods, especially studies exploring the relationship between sense of place and climate change.

3. The research findings are intended to contribute to the larger SEQCARI project and to be made available to the Sunshine Coast Regional Council.

1.5 Assumptions and Limitations

This study assumes that the overwhelming scientific evidence of climate change is sufficient ground for conducting this research. The research is qualitative in nature and limited to a phenomenological approach. The philosophical underpinnings guided the research methods including the selection of research questions and interpretative phenomenological analysis. This study was limited to exploring the relationship between sense of place and climate change adaptive capacity. The intent was to provide insight into this complex topic through the personal accounts of residents of the Sunshine Coast as a way to understand the intricacies and nuances of lived experience manifest as meanings associated with everyday life.

The study was limited to interviews with residents of the Sunshine Coast who agreed to participate in the study. Two additional criterion limited participation in the study: 1) individuals were to be 18 years of age or older, and 2) individuals were required to have lived in the region for at least one year. The rationale for setting an age limit was to ensure a deep level of engagement with the concepts and ideas about sense of place. The residency requirement was established to improve the quality of feedback associated with living in the study area. The overarching interest of this project was conversations with people in their capacity as first and foremost as residents, however professional practice and academic studies undoubtedly influenced their perceptions, values, preferences, and responses to the research questions.

Setting a higher sample size and employing a chain referral approach was anticipated to best result in recruiting some participants who would provide data-rich responses. As it turned out (see Conclusion) these participants were interspersed throughout the recruitment sequence, although the majority were near the end of the data gathering process, which confirmed saturation had been achieved. Had I had set a smaller sample size I mostly likely would not have recruited these individuals. Consequently, the large sample size also resulted in a large volume of interview recordings to be transcribed and analysed. A modified Interpretative Phenomenological Analysis framework was chosen to help organise and identify super-ordinate and sub-ordinate themes, and facilitate a more thorough interpretation of data and rich findings to answer the research questions.

I have a longstanding interest in humanity's relationship with the natural environment and the way settlements are designed and planned with a focus on finding ways to living more harmoniously with each other and the planet. This personal bias inspired the decision to undertake doctoral studies that investigated the dynamic and at times divergent socio-ecological phenomenon of climate change and sense of place. It was also hoped that the study findings might inform and inspire the work of practitioners and researchers alike.

1.6 Thesis Structure And Outline

1.6.1 Chapter 1: Introduction

This chapter has outlined the purpose of the study, the approach taken, and research questions.

1.6.2 Chapters 2 and 3: Literature Review

Chapters 2 and 3 provide a comprehensive review of the scholarly literature to understand the development and maturation of the concept of sense of place and how it relates to the study of human response to climate change with particular reference to adaptive capacity. The chapters reveal the interconnections between the two concepts to help formulate the research questions.

1.6.3 Chapter 4: Research Design: Methodology and Methods

Chapter 4 outlines the Research Design, which is comprised of three parts and begins with an overview of the study area to provide geographic and historical context to the research. The methodological framework then presents the philosophical perspective underpinning the study and provides the basis for the research methods used to gather and analyse the data.

The philosophical foundation of the study is based on an ontological (existential phenomenological) perspective as a framework for exploring the experiential and emotional characteristics associated with perceptions and meanings related to living on the Sunshine Coast, its landscape morphology, and the perceived need and capacity to adapt to potential climatic events.

Semi-structured face-to-face interviews with 43 Sunshine Coast residents were recorded, transcribed and analysed to understand the relationship between sense of place and climate change adaptive capacity. Respondent's sense of place was further elicited through their visual representations (photographs, paintings, drawings) of people, places, or things that most represented their sense of place on the Sunshine Coast. Respondents also were asked to present one image that represented landscape change within the region. The images were

intended to serve as a point of reference for personal discussions and recollections about their sense of place and in turn act as a springboard for conversations about climate change adaptive capacity.

Data was recorded and coded in a number of iterations. A sample of interviews was subjected to a modified *Interpretative Phenomenological Analysis* (IPA). This process began with an intensive analysis of a small number of verbatim interview transcripts to identify emergent themes. These themes were then used as a framework for extensive analysis of the remaining interviews to determine consistency, identify additional themes and patterns, and transcription of the corresponding interview recordings. The themes and selected transcripts were then subjected to IPA to confirm super-ordinate and sub-ordinate themes, which were in turn subjected to descriptive and interpretive analysis via a double hermeneutic. Themes that best represented the range of participant's views formed the content of the discussion chapters. Respondent images were catalogued alongside corresponding transcripts, which aided the interpretation and re-interpretation of the transcripts and emerging themes.

1.6.4 Chapters 5-7: Analysis and Research Findings

The research findings and researcher interpretation drawn from the application of a modified Interpretative Phenomenological Analysis are presented in three separate chapters: Chapter 5: Becoming Place, Chapter 6: Imagining and Adapting to Climate Change, and Chapter 7: Linking Place and Adaptive Capacity. The three chapters consist of selected transcribed respondent answers to the interview questions and researcher interpretation. The findings are also complemented with images that illustrate the elements and features of the Sunshine Coast that most represented respondents' sense of place in relationship to the research themes.

Following a phenomenological approach, analysis was conducted to identify raw sensory data and generate themes. The findings chapters present these raw sensory experiential data, which are discussed later with respect to geographical literature on sense of place and climate change. The findings confirm established theories and findings from earlier studies of sense of place, particularly the role of time, space, and social interaction as the key components for constructing sense of place. Spatial environments were an important feature of respondent constructs of place, particularly the natural environment, which is an important feature of the Sunshine Coast. Home was also an important aspect of respondent sense of place as it served as the foci for dwelling in the private realm and an anchor connecting with the public realm. Social interaction was also an important component of sense of place, which when developed overtime enhances the connections and embeddedness of place. Overall, the local scale was important for respondent's sense of place, although they readily demonstrated capacity for extended senses of place.

The findings revealed that comprehending the complexities of climate change and adaptive capacity was challenging for most respondents, even those that were formally educated in environmental-related post-secondary studies. The absence of observable and measureable climate change at the local scale creates a gap between awareness and acceptance and ultimately action. Similar with sense of place, extensibility was an important aspect of making sense of climate change as the phenomenon is abstract, immense, and ephemeral and requires active and critical imagination to bridge the gap of lived experience of climate change.

1.6.5 Chapter 8: Discussion

Chapter 8 Discussion presents a comprehensive interpretation of the findings and comparison with existing literature to confirm previous theories and findings from earlier work on sense of place as a foundation for an exploration of the relationship between place and climate change adaptive capacity. Place and lifestyle are bound up together and in turn bound up with anthropogenic climate change and human response. Respondents are emotionally invested in their sense of place on the Sunshine Coast and value the ecological and cultural amenities of the region. The region has experienced changes over time, however the current peri-urban transformation comes at a portent time in the history of the region whereby development in the fragile coastal zone is causing a reduction of natural amenities that are important to ecosystems processes and a drawback for migrants to the region. Furthermore, development is disrupting a seemingly stable sense of place, which may be compounded by the potential effects of future climatic change.

Respondents are also altogether aware of climate change, however acceptance of the phenomena and the perceived need to take action vary across individuals. This discrepancy is attributed to a general sense of confusion brought about by conflicting information, divergent political leadership, and an overall sense of uncertainty about the future. Consequently, respondents are not confident that institutions with bestowed responsibility to care for the public good will implement plans designed to limit the potential effects of climate change. Respondents, as individuals, are generally confident that they can adapt to climate change, but feel their adaptive capacity is strengthened by collective action. This thesis argues that building adaptive capacity is contingent on making clear connections between sense of place and climate change at the local scale to make the phenomenon more meaningful for residents. Through a pragmatic sense of place, place-based strategies bring the local into focus by leveraging existing care and value of the natural environment, engaging citizens and local knowledge, building trust through dedicated leadership, and involving local residents in decisions that affect them most. In this way, the genuine becoming of place and becoming climate-active is manifest.

1.6.6 Chapter 9: Conclusion

The Conclusion provides an overview of the study, the findings drawn from the analysis, and interpretation of the key concepts that answer the research questions. The chapter includes a brief description of the contribution to the discipline and the collaborative SEQCARI project with a look to considerations for future research on the topic. This chapter concludes with a brief researcher reflection of the research process and my personal reflection of living on the Sunshine Coast while undertaking doctoral studies.

2.0 A REVIEW OF SENSE OF PLACE LITERATURE

As part of this research, a comprehensive review and analysis of the literature representing the two core topics under investigation – sense of place and climate change was undertaken to frame and support the study. The literature review is presented in two chapters that each examines the two core themes underpinning this project and serves to provide a foundation and framework for the research design and methods, analysis, and discussion.

The exploration of sense of place¹ scholarship begins with an historical overview of the origins and development of the concept over time. Although the review of place literature focuses primarily on qualitative works within the domain of human geography and existential phenomenology, a conscious decision to not privilege one school of thought over another is embraced in an attempt to conduct the most comprehensive review. Therefore, quantitative works complementary to this study are examined and referenced throughout this document. This approach highlights the complexity of the study of place and the need for integrating the different and sometimes contrasting perspectives from within the discipline of geography and other disciplines to develop a comprehensive understanding of the complex phenomenon of sense of place. The literature review on place includes a brief review of Relph's concept of *A Pragmatic Sense of Place*, a theoretical framework for tempering idealised notions of sense of place situated within the context of present-day and future challenges of the twenty-first century such as climate change. The chapter concludes with an exploration of place-based strategies as an approach to bridging some of the challenges of traditional planning, place making, and climate change adaptation.

Chapter 3 presents an overview of climate science and the integration of the core concepts of the discipline into the domain of planning and adaptive management. A review and analysis of public perceptions of climate change with a focus on adaptive capacity as a strategic approach to understanding and responding to climate change is presented. The section revisits sense of place with an examination of place-based planning strategies as a possible strategic framework for facilitating climate change adaptive capacity. The chapter concludes with a brief overview of place-based climate action.

2.1 Sense of Place

“What begins as undifferentiated space becomes place when we endow it with value” (Tuan, 1977, 6)

¹ For brevity, the phrase ‘sense of place’ is periodically referred to as ‘place’. To avoid confusion, careful attention was given to ensuring that the word ‘place’, when referring to sense of place, is used within context of the topic as opposed to the broad range of definitions associated with rank or location.

Sense of place or simply 'place' has been much discussed and over time assigned numerous definitions from a range of disciplines. Place is a highly subjective and simultaneously shared concept. It is elusive and seemingly intangible, while at the same time used in marketing and advertising materials to entice people to relocate and live out their dreams in more desirable locales. Place is never static, but always in a constant and evolving multi-dimensional state of flux. Place changes as similarly the morphology of landscapes is destined to change alongside a perpetual astronomical evolution of becoming shaped by time and space.

Place is a concept that seems simple on the surface, yet it contains considerable complexity when one attempts to interpret and assign a definition that sufficiently captures the subtle nuances and emotions associated with the individual and collective meanings and values assigned to spaces, landscapes, and associated social interactions. Broadly speaking, place comprises the activities, and cognitive and emotional connections related to meanings human beings draw from and attach to a locale and objects therein (Relph 1976; Knez 2005). Over time, people can develop strong attachments to place and form identities based on these attachments, bonding with the biophysical features and/or the social relationships within a geographic area (Knez 2005).

The concept of place has become a "prominent focus" for investigating the relationship between people and their environment (Patterson and Williams, 2005, 361). As place has been studied and discussed it has also been assigned a range of definitions. It is a common and well-understood term, yet there is limited critical understanding of place in geography and other disciplines such as philosophy (Creswell 2004). This is partly due to place being so familiar that it is easily overlooked and put into the background of everyday life making the concept itself somewhat opaque (Malpas, 1999). Appendix I provides a range of definitions of sense of place from a variety of scholars and disciplines that sought to capture its complexities.

The range and diversity of descriptions and definitions of place highlight the importance of human meanings; drawing on culture, history, experience, imagination, and value, which may or may not be visible or tangible, but are interwoven with the biophysical and material world. Drawing on Tuan's definition of place that opened this section, Vanclay (2008, 3) eloquently captures the complexity and ambiguity of sense of place with one of the more clear and concise definitions being, "space imbued with meaning".

2.2 Place, Space and Time

The tradition of geography was largely founded on exploration and description of spatial relations and characteristics; area, volume, distance, for the purpose of ordering of points and objects primarily as maps, and in the present day as complex integrated digital satellite and

computer-generated imagery. These technical instruments serve as important tools to aid defining spatial coordinates, the labeling of biogeoclimatic and natural resource zones, modeling settlement patterns, and coordinating navigation, transportation and shipping logistics among other practical applications. The resultant documents also serve as important historical references displaying settlement and land use patterns and spatial transformations over time. Thrift (2009) notes that since the earliest explorations and associated spatial measurements were driven by resource exploitation and that, “many of the ways space is measured out around the world were imposed by imperial conquest and not prettily negotiated” (2009, 87).

The term ‘space’ is often associated with place and has been described as raw material or a blank slate to which meaning is added to create place (Casey 1997; Gieryn 2000; Vanclay 2008). However, Stedman (2003b) argues that, “Space is never truly “blank” because the physical setting contributes important raw material to place meanings” and thus, “The transition from space to place involves progression from the foreign to the familiar: space is transformed into place as it acquires definition and meaning (Stedman, 2003b, 823). Lefebvre (1991) presents three concepts of space: 1) material space - the space of experience, 2) representations of space - space as perceived, and 3) spaces of representation - lived space (1974, 3). Space and place are distinct, however place is dependent on space to provide a horizon and topography that cradles a collection of objects and people who ultimately give space meaning.

Space is aligned with time, but holds a concrete physical reference to its presence. Agnew (2011) traces the modern day conceptions of space to identify two prevailing and contrasting views originating from the seventeenth century. The subjectivist school, associated with the Newtonian perspective highlights the subjective position of human beings located in space and place. The Newtonian perspective is represented by “an absolute concept of space that is an entity in itself, independent of whatever objects and events occupy it, containing these objects and events, and having separate powers from them” (Agnew, 2011, 319). Counter to this view, the objectivist school associated with the Leibinzian perspective tends to focus on the causal relationship of human activity in relation to location and the spatial domain. The Leibinzian viewpoint that inspired the modern conception of space, takes the view of relational space as having “no powers independent of objects and events but can be constructed only from the relations between them” (Agnew, 2011, 319). Despite the tension between these two views of space and the subsequent constructs and transformation of space into place, both exist in tandem with a set of corresponding preferences that necessitate different ways of perceiving and understanding phenomenon.

Human constructs of time are aligned with the sequence of natural cycles associated with the Earth’s revolutions around the sun (Tuan 1977). The diurnal and seasonal cycles trigger the

migration, mating, and birth cycles of the Earth's diversity of creatures and biota. This temporal construct is what Sorokin and Merton (1937) refer to as *astronomical time*. Aligned with these natural phases are human activities such as the sowing of seeds and harvesting of food and the many cultural events and happenings that provide experiential reference points that enrich human life. Time is a key component of constructing sense of place and an important aspect of comprehending the longitudinal nature of climatic processes.

Taylor (2009) presents two ways of viewing time: *physical* and *social time*. Physical time is that which "can be measured precisely" whereas with social time, "the emphasis is upon the 'content of time' and the focus on *social processes*" (Taylor, 2009, 140). Physical time is analogous with *astronomical time* and the advent of chronological or *clock time* (Ingold 2011). Clock time is that which Sorokin and Merton (1937, 621) conceive as being "uniform, homogeneous; it is purely quantitative and shorn of qualitative variations". The height of the Industrial Revolution coincided with increased technological innovation not only in manufacturing, but also transportation and subsequently trade, which led to "widespread standardization of time" (Thrift, 2009, 87). A simple way to look at these two perspectives of temporality might be *structured* and *unstructured time*. Unstructured time is most commonly referred to as, "'free time', or leisure time, which is in contrast to structured, work or clock time" (Ingold, 2011, 329). Fundamentally, time is a way for human beings to organise experiences along a basic continuum with *past*, *present*, and *future* being the most familiar way of temporally segmenting and organising experience. Space and time are essential ingredients for constructing a sense of place. Space and time are also important aspects of constructing an understanding of climate change as its effects are predicated to occur in the future.

Agnew (2011) pinpoints two fundamental, yet to divergent views of place that align with his examination of the relationship between space and place. He suggests that the "abstract spatial analysis" in the form of the universal geometric concept of space represents settlement points that facilitate the pursuit of "social or economic processes". Counter to this perceptive is the "phenomenological understanding of a place as a distinctive coming together of space" (2011, 316). Here place is defined as the immaterial richness of human experience, the essence of a sense of place, or *genius loci*.

Although not bound by the scalar characteristics of time and space, Casey (1993, 8) asserts that "place became subordinated to space (and both to time) in the seventeenth century and has only become tentatively rehabilitated in the twentieth" and possibly earlier (Malpas, 2012). The relegation of place to the background facilitated a preoccupation with the measurement of time and space that emerged in the foreground of human consciousness and flourished in step with the Industrial Revolution and the Enlightenment Period. As explorations of the concept of place evolved and gained momentum in the latter part of the twentieth century, guided by the phenomenological approach employed by humanist geographers, the study of

place emerged as a legitimate academic inquiry into the human experience and inter-relationship with the biosphere (Seamon 2010).

2.3 Place and Landscape

'Landscape' is a term often associated with place. Like place, the concept often eludes definition, although it is most frequently aligned with the visual representation of objects aligned along the surface of the Earth's horizon, or the historical German term *landschaft*, or 'land shape' (Paasi 2002). Tuan (1974) contends that, "Only when it [landscape] was transplanted to England [from the Netherlands] toward the end of the sixteenth century did the word shed its earthbound roots and acquire the precious meaning of art. Landscape came to mean a prospect seen from a specific standpoint" (Tuan, 1974, 133). In this context, the visual representation of landscape, first in paintings and later in photographs, became symbolic of an imagined sense of place that captivated human thought across spatial, temporal, and metaphysical scales.

Relph (1976, 10) connects space, landscape and place, describing them as "poles of the geographical life-world – space as experienced, landscape as the bounding surface of space, and place as centers of meaning in space and landscape". In this definition Relph is addressing only one facet of landscape – the physical. However, landscape is more than the physical elements in space; it also includes the cultural elements associated with the physical forms (Sauer 1925); it is the horizon that dissects space and provides the surface where places are made (Tuan 1977). The surface of the earth consists of natural topographical features that cradle the patterns of human settlement upon a physical landscape. Landscapes exist within the spheres of spatial and temporal dimensions where its physical and imagined topographies are constantly evolving (Massey 2006). The everyday activities and interaction of human beings with the natural and built landscape culminate in the construct of place.

Carl Sauer's seminal publication *The Morphology of Landscape* (1925) was one of the earliest writings that applied a phenomenological perspective to geography. In this work, Sauer explored the development of geography, its roots in earth science and the recognition of cultural factors associated with landscape that emerged out of European geographic inquiry at that time. In comparing geography to disciplines such as history Sauer noted that, "The facts of geography are place facts; their association give rise to the concept of landscape." (1925, 321). Sauer sought to clarify geography as a comprehensive discipline founded on spatial relations, but a field of study that has the capacity to give equal attention to temporal (historical) and cultural (sense of place) aspects of academic inquiry. In attempting to clarify geography's scholarly trajectory, Sauer initiated a discourse on the application of phenomenology within geography as a way to re-integrate the cultural aspects of human

interaction with the physical landscape that altogether shape and reshape cultural practices alongside the morphology of natural and built environments (Sauer 1925).

John Kirkland Wright further explored the emerging phenomenological arc in Sauer's work with an exploration of the *geographic imagination* in his 1946 address to the American Association of Geographers. In his paper, *Terrae Incognitae: the place of imagination of geography*, Wright introduced the concept of *geosophy*, which he founded on three key principles of geographic inquiry: 1) a multidisciplinary approach, 2) imagination and subjectivity in geographic inquiry [the emotional bonds between people and places compared to the physical realm of land surface, climate and cartography], and 3) sharing academic knowledge (Keighren 2005). In his address, Wright advocated for a more holistic approach to exploring geographic phenomenon and understanding everyday lived experience, which challenged the established philosophical and cultural belief of scientific neutrality and professional specialisation and expertise (Lowenthal 1961).

Wright's concept of *geosophy* also invited the amateur naturalist and farmer to engage in informal geographic practice as a way to enrich the discipline and breakdown the siloes of specialisation. At its core, the concept of *geosophy* is strikingly similar to the modern-day notion of *citizen science*, whereby the volunteer "collects and/or processes data as part of scientific inquiry" (Silvertown, 2009, 467). With this approach, Wright sought to nurture the multitude of individual imaginations and explorations that humans might explore and understand the world as a "patchwork of miniature *terrae incognitae*" (Wright, 1947, 3-4). Although Wright's ideas were not well received at the time, and remain a somewhat elusive concept to this day, his proposition offered several groundbreaking approaches to research not only specific to geography, but also relevant to all social sciences (Lowenthal 1961; Keighren 2005).

Ingold (2011, 195) expands on the concept of geographic imagination with the concept of "cartographic imagination" as an act of daily wayfinding and engagement in navigating the everyday landscape, whereby encounters and discoveries are made along well-worn pathways of mobility. The concept of wayfinding is a common term within the planning vernacular by which signposts, markers, and maps facilitate the orientation and movement of individuals within and through natural and built environments. For Ingold, the concept means more than the practical application of spatial orientation or guiding mobility. In his interpretation, Ingold considers wayfinding as corporeal moment as performed across space and time culminating in the construction of a sense of place that is created through everyday lived experience.

C. Wright Mills (1959) explored the concept of human imagination from a sociological perspective in his groundbreaking work, *The Sociological Imagination*. In the book, Mills

proposed that a 'sociological imagination' offered conscious reflexivity whereby the individuals possessed the capacity to reflect and be aware of history (time) and society. Geographer David Harvey (2005, 211) felt that Mills' concept "formed a common bond for all the social sciences and was of central concern to history and social philosophy". However, Harvey was also critical of the absence of a spatial (geographic) orientation in Mills' theory and he proposed a more comprehensive perspective of 'sociological consciousness' or 'geographical imagination' be considered; a perspective that Harvey claimed was already established in many disciplines (architecture, art, design, planning, anthropology etc.). In his assessment, Harvey concluded that, "The relations between social processes and spatial forms needed to be better understood as a prerequisite to well-grounded critical research on urbanization, modernization, diffusion, migration, international capital flows, regional development, uneven geographical development, geopolitics and so on..." (Harvey, 2005, 212).

Constructs of place and landscape are diverse and vary across cultures and are in no way limited to colonial and/or Anglo-American perspectives presented thus far. Australian Aborigines hold very specific ideas and imaginations about human interaction with the biosphere and in many ways represent a similar sense of care and respect for the planet found within existential phenomenology, environmentalism, and sustainability. Aboriginal perceptions of human creation and evolution are closely tied to the Earth and supernatural forces, which are altogether reinforced through an oral tradition and cultural practices (Ryden 1993). These connections are reinforced through the narrative *songlines*, whereby the Ancestors, "... literally sang the world into existence" and "those who know the path and the song can follow the one and sing the other in the same way the Ancestors did, recreating the mythic creative process, reasserting their identities" (Ryden, 1993, 44-45).

Aboriginal relationships with the land are reinforced through a long history of cultural narratives, which are in stark contrast to detached utilitarian colonial attitudes toward nature. "To Aboriginal people, western concepts of land ownership appear to be arbitrary and reckless" (Mulligan and Hill, 2001, 234). Mulligan and Hill (referencing Rose 1992) contend that "the English language is the product of a particular cultural history and, as such, it cannot articulate Aboriginal concepts of land tenure" and thus, "Aboriginal people have adopted the word 'country' as it more closely captures a sense of connectedness than the emotionally detached concept of 'landscape'" (2001, 237).

Human perceptions of space, time, and landscape entwined with language, social interaction and cultural practices are the fundamental ingredients that work together to form the foundation for constructs of place. The meanings and values assigned to sense of place are in constant flux and subject to different interpretations over time and across cultures. The following section builds on this foundation with an examination of the philosophical

underpinnings of humanistic geography's interpretation of sense of place and its development during the latter part of the twentieth century to the present.

2.4 Philosophical and Theoretical Orientations of Sense of Place

The range of disciplines and scholarly explorations of the concept of sense of place each offer unique perspectives, enriching the understanding of this complex and dynamic human construct. Thinking about place grew out of philosophical and ontological conversations about human existence and experiences in the world. Some of the earliest notions of sense of place can be traced to the Ancient Greeks and Eastern philosophy (Tuan 1974). By the twentieth century, existential phenomenological philosopher Martin Heidegger, building on the work of his teacher, Edmund Husserl, further developed the concept of place in the essay *Building, Dwelling, Thinking* from his book, *Poetry, Language, Thought* (1971). The study of place is well suited to phenomenology and it is little surprise that the work of phenomenological philosophers, namely Husserl, Heidegger, Schulz, Sartre, and Merleau-Ponty, informed much of the early theoretical explorations of sense of place undertaken by human geographers such as Sauer, Tuan, Relph, Lowenthal, and Buttimer, or what is commonly referred to as humanistic geography. Existential phenomenology was in no way limited to geography and has been applied by other disciplines including sociology, anthropology, education, and health sciences, as well as providing a foundation for environmental psychology (Seamon 2010).

2.5 Phenomenology and Sense of Place

Phenomenology and analytic philosophy were the two primary strands of continental European philosophical inquiry that emerged during the twentieth century (Smith, 2013). "Phenomenology investigates meanings and taken for granted worldviews that constitute our being-in-the-world" (Stefanovic, 2000, 254). Analytic philosophy, or Anglo-American philosophy as it is commonly known due to it primarily being adopted in English-speaking countries, focuses on logical positivism, or an empirical understanding of knowledge (Rockmore 2006). Although the two schools of thought are seemingly diametrically opposed, they periodically experience overlap in theory and application (Smith 2013).

Edmund Husserl is considered the source for introducing the concept of phenomenology in 1900 with his study of human experience, which he referred to as the *lifeworld*, although earlier thinking on the topic can be traced to Hegel (Smith 2007; Sokolowski 2000). Husserl's approach focused on "the reflective study of the essence of consciousness as experienced from the first-person point of view" or the "study of phenomena, the way things appear to us in our experience, the ways we experience things in the world around us" (Smith, 2007, 188-189), which became known as "transcendental phenomenology" (Elliott 2005). Human

constructs of place occur in a range of locales over periods of time conducting everyday taken for granted activities, or what Husserl refers to as the “natural attitude” (Husserl, 1982, 5). Here the mundane happenings of an ordinary day give rise to the range of life’s momentous occasions culminating in a sense of place. Recalling, remembering, or reminiscing about place is always from an historical perspective (looking backward) to elicit memories of past lived experiences at a given time and a given locale.

As a student of Husserl, Martin Heidegger elaborated on his teacher’s thinking with the introduction of the concept of ‘being’ in the sense of conscious awareness as a contrast to physical entity. In his pioneering work *Being and Time*, Heidegger (1962) introduced the concept of *Dasein*, a term that aims to capture or describe the human consciousness as existence in space and time. Heidegger’s main project was to redefine the Cartesian separation of subject and object with *Dasein* as “being in the world”, a concept that in many ways underpins the principles of ecological sustainability and ecological economics by asserting that human beings are part of ecological processes and fundamentally integrated with the biosphere. A reading of Heidegger’s *Building, Dwelling, Thinking* serves as a useful foundation for the application of existential phenomenology for the study of sense of place. In the essay, Heidegger focuses on the concept and experience of the activity of dwelling and how the transformation of language over time altered the meanings of such words as *baun* (dwelling) and *bauen* (cherish, care, protect). A selection of key points is presented here to assist with the examination of the richness of Heidegger’s ideas on dwelling and home as these pertain to sense of place.

In the essay, *Building, Dwelling, Thinking*, dwelling is presented as way for viewing the world as home where mortals engage in the mindful practice of being in the world as a way of living harmoniously with planet Earth. For Heidegger, dwelling is the essential (non-technical and non-architectural) nature of human existence. Heidegger proposes that the activity of building is the physical manifestation of the need to dwell. Building consists of the practical necessity of making shelter. He also brings attention to the activity of building non-dwelling structures, for example, constructing a bridge for the purpose of transporting people and goods across the expanse of a river. The main thrust of the paper is that the essential and the non-separable together represent the notion of dwelling. However, as with the preoccupation with spatial relations, modern human beings have tended to put the technical and physical in the foreground and the essential in the background. Thus, the etymological root of the word *baun* (dwelling) is degraded by the focus and reinforced meanings and practical application of the word for building. To summarise, Heidegger concludes that the preoccupation with the activity of building for non-essential purposes is inconsistent with harmonious living (*bauen*) (Heidegger 1971).

French philosopher Maurice Merleau-Ponty was motivated by Heidegger's work and developed further phenomenological existentialism with his focus on embodiment whereby "lived space is firmly anchored in the nature and the structure of the human body and the potentialities for action" (Dovey, 1993, 249). Merleau-Ponty (1962) brought Heidegger's ideas a step closer to the concept of connectedness of the mind and body with a particular focus on the physicality of embodied lived experience. Where previously consciousness held privilege and was seemingly perceived as separate from the body, Merleau-Ponty emphasised that the mind was dependent on the body to house it and propel it through space (and time) (Merleau-Ponty 1962). The philosophical underpinnings of phenomenology focus on the mind-body lived experience of human interaction with the landscape and biosphere, which underpins the theory of sense of place.

2.6 Humanistic Geography and Sense of Place

Inspired by the work of these existential phenomenologists, geographers began to explore its application to humanistic geography as a way to embrace a more holistic approach to the study of personal experiences, transformation of space into place, and the influence of cultural practices on human beings and the biosphere. The humanistic perspective seeks to turn the preoccupation with the detached abstract technical phenomena toward reflexive human experience as situated across temporal and spatial scales, from local to global, and along the continuum of the past, present and future. Consequently, humanistic geography is intentionally inclusive to allow for the interplay between people and place. Tuan (2012) is careful to clarify that humanistic geography not be confused with secular humanism or rationalism, which "rule(s) out *a priori* any input from religious and theological scholarship" (2012, 5).

The application of phenomenological perspectives has not been limited to humanistic geographers. Disciplines such as environmental psychology, architecture, and urban planning have integrated phenomenology within scholarly and applied endeavors. Since the 1970s, architects Christian Norberg-Schulz and Christopher Alexander readily applied the philosophical principles of phenomenology to architecture and design as a means of facilitating the conscious act of place making. Norberg-Schulz embraced the notion of *genius loci* (spirit of place) as a fundamental feature for nurturing a sense of place through the application of place making in design and urban planning (Patterson and Williams 2005). Alexander's *A Pattern Language* (1977) and *A Timeless Way of Building* (1979) are acknowledged as quintessential material for architecture and urban planning that embody the core concepts of phenomenology and sense of place (Seamon 1993). These works advocated for a more complementary design aesthetic that adopted concepts such as biomimicry and citizen engagement through active public participation in the design and

planning process as a response to the post-war expansion of functional and homogeneous urban landscapes of the New World (Bhatt 2010).

Sense of place is conceived as an immersive synesthetic body and mind experience suspended in the dimensions of time and space (Casey 1997; Merleau-Ponty 1962). For Relph (2008), "Sense of place is a synaesthetic faculty that combines sight, hearing, smell, movement, touch, imagination, purpose, and anticipation" (2008, 313). According to Ryden (1993, 38), "A knowledge of place is grounded in those aspects of the environment which we appreciate through the senses and through movement: color, texture, slope, quality of light, the feel of the wind, the sounds and scents carried by that wind". With such a vast array of stimuli and human interaction through time and space it is conceivable to conclude that sense of place is dynamic, complex, and in perpetual change.

Pred (1984) considers this ever-changing fluidity of place as the process of 'becoming', a term borrowed from Ancient Greek philosophy. For Pred, "Place is [therefore] a process whereby the reproduction of social and cultural forms, the formation of biogeographies, and the transformation of nature ceaselessly become one another at the same time that time-space specific activities ceaselessly become one another." (1984, 282). The theoretical concept of becoming distinguishes between the ontological concept of 'being' and the evolutionary and occasionally temporary or ephemeral series of changes that occur over time (Carlisle 2005). Massey (1994, 119) presents "two interweaving strands" of sense of place drawn from the work of Heidegger and Blanchard. In one strand, Massey proposes the concept of *Place-Being* whereby "Space connotes Being" and a sense of place associated with "memory, stasis, and nostalgia". On the other hand, *Place-Becoming* is associated the forward thinking and the "assumed progressive project" of sense of place whereby "Time connotes Becoming (1994 135). In this conceptual model, space and time work in tandem to facilitate the construction and reconstruction of sense of place.

In *Space and Place: The Perspectives of Experience*, Tuan (1977) presents three types experiencing: 1) biological, 2) relations of space and place, and 3) the range of experience or knowing. Tuan suggests that despite our capacity for mobility, a sense of place associated with intimate knowing, rootedness and dwelling is preferred over a nomadic life (1977, 158). Despite Tuan's proposed preference, mobility and a nomadic life has long been a part of human history and is very much a part of the modernising world². American historian and environmentalist Wallace Stegner (1992) contends that for every person who "would like to be a placed person, another is the opposite, the displaced person, cousin not to Thoreau but to Daniel Boone, dreamer not of Walden Ponds but far horizons, traveler not in Concord but in

² The term 'modernising' is used here to clarify that not all parts of the world are 'modern' and that such cultural evolution is another example of becoming. I also want to distinguish between mobility for business or pleasure and mobility for survival, e.g. political and/or ecological refugees.

wild unsettled places, explorer not inward but outward” (1992, 199). Although there may be a preference among human beings for a sense of stability, security, and rootedness, the reality is that some human beings are and/or have always have been nomadic (either by choice, necessity, or persecution). Stegner’s perspective further illustrates the diversity of the human condition and need for belonging, whether it be situated or in search of place as characterised by the pioneering spirit of the explorer or everyday person seeking new spaces to settle and carve out a life.

By the 1960s and 1970s, human geographers such as Buttimer, Tuan, and Relph had each embarked on deeper explorations of phenomenology within the geographic context. This work coincided with a movement within the discipline that once again questioned the prevailing abstract spatial relations paradigm. A common theme throughout their work is the call for a movement that engendered an epistemological shift, resulting in what was to become humanistic geography (Seamon 2010). This new school of thought introduced human experience as an integral part of understanding geographic phenomenon into a discipline that was largely preoccupied with a focus on earth science (Tuan 1977).

By embracing a phenomenological approach, these geographers explored among other core concepts, Heidegger’s earlier discussion on dwelling and home as it related to landscape, geographic imagination, and place. In her exploration of dwelling, Buttimer (1976) proposed that, “To dwell implies more than to inhabit, it means to live in a manner which is attuned to the rhythms of nature, to see one’s life anchored in human history and directed toward a future, to build a home which is the everyday symbol of a dialogue with one’s ecological milieu” (1976, 277). Here, Buttimer considers the temporal scale as a factor of the human evolutionary process entwined with nature that is grounded by the notion of identity or belonging that is associated with experiences, meanings, and values that form one’s sense of place. Space and time are key aspects of lived experience that nurtures the passage of being and becoming that altogether form sense of place.

A deep or strong sense of place is commonly linked to belonging, rootedness, and connectedness with both environmental and social aspects present in a given locale (Seamon 1984; Vanclay 2008). The combined interaction with both topographical and social features of a locale influence the conscious (and sub-conscious) emotional bonds and subsequent attached meanings that result from an “accumulation of experience” culminating in a sense of place (Stedman, 2003b, 823). In developing a focus on place as a specific field of study, Relph proposed that, “The essence of place lies in the largely unselfconscious intentionality that defines places as profound centers of human existence” (1976, 43). The concept of dwelling is intimately aligned with the concept of home through the activity of building, the utility of a structure as a residence, and the essence of belonging, attachment, and identity associated with a sense of place. As Relph (2008) summarises, “The deepest sense of place

seems to be associated with being at home, being somewhere you know and are known by others, where you are familiar with the landscape and daily routines and feel responsible for how well your place works” (Relph, 2008, 313).

In his book *Topophilia: a study of environmental perception, attitudes, and values*, Tuan (1974) introduced the concept ‘topophilia’ a neologism that defines a positive connection or affection one may hold for a given locale and broadly includes humanity’s affective ties with the material environment. Topophilia further reinforces synesthetic experiencing both spatially and temporally as human beings respond to the environment visually, aesthetically, corporeally, and emotionally; drawing on memory space that altogether culminates in a “love of a place” (Tuan, 1974, 92). Tuan (1979) added a counterpoint to his positive definition with another neologism, ‘topophobia’, which not surprisingly, refers to the negative emotions of fear, vulnerability, or of feeling unwelcome in a space such as barren landscapes, slums, or congested urban areas. Here Tuan highlights the polemic differences that can manifest between desirous and repulsive characteristics of places.

Edward Relph’s *Place and Placelessness* (1976) is an influential and consistently cited publication. Alongside Tuan’s work during the same period, Relph’s breakthrough work could very well be considered one of the cornerstones of the study of place in the latter half of the twentieth century. Building on the work of Husserl, Heidegger and others, Relph developed a comprehensive analysis of a phenomenological approach to understanding and critically thinking about human constructs of place and its implications for planning, design, and cultural practices. In this work, Relph presented a range of ideas and terms centred on the core of concept place, for example *placelessness*, *insidedness*, and *outsidedness*. For Relph, placelessness is the homogeneous or featureless “non-place quality manifest in uniformity, standardization and disconnection from context” (2008, 312). Similar to Tuan, Relph proposed that a strong sense of place could also manifest in opposing or negative ways, for example as parochial or exclusionary in the form of gated communities, or more generic and colloquial terms such as NIMBYism³ (Relph 2008). However, Relph did not see these opposing concepts of place as being mutually exclusive, rather “place and placelessness are bound together in a sort of geographical embrace so that almost everywhere contains aspects of both” (Relph, 2008, 312).

The thrust of *Place and Placelessness* was to turn the view of the natural environment from that which Relph deemed as being “mechanical and abstract” to one that captures the “subtlety and significance of everyday experience” (1976, preface, n.p.). With this work, Relph attempted to reinvigorate the purpose and practice of planning that had so far experienced varying degrees of successful design and implementation, but were all too often deficient in the important aesthetic and cultural qualities necessary for nurturing the diversity of human

³ NIMBY - Not In My BackYard

experience and spirit of place. In this way, sense of place may serve as a pathway for further exploration of the relationships between people and their environments and the role of planning in building adaptive capacity to climate change.

Phenomenological philosophers Edward Casey and Jeff Malpas have expanded on Heidegger's concept of 'being-in-the-world' and together with Merleau-Ponty's emphasis on the body, have expanded on humanistic geography's theory of sense of place introduced in the 1970s. While humanistic geographers tended to focus on the subjective human experience of place, Casey and Malpas geographically situate human being as a critical factor in the constructs of place.

Edward Casey (1999) finds Heidegger's concept of "being-in-the-world" to be perhaps too formal and abstract to effectively capture and convey sense of place and therefore, "To be in the world, to be situated at all, is to be in place." (1999, xv). Casey considers such being-in-place as emplacement, whereby "living-moving bodies... belong to places and help constitute them" and as the human body is dependent on place, "there are no places without the bodies to sustain and vivify them." (1997, 24). Casey's concept of emplacement draws on Heidegger's emphasis on dwelling through which "Embodied emplacement requires structures in which to reside – structures devised by human beings to reflect and support their desires and needs", which extends from the privacy of the home into the public realm (1999 xvi). Such embodied emplacement is defined by what Casey calls "thick place", whereby intentional engagement with place "call[s] for full bodily engagement, most notably in the case of rituals and other forms of interpersonal experience." (2001, 719). Conversely, "thinned-out places" are defined by "decreased bodily engagement: where the lived body is less fully immersed in the constitution and continuation of place, the place itself is correspondingly thinner." (2001, 719).

Australian philosopher, Jeff Malpas, has contributed significantly to the theoretical development of place in geography through his interrogation of Heidegger's work, especially *Being and Time*. Malpas isolates Heidegger's being-in-the-world and gives the concept geographical orientation with the emphasis on the term locality and in particular the concept of "locality of being" whereby human beings are not only in the world, but situated in a locale, or in place, which "is only possible within the all-embracing compass of place" (1999, 15). Similar to Casey's interwoven conception of being and place, Malpas contends that being only comes about through intentional interaction with place and that limited or shallow engagement undermines the capacity to understand ourselves and ultimately, our sense of place (2008, 2009). To this end, Malpas maintains that "dwelling is the mode of human being, so human being is essentially a being in place, just as it is also a being in the world." (2012, 63).

2.7 Place: Attachment and Identity

Place-attachment and place-identity are interrelated concepts that each hold distinct meaning, describing individual and/or collective bonds with the physical features, objects, and people that are brought together and interact in and around a locale. The two concepts are often used interchangeably in that they both relate to belonging and sense of place. However, despite the overlapping characteristics, *place-attachment* specifically refers to the social interactions and relationships created and developed over time, whereas *place-identity* defines an internal, or subjective concept of oneself as an individual as defined by both the social elements and biophysical attributes that are co-constructed through lived experience of place (Knez 2005).

Place-attachment can be described as “the bonds people develop with places”, which are based on three core components: emotional, cognitive, and behavioral, with emotional bonds being most frequently referenced and/or measured (Lewicka, 2008, 211). Strong emotional bonds derived through casual and long-term social interactions are the key ingredients for developing place-attachment. Other factors that influence attachment are age, length of residence, and social ties whereby time and social interactions together with the physical landscape act as a catalyst for the development and attachment of symbolic meanings associated with sense of place (Hay 1998; Stedman 2003a). However, it takes more than attachment to embed one’s self or identity to form a cohesive place construct (Lewicka 2008).

Place-identity is contingent on the existence of place-attachment. The different symbolisms of place produce different and diverse identities making place important to one’s personal identity with the physical features and cultural characteristics of a locale (Lewicka 2008). Place-identity can range in scale from local, regional, or national with capacity for civic pride or a feeling for the spirit of place at the local level being strongest (Cloke and Jones 2001). Cognitive factors such as multicultural or multiethnic character of a city for example, can be important in creating a unique and distinct identity (Knez 2005; Lewicka 2008). Place-identity is often developed over time through continual interaction with people and places that possess a distinctive character and is greatly influenced by being born and/or raised in the same locale (Jacobson-Widding 1983).

Another key factor facilitating the transformation of space into place is place names (Tuan 1991). The power and symbolism of language together reinforce the aesthetic and cultural features of a city or region, which facilitates the development of place-identity, and in particular a shared sense of place or place-identity. Although the physical features and unique characteristics of a place are important factors for enhancing place-identity, it is primarily the intimate and casual social interactions occurring over time that have the greatest influence (Knez 2005). ‘Home’ or ‘hometowns’ are words that most commonly capture the essence of place identity. Consistent with the phenomenological perspectives underpinning Heidegger’s

emphasis on dwelling, the concept of home is a central theme to the theory and study of sense of place.

Tuan (1991) has suggested that geography is comprised of three core components: earth, people, and home, with the earth conceived as a home, or “earth as the home of people” (1991, 99). This perspective ties together the concept of dwelling and care for the planet with the overlapping layers of home and sense of place. Cresswell (2004) suggests that home is very much at the core of human geography and that, “Home, more than anywhere else, is seen as a center of meaning and field of care.” (2004, 24).

Home is commonly conceived as being a spatially defined area to which human beings are able to retreat from the outside world and where there tends to be the greatest influence within the confines of this space (Seamon 1979). Some initial ideas of home are often defined by the structural properties of a residence - the layout, aesthetic, form, and overall character of a shelter and in Bachelard’s (1994, 32) view “the house is our corner of the world”. Bachelard’s phenomenological interpretation of the sensory and corporeal interactions with the architectural and spatial features of a house such as the way sunlight enters a room through a window, the creaks of a wooden floor when walked upon, scents associated with the kitchen or attic, or the “fingerprint memory”⁴ altogether serve as tactile cues associated with experience, memory space, and the embodiment of home (Bachelard 1994). These experiences and interactions with physical features combine to form deeper symbolic meanings associated with the events and activities of everyday life that transform a residence from a mere structure into a sense of belonging or home (Tuan 1991).

The physical structure of a house⁵ and the emotional meanings associated with home are entwined and create what could be conceived as an essence of place – security, peacefulness, family, memorable events, belonging etc. Although centred on the structural form of a residence, home is not limited to a residence and typically extends outward from the structural confines into adjacent areas that altogether expand the fluidity of sense of place. “Home, ... is that zone of familiarity which people know intimately, and in which they, too, are intimately known. As such, it [home] encompasses all the settings of everyday life; whether the house, street, neighbourhood, or place of work” (Ingold, 2011, 330). Home serves as the focal point of dwelling and is a key component of sense of place, which fundamentally grounds this study research.

An important factor of sense of place is length of residency. Stegner (1992) suggests that “a place is not a place until people have been born in it, have grow up in it, lived in it, know it

⁴ Stilgoe (in foreword to *Poetics of Space*)

⁵ The words ‘residence’ and ‘abode’ are used in this document to more accurately reflect the diversity of living quarters other than the detached single-family house.

died in it – have both shaped it, as individuals, families, neighborhoods, and communities, over more than one generation” (1992, 201). Thus, when people reside in an area for a prolonged period of time, the likelihood of becoming emotionally invested in other people and the landscape increases over time and “constitute[s] vital reference points for many individuals... special locations and settings, which serve to recall particular personal experiences”, which results in a “sense of deep care and concern for that place” (Tuan, 1977, 37). The relationship between home and length of residency introduces another intersection with the concept of time and space as an important consideration in this research.

Hay’s (1998) multiple method (phenomenology, ethnography, and social surveys) longitudinal study (1990-98) of rural residents of Banks Peninsula, New Zealand and Cowichan Valley, British Columbia, Canada confirmed that length of residence is a key factor for developing place-attachment and identity with social interaction being the principal influence. Using the multiple method approach, Hay was able to identify factors influencing length of residence as being important determinants for how long a person will remain in an area. For example, home ownership (including residence status), expectations and intentions for remaining in an area, and an individual’s age at the time of settling in an area, the latter of which is most pronounced when an individual is born and/or raised in a locale and remains there for most of their life contribute to deep emotional connections with place (Hay 1998).

Strong bonds associated with the social and natural environment are not limited to the individual and “may also involve a sense of shared interests and values (Cuba and Hummon, 1993, 113). Williams and Stewart (1998) suggest that a sense of place fosters such shared meanings and values, which are reinforced through a “shared language that eases discussions of salient issues and problems” that allows for the emergence of a “shared sense of place” and/or “a shared future sense of place” (1998, 23). Again, the power of language facilitates and reinforces place constructs through ongoing narratives of informal everyday interactions together with formal social structures associated with laws that guide individual behavior and collective cultural practices. Despite the capacity and resilience of such a shared sense of place, “At a local level, place meanings are less stable than they once were, being buffeted by increasingly distant and uncontrollable social economic forces. Meanings have become more individualised and boundaries have become more permeable. In addition, a sense of place that at one time may have largely been shaped and maintained by community insiders is increasingly subject to more distant markets and political forces” (Williams and Stewart, 1998, 20). Thus it is important to consider how sense of place is influenced by global structures and the flow of people, natural resources, goods, and capital.

2.8 Globalisation and Sense of Place

Following the Second World War, the twinning forces of capitalism and globalisation expanded and by the 1970s and has become fully entrenched (Massey 1994). During this time, “residential development was almost completely taken over by corporations” (Relph, 1987, 172). This change increased private home ownership and decreased public housing, which altogether revitalised the meaning of home (Mallett 2004). The shift in emphasis from public to private ownership is most pronounced in advanced capitalist Anglo-American countries (USA, Britain, Australia, Canada, and New Zealand) with a strong cultural identity and status associated with, “preference for a free-standing house with a yard and occupied by a single family” (Mallett, 2004, 67). Consequently, conversations about locality, sense of place, and home were at least partially a response to concerns about globalisation and time-space compression, which some scholars attribute to a “fragmentation of local cultures and a loss in its deepest meanings of sense of place”(Massey 1994, 162).

Noted Marxist geographer, David Harvey (2005) offers a critical assessment of what he considers to be the underlying factors driving globalisation and the disruption of place:

“The current phase of globalization (which dates from the early 1970s) has increasingly been powered by a hegemonic neo-liberal, free market agenda in which privatization and the opening up of markets world-wide to commercial, entrepreneurial and multinational capitalism has become the dominant moving force backed by the military and commercial power of the United States. With the collapse of the Berlin Wall, the triumph of the free market seemed complete. Highly mobile finance capital has become dominant at the same time as revolutions in transport and communications and in information technologies have taken systems of exchange and movement to a higher order of generality: the result of a long drawn out process that Marx called “the annihilation of space through time.” (2005, 217).

Williams and Stewart (1998, 21) contend that such globalising forces have influenced the form and function of settlements resulting in increased homogenisation of the urban landscape as well as a destabilisation of sense of place that has “weakened local distinctiveness”. In modern times, the unique characteristics of place have been absorbed by ‘community’ and later ‘society’ to the extent that “place has lost its significance” (Casey, 1993, 15). However, Massey (1994) suggests that, “Globalization (in the economy, or in culture, or in anything else) does not simply entail homogenization. On the contrary, globalization of social relations is yet another source of (the reproduction of) geographical uneven development, and thus of the uniqueness of place” (1994, 156). While Massey may not agree that globalisation automatically produces uniform urban landscapes, she does acknowledge

the capacity of globalisation to alter unique characteristics of place, and that the transformation of place is not possible without the some destabilisation of a pre-existing place construct, whether physical or cultural.

Sense of place, place-attachment, and place-identity evolve over time and are altogether contingent on the ongoing interaction between people and physical features of a locale (Relph 2008). Numerous factors contribute to individual and collective place constructs from natural landscapes, iconic features both natural and built, place names, social interactions, shared meanings and values, cultural practices, and political and economic forces of globalisation. An emphasis on home and loved ones altogether contribute to varying degrees of attachment and belonging with stronger ties being developed when one remains in a given area for a prolonged period of time. However, technology has facilitated increased mobility and altered the ways people communicate. Today, people around the globe increasingly spend less time living in a single location, maintain multiple and distant relationships, and interact via diverse modes of communication, sometimes simultaneously across different time zones. Harvey (1990) suggested that time and space is socially constructed and that the conditions of modernity have resulted in a 'time-space compression'. Adams (1995) proposed that this time-space compression has resulted in lives being 'extended' across temporal and spatial scales, from local to global, from personal to virtual, in what he refers to as 'extensibility'. Sense of place is dynamic and fluid and in varying degrees of stability and flux. Making sense of place is making sense of the world in all of its various permutations and manifestations.

2.9 Critiques of Place Theory

A criticism of humanistic geography's notions of home, and by extension, sense of place (attachment, identity), is a tendency to focus on the idealistic, romantic or nostalgic representations of home that occasionally overlook the less appealing realities of everyday life. The perception that the private confines of the house (home) serve as a safe haven for domestic life is not necessarily true for all women (and children) (Rose 1993; Mallett 2004). Additionally, Cresswell (2004, 110) suggests that such idealism can result in a negative social stigma toward economically and politically disadvantaged individuals and groups such as the homeless and refugees who may be perceived as being 'outsiders' or 'people without place'. "Not only are the refugees and asylum seekers from other places but they supposedly threaten 'our place' and 'our culture'" (Cresswell, 2004, 121). Massey (1994) argues that much of the scholarship of place that espouses concepts such as belonging and identity are also dependent on longing for the past and nostalgia as "attempts to fix the meanings of places, to enclose and defend them: they construct singular, fixed and static identities for places, and they interpret places as bounded enclosed spaces defined through counterposition against the Other who is outside" (1994, 168). These critiques confirm that sense of place (and home) is a complex and most certainly not a uniform concept. Despite

the negative attributes of place, which scholars such as Relph and Tuan have attempted to integrate in their work, it would be difficult to argue that the majority of human beings do not prefer stable and cohesive collective of place meanings and values, and the comfort and security associated with home.

Low and Altman (1992) proposed that theoretical concepts such as place follow a common course or 'three stage evolution' within social science research. In the first stage, new concepts are introduced and are universally accepted. After some time, the concept enters stage two where scholars seek to validate and clarify the concept's meaning through intense debate. The third stage is comprised of the "development of systematic theoretical positions and clearly delineated programs of research and application of knowledge to the solution of practical problems" (1992, 3). Patterson and Williams (2005) suggest that place research experienced "substantial erosion of consensus" by the 1990s and had moved into phase two by the mid-2000s (2005, 361).

The introduction of phenomenology as a theoretical framework for understanding place in the 1970s seemed to gain traction without much critique until about the mid-1980s. In 1985, John Pickles published *Phenomenology, science and geography: Spatiality and the human sciences* where he questioned the phenomenological methods and principles espoused by Buttimer, Seamon, Tuan and Relph (Rehorick 1991). Pickles (1980) specifically scrutinised the work of Seamon and Buttimer in their book *The Human Experience of Space and Place*. In his critique, Pickles argued that Seamon and Buttimer "either misunderstood or misapplied Husserlian phenomenology" and consequently they were "not doing phenomenology authentically" and that "Heidegger's hermeneutic phenomenology can provide the necessary ontological foundations not only for the study of human geography, but for all science" (Rehorick, 1991, 359). Pickles advocated for a return to 'phenomenological purism' to ground the scholarly contributions of geography and other disciplines in light of the then early explorations of phenomenology outside the discipline of philosophy (Rehorick 1991).

A renewed interest in place in the 1990s brought about another critique of its application as a framework for qualitative inquiry during the early 2000s (Patterson and Williams 2005; Lewicka 2008). Cresswell and Massey were critical of Relph's apparent preference for idealised or romantic notions of place presented in *Place and Placelessness*, contending that it presented simplistic dualisms, and that it was out of touch with contemporary notions of place (Seamon and Sowers). In response to these criticisms, Seamon and Sowers (2008) argued that Relph provided a comprehensive and intentionally broad discourse on the topic of place and that these critics misunderstood the basis of phenomenology as a theoretical framework whereby "there are different dimensions of human experience and existence and that *all must be incorporated* in a thorough understanding of human and societal phenomena" (2008, 48).

Such critical assessments of idealised concepts of place (and home) are valid and important for the scholarship and continual enhancement of the study of place and highlight the value of different perspectives to understanding and making sense of complex natural and social phenomenon. These counterarguments illustrate how in a rather short period of time some of the early interpretations of place put forward by humanistic geographers were subject to the emerging socio-economic forces of globalisation, while at the same time further validating the importance of place as the world engages with the many challenges of the twenty-first century.

2.10 Pragmatic Sense of Place

For Relph (2008), a *pragmatic sense of place* is defined by an appreciation for the distinctiveness of a locality that simultaneously grasps its relationship to larger regional (and global) contexts, which he sees as being essential for developing ways to cope with many of the present and potential social and ecological challenges such as climate change. The concept appears to be an attempt to align the ontological features of place with the realities of an increasingly urbanised and globalised post-modern world. Consistent with humanistic geography's views of place that focus on locality, the concept of a pragmatic sense of place proposes that every locality, place, and community will adapt differently to the unique characteristics and conditions specific to each geographic locale. A focus on the local does not exclude the national or global scale, but brings these territorial contexts into view when looking for connections and adaptive strategies to build capacity and resilience to social and environmental shocks. For Relph (2008), "A pragmatic sense of place can simultaneously facilitate these adaptations, contribute to a broader awakening of sense of place, and reinforce the spirit of place in all its diverse manifestations" (2008, 323).

To enable such an adaptive transformation, Relph proposed that a "cosmopolitan imagination" is needed to both appreciate the local essence or spirit of a locale or region together with an understanding of global interconnectivity (2008, 314). Drawing from Adams' concept of extensibility, Relph reasons that an extended worldview causes sense of place to be more diffuse, but that humans also have "vast experiences that facilitate an appreciation of place" (Relph, 2008, 315). It is in this context that Relph proposed integrating an "appreciation of the distinctiveness of a locality with a grasp of its relationship to regional and larger contexts" allows one to "be simultaneously locally focused and geographically extended" (Relph, 2008: 322). Here, Relph acknowledges the conditions that form the modern world - technology, mobility, and diversity with an exploration of the potential of extensibility as a means of addressing the complex social-ecological problems of the twenty-first century.

It is understandable why Relph incorporated the concept of pragmatism in his most current conception of place. Pragmatism is a philosophical school of thought that emerged from late nineteenth century America. Based on moral pluralism, the philosophy embraces similarity

and consistency with difference and change together with a holistic view of human interaction with the biosphere (Parker 1996). This school of thought is also closely aligned with the underlying principles of phenomenology, namely the focus on experience as well as a conscious caring for place. It is important to clarify that the term 'pragmatism' in relation to this philosophical school of thought not be confused with the term 'practical', which is often associated with economic efficiency and abstract technical utility of natural resources (Parker 1996).

Notwithstanding Relph's endeavor to weave ontological and empirical perspectives of place under the banner of pragmatism, the inherent tension between the two approaches remains intact. It would appear that Relph's attempt to bridge the two schools of thought so far allows for post-modernism and globalising perspectives of diversity and richness of place, however the nuts and bolts of actualising the concept of a pragmatic sense of place remains tenuous. Apart from a single reference suggesting that the many challenges of the twenty-first century "will, at least in part, require place-based strategies for their mitigation", Relph does not provide a definition or interpretation of place-based strategies or other means of enacting pragmatism to achieve the desired goals presented in the essay. Perhaps this is not Relph's domain, however considering the magnitude of the challenges presented, it would be useful, especially for practitioners, if he explored further the potential pathways or frameworks to integrate a pragmatic sense of place into existing planning strategies which is a component of this research. In consideration of this gap, a review of place-based methods and strategies is presented to understand better some of the interpretations and applications of the concept in planning.

2.11 Place-Based Strategies and Planning for Change

Place-based strategies are linked to the broad interpretations of sense of place theory as a way to formulate applied methods and practices that seek to achieve place-oriented outcomes. Corresponding to a focus on caring for place that underpins the humanistic perspective of sense of place, place-based strategies focus on locality, both spatially and socially, which can be represented by the meanings that individuals and groups assign to a range of conceptual and practical attributes and activities that occur in a given geographic locale (Tuan 1990). Numerous institutions and professional practices around the world have endorsed and/or applied place-based strategies from education and social programs, tourism, economic development, and most commonly land use planning, conservation, and ecosystems management (Stedman 2002). The review of place-based literature for this study was limited to land use planning and environmental management.

Many of the documents reviewed for this study did not provide a consistent interpretation and/or definition of place-based, a description of how the concept might be implemented, or

possible place-specific outcomes associated with application of the method. There does not appear to be an established framework, set of guidelines or best practices within various disciplines, although there appeared to be broad appeal for integrating the concept. Consequently, the application of place-based strategies appears to be undertaken in an *ad hoc* manner with a core set of features that frame an applied method. For example, place-based concepts have been formally incorporated into a range of planning documents linked to objectives and strategies designed to achieve locally focused, community-based outcomes derived through active public participation in the planning process.

Consistent with the perspective of place espoused by humanistic geography, the catalyst for developing place-based strategies was born out of a response to the abstract, scientific, and high-technology approaches to land use planning of the 1970-80s that focused on economic outcomes and, “provided few connections among lands, resources, and their meanings to people” (Galiano and Loeffler, 1999, 7). Place-based strategies attempt to shift the focus from purely utilitarian aspects of land use planning by drawing on resident’s sense of place values and meanings including local knowledge and visions for the future (Davenport and Anderson 2005). Fundamentally, place-based strategies represent “an effort to create a more equitable, democratic way of defining, expressing, and valuing places” (Cheng et al, 2003, 101). Kinnear and Ogden (2014) consider the primary elements of place-based planning to be spatially defined as “geographically bounded areas – regions where like-minded individuals and organisations share a similar resource base, climate, markets, and drivers and barriers for business growth: this is the core basis for ‘cluster’ or ‘place- based’ policy” (2014, 44). Galiano and Loeffler (1999) contend that, “A knowledge of places having high values to humans as well as an understanding of the significant meanings and images that places have to individuals within a community should allow planners, managers, and decision makers to better articulate standards and guidelines that will maintain the salient characteristics of those places” (1999, 9).

A key feature of the place-based approach is that the best way to understand and integrate place values and meanings is through public engagement and participation in the planning process to inform the identification of long-term objectives and goals for a local area. Kruger and Williams (2007, 86) propose that, “Place-based planning is an opportunity to do the following:

- Empower community members and build community
- Engage the community in inventory activities
- Build relationships and trust; regain credibility
- Engage in mutual learning
- Explain policies and rationale
- Raise awareness of and mitigate conflict
- Plan holistically

- Incorporate a broader range of meanings into planning.”

Public participation is an integral component of the place-based approach, however there are inherent limitations to engaging the public in planning. Prior to the 1960s, local government was responsible for land use, building design, and public infrastructure (roads, sewage, water etc.). However, by the 1960s and 70s social and economic problems emerged in large urban areas causing citizens, politicians, and planners to question this form of planning (Berke 2002). Public participation grew out of a need for planners “to analyse and synthesise the goals and values of the community” (Reynolds, 2004, 132). Public participation can be conceived as a way to empower non-government entities – citizens, private companies, public interest associations, and financial interests. More direct involvement in the form of planning charrettes and public forums have the potential to enable meaningful dialogue and information exchange that can improve support for plan implementation, however, doing so often requires an informed public, government commitment, money, time, and resources (Mostert 2003). Public opinion polls, surveys, and focus groups are a more cost-effective means of gaining a “representative and accurate understanding of what the public wants [although] they are not actually participation. They are instead detached and scientific” (Innes and Booher, 2000, 4).

Although there is a general consensus that public participation improves planning outcomes, not all citizens are interested or have the time to participate, they often lack necessary information due to poor government communications, or feel their voice will not be heard even if they did participate (Reynolds 2004). If government is unwilling to engage the public this can lead to poor public relations, a lack of confidence in planning bodies, and limited buy-in. Some entities may be opposed to participation altogether (Mostert 2003). Special interest groups that are better organised and able to participate may not necessarily represent the broad views of the public, which can also compromise planning outcomes (O’Riordan 1977). Poorly facilitated participation processes often fail to meet planning goals, which can lead to an angry and disengaged citizenry that distrusts government, or only become engaged when the stakes are high (Innes and Booher 2004).

Some of the challenges to public participation may be overcome by timely communication of relevant information and determining what is an acceptable level of participation (Reynolds 2004). Innes and Booher (2004) suggest that the key to successful participation is collaborative participation where an open dialogue is attained through equal empowerment. In this scenario, establishing trust has the ability to build capacity and leverage social capital, which together improve goal setting and determining strategies. Similar to traditional direct engagement, collaborative participation requires commitment and resources to successfully achieve planning outcomes (Innes and Booher 2004). In some cases however, it may not

always be feasible or necessary to engage the public on all projects (Kruger and Williams, 2007).

One example of successful implementation of the place-based approach to land-use planning in Australia occurred in 2000 at Warringah, New South Wales. In this case, the local council implemented the Warringah Local Environmental Plan (WELP 2000), which was unique to all other plans in the state in that it was created through extensive public consultation and centered on “a system of locality- and place-based planning”, which replaced “traditional development zones” (Untaru, 2002, 84). Despite the apparent success of the WELP 2000, it lasted less than a decade and the majority of the place-based system of locality was replaced with the WELP 2011, which returned most of the area to a traditional zoning model. The rationale for returning to land-use zoning was to ensure consistency with State planning legislation whereby, “The standardisation of definitions and land use zones in [W]LEP 2011 provides greater certainty regarding land use and permissibility in Warringah” (Warringah Council 2011). The short lifespan of the WELP 2000 illustrates the challenges associated with developing non-traditional planning approaches that can be subject to streamlining for consistency and efficiency across local and state governments.

Part of the challenge of integrating sense of place in planning frameworks is a general misconception that place-based strategies are inefficient and that the process impedes managers and planners from getting on with the task of planning (Williams and Stewart 1998). Smith et al (2011) suggest, that developing place-based outcomes such as a shared future sense of place requires planners to, “understand how specific types of meanings affect the desired outcomes that individuals would like the resource to be managed for” (2011, 359). Despite such challenges and shortcomings, experimentation and adoption of place-based strategies in planning (and other professional practices) indicates a broad appeal for directing the focus on building community capacity and resilience at the local level.

2.12 Summary

Sense of place is fluid and dynamic. It is an experiential and conceptual phenomenon that is readily understood, but often difficult to define. Place is anything and everything and most certainly far from being nothing. It is not a physical thing *per se*, e.g. a single solitary object, but rather a collection of meanings assigned to objects, people, metaphysical entities, and the landscape. Sense of place is formed and reformed overtime through social interaction and engagement with landscape. It is a dialectic, a perpetual double hermeneutic that is subject to space and time and eternally in the mode of becoming. Place becomes something and that something is never static and subject to instability and change.

An underlying feature of place is care for the biosphere and this perspective has been integrated into land use planning and environmental management as a means of actualising such care. And although the quality of place experiences can be far from ideal, the constant throughout human history has been a desire to create places that provide for human need, shelter, dwelling, cultural development, and wellbeing. Place-based strategies are one example of a formal approach acting as a catalyst for balancing the predominant abstract technical view of the biosphere and tempering the globalising forces of capitalism.

The study of sense of place has evolved over the past half century. This section presented an overview of the literature relevant to the study. It is by no means an exhaustive review as doing so is beyond the scope of the study. The following chapter presents a review of the literature on climate change with interconnections to sense of place.

3.0 A REVIEW OF CLIMATE CHANGE LITERATURE

“Climate change is not ‘a problem waiting for a solution’. It is an environmental, cultural, and political phenomenon which is reshaping the way we think about ourselves, our societies and humanity’s place on Earth” (Hulme, 2009, n.p.)

3.1 Introduction

Climate change is a complex social-ecological phenomenon spanning vast spatial (local to global) and temporal (past, present and future) scales (Lazarus 2009). The earliest scientific discoveries of the role of carbon dioxide (CO₂) in contributing to increasing atmospheric temperatures were made in the nineteenth century (Hulme 2009). However, it was not until the 1970s that confirmation to this effect was made using historical climate records (Harding 1995). The United Nations established the International Panel on Climate Change (IPCC) in 1988 to compile, review, and assess the most current scientific and technical data on the phenomenon of climate change. There is now overwhelming scientific evidence to conclude that climate change is the result of the twinning effects of natural climatic processes combined with greenhouse gas emissions from human industrial development, namely landscape modification and fossil fuel dependent planning (Houghton et al 2001).

Growing interest in the climatic effects of increased CO₂ combined with advances in computer technology led to the development of climate simulation models, which identified potential impacts associated with a range of possible scenarios by contributors to the IPCC reports. These findings shifted scientific and political attention on strategies to mitigate the effects CO₂ and related greenhouse gas emissions (Biesbroek et al 2009). Climate change is unevenly dispersed with potential negative effects including increased atmospheric and oceanic temperatures, sea level rise, increased frequency and intensity of storms and precipitation, decreased snow cover, glacial retreat, and decreased sea ice thickness (Houghton et al 2001). Recent analysis indicates that climate change is occurring more quickly than expected and that the effects for Australia might include more intense and frequent events such as heat waves, droughts, bushfires, and floods (Steffen, 2009). The potentially negative (and potentially positive) effects of climate change are uncertain. This uncertainty adds complexity to developing strategies designed to mitigate negative impacts of climate change on ecological and social systems. How communities respond and adapt to this uncertainty is contingent on their capacity to prepare for and respond to potential negative effects. Adger et al (2005) propose that strong social structures and institutions increase the likelihood that communities will develop the ability to respond to change, which is the subject of this research. In order to explore the capacity of communities to respond to change, some initial discussion of how change is measured is needed.

3.2 Sense of Place, Land Use Planning and Climate Change

Despite the volume of publications examining the concept of sense of place, there has been limited original research investigating the integration of place theory in land-use planning and environmental management. To date, there are very few original studies that explicitly investigate the relationship between place and climate change adaptation. Neither are there many examples of research using in-depth semi-structured interviews and participant-supplied photographs to investigate place within the context of climate change adaptation. This presents an important gap in the literature. Consequently, this study is significant for its originality of the research subject, the research questions, and the methodological approach.

This study investigates a gap in the literature – the general assumption that a sense of place may foster or be a pathway to climate change adaptation. The project also builds on previous work by Carter et al (2007), which revealed that the globalising forces of development and tourism projects an image/place-identity on residents of the Sunshine Coast that is inconsistent with their own personal image/place-identity. Carter et al (2007) found a disjuncture between sense of place/place-identity and the changes brought about by tourism development.

Some landscape-related studies investigating notions of place have been undertaken using quantitative approaches, typically with many participants and based on survey instruments with close-ended questions prepared in advance by the researcher. Participants often rank their preferences using a Likert scale. For example, questionnaires were used to investigate attachment to place on public lands in Utah (Eisenhauer et al 2000), community attachment and sense of place on natural lands (Clark and Stein 2003), place-identity and displacement on the Sunshine Coast (Carter et al 2007), and place attachment and landscape preservation (Walker and Ryan 2008) with a view to investigating the relationship between sense of place, place-identity and the impacts of development on these locales. The latter study used a questionnaire accompanied by a photo-booklet. A quantitative approach yields a large amount of data that provides high-level assessment of location, appearance and preferences such as visual quality (scenery) and functionality (land-use). While this approach may be satisfactory for providing generalisations about preferences for a large population, it does not provide critical insight into why the preferences were ranked the way they were by participants, or understandings of “person-place interaction” (Ohta, 2001, 388).

Several researchers have studied place using qualitative methods such as in-depth interviews. During the interviews, researchers may use photographs or other visual aids to assist the elicitation of high quality information about places from participants. Interviews supported by photographs were used in a study landscape preferences in Japan (Ohta 2001), place attachment among the elderly in rural Illinois, United States (Ponzetti 2003), place and national parks in Alberta, Canada (Stedman et al 2004), and place attachment in rural New

England, United States (Ryan 2009). Ohta (2001) used a phenomenological approach in his study, examining the interpretations of lived experiences and the emotions triggered in his participants who viewed photographs of idealised Japanese landscapes. These studies focused on the relationship and influence of the physical landscape on place-attachment and place-identity with the intention of understanding how visual images represent and inform perception of place and place constructs. These studies also looked at the unique features, characteristics, and desirable qualities of a given landscape on personal preferences and factors that drawn people to and inspire them to return or reside in certain locations.

A limited amount of literature discusses sense of place and climate change. In Sweden, Knez (2005) studied attachment and identity related to place and climate preferences, where data from questionnaires sent to 600 households were used to build structural models. This study was more concerned with personal preference as a location to live than climate change *per se*. In Canada, researchers are developing computer simulations to engage local decision-makers and stakeholders with the impacts of climate change, where photo-realistic, three-dimensional visualisations show the impacts of sea-level rise and inundation – based on the International Panel on Climate Change (IPCC) scenarios – in specific, well-known places in the city of Delta, British Columbia (Shaw et al 2009). The goal was to use the visualisations to more effectively communicate the risks associated with climate change with the intention of influencing adaptation behaviors. The computer models have been constructed but studies with participants have not yet been published. Hess et al (2008) take an explicitly place-based view to discuss the risks associated with climate change. However, this study consisted of a desktop literature review, which has not produced original findings that can be applied and tested in the field.

Some research of place employed visual methods, however its application varies across disciplines. Few studies investigate the relationship between place and climate change adaptation, and only a small number of these studies use visual methods. Walker and Ryan (2008) and Stedman et al (2004) appear to be some of the earliest researchers to use visual methods for the study of place and specifically, place-attachment. Walker and Ryan's study of resident perceptions of town character, rural landscape change, and place attachment using photographs revealed that "Local residents' attachment to place is often an untapped resource that landscape planners can use to garner support for innovative strategies to preserve and sustain rural landscape." (2008, 151). Stedman et al's study of resident-employed photography of high amenity places revealed that residents, "have a multiplicity of types of ties to the social and natural environment" that was not limited to natural features, but also included everyday structures such as churches and pulp mills situated in the built environment (2004, 602). Similarly, Ponzetti's 2003 study of place attachment of the rural elderly using participant photographs and in-depth interviews showed that visually representing sense of place revealed the interconnected relationships between people,

structures and the landscape. In Ponzetti's study, the majority of images were of the landscape and buildings therein as opposed to people. When asked to explain the importance of place captured in their photographs, it was discovered that the landscape and associated buildings "were often reminders to the elderly participants of important people, both living and deceased, in their lives. The physical environment appeared to remind respondents of social relations but social relations rarely reminded them of physical space." (2003, 11). These studies serve as examples of the somewhat short life span and the limited application of visual methods used for the study of place.

A recent study of sense of place using visual methods was conducted in coastal communities along the Great Ocean Road, Australia. Green (2008) carried-out an extensive study of coastal settlements and place character using researcher-supplied photographs, maps and employed both quantitative and qualitative methods. The findings of this study indicated that the recent migration and increased development occurring in these coastal locales are undermining residents' sense of place. Modification of the landscape, the location of developments, and types of structures were found to be inappropriate and inconsistent with the original character of the towns studied. Additionally, the author proposed that consideration needs to be given to planning future developments that may increase vulnerability and risks associated with climate change, such as sea-level rise and erosion (Green 2010). Although Green (2010) made this proposition, the study did not specifically investigate the relationship between place and climate change, and is therefore limited to the general assumption that sense of place needs to be considered in land use planning and climate change.

3.3 Community Vulnerability and Resilience

The phenomenon of climate change is dispersed across temporal and spatial scales. It is both conceptually and physically vast making it difficult to grasp the full consequences of its potential effects. Thus, the scale and scope of climate change presents challenges to the preconceived notions of what constitutes everyday life today, and in the future for society. The scale of adaptations range from individual to collective action, whereby the "ability of societies to adapt is determined, in part, by the ability to act collectively" with trust and cooperation being important factors (Adger, 2003, 387). Social planners and community development practitioners are grappling with how best to work with community groups, particularly at a more 'local' scale in order to determine how best to mobilise their communities toward thinking about adapting to climate change. Notions of place have not yet been well developed in community development and adaptation literature. Concepts such as vulnerability, resilience, mitigation and adaptation are most well used.

The concept of vulnerability originates in the study of hazards to human and natural systems

and has been embraced within the study and strategic planning related to climate change (Brooks 2003). Cutter et al (2008) define vulnerability as “the pre-event, inherent characteristics or qualities of social systems that create potential for harm” (2008, 599). In social systems, vulnerability is most often linked to socio-economically marginalised people and/or groups (Olmos 2001). The concept of resilience is borrowed from the field of ecology and is defined as “a measure of the persistence of systems and their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables” (Holling, 1973, 14). The concept of ecosystem resilience has been adopted for planning social systems as a way to build adaptive capacity to potential negative effects of climate change (Hamin and Gurran 2009). In the human context, “Resilience is the ability of a social system to respond and recover from disasters and includes those inherent conditions that allow the system to absorb impacts and cope with an event, as well as a post-event, adaptive processes that facilitate the ability of a social system to re-organise, change, and learn in response to a threat” (Cutter et al, 2008, 599).

The two principal human responses to climate change are mitigation and adaptation (Fussel 2007). Mitigation is defined as “an anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases” (IPCC 2001 n.p.). For the most part, climate change policy has focused on mitigation because such strategies are more clearly able to be formulated and are perceived to offer ‘win-win’ outcomes through reduced consumption resulting in financial savings for institutions and individuals alike (Laukkonen et al 2009). By the 1990s, there was a growing recognition that the effects of climate change were inevitable and likely substantial due to the volume of carbon emission over the long history of industrialisation, and that adaptation offered a complementary strategy alongside mitigation (Parry et al 1998). The 3rd IPCC Assessment Report formally introduced adaptation as a key response strategy, which it defined as “... adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts (IPCC 2001 n.p.). Furthermore, adaptive capacity was identified as one of the key determinants of adaptation, which is defined as “the potential or ability of a system, region, or community to adapt to the effects or impacts of climate change” (Smit and Pilifosova 2001, 879). Alongside resilience, the concept of climate change adaptation is borrowed from scientific understanding of the capacity of ecological systems to cope, respond, and adapt to change over time. Adaptation is the intentional action taken to limit risks and leverage opportunities associated with climate change (Fussel 2007). Within the human context, the concept incorporates complex social systems, learning, and strategic planning to mitigate negative effects of climate change (Richardson 2010). In much of the climate change literature, adaptation and mitigation are treated as separate concepts and distinct activities.

Adaptation and mitigation vary in terms of measurement and comparative costs and benefits, the range of participants involved, and across spatial and temporal scales of effects (Klein et

al 2005). However, the gap between the two strategies might very well be traced to the divergent political issues associated with the historical responsibility for carbon emissions that resulted in a separation of mitigation and adaptation within international institutions (Tompkins and Adger 2005). The result has been a dichotomy in policy and research (Biesbroek et al 2009; Head 2010). Recently, it has been suggested that the two strategies be combined due to the inherent links and that they ultimately occur as a result of human behavior regardless of whether the motivation is global, local, or personal (Wilbanks et al 2003; Tompkins & Adger 2005; Klein et al 2005; Laukkonen et al 2009; Larsen & Gunnarsson-Ostling 2009). Although some climate scientists consider local level spatial planning to be a focal point for implementing mitigation and adaptation strategies, so far it has played a limited role, in part due to the political division among scientists and politicians (Biesbroek et al 2009).

To increase the opportunity for identifying holistic response to climate change, Tompkins and Adger (2005) proposed adopting the more inclusive term 'response' to clearly merge mitigation and adaptation as a unified climate action. They define response as "... any action taken by a region, nation, community or individual to tackle or manage environmental change, in anticipation of that change or after the change has occurred" (2005, 564). Response requires integrated decisions across a landscape representing civil society that includes individuals, corporations, public institutions, all levels of government, and international agencies (Tompkins & Adger 2005; Adger et al 2005; Laukkonen et al 2009).

Although there is consensus within the scientific community that anthropogenic influences contribute to climatic change and awareness of the phenomenon "has woven its way into the general consciousness worldwide", as the conversation has moved into the socio-political domain, the perceptions and attitudes become more dispersed (Lorenzoni and Pidgeon, 2006, 75). With the majority of research investigating climate change residing in the domain of physical sciences, it is now recognised in academic, professional, and political circles that the contribution of social sciences and qualitative research to the study of climate change has been lacking (Urry 2008). Brace and Geoghegan (2010, 294) advocate for alternative ways to exploring climate change as, "science is certainly not the only venue in which climate change knowledges are made or through which they are circulated". Grothmann and Patt (2003) suggest that risk perception of climate change is "socially constructed and negotiated" and that adaptation is socio-cognitive-behavioral process comprised of "adaptive behaviour" and "changes in cognition" (2003, 3). Furthermore, Hulme (2009) proposes that it is worthwhile to "examine climate change as an idea of the imagination rather than a problem to be solved" (2009, 340).

The precautionary principle is symbolic of adaptive responses that have the potential to reduce the negative effects of climate change and increase benefits as sustainable practices reduce community vulnerability and increase resilience (Cutter et al 2008). However, the

inherent challenges associated with implementing adaptive policy and planning strategies often come down to the cost of taking action in the present and uncertain future benefits. “Thus, the effectiveness of strategies for adapting to climate change depend on the social acceptability of options for adaptation, the institutional constraints on adaptation, and the place of adaptation in the wider landscape of economic development and social evolution” (Adger, 2003, 388).

3.4 Communicating through Visual Means: Climate Change Effects on Place

“...how we see the future has everything to do with how we live in the present. For the first time in recorded history, the certainty that there will be a future has been lost; this is the pivotal psychological reality of our time” (Gablik, 1992, 19)

Climate change is inextricably linked to the future with many of the scenarios associated with scientific models becoming bound up in the imaginations of people (Yusoff and Gabrys 2011). Early communication of climate change was often limited to scientific reports that were not necessarily accessible to or readily available for public consumption (Moser 2010). The climate change message presented by scientists, policy makers, and the media is often comprised of a version/vision of the future that is not always shared by each other or the public, which adds to the confusion and conflict of an imagined future. Attempts to communicate the complex scope and vast scales of climate change have often relied on sensational imagery and terminology to engage public awareness of the perceived urgency required to respond to climate. When negative and sensational language is used to communicate climate change it can have detrimental effects on engagement leading to confusion, denial, and apathy (Hulme 2009; O’Neil and Nicolson Cole 2009). For this reason, “Adaptation often appears to be the less dramatic imaginative counterpart to the catastrophic future scenarios of abrupt climate change. In this respect, adaptation practices may be presented as viable and pragmatic alternatives for configuring attainable climate futures, typically through iterative and local every-day practices” (Yusoff and Gabrys, 2011, 522). Adaptation practices need to be linked with the emotive and lived realities of the communities who are to adapt and ways to research this challenge are lacking.

In the public realm, mass media is the primary source for information about climate change, which is driven by large volumes of sensational imagery (Carvalho and Burgess 2005). O’Neil and Nicolson-Cole (2009) conducted research in the UK that investigated the relationship between visual representations of climate change and people’s perception of the phenomenon. The study revealed that commonly used images of storms and sea level rise may captivate and have a lasting effect on people’s imagination, but this often results in negative feelings of helplessness and hopelessness and uncertainty of what if anything can

be done. Furthermore, fearful imagery has the ability to make climate change distant in time and space and that there needs to be a “connection with “the everyday” in both spatial and temporal terms” (O’Neil and Nicolson-Cole, 2009, 369) Therefore, the use of visual images to communicate climate change needs to be less disruptive and more tangible to engage people in everyday terms that are manageable and make sense to them. This research will partly rely on the use of visual imagery to help evoke ideas of what climate change mitigation and adaptation might mean in people’s imagined worlds and preferred locales. In particular, it will rely on these to aid communicating with the deep emotive attachments, identities and senses of place of residents for whom mitigation/adaptation is likely to be impacted on.

The process of making sense of climate change relies in part on drawing comparisons with past and/or present life experiences. This explains why images of natural hazards are used to convey possible future climatic events. A familiar frame of reference facilitates imaginations about the future and aids the conceptualisation of strategic actions and plans. Past and recent extreme events are often used as a frame of reference for potential impacts of climate change at the local level (Bickerstaff et al 2006). Where people do draw connections they tend to reflect issues where there was some immediate demonstration of impact, for example, flooding, local coastal erosion (Lorenzoni and Pidgeon, 2006). Such points of reference are commonly referred to as an availability heuristic or “attribute substitution” as a way to link lived experience with scenario planning (Li et al 2011). Such imaginations help bridge the abstract scientific representations of climate change by moving from a purely cognitive interpretation to an embodied sensation of climate (Knebusch 2008), for example the sensation of heat, moisture, wind, or thrust of a wave while surfing.

“A global public discourse does *not* arise out of a *consensus* on decisions, but rather out of *disagreement* over the *consequences* of decisions.” (Beck, 2010, 260).

Although climate change is now fully embedded in the human consciousness and a coordinated policy and planning response has begun to take root in jurisdictions around the world, humanity has not yet fully moved from awareness to action. This can be due to a number of reasons, namely that observable and measurable negative effects are just beginning to become evident, and many are occurring in distant and remote locales with negative consequences being experienced by small populations. Fundamentally, the lived experience of climate change is so far minute compared with the range of real and immanent threats and day-to-day personal struggles. Kirkman (2007) suggests that, “while denial may seem irrational from an objectivist point of view, it may be that our lived experience of the threat of global climate change gives us what might be called “plausible deniability” (2007, 20). What is needed is a change of focus from climate change in the industrialised/dominant world being thought of as something distant, remote and of concern to others, to a focus on the

local scale and affluent or dominant societies through a means that is near and dear to people – such as effects on their sense of place.

Hulme (2009) suggests that the reason climate change does not get enough traction is due to disagreement on 1) “fundamental reasons to take action”, and 2) “the urgency with which we should take action” (2009, 139). Hulme (2009) proposes that this gap is attributed to two spatial-temporal conditions, which he refers to as situated and un-situated risks. Situated risks are positioned locally and in the present, whereas un-situated risks are spatially and temporally distant (Hulme 2009). For Hulme, climate change is primarily un-situated, which “constrains engagement with climate change”, and “has significance for the way expectations of future climates are constructed” (Hulme, 2009, 201). Therefore, there is need for research and practices that are situated, local and in place.

A wide variety of surveys have been conducted to gauge public opinion about climate change. Despite inconsistency across various modes of data collection, it can be concluded that attitudes and perceptions have fluctuated over time (Lorenzoni and Pidgeon 2006). Leiserowitz and Smith (2010) conducted research of American attitudes toward climate change and identified what they call, “The Six Americas”. This work identified six groups of attitudes toward climate change: Alarmed, Concerned, Cautious, Disengaged, Doubtful, and Dismissive. The distribution indicated about 50% of people represented Concerned and Cautious with the remaining three groups each representing between 10 - 14%.

Since 2009, and as part of a longitudinal research program, the CSIRO Climate Adaptation Flagship has investigated Australian citizens’ understanding of climate change. The 2014 report concluded that:

- Attitudes have remained stable across the four surveys
- Climate change ranks low compared with everyday concerns such as cost of living, health, economy etc.
- Consistent with the three previous reports, most respondents agree climate change is happening, but are divided on the proportion attributed to anthropogenic influences.
- The percentage of people that deny climate change is happening is less than 10%, however this group believes that the percentage is closer to 50% (an increase over the previous year of 25%).
- Awareness of the term “climate adaptation” is very low (20%). (Leviston et al 2014)

Fluctuating public opinion has been linked to efforts by special interests to sway the public for economic or political gain. Scruggs and Benegal (2012) acknowledge that such interests influence public opinion, however their research of US and European attitudes toward climate change revealed that a recent drop in public support for climate initiatives was more likely attributable to the Global Financial Crisis (GFC).

3.5 Synthesis of Climate Change Adaptation and Implications for Sense of Place

Climate change may be a divisive and contentious topic, however Beck (2010) suggests that the emerging climate change narrative is leading to “an ongoing extension and deepening of combinations, confusions and ‘mixtures’ of nature and society” that is counter to the predominant separation of humanity and nature (2010, 256). In this way, the current tension is merely part of the growing pains associated with a changing climate and the phenomenon may very well serve as a catalyst for fostering a better understanding and care for the biosphere.

The complex nature of climate change calls for a need for research that connects with people’s situated understandings – their knowledges of local phenomena and imaginations of how these may be affected. Until this is done the effective adaptation cannot occur. However, by doing so, the ways in which adaptation can be enabled by people who do not want these effects on place, can also be devised.

3.6 Intentionality and Adaptation

As mentioned in Chapter 2, sense of place is sensing and making sense of our environments and social interactions. A key challenge of climate change is that the phenomenon is spatially and temporally distant with limited opportunities for the average person to observe first-hand lived experience of its effects. Despite the inherent abstract complexities associated with climate change, it is possible to draw from everyday lived experiences to make comparisons and activate the imagination. For example, daily weather and seasonal cycles are more immediate components of temporally vast and complex climatic processes, which influence “our physical and emotional beings [which] is a complex interplay of sensate time, body and place” (Howard, 2013, 7,11).

Technical measurements associated with the effects of climate change often overlook the experiential and emotional connections people have with places (Adger et al 2009). As Howard (2013) succinctly states, “our experiences of our places, our environments is nothing merely subjective, and how we know our places and imagine them is not an abstract activity.

Each place in its unique topography, ecosystems, patterns of energy and flow, and cultures represents a specific awareness, or state of mind" (Howard, 2013, 5). As mentioned above in Chapter 2, Anderson (2009) suggests that place-based strategies are critical to adaptive capacity because of "the ways discourse on lived experience of climate defines and localises the identities of people and place" (2009, 342). As the understanding of climate change has matured and moved from the confines of science into the public realm of engagement a 'cultural turn' has nurtured the 'co-production of knowledge' that produces new cultural practices (Yusoff and Gabrys 2011).

Merleau-Ponty's focus on the lived body experience as embodiment is inextricably linked to action and intentionality of interacting with the environment. Merleau-Ponty's focus on the body and embodiment sought to expand on Heidegger's project of bridging the Cartesian dualism that effectively separated mind and body. A key hypothesis drawn from Merleau-Ponty's *Phenomenology of Perception* (1962) involves the *intentional arc* and *maximal grip* whereby the body and the world are bound together in "synaesthesia as a unified collaboration of all the senses" (Berleant, 2005, 7). Dreyfus (2002), proposed that the *intentional arc* "... names the tight connection between the agent and the world, viz, that, as the agent acquires skills, those skills are 'stored', not as representations, but as dispositions to respond to the solicitations of situations in the world. The *maximal grip* names the body's tendency to respond to these solicitations in such a way to bring the current situation closer to the agent's sense of optimal gestalt" (2002, 367-368).

The main thrust of the hypothesis is non-representation of embodiment where the body-subject world of learning is achieved when phenomenon is present in the mind as a feedback loop (Dreyfus 2002). Expanding on Merleau-Ponty's original concept, Dreyfus has proposed five stages of the intentional arc as a framework for learning whereby "our relation to the world is transformed as we acquire a skill" (2004, 1). The five stages of Dreyfus' interpretation are: Novice, Advanced Beginner, Competence, Proficient, and Expertise with new skills acquired in each successive stage of the arc, which are reinforced through a feedback loop of embodied experiential learning. The combination of the intentional arc and maximum grip may serve as a conceptual framework for imagining and embodying climate change whereby more frequent and intentional engagement with climate action creates a feedback loop of everyday taken for granted experiences that foster transformative and adaptive behaviors leading to a natural attitude of climate action. In the same way that humanity has evolved to become industrialised, urbanised, and modernised, in the current age of a changing climate it is quite possible humanity is in transition toward an intentional arc of "adaptive strategies that can be embedded in everyday practice" (Yusoff and Gabrys, 2011, 517). In this sense, embodiment with climate change is independent of the physical presence of climate stimuli and is instead reinforced through cultural practices that support adaptation and mitigation. Attachment and identification with place are often built on strong emotional bonds with the culture and

environment and therefore such research requires a purposeful and thorough investigation (Eisenhauer et al 2000). Therefore, research that uses a proxy such as sense of place as pathway to understanding climate change is needed.

3.7 Place-Based Climate Action

The many effects of climate change are anticipated to be experienced at the local level, adaptation strategies such as coastal defense and retreat may very well have a negative effect on residents' sense of place. A strong positive bond or connection with place may help or hinder adaptation planning and action; residents may resist relocation by remaining in areas most vulnerable to rising sea levels, storm surges, or inundation instead of retreating. As the effects of climate change will vary geographically, it is most useful to focus attention on local and spatially manageable activities with a mind to integrating with a larger global context. Social interaction at smaller local spatial scales provides the opportunity for collective action that might be less possible with large disperse communities (Wilkinson 1999). Place-based strategies are not necessarily intended to address larger global factors, although local action could have wider collective benefits (Wilbanks 2003).

Local level planning is well suited to adaptation strategies that focus on community oriented actions that encourage participation and leverage local knowledge (Reid et al 2009). In particular, a focus on place highlights the local nature of both exposures and responses, and it brings attention to environmental changes where the motivation to address them is strongest. Place-based adaptive strategies that focus on the local and consider the global are consistent with notion of extended sense of place (as mentioned in Chapter 2 with regards to the concept of extensibility) both spatially and temporally and take into account vulnerable populations and future generations whereby “emphasizing place highlights climate change’s effects where they are most acutely felt, where local strengths are best understood, where place attachment can be leveraged most effectively and where residents will reap the benefits of adaptive measure promoting sustainability and livable communities” (Hess et al, 2008, 476)

The application of place-based strategies is still in its infancy in land-use planning and the same holds true for climate action initiatives. In light of the absence of specific examples, it is possible to draw comparisons from examples of local response to natural hazards. Boon (2012) conducted a comparative analysis of community resilience to flood events in three Australian towns (pop < 4000). The findings revealed that local social networks, communities of interest, and family ties were key place-based resiliency factors. Local knowledge was also an important factor as local people were able to assist non-local emergency services personnel with navigating the local area during a period of crisis (Boon 2012). Local knowledge and personal networks are examples of human resources or social capital that are already present and readily accessible and do not require formal planning frameworks to be

effective, although support from public institutions could possibly enhance such resources. Although these findings revealed positive attributes of local resources and knowledge, place-based meanings may either “enhance or inhibit an individual’s willingness to adapt to changing environmental conditions.” (Smith, 2011, 53).

Measham et al (2011) conducted a comparative analysis of three Sydney, NSW area local area governments. Using community-based planning as a comparative framework for place-based planning the study revealed that, “municipal planning represents a key avenue for local adaptation, but is subject to recognised constraints” (2011, 889). A positive finding indicated that sufficient climate science is being conducted at the local level. The researchers expanded the scope of the study beyond known constraints such as limited resources and lack of information and identified several additional constraints:

1. There is a mitigation bias embedded in planning and “a strong tendency to assign climate adaptation (along with mitigation) to the environment section of the council. This stems from a legacy of thinking of climate change as an environmental issue.” (2011, 905)
2. Local government is charged with a wide range of regulatory and non-regulatory responsibilities, which can be subject to state designated authority (see Smith, Preston, et al 2009)
3. There are inherent limits to integrating local knowledge with technical and/or scientific knowledge
4. Broader institutional factors such as leadership and competing planning agendas impede integrating climate adaptation initiatives.

For Measham et al, “A major challenge with place-based planning stems from overly simplistic notions of community. Naïve conceptions of community imply a homogeneous, spatially fixed social group that shares consciousness of being.” (2011, 895). While this may very well be true, and as the authors noted, most planning initiatives are subject to financial, legal, technical and institutional constraints that limit the capacity of governing bodies to achieve desired outcomes. Institutional inertia is a well-documented feature of all organisations, especially large governments and corporations (Harries and Penning-Rowell 2001; Kates et al, 2011; Pihkala et al 2001). With this in mind, Measham et al made three recommended changes to leadership to improve adaptive capacity at the local level:

1. “Move beyond mitigation to include a focus on adaptation in practical terms;

2. Push for reform at higher levels of government to enable changes in the planning frameworks which currently hinder local adaptation; and
3. Embed climate adaptation into a wider range of council functions.” (2011, 906)

Bassett and Shandas (2010) conducted research of climate action plans for 20 US municipalities and found that successful planning was contingent on cooperative inter-agency initiatives that included a mix of all levels of government and arms-length coordinating agencies. The authors observed that localities that had the greatest endorsement for climate initiatives did not originate with planning departments rather a mix of environmental services, public works and sustainability agencies. Above all, “a political champion appears critical to the decision to plan” (Bassett and Shandas, 2010, 441). This example indicates that although spatial scale is an important factor, support for climate plans is most contingent on people who support climate action initiatives and are willing to work together, which frequently happens in a geographically defined area/community.

3.8 Summary

Despite the concept of climate change being firmly situated in human consciousness and broad scientific consensus supporting climate initiatives, action taken to adapt to and mitigate the potential future effects of the phenomenon is varied. This gap is largely due to the complexity of climatic processes, the vast spatial and temporal scale of the phenomenon, and modern economic and political social systems that continue to add greenhouse gas emissions to the atmosphere. Jurisdictions around the world continue to explore a range of strategic initiatives to sustain human and natural systems with varying degrees of success. As the scope of potential effects range from local to global, such initiatives will likely require a mix of formal and informal actions to engage the public, institutions, and corporations to facilitate the transition toward an embodied climate future. Sense of place is intimately linked with land use planning and cultural practices, which in turn determines adaptive capacity to climate change. This chapter serves as a conceptual framework for the study. The following chapter introduces the philosophical orientation, methodology and methods used to answer the research questions. The research design is followed by a presentation of the research findings. An interpretation of the findings is presented in the closing discussion chapter.

4.0 RESEARCH DESIGN: STUDY AREA, METHODOLOGY AND METHODS

4.1 Introduction

This section outlines the research design and methodological framework for the study and includes a description of the study area, epistemology, data collection, and analysis techniques. This study sought to understand how residents construct their sense of place, their comprehension of climate change, their perceived adaptive capacity, and the relationship between place and climate change. It focused on lived experience of Sunshine Coast residents, which was supplemented by an elicitation of the places invoked by interviewees using visual images and the locale where images were taken. The study employed a multidisciplinary approach grounded in phenomenology, human geography, and visual methods to frame an investigation of sense of place and climate change adaption. This approach was anchored by four key themes: spatial and temporal orientation (the study area and aspects of it), the lived experience of residents where they live, work, and play, the phenomenon of place represented visually as a visual moment, and understandings of climate change.

4.2 Epistemological Orientation

The epistemological orientation for this study is centered on the social construction of sense of place, which focuses on human experiences, behaviors, language, and actions that generate individual and collective place constructs (Relph 1976; Tuan 1974). Although human experience is central to this perspective, the natural and built environments feature prominently in the formation of sense of place. The constructivist orientation anchors the investigation of sense of place, which aids the examination of the relationship between sense of place and climate change adaptive capacity as a social construct contingent on exercising human agency and making meaning of the data collected. The approach is not objective/objectivism or subjective/subjectivism, but a mix of the two whereby I design the study, collect the data, and apply my own experiences and meanings to interpreting the data.

The rationale for adopting a constructivist perspective for answering the research questions is based on the complexity of the two main themes of the study and the inter-relationship between them. This epistemological orientation informed the theoretical perspective, methodology and choice of methods used to answer the research questions. According to Crotty (1998), "Justification of our choice and particular use of methodology and methods is something that reaches into the assumptions about reality that we bring to our work" (1998, 2). Human consciousness and the mind-body experience are the philosophical foundation of the phenomenological tradition, which is ideally suited to examining the construct of sense of

place. The nature of this research is exploratory and unlike quantitative research, which seeks to validate through measurement, qualitative research seeks to “understand, represent, or explain something, usually some fairly complex social phenomenon” (Pyett, 2003, 1170). Therefore, qualitative data-gathering methods aligned with phenomenology and the constructivist epistemology was used to investigate the complex interplay of place and climate change.

In my lived experience, it appears that humanity is currently presented with a most compelling situation and the world, as I have known it seems to be becoming increasingly uncertain. The assumptions that I bring to the research are my faith in humanity to work through this challenge and a genuine interest in being a part of this process, which is driven by a longstanding respect and care for the biosphere. A brief researcher reflection outlining my personal perspective as well as knowledge gained from the research experience is presented in Chapter 9.

4.3 The Study Area

The coastal zone is the most desirable area to live in Australia, making the coast an important cultural feature for the majority of Australians. This situation puts pressure on dynamic and fragile coastal ecosystems, which is exacerbated by climate change (Clarke and Harvey, 2013) and as “the most intense and fast paced urban development is occurring in coastal areas surrounding cities... local government engagement is crucial” (Gurran and Hamin, 2013, 100-01). Furthermore, coastal amenity communities will “need to ensure that vulnerable natural systems – species, habitat, and the ecological processes on which they depend – are also able to adapt to climatic change” (Hamin and Gurran, 2009, 239). This research seeks to explore sense of place and community engagement through place-based strategies that appeal to resident’s appreciation and value of ecological amenities whilst also leveraging these around their need to adapt to a changing climate and consequently, the local environment.

As consistently desirable places to live, coasts have been subjected to profound changes due to urbanisation, transportation, shipping, and resource use that altogether put increasing pressure on coastal ecosystems. This pressure has resulted in some areas experiencing declining water quality, fisheries collapse, and biodiversity and habitat loss (Clark 1996; Garmendia et al 2010). Expanding urbanisation and intensive resource use have also increased the vulnerability and risks associated with naturally occurring hazards in the coastal zone (Crossland 2005; Torrens et al 2008). Dynamic coastal processes make settlements in these areas particularly vulnerable to natural hazards. Sea-level rise, inundation, flooding, storms, erosion and sediment deposition all pose risks to human settlements in coastal areas (Church et al 2010; Torrens et al 2008). In Australia, approximately 70% of the population

lives in urban areas with most of its urban centers situated along the coast. Consequently, it has been estimated that approximately 80% of Australia's population live in the coastal zone (Harvey and Caton 2003; Commonwealth of Australia 2009).

South East Queensland (SEQ) is one of Australia's fastest growing metropolitan regions (Carter et al 2007). Encompassing the heavily concentrated urban areas of Brisbane, Toowoomba, the Gold Coast, and the Sunshine Coasts, the total SEQ population is projected to increase by approximately 60%, while the Sunshine Coast population is estimated to increase by approximately 70% by 2030 (Queensland Government 2010). The Sunshine Coast, Queensland, Australia is one of 10 local government regions of South East Queensland. The region, comprised of Noosa and Maroochy Shires, and Caloundra City was referred to as the 'Near North Coast' until it was renamed the 'Sunshine Coast' in 1966 as a way to promote the region as "a complementary attraction to the Gold Coast" (Sunshine Coast Regional Council 2010). In 2008, the three Local Government Areas were formally amalgamated under a single governing body, the Sunshine Coast Regional Council⁶ (SCRC) shown in Figure 1. The current population of the region is approximately 300,000 and is estimated to increase to over 500,000 by 2030. Early development was centred on small towns along the rail line from Brisbane to Gympie, however the desirable coastal foreshore was eventually accessed with numerous roads being built to accommodate the advent of the motorcar. Consequently, development of the Sunshine Coast has been clustered in a ribbon pattern in a North-South direction parallel to the coastline along the inland railway and the Bruce Highway. Planning and construction is presently underway for several developments in the region, most notably a large-scale residential development in Caloundra South designed to accommodate 50,000 people over the next five years (SCRC 2010).

Managing substantial growth and development over a relatively short period of time is an enormous undertaking for decision-makers, managers, and planners tasked with ensuring sustainability for the current and future projected population. A commonly shared sentiment among residents is that they do not want the Sunshine Coast to become another Gold Coast. This commentary corroborates with Weaver and Lawton's (2001) findings, which highlights Sunshine Coast residents' concerns about "becoming another Gold Coast." Such a sentiment illustrates a distinct sense of place, particularly with regard to a collective conscience that is resistant to the growth and development to date and projected over the next twenty years.

⁶ In 2013, residents of the former Noosa Shire campaigned and successfully separated from the Sunshine Coast Regional Council. As a new Noosa Council came into effect during the final preparation of this document, for consistency the region encompassing the three former LGAs is referred to as the Sunshine Coast and the corresponding governing body, the Sunshine Coast Regional Council (amalgamated three LGAs).

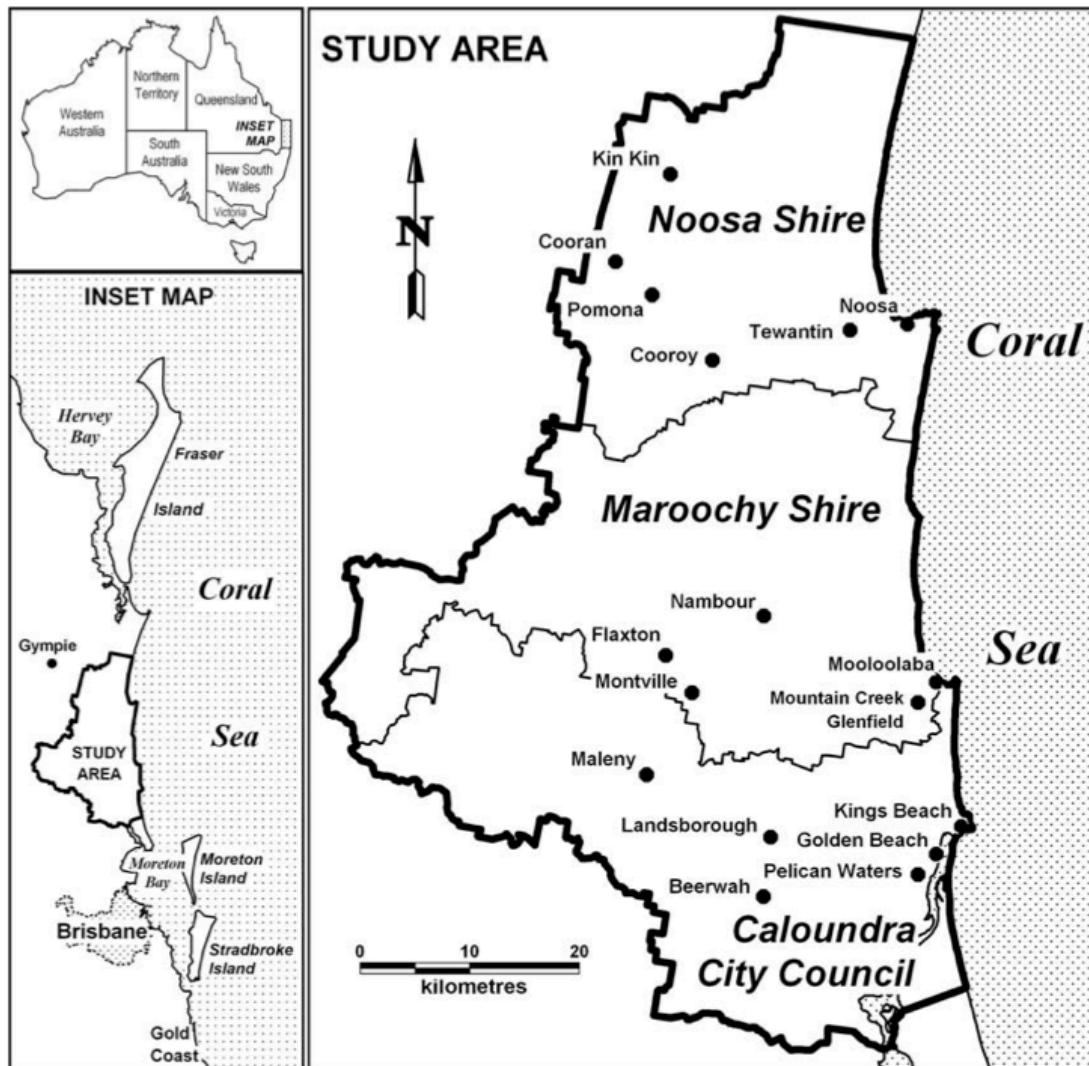


Figure 1. Study Area: Sunshine Coast (Source: Dyer, Gursoy, Sharma, and Carter 2007).

Expanding development puts pressure on both current residents and the natural environment, which is compounded by the predicted, but uncertain negative effects of climate change, which in itself adds another layer of complexity to designing strategic management and development plans. The Queensland State Government seeks to manage this growth by identifying a preferred settlement pattern through a number of strategies: 1) containing development by increasing building density, 2) redevelopment, 3) utilizing under-developed land, 4) leveraging existing transportation infrastructure, and 5) channeling development toward the Western Corridor to take pressure off the coastal foreshore (Queensland Government 2010).

The SCRC has developed several documents outlining current and future planning for the region. The SCRC *Corporate Plan* highlights that the region is "one of the most desirable places in the world", that its "lifestyle is highly prized", and that its residents "have told council

that retention of the region's character is vital" (SCRC, 2009a, 2). In 2011, Council updated its 2009 *Community Plan* that outlines planning for the region to 2030 (SCRC, 2011).

The *Community Plan* identified that residents place high value on the natural environment and that managing growth is a major concern, specifically, residents are concerned that the region cannot sustain projected population growth (SCRC 2011). The *Community Plan* also recognises "new and emerging challenges such as climate change and peak oil" and that "Community adaptation strategies will become increasingly important for our region in the century ahead." (SCRC, 2011, 9). In addressing these concerns, the *Community Plan* outlines Council's intention to be the "most sustainable region in the country by protecting... our precious natural assets and lifestyle, build our economy, create a fair society and seize new opportunities as they arise" (SCRC, 2011, 3).

Together these planning documents demonstrate that Council understands the need to plan for the future, while at the same time acknowledging the inherent challenges of balancing development and retaining the quality of life and special character of the Sunshine Coast. Since the SCRC is committed to maintaining the identity of the region and to becoming the most sustainable region in Australia, it is important to understand how residents construct this sense of place, attachments, and identities (a desirable place to live and work, amenities, lifestyle, and characteristics of the natural and built landscape etc.) and how these notions of place may serve as a catalyst for community adaptation and engagement that supports Council's sustainable community objectives.

4.4 The Sunshine Coast: A Brief History

Prior to the arrival of the first colonial explorers in the early nineteenth century, the indigenous Kabi Kabi⁷, Waka Waka, and Dalla peoples occupied the area in and around the Mary River basin, which approximately coincides with the Sunshine Coast, although the traditional lands extended south to Morton Bay and north to Burrum River (Mathew 1910; Cato 1979). Colonial settlers were attracted to the resource-rich region, initially for timber and later the discovery of gold near Gympie. The arrival of colonial settlers resulted in violent conflict, displacement, and eventual annihilation of most of the Aboriginal people that had owned the land for thousands of years prior to contact (Cato 1979). Extensive timber harvesting eventually opened the landscape for agriculture, primarily dairying and cane farming (Spearritt 2009).

By the 1950s, the Sunshine Coast and the Gold Coast were established as convenient holiday destinations for the residents of Brisbane, which opened the door for tourism

⁷ The Kabi Kabi is the traditional Aboriginal spelling of the name Gubbi Gubbi, the latter of which is most commonly used name today.

development during the 1970s. Most visitors were attracted to the coast for the beach and surfing, while others were drawn to the hinterland “preferring the ‘green change’ or ‘tree change’ rural renewal lifestyle” (Carter et al, 2007, 760). Over the years several tourist attractions were built (the Big Pineapple, Australia Zoo, Underwater World etc.), which together with the abundant natural amenities firmly established the Sunshine Coast as a national and international tourist destination.

Proximity to Brisbane combined with deregulation of the dairy industry and a long history as a holiday destination set the stage for increased residential development and the subsequent sea change migration, which has been described as the migration of affluent people from urban areas relocating to the coast in search of a tranquil lifestyle set in an aesthetically pleasing natural surroundings (Burnley and Murphy 2004; Green 2010). Whether by coincidence or by design, the sea change phenomenon overlapped with broadcast of the Australian television series *SeaChange*, which portrayed the exodus from hectic urban life and escape to the idyllic coastal lifestyle. Such ‘amenity migration’ is the result of people being drawn to areas of abundant natural amenities that support lifestyle pursuits as opposed to employment, which can lead to social tension whereby long-term residents feel new arrivals will diminish the ideal rural landscape (Marsden et al 1993; McIntyre 2009).

Beginning in 2000, two important events occurred that affected regional economic development and the morphology of the region’s predominantly rural landscape. First, deregulation of Australia’s heavily subsidised and regulated dairy industry came into effect in 2000 (Edwards 2003). This was followed by the closure of the Moreton sugar mill in Nambour in 2003 (McDonald et al 2006). Eventually the economic viability of agricultural operations within the region began to dwindle and although some farmers diversified operations, others have sold their property “as a retirement asset” (McDonald et al, 2006, vii). These events combined with a dependence on cyclical residential development and tourism has eventually made the region “economically unstable and politically volatile” (Mullins, 1992, 188).

A critical component of the local economy and the primary draw of tourism and amenity migration is the region’s high quality natural habitat. This situation presents a challenge for a regional government authority that encourages development while simultaneously attempting to achieve sustainability goals. As Hutton and Connors (1999) quoting Peter Newman note, “when individuals seek to optimize their private environmental quality through either seeking lower densities at the urban fringe or through prevention of higher densities in the present urban fabric, then the increased dispersion of the city will almost certainly mean an overall decline in urban environmental quality” (1999, 218). Reducing environmental impacts and achieving sustainability goals are further compromised by dispersed and fractured settlement patterns that are contingent on personal vehicles as the primary mode of transportation (Van de Berg 2007). In addition to development pressure, sea change communities experience

seasonal fluctuations in population during peak periods that puts pressure on infrastructure for short periods of time. This situation is compounded by the cost associated with ongoing maintenance during off-peak periods, which adds economic burden to a government revenue base that is largely limited to residential ratepayers. Noosa has attempted to limit population growth to reduce the impact on infrastructure and natural environment (Smith and Doherty, 2006).

A key factor that may impede Council's ambitious sustainability goals is that the State of Queensland has the capacity to usurp local decision-making. The Queensland Urban Land Development Authority (UDLA 2010) has been implemented to achieve economic growth through housing development. The ULDA seeks to streamline the approval process by reducing the capacity for public participation in the planning process. Although the ULDA contains reference to ecology, it does not appear to be a priority compared with the economy (Lamb 2010). In summary, Jones and Wiltshire (2011) suggest that the "establishment of the Urban Land Development Authority (ULDA) is characteristic of the trends taking power away from communities and giving greater influence to a commercially driven short-term focus" (2011, 14).

The Sunshine Coast has experienced several transformations to the cultural and natural landscape since the arrival of the first colonial settlers over two centuries years ago. This trend has continued as the region made a striking transition from rural to urban over the latter part of the twentieth century. The region is blessed with abundant natural habitat and pristine beaches that have attracted people from around the world to visit and settle in the area. This has created a tension between new arrivals and locals who are concerned about negative effects of development on the natural landscape and their sense of place. This 'peri-urban' transformation has also introduced a range of complex planning considerations that seek to preserve this valuable habitat while encouraging development to meet demand. This balance is further complicated with the recognition that the region is vulnerable to potential future climate change, which is exacerbated by development and loss of habitat. These conditions present an opportunity to examine the relationship between residents' sense of place and climate change adaptive capacity, which is the focus of this research.

4.5 Methodology

According to Husserl (1970) discovery "is really a mixture of instinct and method" (1970, 40) Phenomenology is a qualitative method that is descriptive, interpretive and focused on the 'what' and the 'how' as opposed to the 'why' (Seamon 1984) from which, "evidence from phenomenological research is derived from first-person reports of life experience" (Moustakas, 1994, 84). Questions of 'what' and 'how' are typical of geographical inquiry through its tradition of spatial analysis (identifying and describing patterns on the landscape) and its

tradition of social inquiry and interpreting social processes (Holmes, 2009). The goal of phenomenological research is to describe the lived experience of a phenomenon, of being 'in' and knowing of the world. Seamon (2000) states that, "Phenomenology is the interpretive study of human experience. Its aim is to examine and to clarify human situations, events, meanings, and experiences as they are known in everyday life but typically unnoticed beneath the level of conscious awareness" (in Seamon and Sowers 2008: 43).

Moustakas (1994, 21) proposes seven key principles that ground all phenomenological research in the social sciences:

1. A commitment to the use of qualitative methods
2. A primary focus on the whole experience, rather than on its parts
3. A search for meaning over the search for rules
4. Primary use of first person accounts as main data sources
5. Insisting that accounts of experiences are a necessary part of any scientific understanding of any social phenomenon
6. Performing research that is guided by the personal interests and commitments of the researcher
7. The necessity of treating experiences and behavior as integrated parts of single whole.

This study drew on data from first-person accounts to conduct a rigorous phenomenological inquiry of residents' constructs of place on the Sunshine Coast. In-depth semi-structured interviews and participant photographs were the primary data sources. A review of local newspapers prior to conducting the research served as a way for myself, as a foreigner, to become familiar with the region and gain an overall understanding of the historical changes as well as current issues and to give context to the project and inform the design of interview questions. I lived in the study area for three years and this avid understanding of community and editorial 'information' and 'perspectives' was therefore important experiential learning. In addition, I kept a journal that also helped me examine my learning associated with the research process and the empirical data. During the research period I also developed a photographic journal of various locales throughout the region.

Conducting in-depth semi-structured interviews can be time-consuming and may result in enormous amount of data, so it was important to think through the research design and interview questions to aid the organisation of field work, data collection, and analysis (Yin

1994). This approach was chosen because it was perceived as a relatively common set of techniques that were intended to provide in-depth information for a given group or area (Shank 2002). Furthermore, the methods selected were appropriate for investigating present-day phenomenon in a real world context (Yin 1994).

4.6 Qualitative Data-gathering Methods

Reductionist positivist science is the primary means of investigating ecosystem processes and climate change. While quantitative research is extremely important for understanding geo-physical and biological processes, qualitative research presents a complementary method for investigating perceptions and understandings of climate change and its relationship with place. Although this study relied on current climate change science as prompts for interviewees and as an application for their imagination of how place changes, the primary investigations of place are qualitative and therefore the study reflected this stance using an existential phenomenological approach rooted in qualitative methods. "Qualitative research is concerned with understanding social process [through] the retrospective accounts of people affected by them" (Allan, 1991, 179) and "... denotes of or relating to quality, and a quality, in turn, is an inherent phenomenal property or essential characteristic of some thing (object or experience)" (Schwandt, 1999, 130).

The research was limited to an investigation of sense of place founded on a phenomenological approach informed by respondent's personal accounts gathered through semi-structured interviews with residents of the Sunshine Coast. Grounded by the phenomenological approach, the research sought to understand how the lived experience of sense of place relates to understandings of climate change and perceived adaptive capacity.

4.7 In-depth Semi-structured Interviews

In-depth semi-structured face-to-face interviews formed the primary source of data. This study recruited 43 participants from the Sunshine Coast in their capacity as residents, not in their professional or public capacity. Participants were asked to bring a small collection of personal images (up to five) to the in-depth semi-structured interviews. Images such as photographs, drawings, paintings, land art, or other visual medium were encouraged. The images were limited to locales within the geographic region of the Sunshine Coast that represented personal sense of place - a river, a tree, a street, a view from a mountain top, their home, the beach, or whatever objects or horizons they felt most represented their sense of place in the area. Respondents were also asked to present one image that represented landscape change of either the built and/or natural environment. These personal images served as a point of reference for eliciting residents' accounts of sense of place, observed landscape

change, and understandings of climate change. The images were included as data and read and analyzed to supplement respondents' oral accounts.

The research benefitted from the participation of people willing to share their personal experiences and descriptions of place using visual images. It was important that participants were willing and able to express their personal feelings, recollections, and experiences of living on the Sunshine Coast. It was critical to clarifying this requirement early in the project to ensure the most robust data was collected and therefore due care was taken to be mindful of respondent's availability and comfort during the interviews (Minichiello et al 1996). The requirement and commitment of respondents was confirmed in advance either in person or through email contact, which included a copy of the 'Research Project Information Sheet' (Appendix II).

Recruitment was initiated through an informal network of contacts made during the first year of candidature or referrals provided by other academics and professionals. The 'snowball' or 'chain referral' technique is a systematic non-probability sampling approach used to recruit participants where the researcher may not have access to participants, or when the subject matter may be considered controversial. Respondents self-select or nominate potential candidates and the process continues in this way until no new information is found, or the study becomes saturated (Minichiello et al 1996).

The chain referral system was employed to recruit research respondents with the intent that there would be an adequate representation of people from all walks of life – retirees, students, professionals, tradespeople, artists, and a range of ethnic and cultural backgrounds. The potential participant pool was limited to residents > 18 years of age or older that had lived on the Sunshine Coast for one or more years. Although a range of diverse backgrounds was preferred, the nature of the snowball sample did not guarantee equal representation across any groups by age (except over 18 years of age), career, ethnicity, or lifestyle.

As a general guide, saturation is an accepted means of determining sample size (Boyce and Neale 2006). It was estimated that between 30 and 45 participants (approximately 10 to 15 people from each of the three previous LGAs) would be sufficient for an independent study of this scope, however, if saturation was not achieved re-evaluation would be necessary to justify recruiting additional respondents (Denzin and Lincoln 2008). Recruitment proceeded more slowly than originally anticipated, so contact was made with local environmental and arts organisations, which kindly distributed information about the project to their members. I also made short presentations to undergraduate geography students and distributed information at the Sunshine Coast World Environment Day Festival. Following these recruitment initiatives increasingly rich data began to be collected with the study reaching saturation at 43 interviews.

Respondents were interviewed in their capacity to provide commentary on their lived experience of sense of place on the Sunshine Coast. "The essence of qualitative research is an unstructured and flexible approach to interviewing that allows the widest possible exploration of views and behaviour patterns" (Hoinville and Jowell, 1978, 9). The objective of the interviews was to elicit participant feelings, recollections, and perceptions of place as a lived experience.

Interviews consisted of introductory questions to put the participant at ease and to create a trustworthy environment to solicit the most information rich responses. Packard (2008) suggests that, "Keeping a relatively open and standard set of questions allowed information to come out that I would have otherwise missed" (2008, 68). With semi-structured interviews, it is important to ask fewer questions and to let the interview evolve naturally. However, due to the complexity of the two main topics for this study, a more comprehensive set of questions was needed to ensure rich data was collected to answer the research questions.

The interviews were initially planned to take place over a three-month period from approximately March through May 2011. This period was intended to allow adequate time to recruit a sufficient number of research participants. However, recruitment did not proceed as planned and the data collection period was extended for an additional three months to recruit a sufficient number of respondents. Respondents were advised of the special nature of the project and the amount of time expected for them to share their personal stories. This approach to interviewing was well suited to the qualitative nature of phenomenological research as semi-structured interviews can be free flowing, where the interviewee serves as a guide through an open discussion (Minichiello et al 1996; Shank 2002).

All research possesses an inherent risk of bias and qualitative research is commonly criticised for not sufficiently dealing with this problem. Of particular concern are researcher bias and reliance on key informants (Schwandt 1999). In phenomenological research, it is important that the researcher be passionate about the subject under investigation (Wimpenny and Gass 1999). With these considerations in mind, I placed myself within the research, not so much in the role of an informant, but in a way that acknowledged that I was the primary catalyst for undertaking the study and that my interest in understanding the notion of place and the links with climate change adaptation set the stage for the study and corresponding questions. In this way, the effects of the researcher were made transparent as possible (Patterson and Williams 2005).

Each interview was estimated to take between 45 and 60 minutes and no more than 90 minutes. Most interviews fit within this range with the majority being 60 minutes in length. Respondents were requested to bring to the interview a set of personal images (at least one and no more than five) of people, places and/or things in the region that most represented

their sense of place. Respondent images served as a visual point of reference for recalling personal feelings and memories about place and facilitating the interview (Ohta 2001; Clark-Ibanez 2004). The images functioned as an extension of personal expression about topics respondents were personally interested in and passionate about.

Interviews began with introductions and a brief review of the projects - signing the consent form (Appendix III), restroom facilities, estimated duration, expectation to share personal accounts, definition of terms to be used, ability to conclude the interview at anytime, as well the audio recording and the practice of note taking. The interview commenced once the logistics were complete and the respondent was conformable and all technical equipment was finalised. This reduced the likelihood of distractions that may compromise the flow of the discussion and data collected.

The interview formally commenced with general questions such as time spent living on the coast, current and past location(s), and occupation (optional). Although this information might have proved useful when presenting the findings, the purpose of the research was to gather data about a participant's everyday lived experience and was less concerned with their profession or specific role in the community, although this often became apparent through open discussions. After the introductory questions were completed the interview proceeded with the semi-structured interview, which consisted of several open-ended questions (Appendix IV). The interviews were recorded using a digital audio device. Handwritten notes of responses were taken to supplement the recording and as a backup should the device fail. The handwritten notes also include any observations taken during the interview including body language, tone of voice, and facial expression etc.

The nature of semi-structured interviews allowed the possibility for new or unexpected information to be gleaned from open discussions. Such information proved useful in the early part of the research as it allowed for the opportunity to adjust the sequence of the interview questions to improve flow, which enhanced information gathered during subsequent interviews. Such flexibility is inherent in qualitative research and helped to aid data collection throughout the study. The researcher needs to be aware when slightly altering course is appropriate or necessary to ensure the research is rigorous (Baxter and Eyles 1999). However, it is also important to be aware when the interview is going off-topic or when to ask probing questions if the interview should stall (Shank 2002). Probing questions are also used to clarify and gain more detail, especially when attempting to understand the meanings participants attach to primary questions (Stewart and Cash 1988).

Care was taken to ensure that the digital audio files were transferred to a personal laptop computer with secure login immediately following the interview. Files were labeled with a respondent identification number, date, location, and order in the data collection sequence.

The respondent identification corresponded with basic personal information of the interviewee (name, duration living in the region, residence location, description of the photograph etc.), which was stored in a secure location separate from the digital audio files. Participant images as material objects were also important data and as an integral part of this study were with treated with the same due care and security. All data was stored on a password-protected back-up hard drive.

Through my previous experience conducting in-depth interviews, I have developed the practice of reviewing my interview notes immediately following the interview to quickly identify themes and to extract any important information that might be useful for subsequent interviews. Digital audio files were then transcribed into word processing software as recording playback was adjusted using a foot controller. Conducting the analysis in an ongoing manner allowed the data to be “studied for themes in the natural language of the participants... to make the participant’s descriptions and experiences of their social world accessible to those who have not participated in it.” (Minichiello et al, 1996, 11). Shank suggests that, “Most forms of phenomenological qualitative research follow the empirical approach. We are interested in seeing how people interpret their worlds, and how we can in turn, interpret their interpretations. When we start working with these sorts of systems of meaning, then we are very close to our final interpretative framework” (2002, 81).

4.8 Visual Methods: Image elicitation

Photographs, paintings, maps, films, and drawings are examples of visual texts used by qualitative researchers as a way to supplement the primary means of data collection – written field notes and audio recordings transcribed to text (Banks 2007). Shank (2002) states that, “In recent years, there has been a growing trend in qualitative research to move beyond a strict dependence on the written and spoken word as the primary source of data” (2002, 142). Prosser and Schwartz (1998) also note that, “...photographs may not provide us with unbiased, objective documentation of the social and material world, but they can show characteristic attributes of people, objects, and events that often elude even the most skilled wordsmith” (1998,116).

The portability of the modern camera has facilitated the recording of visual phenomenon from objects, to people, and landscapes and in doing so photography has permeated our everyday lives as both science and art (Sontag 1977). Photography has become a valuable research tool for capturing moments that can be conveniently examined in detail at a later time alongside, and in combination with, other data. Photography is particularly useful for recording landscape patterns and processes over time (Low and Lawrence-Zuniga, 2003), for example, “there is potential to recognize some quite tangible visual or landscape-related effects of climate change, such as sea-level rise, flooding, or drought” (Markwell, 2000, 641). As

Sheppard (2005) highlights, "In the context of climate change, visual methods are beginning to be used to accelerate social learning, and the possibility of their motivating the substantial policy, technological, and life-style changes needed has begun to be recognised" (2005, 642).

Visual methods have been used in formal research as well as a tool for engaging the public in community development in South East Queensland and other parts of Australia. In 2009, the New South Wales Department of the Environment initiated a project using visual methods that engaged 250 citizens to photograph the incidence of sea level rise. The Department produced the publication *A Snapshot of Future Sea Levels: Photographing the King Tide* (Watson and Frazer 2009), which is being used as a tool for public education and awareness about climate change. The success of the project reinforced what Sheppard calls the ability of images to "quickly and powerfully" communicate messages (2005, 638).

This study used participant images as a point of reference for the investigation of place and landscape change over time. Images can be valuable to the research process as they can be used as an icebreaker that serves as a point of convergence to stimulate discussions about personal experience as well as for prompting, or to supplement words (Higgins and Highley 1986; Schwartz and Ryan 2003). Photo-elicitation is a technique that focuses the discussion around photographs and invokes viewer comments and narratives about place, "opening up avenues and uncovering local knowledge which might have been previously unknown to the researcher" or the respondent (Packard, 2008, 65). The study was not limited to photographs, however the same principles of photo-elicitation were applied to all images presented by respondents.

Respondent images were anticipated to represent a more personal or emotional connection with place, or what Barthes (1981) refers to as *punctum*. Photographs and the photographic narratives provide channels to knowledge that words alone are unable to achieve. Used in interviews, photographs can reveal complex and occasionally difficult personal experiences and emotions (Canal 2004). The photographs also formed part of a visual record of the Sunshine Coast at a portent time in the region's history and possibly converging with future climatic events. Respondents were asked if they would be willing to be provided a copy of their images for the research record. All respondents that provided images were quite happy to share their images and offered either physical or digital copies. Where participants were unable or unwilling to provide their own photographs, I offered to take photographs under their direction. Researcher supplied photographs can be useful for studies of this nature. However, there was a risk that these images may not be representative of place for the respondents (Clark-Ibanez 2004). I originally planned to have a set of iconic and everyday landscape images available during the interviews, however this plan was abandoned, as it was determined that doing so would introduce researcher bias. In some instances respondents did

not bring images, or the interview was conducted at their residence, which made it was easy to take a few photographs on their behalf.

4.9 Analysis

The aim of this study was to understand how residents construct their sense of place, their comprehension of climate change, and the relationship between the two phenomena. The data was analysed using two methods recommended by Silverman (2011) and Smith and Osborne (2008), which together formed the basis for a modified *Interpretative Phenomenological Analysis* (IPA). This analysis was conducted in order to identify raw sensory data and generate super-ordinate and sub-ordinate themes, following a phenomenological approach. The findings chapters present these raw sensory experiential data and are subsequently discussed with respect to geographical literature on sense of place and climate change.

Following Silverman (2011), I employed intensive-extensive analysis whereby intensive analysis was applied to verbatim transcripts of initial interviews. With this method it was possible to identify the most compelling, unique, and/or shared themes. The themes drawn from the intensive analysis were then used as a framework for reviewing the remaining interview recordings. This method of comparison and confirmation expedited the process whereby only relevant themes were transcribed from interview recordings subjected to extensive analysis. This process saved considerable time and allowed for deeper reflection and analysis of the complete transcribed text, images, and sub-ordinate themes.

All of the themes compiled from the intensive-extensive analysis phase were then subjected to IPA for in-depth analysis. Following Smith, Flowers and Larkin (2009), the process consisted of six steps as shown in Table 1. The IPA process begins with an initial reading and re-reading of the transcripts. This step is comprised of three core analytic steps: Descriptive, Interpretive, and the Double Hermeneutic. Descriptive analysis focuses on the particular and consists of initial note taking of keywords, phrases, use of language and expressions, and topics that matter most to the respondent. The Interpretive step involves a reduction of the volume of detail through the process of identifying and coding emerging themes, and making connections across cases. The Double Hermeneutic is a two step interpretative process whereby the respondent is interpreting their own world, followed by the researcher sense making of the respondent's personal account (Smith and Osborne 2008). The iterative cyclical process of questioning and meaning making is referred to as the hermeneutic circle, which "usefully illustrates the dual role of the researcher as both like and unlike the participant" (Smith, Flowers, and Larkin, 2009, 35).

Table 1. Stages of Interpretative Phenomenological Analysis

Stage	Description of method	Theme types
	1. Initial reading of transcripts	
Descriptive	2. Note taking <ul style="list-style-type: none">• Descriptive comments• Metaphor, keywords, phrases or explanations• Things that matter most to participant• Idiosyncratic figures of speech and emotional responses	Particular
Interpretive	3. Themes <ul style="list-style-type: none">• Micro-analysis: link with whole• Coding using interpretive new summarising statement	Shared
Double Hermeneutic	4. Connection across themes <ul style="list-style-type: none">• Super-ordinate and sub-themes• Cluster like with like and separate opposing themes	Shared
	5. Patterns across themes <ul style="list-style-type: none">• Most compelling• Idiosyncratic• Shared instances	
Gestalt	6. Write up: distill essence of themes	Frame, structure, whole essence

Using IPA, the role of the researcher is to employ a reflexive attitude in order to engage in reflective critical thinking, awareness, and openness with the research process and respondent transcripts (Willig 2001). Through this process, analysis “moves from the particular and the shared and from the descriptive to the interpretative” with “a commitment to an understanding of the participant’s point of view, and particular psychological focus on personal meaning-making in particular contexts” (Smith, Flowers, and Larkin, 2009, 79). The double hermeneutic involves the classification of super-ordinate (‘like with like’) and sub-ordinate themes and patterns of shared instances. The final step of IPA is the distillation and writing up of findings that capture respondent’s lived experiences.

At the conclusion of transcribing the interviews there was a large volume of data for phenomenological research. Following Smith, Flowers, and Larkin (2009), I employed “measuring occurrences across cases” to categorise themes (2009, 109). Using this method it was possible to identify instances across all respondents to tabulate occurrences by theme, e.g. one-third, half, or all respondents. Tabulating occurrences across cases also improves validity (Smith, Flower, and Larking 2009).

Data preparation and analysis resulted in a comprehensive and extensive respondent inventory. I used this data to experiment with tabulation and distribution plots to cluster respondents by themes as a way to compare and contrast individuals and groups based on a range of criteria - length of residency, scale of sense of place, individual/collective adaptive capacity, community engagement, perception of climate change, and perceived adaptive capacity, etc. Although this process was useful for organising the large volume of data (respondent information, transcripts, themes etc.) and also informed the interpretative analysis, I concluded that including tables or plots in the body of the thesis or appendices would take away from the rich narrative accounts. Consequently, I chose instead to include a summary of occurrences across themes, per Smith, Flowers, and Larkin (2009).

The application of IPA is not without its critics. Giorgi (2010) has critiqued the use of phenomenological methods and IPA in particular with an emphasis on his perception of what constitutes “good science” founded on reliability and replicability of methods drawn from the natural sciences (2010, 3). Giorgi (2010) argues that IPA is not grounded in “continental philosophical phenomenology” and that practitioners of phenomenology, who adapt phenomenological methods such as IPA, often fail to understand the difference “between phenomenology as a philosophy and phenomenology as a theory of science” (2010, 4). Giorgi (2010) contends that researchers who do not follow phenomenological scientific criteria and corresponding methods ultimately need to overcome deficiencies in research design by employing empirical standards to give validity to their research.

Prominent IPA practitioner, Jonathan Smith, argues that IPA is very much informed by the work of noted phenomenologists Husserl, Heidegger, Schleiermacher and Gadamer among others (2010). Furthermore, Smith reasons that “processes in qualitative research are not the equivalent of the carefully prescribed procedures in qualitative research” and that “Doing good IPA requires the development of some complex skills – interviewing, analysis, interpretation, writing, and researchers at different stages will have different degrees of fluency and adeptness at these skills.” (Smith, 2010, 188). Consequently, the quality of research is dependent on a researcher possessing the necessary skills to undertake the process of research and not necessarily following exact procedures (Smith 2010).

4.10 Writing Up: Thick Description and Narratives

Qualitative data are rich in information and layers. Thick description is often used in ethnography and other social sciences and is well aligned with “the phenomenological orientation of qualitative inquiry” (Schwandt, 1991, 161). This approach provided a deeper and more thorough account of respondents’ lived experiences whereby interpretations of common themes revealed subtle statements or latent content, which supplemented the manifest content or direct transcriptions of interview text. Following the detailed analysis, the

emergent themes and narratives were prepared as a thick description that reconstructs the recollections and perspectives of the interviewees in a way that presents the information in a logical progression.

4.11 Summary

This chapter presented the research methodology and rationale for employing phenomenological methods and alignment with the research questions. A description of the study area provided geographical orientation and context for the study and the research design summarised the data collection and analysis methods. Chain referral sampling was the primary means used to recruit respondents to participate in the research. Respondents were informed of the purpose of the research and signed their consent to participate prior to the interview. In-depth semi-structured face-to-face interviews were conducted and audio of the discussions was recorded and handwritten notes were taken. Respondents were requested to present between one and five images that most represented their sense of place as well as one image of observed environmental change. The images served as visual cues to aid respondents in the recollections and expressions of sense of place and climate change. The data was transcribed as outlined in this chapter and subjected to a modified *Interpretative Phenomenological Analysis*. The analysis was written up as narrative accounts that form the content of the following chapter.

5.0 ANALYSIS AND FINDINGS: BECOMING PLACE

5.1 Introduction

The research findings are presented in this chapter and the two subsequent chapters. Chapter 5 - Becoming Place presents residents' existential sensing and constructs of sense of place, framed by natural and built environment attributes in the data with a focus on home, spatial environments, and the public realm. Chapter 6 - Imagining and Adapting to Climate Change presents the sub-ordinate themes of formal and informal environmental education/learning, perceived adaptive capacity, and climate action. Chapter 7 - Linking Place and Adaptive Capacity examines the connections and constraints between sense of place and climate change adaptive capacity with an exploration of ecological ethos, the peri-urban transformation, and climate change and sense of loss.

Each chapter presents the main themes that emerged from the analysis of individual and collective narratives. The themes were intentionally shaped by the aim of the study and the corresponding questions that were designed to guide and elicit personal experiences pertaining to sense of place and climate change adaptive capacity. The research framework also allowed for themes to emerge that were not anticipated. The analysis was further informed by my interpretation and re-interpretation of the transcripts. The resulting themes are not the only possible interpretation of respondent's personal descriptive accounts. It is therefore possible that that another investigator(s) might reveal somewhat different and/or additional themes that were unintentionally overlooked by myself.

The super-ordinate and sub-ordinate themes presented in these three chapters provides a focal point for understanding the experience of residents' sense of place and understanding of climate change. The super-ordinate themes were framed by the research questions and the sub-ordinate themes emerged from the analysis. The findings highlight the uniqueness of individual experiences as well as the collective nature of shared experiences. Respondent quotes presented in this study were drawn from verbatim transcripts and are unaltered unless for clarification as noted using brackets.

The study produced a significant volume of transcripts and in some instances participants provided very similar responses to the research questions. It was therefore, not feasible to include examples of transcripts (or images) from each respondent to satisfy inclusivity or representativeness. Consequently, the most illuminating responses were selected that best exemplified each theme. This decision in no way devalues the importance of the excluded responses or the contribution these respondents provided to the research as all transcripts were subjected to extensive analysis. Finally, the selected transcripts follow a logical progression according to the themes presented and therefore some respondents comments appear once or more throughout the analysis and findings chapters.

Despite using intensive-extensive analysis for transcribing the interview recordings, the somewhat large participant sample resulted in a significant amount of transcribed text for a phenomenological study. In accordance with IPA, reoccurring instances across themes were tabulated, which aided the organisation and management of the volume of data and the identification of emerging themes and any outliers. References to instances supplement the verbatim transcripts.

5.2 Becoming Place: The Private Realm – Home sweet home

This section focuses on the sub-ordinate theme of spatial environments with particular focus on the super-ordinate themes of home, natural landscapes and the public realm, and social interaction. Interview transcripts for these themes were drawn from Questions 8, 9, and 11.

In describing residents' lived experiences of place, all respondents considered home to be an important component of their sense of place. This finding was reinforced with over three-quarters of the respondents presenting photographs of their home or views from their home as representing the centre of their place experience. Respondents were given the choice of where they would like to conduct the interview and over half chose their place of residence. Conducting interviews at a respondent's residence facilitated conversations about their sense of place as the home often provided a physical focal point for their descriptions. The residence also served to anchor their descriptions that extended outward from the very local and familiar into the public realm.

When asked to describe how their first photograph represented their sense of place, most respondents made reference to home, the landscape, and the multitude of interwoven aspects of one's everyday lifeworld associated with living on the Sunshine Coast. For example, in his youth, Frank spent time on the Sunshine Coast exploring the hinterland region, eventually migrating from Brisbane and settling in the region over 26 years ago. Frank did not present a photograph, however the interview was conducted at his home, which reinforced what he had to say about his sense of place.

Well, it's the environment. It's the lifestyle. Being here in Coolum Waters has an awful lot to do with it. I haven't been down to the beach as much since we moved here. This may be something to do with my age. Mainly it is all about this place (home – points finger downward on the kitchen table). We have everything we need. Well, it really has become a part of me I reckon. And I get involved in a few of the things. I'm a volunteer at the Art Gallery at the university. I've volunteered with a local community jazz organisation. (Frank, 76 years old).

The emphasis on sense of place for Frank is the home he shares with his wife. It is also the immediate area encircling the small housing estate where the house is situated. The estate includes amenities and facilities that provide space for social interaction within walking distance. As Frank has aged, his sense of place has become concentrated, at least partially due to his reduced mobility. Going to the beach, which was once an important spot for fishing with his children is now visited less frequently, however, he continues to engage in volunteer activity, although the number of associations has reduced over time.

Frank presents two key factors that draw people to the Sunshine Coast: the (natural) environment and lifestyle. Half of the respondents indicated lifestyle and/or leisure as a motivating factor for migrating to the Sunshine Coast and three-quarters of respondents indicated that the visual aesthetic of the natural landscape as being important for their sense of place experience.

Lloyd gives another example of a septuagenarian male perspective, however Lloyd has lived his entire life on the Sunshine Coast. Lloyd comes from an agrarian family with Lloyd spending the better part of his adult life engaged in dairy farming. As Lloyd described it, deregulation of the dairy industry beginning in the 1980s caused small-scale farms like his to cease operations due to no longer being economically viable. Lloyd did not present a photograph, however the interview was conducted in his home as well as on the property overlooking the hinterland valley. I took a photograph under his direction as we talked about his sense of place (Figure 2).

I think the wonderful thing is, this view means as much to me as anything does. I would never say I could do without it, but at the same token I would miss it. I travel all over South East Queensland and when I drive up this old hill or along the ridge I feel as though I have arrived. It just feels so special.

Once I'm at the top of the hill I turn off the air conditioning and roll down the window and the air just feels incredible. I admit it has been a fantastic place to live. I can say I wouldn't want to live away from it. I can tell you that there isn't a day that I don't take in this view and feel very lucky to have been able to live here.

I have always felt special here that this is a special place to live. It feels like such a special place because of my family history of working this land. We built this farm from scratch. It's been good to us, so you get a sense of belonging to an area, you learn about it. If we can keep the land in the family I would be really chuffed that my daughter would continue to appreciate as much as I do.

Lloyd has a very deep sense of place associated with his home and the land, which is linked to living in the same locale his entire life combined with a deep respect for the earth that provided for three generations of his family. His sense of place is both aesthetic and corporeal and weaves together strong sensorial experiences that define his embeddedness in the landscape. Lloyd's sense of place is not limited to him, but extended through his family's lineage, from his grandparents and parents, to his children and grandchildren, and is particularly profound as he has watched farm after farm including his own succumb to closure. Some of the adjacent properties have eventually been sold and converted to housing estates. Lloyd has so far been able to find a way to remain in the region without selling and wishes for nothing more than to keep the farm in the family. This highlights an underlying theme on the Sunshine Coast – the transition from small-scale working farms that supported several generations, to the current situation whereby farming is no longer viable and farmers are forced to sell their land leading to the transformation from rural to residential landscapes.



Figure 2. Sunshine Coast Hinterland (Photo by author).

While the landscape figured prominently in many of the conversations with respondents, it served as more than a setting for home, but also as a counterpoint for bringing the respondent's focus inward on the day-to-day activities of the inhabitants and the importance of family relations.

Originally from New South Wales, Adam was travelling through Australia and happened to end up on the Sunshine Coast just over 20 years ago and eventually made his life there. His house sits on a plot of land on a hill in a sparsely populated housing estate situated in the hinterland. The interview was conducted at Adams' home while we shared a cup of tea overlooking the rural landscape (Figure 3).

When I think of sense of place I think of family. The place is very attuned to how we live in the space. Over the years I've been drawn to go sit on mountains, walk through the bush and spend time on my own where a physical sense of place dominated my thinking, whereas this phase is a setting for my family context. This is a defined space where we live and engage as a family.



Figure 3. View Overlooking Frank's Property (Photo by author).

In many ways this place is my sanctuary, a place I can escape to from the busy in between world. This place provides a context for a family life. We're not stuck between three houses. We have the ability to escape in the landscape. This is how place works for me. (Adam, male, late 40s)

Similar to Frank, Adam's physical/functional interactions with the wider locale have contracted over time, although not quite yet to the same degree as Frank. His focus has evolved from

exploring natural spaces and communing with nature in his 20s to being concentrated on social interaction with the family. Natural spaces remain an integral part of his sense of place, however it is now more about escaping into the landscape and sharing these experiences with his wife and children as opposed to in solitude. A spacious setting is important to Adam as indicated by his preference for living in a semi-populated area with some distance between houses as opposed to living in an urban setting. This choice highlights Adam's value of a balance between natural and built environments and corresponding place construct.

The examples presented thus far have demonstrated how sense of place is constructed for individuals that have lived on the Sunshine Coast for twenty years or more. For individuals that have lived on the Coast for significantly less time, the experience can be dramatically different.

Melissa relocated from Melbourne to the Sunshine Coast to attend university three years ago. She is in her early 20s and is a recent graduate of the environmental sciences program. Although Melissa is young and outgoing, she has struggled with developing a sense of place during her time on the Sunshine Coast, which influences her decision to put down roots or to relocate elsewhere now that she has concluded her studies.

I am constantly in a battle with myself to stay happy. There are areas of my life that I am not necessarily fulfilled in. That is what has created a sense of disconnect with forming a sense of place here.

We have been thinking of leaving because the Sunshine Coast has never been one hundred percent home. We've made our house a home, but everywhere else I don't feel the same way. I have a car, but I prefer not to drive. Without a car it is very difficult to explore. The coast has so many dispersed communities it's difficult to feel connected.

My sense of place is my home and the university. In between there is a disconnect because of the lack of public transport. There isn't much in the way of cultural places like art galleries and botanic gardens. There just isn't a lot of that here.

Coming from Melbourne it has been difficult to connect with people my age. Most people my age have kids or want to party and we're just not interested in that lifestyle. There aren't any nice places for people to go out for the night. Mooloolaba is full of 19 year olds getting drunk out of their minds and getting into fights. It's just not what we're into.

Melissa presents a unique perspective compared with the previous respondents who are at different stages of their lives – who are older and have lived on the coast for a considerably longer time, and consequently are more settled. Similar to Frank, Melissa has a contracted sense of place focused on home and the university however, this is most likely attributed to the brief amount of time she has lived on the Coast indicating an interaction between place and time. She is struggling with what sense of place means for her while living in a new locale away from family. She is also seeking institutions, public services, social interaction, and ultimately experiences that are commonly found in more densely populated urban areas similar to where she previously lived, but have consequently also lost their 'natural' landscapes. Melissa's place construct is also compounded by internal emotions revolving around personal happiness.

Apart from separation and living in a new locale, there are additional factors contributing to Melissa's sense of disconnect and forming a sense of place on the Sunshine Coast. This is partially due to her values. For example, she is conscious of carbon emissions, and thus she prefers to drive less. This choice makes her dependent on public transit, which consequently impacts her ability to explore the area as well as make connections with people outside a single path of mobility between home and the university, a point particularly of note to areas (such as 'peri-urban' areas) undergoing rapid change due to in-migration. Although Melissa is young, she appeared mature for her age, which is demonstrated by her personal choice of refraining from engaging in common university student revelry. Despite some negative experiences she was fully engaged at university and regularly volunteered on campus and the wider community. She is a deeply reflective person that is attempting to balance being an active member of society and being conscious of her ecological footprint.

From these results we can see how sense of place is associated with the home and the way it anchors both outward and inward expressions of place and community. The findings also reveal a relationship between sense of place and space and time. For example, the length of time one lives in a locale can influence one's sense of place, with longer durations leading to a stronger sense of place and less time resulting in a weaker sense of place. Duration of residence may also influence the spatial range of one's definition of place. Over time sense of place may be contracted due to aging and/or evolving personal priorities that turn the focus inward to the home and its inhabitants. Conversely, a contracted sense of place may also be due to living in a given locale for a brief period of time. This contraction can be compounded by personal values that intentionally limit mobility, which can also limit the level of social interaction one is able to engage in beyond the typical range of mobility, e.g. home, work, commerce, recreation etc. Above all, sense of place is far from predictable, static or even stable. Rather, sense of place can be simultaneously subjective and objective as much as it is constantly in flux and evolving over time and space. Despite this range of changes, the home serves as a critical anchor or intersecting point for individuals and groups alike.

5.3 Becoming Place: Spatial Environments

Moving outward from the home and into the public realm revealed additional layers of respondents' sense of place construct, namely aesthetic and corporeal experiences associated with the natural landscape. Three-quarters of respondents identified the land and/or natural landscape as an important element of their sense of place on the Sunshine Coast. Specific land features figured prominently in respondent descriptions, namely the coast and ocean, rivers, the hinterland and rainforests, and iconic landform features such as mountains, and designated areas of natural and cultural significance such as Noosa National Park. Interview transcripts supporting this theme were drawn from Questions 8, 9, 10, and 17.

The rural idyll, or gaze, constitutes an important characteristic for many long-time residents and as a drawcard for more recent arrivals to the region. Seven years ago Stacey relocated to the region from Canberra. For her, the natural environment was the primary factor motivating her to migrate, however her experience so far has not quite turned out as she imagined. Stacey's photograph is presented in Figure 4.

This is a photograph we took while on holiday to the Sunshine Coast (in 2001). The view is looking out over the Glasshouse Mountains from Mountain View Road in Maleny. This is a classic view that attracts the tourists.

I had the photograph on the wall in our house in Canberra. It was on the wall to remind me that this is the place I wanted to move. The photograph represents a hope that we would move here one day. We did, but it's turned out to be harder than I expected. So the dream that is captured in this photo is little bit of a reminder of the difference between dreams and reality. It is a reminder of how different things are in a place when you live there compared to when you are holidaying. I still really love it and we will be staying, but it has been harder than I expected it.



Figure 4. View Looking Toward the Glasshouse Mountains (Photo by Stacey).

Stacey revealed how one's idealised concept of an imagined life can be a powerful motivator, but once imagination gives way to the lived experience of a new lifeworld, it can and often is, different than planned. The process of learning and accepting the inconsistency between imagination and reality has not deterred Stacey from remaining on the Sunshine Coast, as her love of the area is so far, greater than the hurdle she is committed to overcoming.

While referring to her photograph, Stacey continued to share her experiences of adjusting to living in a new locale and reflecting on the landscape transformation that has occurred in the short time since her arrival, including her own role in its change.

On one level it was a bit of a dream for me. It was my idyllic landscape. I thought it was very pretty. So in the time that we have moved here there is now a mansion where this house used to be. It is a colonnaded palace, mega-mansion. And in a way the symbolism of this house is that we are part of this change. There are all kinds of issues about taste. What is it about a farmhouse that looks acceptable and attractive? I guess it harkens to some sort of idyllic idea of a balance between the open space and cultivated land that allows us to survive. It's not ostentatious. It is humble. I still find it a beautiful view.

The difference is that now I see below the surface a bit more than I did. It's not that I have stopped appreciating the beauty, it's just that I feel that ordinary old street that I live on has more meaningful connection for me now. I'm very conscious that we are a new wave of residents in the town. I guess that makes me sensitive or a little self-conscious.

The funny thing is nobody talks about before the farmers arriving and taking the land from the Aboriginal people. This doesn't justify development, but it illustrates that history is longer than what the public debate seems to be about, which is the tree changers and the sea changers. We are part of a historical continuum.

Sometimes I feel quite ambivalent about it. I have quite mixed feelings about how much I belong there. It is almost like knowing too much. It would have been easier if I just didn't know as much or being as reflective. I am I'm not against building houses, but it frustrates me that they are allowed to build with no concept whatsoever of where the sun rises and sets. I just don't think there is any excuse for it these days.

Stacey acknowledges that she is part of the cultural sea/tree change phenomenon and its influence that is reshaping many low-density coastal regions throughout Australia. Although the natural beauty of the region remains integral to her place construct, we see how her outward gaze has turned inward and contracted with a focus on the street where Stacy lives. This highlights an important contrast of Stacey's place construct, the "ordinary" everyday and the idealised aesthetic of the rural idyll where the aesthetic resides in the background and day-to-day events reside in the foreground.

On deeper reflection, Stacey looks back through history to gain context of the transformation of natural and cultural landscapes over time. It is not justification to support the current trend, but signals a caution for how the region is being transformed today. Being part of the change, Stacey accepts the reality of growing development that is reshaping the Sunshine Coast, but she does so as someone that has consciously embraced sustainable practices to reduce her ecological footprint. It is from this position that she wonders how development can continue in its current form and meet Council's sustainability goals.

Marco is another migrant to the Sunshine Coast and lives in the same area as Stacey. However, Marco has lived in the area for over twenty years. He owns a business in town and has developed strong social connections through the business as well as through his involvement with local organisations. In this passage we learn more about his relationship with the land and observations from the top of the Blackall Ranges looking toward the growing residential development along the coastline.

The relationship between a person and the land that they live on is a very intimate one and it has to be one that is fought. It's not something that is given. You actually have to put work into it and make it your place. I've got a hectare of land here and there's more bush land around and I am constantly embedding myself in this actual block of land and making it my own. At the same time I am despairing at the changes that I am seeing around me, which seem to be diminishing the environmental values all of the time.

Marco's sense of place is both aesthetic and corporeal. He has observed the developmental changes to the region that have impacted the natural landscape he so admires, but he is also physically embedding himself in the landscape through the physical effort he is putting into maintaining the property and caring for the garden where he grows food. The two experiences are intertwined, but similar to Stacey, the aesthetic resides in the background and his corporeal experience is the one that imbues his sense of place with meaning as it pertains to his home and the land it rests upon. Just to be clear, this in no way implies that Marco's corporeal experience takes precedence over his aesthetic experience, but that the two are constantly interchanging depending on the activity he might be engaged in at the time.

Together these elements form part of Marco's existential phenomenology: his lifeworld and sense of place.

Derek is an expatriate from the United Kingdom. He has lived in Australia on and off over the years and retired to the Sunshine Coast twelve years ago. He has been involved with a number of community groups and is actively engaged with activities that shape Noosa Shire. Our interview took place sitting on his deck overlooking Sunshine Beach.

The National Park really symbolises my sense of place. It is the right mix of natural spaces and development. Our home is our house and Noosa the balance between natural and built environments is about as good as it gets anywhere. There are the social aspects as well. We like going to the theatre and there are a number of good restaurants in a short distance.

My sense of place is on two levels, home and the Noosa community. The village feel is an important. I like the mix of the natural and built environment. I have lived in places where I didn't have a sense of place. Noosa is special, not elite, but an example of excellence in planning. The elitist tag of Noosa is unfair. It is sensible planning. I care about this place and want to achieve change. Small things make a difference.

For Derek, his sense of place emanates from the home and outward into the natural and public realms. Living near the Noosa National Park has an immediate influence on Derek's place construct, as it is easy for him to access with relative frequency. What is most important for Derek is the balance of natural and built environments. This is highlighted by the value of his aesthetic experiences combined with interpersonal aspects of the cultural and social elements he finds in town, which he describes as "special".

In comparing Noosa with other locales in which he has lived, Derek contrasts Noosa with other locales that for him did not have a sense of place. His caring for the area, which is a motivating factor for his involvement with local groups and attending council meetings define his strong sense of place. He feels so strongly about this that he defends Noosa against some of the criticism directed toward the Shire from residents of other communities on the Sunshine Coast. Derek's position sheds light on some of the underlying tensions throughout the region between all communities that have experienced land use development and in different ways are trying to maintain highly valued aesthetic and cultural values. Noosa and other coastal foreshore settlements are becoming densified, while the rural is becoming fragmented.

Robert was the only respondent that self-identified as being of Aboriginal ancestry. When asked to describe how his photograph represented his sense of place, Robert shared his unique perspective that centred on the traditional camp of his great-grandfather.

This photo is of an area of land that is similar to sacred Aboriginal land⁸. The area is the camp for the indentured labourers of the Queensland Labour Trade. It is linked to these indentured labourers that camped at this spot. So this must be my place. This image signifies my family's lineage, it is where my great grandfather camped before I existed and that's my connection to this place.

Even though my people are from North Queensland and I will always call it home, this is my place because of my parents and my children's ancestral people. So in many ways both places are home, but for different reasons. My great grandfather camped at this spot and that is my connection with this place.

I most definitely feel a sense of connection with this place. This land is officially known as the 'The place for our place'. It has been called that since time immemorial. This is where our close ancestors, the previous two or three generations, where they spilt their blood, they spilt their sweat, they spilt their tears. So this land has got something of them in it. It is our responsibility to play homage to them and celebrate them by looking after that hunk of dirt. It is a place where we undertake activities to protect the riverbank, camp, and have celebrations.

Although Robert's lineage originates in Northern Queensland, we learn how the physical attributes of the earth and Aboriginal ancestry and heritage through the generations are tied together and are of utmost enduring cultural significance. It is through these familial relations that Robert defines his sense of place on the Sunshine Coast and the collective responsibility to protect the land on behalf of past, present, and future generations. In Robert's description, we get a sense of the *genius loci*, the spirit of place that is unique to Aboriginal people. This is not to say non-Aboriginals do not have a similar essence of place, only that it is unique because of its cultural and historical significance.

Shane is originally from Brisbane. As an avid surfer, he spent several years chasing waves along the Gold Coast before relocating permanently to the Sunshine Coast over twenty years

⁸ Robert shared a photograph that represented a landscape similar to the one he described during the interview. As Robert explained, it would be disrespectful to his ancestors to share a photograph of the actual land with non-Aboriginals.

ago. In recent years, Shane and his family have been living overseas for work. Living elsewhere has given him a greater appreciation for the way people live in other locales, but in no way has it diminished his connection with the Sunshine Coast. When asked about important community considerations, Shane tied together his definition of sense of place as it pertains to community engagement.

So you know, for me this sense of place is being a part of the community things. I'm building the place. I am very privileged to live here and I like to think that I'll live here on and off. But it is very important to build the sort of place that I want it to be for me, for my parents, or my children. The future is where everyone can really enjoy. At the end of the day, that is building the sort of community I am interested in the long-term. You talk with the people you meet by walking and riding (bicycle). It's how everyone stays connected. You'll get friction and that's life, but you'll actually meet more people and feel more comfortable. Some of the times I think some of the projects are very selfish. It's not just for me, but it's how I want it to be. It's not about me holding on to that, but it is about providing what I think is a really nice thing for the community.

Shane's sense of place originates with his family, however the home serves as an anchor for lived experiences and notions of place that also extend outward into the public realm, which he refers to as "community". It is there that Shane's appreciation and pride for where he lives acts as a motivating force for engagement in community activities. Although Shane holds some idealised perspectives on how he would like the community to be, those ideations are motivated by a genuine care and compassion for the collective good. Shane also holds strong aesthetic and ecological values; however, his social interaction and community engagement are prominent features of his sense of place.

Alexis was born and raised on the Sunshine Coast, but left the region for a decade while she went to university and started a family. Her motivation for returning was the strong emotional pull she felt since childhood. She also wanted to raise her children in the familiar setting that she enjoyed. She noted that the economic challenges of living on the Sunshine Coast compared with other locales she lived in the intervening ten years, but that the emotional draw was too great to keep her away. Our interview took place overlooking the hinterland valley where she grew up while she showed me photographs from a family album illustrating the changing rural landscape as presented in Figure 5.

I feel very connected to this place. It is a sense of being whole. When I was young I used to sit up on the hill there and look out into the world. It was a really important experience because I felt rooted in place, rooted into the

ground. Yet, there was the sky above, the earth below and the horizon over there. It was like this perfect sense of being connected, probably more in a spiritual sense than anything else. It's about being whole and being a part of the place you actually find yourself in and having a deep sense of belonging.

For Alexis, her childhood and young adult experiences define her sense of place. Although the rural idyll forms part of her place construct, it is less aesthetic and more corporeal in the way it provides spatial orientation, not only in the physical sense, but in a metaphysical sense as well. The hill upon which she sat as a youngster spatially oriented not only her body at a vantage point to visually take in her immediate surroundings, but also in her imagined sense and interconnectedness of the biosphere, which together nurtured her rootedness. It could be argued that the landscape is an integral part of a collective place construct that acts as a visual cue for a much deeper sense of connectedness to locale. For Alexis, there is a similar deep rootedness that seems to be equated with time and that also invokes a deep ecology/*genius loci* or some spiritual connection with place.



Figure 5. Alexis' Family Photographs (Photo by author).

5.4 Becoming Place: The Public Realm – Social interaction and communities of interest

The dimension of social interaction expands from the intimate personal space of the home, comprised of immediate and extended family members, and outward into the public realm,

which is occupied with a diverse range of strangers, acquaintances, coworkers, schoolmates, and friends. The scope of social interaction within the public realm is often unpredictable and constantly in motion, and as such it is a critical and integrated ingredient of an individual and collective sense of place.

The findings show that two-thirds of respondents identified social interaction as being an important aspect of their sense of place. Over three-quarters of respondents engaged in volunteering activities; over two-thirds of those activities being related to environmental enhancement and protection; and half of respondents were members of organised groups or schedule events and activities.

For respondents, social interaction is interwoven with the multi-dimensional layers of sense of place. From random interactions at the shops, to quasi-planned meetings on the beach to assess the waves for a surf, to more organised and scheduled groups and meetings, social interaction defines sense of place. Throughout the study the distance between settlements was identified as an impediment for facilitating unplanned and planned activities alike, especially as it related to developing and maintaining friendships through communities of interest. This section presents interview transcripts with researcher interpretation for Questions 8, 9, 11 and 16. Question 8 corresponds with respondent images presented during the interview.

In the previous section, Shane described and represented a part of his everyday life – riding his bicycling and meandering from his home through town and the random encounters he has with others along the way. In the following account, Shane discusses his observations made at two different coastal structures situated on the landscape as presented in Figure 6 and Figure 7.

This is a line you come up to (dune fence) and this is a line you stay on (path). It is manmade, where someone is creating an interaction with the natural stone. People are drawn to it, and will walk on it. It is an art project, whether or not the person that made it thought so. (At the dune fence), some people on walks stop to look at the surf and start talking and they don't realise that it's a little junction. It's an interesting event in that way.

Here Shane compares two different intersecting points that nurture social interaction at the land-sea interface. It is important for Shane that there are spaces and objects created in an *ad hoc* way, such as the rock pathway constructed of natural materials that can easily be reintegrated with the landscape as opposed to large-scale capital projects that take time to be completed and that might not be easily reintegrated back into the landscape such as structure made from concrete. Another factor Shane considers crucial to the formation of the physical aspects of such *ad hoc* structures is that they were constructed without going through a

formal approval process; the citizenry have found a way to be engaged with and contribute to the community in a way that is not capital intensive or politically motivated. Although large-scale projects such as formal parkways, plazas and surf clubs are successful means for facilitating social interaction for locals and visitors alike, some of these spaces and structures are not necessarily consistent with resident's such as Shane's imagined or preferred public realm and corresponding sense of place.



Figure 6. Dune Fence: a point of social interaction (Photo by Shane).



Figure 7. Ephemeral Rock Pathway (Photo by Shane).

Troy arrived on the Coast with his family three years ago. He is friendly and outgoing, so it was not too long before he made an interesting discovery that he had not quite anticipated.

There are positives and negatives here when it comes to people meaning, there are a lot of places that are sitting empty or the owners are only here every now and then. It makes it difficult to develop relationships. There are properties that change hands frequently. Then there are the people that are renting that don't necessarily have a mental commitment to the place because they know that they have the option of leaving. They also know that there is the option of the owner kicking them out.

Troy highlighted a challenging characteristic of the Sunshine Coast as a tourist and sea change destination. For Troy, development designed and marketed to attract temporary visitors and second homeowners does not necessarily attract people who are committed to the community in the same way as long-term or permanent residents. This is not an obvious conflict rather it flows below the surface of day-to-day social interactions, mostly due to locals not wanting to cause tension when their livelihoods are dependent on non-local income. And in Troy's case, it simply makes it difficult to get to know your neighbours if they are only there periodically and/or not committed to forging friendships with locals. This characteristic makes for an interesting social dynamic that is distinctively different than other locales with more permanent/less transient residents.

Holly is in her sixties and has lived on the Sunshine Coast for over a decade. She has lived in a variety of locales throughout Australia and has happily settled in a small seaside town. In the next passage we learn how social interaction has enhanced Holly's sense of place while she refers to a community project presented in Figure 8.

This probably represents my sense of place here because I have dedicated so much time and effort into restoring the area near the creek. I have spent the last five years working on restoring the creek side. I call the group 'my tribe'. I have made new friends, which has led to being involved in other groups. I could see the potential, so I decided it would be me.

Through volunteering Holly has made friendships and met other people in the community, which has extended her social network beyond the town and the people where she lives. She considers herself a little bit of a renegade and is the *de facto* organiser and leader of the group. She is very dedicated to the ecological restoration project, but it could be argued that the social interaction is as much of an attraction as is pride in her work. All of these elements are tied together and form the essence of her sense of place.



Figure 8. Creek Restoration Project (Photo by Holly).

The importance of social interaction contributing to the formation of one's sense of place was illustrated earlier by Stacey's struggle with settling in to the new town where she lives. As she described her sense of place on the Sunshine Coast, she reflected on her time living in Canberra and the importance of friendships and some of the challenges of forging new friendships in a different locale.

Leaving friends in Canberra was a bit hasty. When you don't have kids in the schools, making friends is not as automatic. You make friends at work, which is great, but everyone is so spread out that I find it difficult to establish social relationships. I have friends from one end of the region to the other and so you don't just drop in.

Some of those aspects of the Coast, well you are aware of them on one level when you are touring around, but it's different in a work a day world. Having said that, I don't feel a great sense of a bond with Maleny or the Coast, although that is growing.

But I do with my own street, which has been a pleasant surprise. It's the only place that I have lived that the numbers of people I know are greater than my 10 fingers and 10 toes. And the funny thing is, I know all the names of their dogs. It's because of going for walks on our street.

That has been really delightful and a surprise because I thought the town was so charming before I lived there, but now I feel that it is fine and convenient. Pretty. A very pleasant setting, but it's the people on my street that I feel a sense of place with. It is to the point that it has been a little disappointing that a few people have moved away. It's not that we socialised a lot, but it is about having a sense of knowing where you live and knowing the people on both sides of you and up and down the street. So my social network is as local as it gets.

Although Stacey was initially drawn to the region for its natural beauty, the visual aesthetic alone has not been enough to form a strong sense of place. She imagined what the people might be like that comprised the quaint town of Maleny, but quickly learned that forging friendships was not be as easy as she thought, or desirable. Looking beyond the town for friendships and communities of interest has proved to be challenging and inconvenient, especially since she is very conscientious about driving distances and corresponding carbon emissions. Consequently, temporal and spatial factors have led to a sense of place that is more concentrated within the adjacent but local scale public realm of her street, as opposed to the town or region. Her need for social interaction is strong and is critical for forming her emerging sense of place on the Sunshine Coast.

Returning to Shane, in the following transcript he reflected on his contrasting experiences of living in an urban area compared to living in a small seaside town. As he explained, the landscape, density and natural boundaries can influence the way an area is developed.

I lived on the Gold Coast for surfing and then came here to buy (land) because of the affordable property on the Gold Coast was suburban crud. Coolum is a town on the beach. It's suburban, but it's a town surrounded by cane fields, the National Park, and the ocean. So it's got these boundaries.

We made more friends here in six months than we did in six years on the Gold Coast. It's really a different sort of thinking. Here it's great. That's the place thing. It's the people. This morning I walked my son to get the school bus and I took some grapes to a friend's chooks and I was chatting with her and some other friends walked past and some more friends. Far out! It was so nice. It was all happening. It is all so close. I really do value that nice feeling.

Shane is a sociable person, so it was interesting to hear about the different experiences he had living in the two locales. This may be indicated by his negative perception and experience living in an urban area elsewhere combined with other facts not discussed. The majority of

respondents did not speak fondly of the Gold Coast, which is consistent with the literature and my experience interacting with people from the Sunshine Coast.

For Shane, sense of place is about people. His daily interactions with friends, neighbours and other locals are critical to his place construct and something for which he has great appreciation. A key point not to be overlooked is the importance of spatial scale; the closeness and immediacy that facilitates social interaction where Shane lives, which allows for spontaneous and consistent interactions that builds up over time.

Lydia grew up in Tasmania and settled in the hinterland town of Eumundi with her husband six years ago (Figure 9). The young couple had lived in other nearby towns in the region before deciding to make a commitment to staying on the Sunshine Coast.

My sense of place is in Eumundi. I feel comfortable and safe here. When we decided to build a house it was an amazing feeling because we could stay and make a home. We have got to know the baker, the newsagent and the butcher. Friends marvel when we take them to the local pub and the bartender asks if I want the usual, which is kind of neat. It feels so good. It really helps with feeling a sense of place. We love it!

For Lydia, building a house helped solidify her sense of place as it provides stability associated with home. This sense of stability is reinforced as it extends from the home into the immediate public sphere through the many different interactions with shopkeepers and other local residents she meets on the street. Familiarity and consistency in her everyday life augment her sense of security and belonging. Unlike some other respondents, Lydia has been able to forge friendships in town, which could be due to a number of factors, including interactions through her husband's business.



Figure 9. Eumundi, QLD (Photo by Lydia).

5.5 Summary

Spatial environments serve as the setting for the home from which respondents look out upon and engage with the world. As we learned, home is very important, which is augmented by the fluid movement and extended place meanings that are constructed through interaction with spatial and social environments beyond the confines of home. The overarching themes of time and space are prominent features of the transformation of spatial environments into place environments. For most respondents, aesthetic features of the Sunshine Coast were very important and were a draw from some respondents to relocate to the region. However, for new arrivals like Stacey, the rural idyll retreats into the background as the need for social interaction moves into the foreground of one's place construct. The design and concentration of settlements can also have an influence on the capacity for regular social interaction, which can aid the formation of place bonds. The concept of *genius loci* is perhaps most represented by an Aboriginal place construct, although as we learned such metaphysical and spiritual elements of place are also shared by people from other backgrounds. Such rootedness in place can be reinforced through corporeal experiences of being physically grounded in the landscape and the embeddedness of working the land. Sense of place is often characterised by profound symbolism associated with iconic features such as Noosa National Park, however, the subtlety of everyday aesthetic, corporeal and social experiences, which often flow unnoticed beneath the surface contribute to the formation of the intricate web of experiences that culminate in the complex and fluid dynamic of sense of place.

Social interaction in the public realm results in the most profound transformation of space into place and a shared sense of place. As we learned, the majority of respondents considered the social to important to their place construct. This finding was confirmed with three-quarters of respondents being members of different communities if interest, which was illustrated by Holly's dedication to a local stream restoration project and Lydia's sense of belonging associated with becoming known within the town of Eumundi. The findings also revealed that it could be difficult forming friendships in an amenity migration destination that is comprised of tourist and second home properties that are inconsistently occupied by visitors and owners. This subtle tension can be compounded by entrenched social dynamics that make it difficult to enter the existing social structure such as was experienced by Stacey.

The local scale was revealed as an important aspect of sense of place. The concentration of settlements can also have an influence on the capacity for regular social interaction, which can aid the formation of place bonds. Stacey struggled with the distances needed to travel to maintain friendships with likeminded people that she could not access in Maleny. The combination of these two factors shifted her focus on to the street where she lives, which became the focal point of her sense of place and not the wider region as she expected. Shane confirmed the importance of the local with his observations and examples of social interaction where he lives, for example the simple built features that serve as points of convergence and casual encounters with locals and visitors alike, which altogether enhance his sense of place. For Shane, the natural beauty of the region is very important, but for him sense of place is mostly about people.

6.0 ANALYSIS AND FINDINGS: IMAGINING AND ADAPTING TO CLIMATE CHANGE

The analysis revealed that the lived experience of climate change is limited for residents of the Sunshine Coast; however, the act of perceiving and conceptualising climate change was evident and represents an important component in the process of comprehending the phenomenon – as a key determinant of adaptive capacity. Over two-thirds of respondents were concerned about climate change and just less than one-third accepted climate change with some doubt. Of the remaining respondents, two were undecided and one did not accept climate change.

Part of the process of comprehension explored the sub-theme of extensibility related to imagining the lived experience of climate change by people living at locales beyond the Sunshine Coast. Much of these discussions focused on climate impacts to settlements of small Pacific Islands and developing countries and the subsequent potential for migration of climate refugees to Australia and how this might affect respondent's lifestyle and ultimately, their sense of place.

6.1 Formal and Informal Environmental Education and Learning

As the analysis of the lived experience of climate change and impacts on place proceeded, a theme emerged between understanding climate change and respondent environmental education and learning. From this analysis two groups emerged: formal and informal education/learning. Formal environmental education was defined as those who indicated that they had undertaken post-secondary courses and/or programs on their own or in combination with professional work in the environmental field. Other respondents that had involvement in agriculture and/or volunteer activity related to environmental preservation, protection, and/or enhancement defined the category informal education/learning. In some instances respondents may very well have engaged in both formal and informal education/learning.

This section presents the findings for respondents' understanding of climate change. The results were drawn exclusively from Questions 19, 22, and 23 which explored respondents' awareness and concerns about climate change. This question served as a conduit to further discussions about the perception, understanding, and the lived experience of climate change.

Information and opinions about climate change are readily available outside the formal education stream through a variety of sources including: public agencies (governments); the news (newspapers and television/online broadcasters); other publications (books, journals, magazines etc.); and other sources (special interest groups, online resources such as blogs, and personal conversations).

Just over half of respondents formed a 'Formal Learning' group with education in disciplines related to the natural environment and were either undertaking or had completed studies with the highest level awarded being a doctorate degree. Over four-fifths of respondents in this group accepted that climate change was occurring/inevitable, with the remaining members accepting climate change was occurring/inevitable, but held some doubt about the rate and intensity of possible climate events.

Fewer than a quarter of respondents represented an 'Informal Learning' group. Just over half of respondents in this group accepted climate change. Of the remainder, less than a third accepted climate change, but with doubt about the reality and severity of potential climatic events. The remainder did not accept, nor have any concern, about climate change.

Respondents that did not fall into either 'Formal' or 'Informal Learning' groups accounted for less than one-third of respondents. Of these respondents, one-quarter accepted climate change, half accepted with doubt, and less than one-fifth were undecided. This 'Other' group displayed the least concern or acceptance of climate change.

The purpose of this breakdown illustrates that that distinct groups emerged from the analysis. Therefore, these groups are used to frame the following presentation of data as these patterns are related with the concepts and themes presented below.

6.1.1 Expert Syndrome

A quarter of respondents commented that they were not a scientist; or at least partially deferred what they considered their limited understanding of climate change to the domain of the subject matter of experts (as the ones in the know about climate change and/or the best people to inform policy makers, educate the public and/or make decisions about how to go about addressing climate change). This finding highlighted the perception that climate change may very well be reserved for and/or the responsibility of scientists and to a degree, policy makers.

This is a kind of 'expert syndrome', which is a way to identify the inclination of respondents to at least partially relinquish individual responsibility to domain experts. Other factors may contribute to this 'expert syndrome' such as the possibility that people are intimidated by the scientific nature of climate change and/or the inconsistent application of climate policy locally and globally.

Deferring to a scientist or expert was not limited by educational background, which may be an indicator of climate science being a specialised domain limited to practitioners. For example, some formally educated respondents suggested that because they did not have a physical

sciences background they might not be qualified to comment, which hints at the belief that climate change is a matter primarily for the physical sciences.

Phil offered his assessment of the climate change body of knowledge and concludes that special interest groups jeopardise what he considered decade's worth of scientific data and information sharing comprising present-day global awareness.

Climate change as far as I understand it as a non-scientist has been known about since the 50s and 60s and certainly the science was pretty robust by the 80s. Now that's 30 years ago and we are not prepared to take it on board and the self-interested parties have, with very little money and effort been able to scramble and confuse and politically intimidate the people that are responsible (for the science).

Despite being a practitioner in a social sciences related field, Phil at least partially defers to knowledge experts. As mentioned in the section Introduction, this type of deferral was a common occurrence throughout the study and raises an important point about people's understanding of climate change and level of comfort discussing and forming an understanding of the topic. The conversation then moved on to Phil's perspective of the tactics used by special interests to discredit and silence climate experts with messaging designed to counter international scientific findings with confusion for the average citizen, including Phil. He concludes with his rather bleak appraisal of what he considers a systemic barrier to collective engagement with climate change.

It seems to me incredibly difficult right now at a country level, regional level or a personal level to sustain arguments about anything other than greed and self-interest. And that is a very difficult environment in which to sell arguments about modifying our lifestyle, paying more for things, reducing our footprint for people we don't know.

Phil feels that present-day self-interest, namely over-consumption gives little hope for public engagement with climate change awareness, adaptive capacity, and ultimately climate action. Phil points to a key element of climate change adaptive capacity – modifying personal lifestyles with the intended purpose of measurable carbon emission reductions being realised at some point in the future.

6.1.2 Comprehending Climate Change

Marco cautiously accepts climate change. His primary concern is focused on biota, which he feels is under threat from excessive human consumption. In the following transcript he

presents the integrated relationships between development, ecological protection, and climate change.

Um, I am very concerned of course that climate change is happening, and that my main concern is for other species because I feel that there are too many people on the planet. We are slowly making it harder and harder for every other thing that lives on this planet to live. But, that's not a really popular view of the world. I don't talk about it too much. I just feel like we're squandering, human beings are squandering the beauty and the plenitude of the world. It's not just population, it the requirement that each individual seems to have for more and more bigger houses, more roads, bigger cars, more of the rest of it.

The most intimate aspect of it from my perspective is the biota. If climate change happens quickly those certain insects may not be there, and the birds may not rear their young and some species are going to die out.

Well, if we go back to Sunshine Coast planning, it's the stupidity of building Caloundra South and putting 50,000 people in there, but we're going to provide them with a railway is just so stupid in the face of climate change I am just speechless.

The initial “um” at the beginning of Marco’s response is an indication of his uncertainty regarding climate change, however he bridges this uncertainty with his present-day concern for habitat loss due to human development. Marco embodies an ecological ethos, a perspective he admits to being uncomfortable sharing with others. His perspective revealed a self-consciousness and social stigma associated with consideration, care, and protection for other species. A similar sense of self-consciousness was detected when other respondents discussed their perception, understanding and concern about climate change. It could be argued that by internalising his feelings about nature Marco may be inadvertently impeding his complete engagement and understanding of climate change and ultimately his personal adaptive capacity, e.g. self-censoring censors one’s ability to communicate and/or behave consistently with their personal values.

Although Marco initially suggests that population is the root cause of environmental degradation, he is quick to point out that it is not necessarily the total number of people, but that the rate of consumption per person is what he considers the greatest concern, particularly its impacts on specific places. Marco’s concern about the impact of human settlement on biota is directly connected to his sense of place on the Sunshine Coast as reflected in his objection to the proposed Caloundra South development. Marco sees this

development as an example of contemporary planning that perpetuates a consumption-oriented lifestyle that contributes to anthropogenic climate change. It may be that Marco simply does not care for master planned estates and is making a case against Caloundra South as a way to advocate for climate change adaptive capacity; however, this possibility should not overshadow his fundamental concern for ecological systems, which is disrupted, displaced, and eventually transformed through the process of land-use and human settlements.

As we recall, Lloyd has spent his life as a farmer interacting with the land and ecology. His years of informal learning exemplify the embodiment of *geosophy*, which gives him a unique perspective and capacity for understanding the relationship between humans and natural systems.

I've certainly got some thoughts on it, but I feel like I don't have enough knowledge on the topic to know for sure. I don't doubt that everything we do today has an effect on natural systems. Whether it is the amount of fuel we use or all of the new homes running air conditioning. If we get used to using air conditioning, then you keep using air conditioning. We might all like to say it is not a concern, but climate change whichever way it comes, whether you're a farmer or lifestyle person, you have to think if the temperature increases one, two, or even half of a degree, it makes the place less comfortable.

I've definitely thought about it. I'm not going to say that it is not my problem or not a concern. It's definitely something that needs to be thought about. And the more you think about it the more you actually work on it.

Well, the major problem I can see, if I am getting the right information, if the polar caps are having massive melts and there is no snow for even small periods in a year, this is going to affect the ecology and the animals and whatever else. It is going to be quite devastating. Where we are here, we probably have some latitude compared to other places. The hardest hit will probably be in the tropical regions along the equator and the poles. And this is a big concern for me. Food security is the greatest concern. It will be Australia's greatest worry.

Lloyd's years of life experience has enhanced his ability to analyse complex inter-relationships between social and ecological systems, although he feels that he does not have sufficient information to be certain about climate change. Despite his uncertainty about climate change he seems certain about the negative effect of human activities on natural systems. Lloyd uses this perspective as a framework for assessing the global impact of

climate change, especially as it pertains to his primary concern for food security affecting his local sense of place.

Jake has observed climatic cycles over several decades and is aware of the topic of climate change. However, as explains that he does not have a lived experience of sea level rise, he consequently does not accept, nor is he concerned about, climate change. Jake's concerns are more immediate, such as silting caused by upstream development and boat wash causing bank erosion of the river near his home. Since climate change does not figure in Jake's construct of place, his focus is on more present phenomenon that does impact his sense of place.

No, not really. I haven't noticed any difference in the 70 years that I have lived here. We get wet cycles and we get dry cycles since I've been on the land. And I haven't noticed any difference. No, no, no consideration.

They're predicting it but I haven't seen any evidence of sea level rise or that kind of thing. The river tides have been the same. The silting and boating are the problems I have seen.

Derek is concerned about climate change, but his position straddles a temporal scale whereby extreme climate events occurring in his lifetime might be more manageable than potential catastrophic events that could be faced by generations further into the future.

Yes I am concerned. It is hard to give a straight and simple answer because it depends on if I am discussing future generations or myself. In my lifetime it will probably be more extreme events. In the longer-term it could be catastrophic for the globe. In the immediate sense I am not that worried about sea level rise. We are on high ground so that is not a worry.

My interest is more policy related and focused on wide-ranging and long-term mitigation. My idea of climate change actions is millions of tiny actions as opposed to a large-scale initiative. More extreme events, or if we get drier events it could lead to bushfires. If we were affected by a fire or extreme event it would destroy my sense of place as it relates to the natural environment.

At the moment, Derek feels that being situated on high ground reduces the potential impact of sea level rise, however, he does not feel as confident about the potential for bush fires, which if realised could have a negative impact on his home and consequently, his sense of place. Derek does seem to make a link between the climate change and its possible affects on his property and sense of place could be quite dire and that is what he is trying to prevent through policy and long-term mitigation. To some way of thinking, Derek wants

people/community to change/adapt because he is concerned his sense of place will be diminished. However, wanting others to understand and change their ways of being is not the same as getting them to engage in collective action. This could be partly due to of 'expert syndrome' and partly because of the extensibility of the challenges that are faced.

Jill is recently retired and has lived on the Coast for over thirty-five years. With formal education and professional social planning experience, she considers the interconnected relationships between people and the planet and the intricacies of a changing climate.

Um, it is. I guess it's more like a principle, than a concern. I don't question the science of climate change I just think it is true. It's a good thing to be a good citizen and it's a good thing to not damage the environment. If I could leave any kind of legacy it would be that kind of attitude for my children and grandchildren. I don't feel I have been very successful so far.

I just think it is politics that questions it, not other scientists. I think there is significant change. I don't think we can do what we do without creating a very negative impact on the environment. As to what that might be here on the Coast, I don't really know what it will be. Sea level rising, more rain, and all that. In a positive world, being a Pollyanna here, it would mean that our sense of place would become stronger because it wouldn't be a commodity anymore, it would actually be something that is treasured and something that we feel is our legacy. Giving up is giving. But you're not giving something up, you're moving toward a positive state. Your values change. To me that is a very positive outcome. I'm not afraid of it.

Why wouldn't it change given what's happening on the planet? But I don't really feel that there is any benefit to living in fear of it. I think that is what is at the bottom of all of these things like tidal waves and don't buy a home on the canals because it will be flooded. I don't think that is fruitful. I think we do need to live with a lot less consumption and be more environmentally conscious. I think of this as a positive way forward, not a negative way forward. I think that this is different than what we might be hearing it's all so negative with regard to climate change.

But I think that change is change. We adapt to other types of change. There's a saying of the Buddha that the only thing that you can be sure of in life is that everything changes. Change is what we most hate because we can't control it. We won't necessarily get what we want out of it. I don't think it is negative to have to give up things. Why would it necessarily be a negative?

And why wouldn't you do it because it is good for the world and good for each other? It's a good thing.

As with other previous respondents, Jill comes to a similar conclusion – that present-day lifestyles have a negative impact on the natural environment and notions of place and this is consequently linked with climate change. Jill accepts climate change as inevitable and something that has always happened and considers its possible effects as being a potential catalyst for motivating a behavioral change. She feels that this shift toward increased value for the environment (and thus mitigating climate change) might also result in a stronger sense of place, or caring for where one lives. Jill acknowledges that this is perhaps an idealistic viewpoint, however it would appear that the combination of her acceptance and positive outlook act as a type of coping mechanism to lessen the psychologically overwhelming complexity and uncertainty of climate change. Despite her sense of uncertainty about the potential effects of climate change, Jill remains positive, and somewhat philosophical as she considers the intertwined evolutionary processes of human development and ecological systems.

6.1.3 Extensibility: Future Generations

When discussing climate change, half of respondents made reference to people beyond the borders of Australia and/or future generations without any prompting or questioning. Of these responses, two-thirds referred to future generations and one-third referred to people living in other countries. Respondent comments were often in the context of people living in other locales as being the first to experience climate change and most likely to experience extreme events, and having less capacity to adapt to climate change than themselves or Australians in general, and that could lead to outbound migration to more desirable locales such as Australia. This kind of spatial and temporal distancing or extensibility of the phenomenon of climate change and its impacts might be considered plausible deniability and subsequently the removal of their responsibility to understand or take action about climate change adaptation. It also exemplifies that climate change would not substantially alter their own revered 'place' but directly or indirectly referred to the impact of climate on the 'places' of others. The above findings are examined in further detail throughout the following analysis and interpretation of interview transcripts.

Concern for climate change can be based on a range of different factors. Frank accepts climate change, however he is not concerned about its potential effects due to his age. The 'not in my lifetime' sentiment was expressed by a small number of respondents and in this study it was not limited to persons commonly considered seniors (65 years and older).

Yeah, well it's going to happen. Again, I must admit I am rather pleased I am the age that I am because I think that one of these days the water levels are

going to rise and we are pretty low here. I don't think it is going to happen in my lifetime.

I don't think anyone is concerned about it, quite honestly. I mean they're all, from what I can gather from people I've been speaking to in conversations, 'Yes, it'll happen, but it's not going to worry us, it's going to happen to other places like Bangladesh and these little island states out in the Pacific. It's not going to happen here.' Yeah, I reckon it will. That's always the attitude isn't it? 'It's not going to happen to me.

Despite being aware of climate change, Frank is not concerned about its effects in his lifetime. Frank's response does provide a useful insight into his conversations with others on the topic. These conversations confirm several themes captured in this study namely spatial, temporal, and social extensibility and the perception that the effects of climate change will be likely experienced elsewhere and by other people. This perspective in turn relates to the spatial similarities and differences between a local and global sense of place. Thus, this extensibility of climate change as a problem 'out there' means that it may have impact on a global sense of place, but little impact on a local sense of place. Although this information could be considered second-hand data it confirms similar viewpoints of respondents in this study, which potentially contributes to a collective action problem and effectively, decreased adaptive capacity.

When asked if climate change was a concern, Phil's acceptance was tempered with doubt.

Yes. Well, we can see climate change but we couldn't say, I couldn't put my hand on my heart and say that that is definitely permanent, long-term climate change as opposed to seasonal variations.

Despite Phil's assertion of the collective "we" of observed climate change his position is also mixed with an uncertainty of its lastingness when compared with what he considered "seasonal variations", which is a view commonly associated with climate skeptics. As mentioned above, just less than one-third of total respondents fell into the 'acceptance with doubt' category. Although not the majority, this is a common viewpoint and illustrates the complexity and confusion in understanding climate change.

As the conversation proceeded, Phil considered the present-day lifestyle as an important factor contributing to the potential limits of extensibility that compromises intergenerational equity.

... on a relatively regular basis, we talk quite seriously about the fact that in 20 to 50 years my grandchildren and my grandchildren's children won't be

able to live. And so that it's incredibly serious, but I think that absolutely nothing is going to happen about it. Absolutely nothing is going to be done about it. Not in the foreseeable political cycle.

In addition to Phil's uncertainty of climate change in the previous passage, he also expressed a distinct sense of futility and despair when considering the fate of future generations, namely his kin. The construct of his temporal extensibility appears to be founded on his present-day experiences whereby he is adamant that the current social-political contract is incapable of preparing the citizenry in the present for climate change in the future. He at least partially attributes the electoral cycle of modern-day politics as a barrier to climate action.

Elaine is a retired small business owner who has lived on the Sunshine Coast for over thirty years. She enjoys gardening and recently participated in local permaculture workshops, which has piqued her interest in sustainability. As we see, she is in the process of formulating her understanding of climate change.

I think it (climate) is being affected by humanity, but I'm not sure it is being affected to the degree that some of the scientists are saying. I'm not saying I don't believe in it, I'm saying that it is only an opinion. It's only a scientific opinion at that particular time. If you go back through history there were a lot of scientific opinions that were wrong. As I said, I think we need to take every precaution and reduce the carbon emissions. We know it is damaging and we need to do something about it, but not panic about it.

I have always felt that the more we can do to preserve the earth and ourselves and get away from the chemicals and the big companies that are only there for profit. The companies are all comprised of people and we are all responsible for that, but if we can reduce the greed we can reduce our problems. We might be speeding the next thing up and I think we should take every precaution, but don't know that we need to get panicky about it. And besides, I'll be dead anyway. It's up to the kids to sort it out. It's not my responsibility anymore.

Elaine made a connection to human development as a contributing factor of climate change while at the same time questioning validity of climate science. Although she did not clearly state that she accepts climate change, her comments indicated a sense of awareness mixed with skepticism. Despite this position, Elaine does feel that action needs to be taken to reduce carbon emissions with her greatest emphasis directed toward corporations, and to a lesser extent human greed. Although she feels action is needed, her view to "not panic about it" indicates a reluctance to fully engage with climate action, which may delay adaptation. This

position is confirmed with her conclusion that “It’s not my problem anymore”, which places the task of climate action on future generations, namely her own children (and grandchildren).

This somewhat blasé attitude was not uncommon amongst respondents as they attempted to understand the complexity of a changing climate and what it means for them as they formulate a way to carry on without too much disruption to their lifestyle. And as lifestyle and sense of place are bound together it should follow that adaptation is woven into the dynamic fabric of life. However, lifestyle has become so equated with sense of place, but unfortunately lifestyle in this sense/meaning equates with production and consumption of goods including food, clothing, wine, and fuel to travel long distances to arrive at amenity destinations such as the Sunshine Coast. And thus, the consumer culture contributing to sense of place is at the same time resulting in development and exacerbating climate change.

As a new parent, Courtney’s extensibility becomes personal as she contemplates future generations and a changing climate, a perspective that is enhanced by her formal environmental education.

Yes, sure it is, especially now that I am a mother. I think it is natural to think about it, to think about future generations. I think that adaptation is an important consideration, not only at the local scale, but also at the global scale. We just don’t know what climatic changes will take place. Needing to cooperate more just to survive. It can all be a bit daunting. There is also population growth and potential climate refugees. It will be difficult if development continues in an unsustainable way and we are pushed to live more gently on the land.

Courtney accepts and is conceptually preparing herself for adapting to climate change. Her extensibility is temporal, spatial, and social as she considers the range of potential effects of a changing climate. Despite feeling somewhat overwhelmed and very concerned about her child, Courtney remained positive in the face of an uncertain future. There was also a hint of concern that extensive development and the possibility of increasing immigration of environmental refugees could negatively affect Courtney’s sense of place.

For Robert, his concern for potential impacts due to climate change is focused on sites of cultural heritage. In our conversation, Robert described his lived experience of the impacts of development on cultural and ecological values.

Absolutely. Absolutely. I have several concerns, but if the sea rises, and based on the research it is a foregone conclusion. I don’t know where the sea is going to rise in this area, but in the low lying areas around here it is going to cover a lot of significant areas on the Coast that are special to me. There

are already significant traditional meeting places that are under water due to dam construction. Before the Lake Baroon Pocket Dam was built it was a meeting place for thousands and thousands of Aboriginal people from not only the local area, but all around South East Queensland and the North for the Bunya Festival. So today, even though that specific location is under water the tradition is being retained because we gather on the banks and have what is considered the Bunya Dreaming Festival. Regardless of blood connections there is kinship among the people. It is all Country. It is a sense of Country. That the land owns us more than we own the land.

And that is how we establish our kinship. I have a strong appreciation for my place and I have a strong appreciation of other Aboriginal people's sense of place because we are connected through Country. I want enough of this area for my decedents to share. As a kid I used to go spear fishing near Kawana Island. They dredged the river and then built million dollar homes on the island. Such development alters the natural habitat. It changes the tidal patterns, which has to have an impact on the environment. It impacts the food sources for other fish species and the local birds and so on. Once upon a time you could catch fish really easily in the Maroochy River. Today you have to work really hard and the ones you do catch have ulcers on them or they are diseased.

In this passage, Robert presented examples of the negative impacts to cultural and ecological resources due to development on the Sunshine Coast. In contemplating climate change, Robert used the flooding of an Aboriginal meeting site due to a dam project as a way to imagine how potential sea level rise might affect other sites of cultural significance. Robert described how his people adapted to this loss by relocating to an adjacent site to continue the ongoing practice of paying tribute to Country and a shared sense of place. For Robert, the importance of the land is more than simply as a resource, but the cultural significance of the land and ecology for supporting the connection of Aboriginal peoples and all of humanity, albeit not in the same manner as before colonial contact

6.2 Summary

The findings from this section examined the emergent theme – Formal and Informal Environmental Education and Learning as a factor that contributed to climate change awareness and in some instances influenced acceptance of climate change and engagement with climate action. All respondents are aware of the concept of climate change, but have limited lived experience of the phenomenon creating a chasm between awareness and acceptance and ultimately, climate action. The findings revealed that respondents felt that

these gaps were compounded by the need for better information to understand the phenomenon and how to engage in climate action. Some respondents, even those with formal environmental education defer to scientists, which was labeled 'expert syndrome' in this study. Consequently, education does not inevitably determine accepting climate change, or climate action. Fundamentally, respondents expressed frustration with decision-makers questioning the science and an overall lack of clarity and leadership.

Respondents made a connection between development and ecological degradation and climate change, while others like Derek made a distinction between population and consumption. Although respondents were able to make connections between consumption and anthropogenic climate change, this assessment turns to conflict when engaging in climate action that potentially impacts their own lifestyle choices, and ultimately their sense of place. Jill feels that a shift toward increased value for the environment (and thus mitigating and adapting to climate change) might also foster caring for where one lives and a stronger sense of place.

Spatial, temporal, and intergenerational extensibility emerged through conversations about climate change. As young mom Courtenay imaged the future of the Sunshine Coast she was both worried about how development might impact on her sense of place as well as potential impacts of climate change for herself and her child. An individual's age can be a determining factor of accepting and engaging in climate action. Although some older respondents considered climate change important for future generations, they did not feel that they needed to take action, or that any action taken today would make a difference in their lifetime. Robert's Aboriginal ancestry is deeply embedded in the spiritual and corporeal experiences of country and for this he is most concerned about the potential affects to cultural heritage values for future generations.

6.3 Perceived Adaptive Capacity

The process of comprehending climate change naturally proceeds to formulating one's own perceived adaptive capacity. Analysis for this section was focused on respondent's concern for climate change, their perceived need and capacity to adapt to potential future climatic events, and examples of possible adaptations.

The findings revealed that over two-thirds of respondents expressed concern for climate change of which one-third of those concerns referred to weather-related events. When discussing climate change, less than two-thirds of respondents made reference to present-day natural events as flooding, bush fires, sea level rise, and weather events. Of the less than one-third of respondents that did not express concern, the reasons cited were not feeling

anxious, that climate change would not happen in their lifetime, and a general lack of concern an/or concluding that climate change was non-existent.

Regardless of a respondent's position on climate change, none of the respondents in the study held a purely positive attitude toward the phenomenon. Over one-third of respondents expressed negative attitudes toward climate change ranging from a sense of frustration, to anger, fatalism, apathy and/or futility.

Counter to the negative attitudes, the majority of respondents felt they had and/or will have the capacity to adapt to future climate events, although this optimism was often conditional. Just less than one-quarter of respondents felt that climate change will be a gradual process and that there will be sufficient time to prepare and adapt. Almost half of respondents felt that they would need to experience climate change first-hand in order to know what type of adaptation is necessary. Over three-quarters of respondents within this group asserted a positive can-do or pioneering spirit.

Similar to perceived types of climate change events, over half of the respondents made reference to solar power and water catchment systems as well as traditional activities such as food gardens as being examples of adaptations in the present that might be useful in the future. It is important to note that the motivation for such present-day actions that could be considered adaptations are not necessarily driven by the perception of climate change and that the reason for undertaking these modifications may have been out of necessity, e.g. limited or no access to public services/utilities, and/or personal preference, e.g. financial, ecological, and/or ideological (reduce carbon footprint and/or reduce the financial gain of large corporate utility providers).

Marco feels that he has a reasonable capacity to adapt to climate change, however when taking a global perspective he concludes that this capacity may be limited by the potential impacts of events occurring in less-developed countries that he felt could dramatically increase the population of Australia, and the Sunshine Coast specifically.

Within reason I can adapt until something happens in Indonesia and some of the several million people there decide that they want to live in Australia. Then all hell breaks loose. If climate change is going to be half as bad as a lot of people are telling us it is going to be then what's going to happen is the seven billion people, large numbers of them, are going to find life quite difficult. It is very nice to be here thanks very much, and I am very glad to be here, but what happens when instead of a half a dozen folks arriving we get millions of people coming here? What happens? This is not a good future.

Marco's imagined future and corresponding adaptive capacity extends beyond the borders of Australia. His assessment suggests that climate events will likely be worse in other locales and that residents of these countries would possess a lower adaptive capacity, resulting in a migration to more favourable locales such as Australia. As we have learned, this perspective is not limited to climate change scenarios, but is consistent with a prevailing resistance to increased population as a factor limiting a present-day high quality lifestyle and preferred sense of place. Although it is insightful to account for increased population and demand for resources in a changing climate, Marco was mostly focused on the impact to his lifestyle due to factors other than the direct effect of natural phenomenon.

When asked if he felt he had the capacity to adapt and if so, what actions might be taken to prepare for climate change, Martin looked to his current lifeworld for examples. Martin gauged his potential adaptive capacity on his lived experience of present-day self-sufficiency as a mental model for future adaption.

We are pretty self-sufficient. We have rain water tanks, we have solar panels, and we have our own electricity. We have hot water; from solar so there is hot water. So we are pretty much prepared for the future. The only problem is we can't grow our own vegetables because the soil is pretty dead.

I think modern human beings are pretending to be very smart. They are aware of what will happen, but on the other side they have the ability to create these filters where they blank out what will happen. But there is this flaw, I think, built in many of us, including myself, where I think, "Yeah, today it's a nice day and I am not so concerned about tomorrow". And I think that this is a problem.

Martin's perceived adaptive capacity was based on current demonstrated adaptations of living semi-off-grid. His descriptions provided evidence of his sense of place as defined by the ability to implement a range of modifications to the home that permit a certain level of self-sufficiency. Despite the number of adaptations he felt that poor soil quality was one limiting factor of his adaptive capacity.

Martin's choice to adopt off-grid services may be based on several factors: 1) necessity – some areas of the Sunshine Coast are not served by public utilities and/or because (similar to much of the country) the region experiences periods of drought and thus it is not uncommon for homeowners to invest in water catchment systems (tanks); 2) personal choice, i.e. perceived financial savings and/or a desire to avert financial benefit of corporate and government utility providers, which may or may not be associated with 3) an underlying self-reliance (pioneering spirit) that may be intertwined with a modern-day ecological utopian ideology common among some Sunshine Coast settlements and their residents.

During our discussion, Martin also took a moment to consider present-day attitudes and how the concept of climate change is complex and overwhelming, leading to coping mechanisms such as temporary denial or extensibility to alleviate the mental burden. His assessment highlights the complexity of comprehending and preparing for climate change and attempting to find a balance between actions and maintaining happiness in the face of uncertainty.

As Shane reflected on adapting to climate change, his pioneering spirit was apparent. Part of his adaptive capacity strategy was based on leveraging natural systems and simple technologies. He also took into account temporal factors that might influence his adaptive capacity.

Rather than fight it we are going to have to go with it. In this part of the world you can catch rain. You can catch the sun. Man if you can't survive with a reasonable level comfort using intelligent, not radical technologies, but intelligent, just winding it back to what you need. It's not going to happen anywhere on earth is it?

I like to think that possibly yes, but um that depends on how old I am when it happens. Like I said before, it is an incredible privilege... it's not going to bother me in the physical sense although it will have an effect no matter what. It will affect everyone.

I like to think that as part of my make-up I don't mind a challenge, I don't mind a bit of hardship. And actually I think that I reckon is rooted in the early days of bushwalking with a tent. I have finished getting my solar system set up. We generate more energy than we use. We've eaten out of our garden recently and I have a very strict water management policy.

Through his acceptance of climate change, Shane implied that resisting the idea of climate change would consequently impede his ability to build capacity to adapt to change. Shane felt that accepting climate change allows him to move more quickly toward climate action, and thus adaptation. Throughout the discussion he provided examples of his interest and adoption of semi-off grid adaptations that culminate in a collective sense of self-sufficiency similar to Martin. As the discussion proceeded he reflected on the lived experience of his youth to identify the origins of his pioneering spirit, which informs his present-day attitude and outlook. He seems to be accepting of the challenges associated with climate change and it could be argued that his adaptive capacity is a combination of ingenuity augmented by his positive attitude toward uncertainty. This positive attitude can also be linked to Shane's strong sense

of place and community engagement for the benefit of himself, his family, and the local community where he lives.

During the process of imagining climate change, Shane tempered his current perceived capacity to adapt to a new climate, as he took into account the temporal scale of a changing climate and the range of possible scenarios. Here he acknowledged that his adaptive capacity would be dependent on his mental attitude and physical capabilities as he ages. Shane draws attention to very place-specific/place-based strategies that draw on natural attributes namely plenty of sunshine, good rainfall, good quality soil in the hinterland for growing food, a warm climate to live in, and the physical elements of the place that support low-impact adaptations.

When asked about his capacity to adapt to potential climate change events, James appeared to be aware of climate change, but his skepticism caused him to be reluctant to become fully engaged with the topic.

I don't know. I don't care. I'm really not interested in it. I don't fully believe in it on some level. It's the wrong word for it. I would say too many humans.

It's just emotional anyway. It's not important if we are here or not. It goes back to the struggle of being conscious and being aware that it's happening but not being emotionally freaked out. If a cyclone came through and wiped everything out, well you just get out from under it and get on with it.

James displayed frustration and a range of negative emotions while discussing climate change and adaptive capacity. In particular, he exhibited pessimism as he navigated his way through the murky waters of climate change searching for a way of not being burdened by the complexity and uncertainty the phenomenon poses. It appeared as though he considered human population to be a greater problem than climate change, although it was uncertain if he was simply distinguishing between the two or singling-out population as the lone issue, although in other parts of the interview he was generally opposed to more people settling on the Sunshine Coast. Despite his frustration and skepticism toward climate change, James used the example of a cyclone as a possible climate event to which he expressed a hint of a pioneering spirit or survivalist instinct as a positive attitude for responding to and/or adapting to climate change

Similar to the previous respondents, Elias was skeptical of the media and countered the negative portrayal of climate change by concluding that the process of climate change will evolve slowly and thus facilitate adaptive capacity of humans. As the discussion continued he explored an assortment of perspectives from population, consumption, adaptation

considerations, and concluded with his realisation that some of his present-day actions might not be consistent with some of his proposed ideals.

What is shown in the media is climate change in the extreme. I think things will happen incrementally and so human beings will adapt incrementally. I don't think climate change will affect our capacity to live as a community.

Yes. I feel I can adapt to extreme events, but it is the long-term damaging effects to vital natural resources that support the survival of human beings namely water and food security. We have to mentally prepare ourselves to disruptions to the way we live today. If it doesn't happen we are no worse for preparing for such change. We may be better for it.

We may need to migrate inland to avoid the effects of extreme weather, but if think of moving back to the coast we may not like the way that it has changed. Nature finds its way. Nature doesn't care about us.

The older people get the harder it will be to adapt. In many ways seven billion people living in this world with nice homes and all that is not sustainable. We are certainly living beyond our means, beyond the carrying capacity of the planet. Unfortunately, we are travelling overseas soon, so maybe we are not doing as much as we could.

When asked about his capacity to adapt, Elias expressed a can-do attitude, or pioneering spirit and a sense of self-reliance similar to the previous respondents. He appeared to feel confident with the availability of a range of possible adaptation choices, although his greatest concern was for life supporting ecological systems.

His perspective that climate action today would have benefits for himself and the world at large even if climate change does not manifest in ways presently predicted seemed to be in conflict with his current lifestyle. This is not to criticise Elias, but to highlight the difficulty of enacting climate adaptations today in the absence of locally experienced climate change.

As Silas contemplated the idea of climate change he acknowledged that he thinks about the possibilities for how climate might affect his and the region's way of life, but that his perceived adaptive capacity fluctuates from day to day. He feels that his capacity to change is contingent on the collective capacity of his community, which is pitted against 'others' he perceives as holding perspectives counter to his own. Similar to other respondents, Silas lives semi-off grid as a member of a small energy/resource alternative community.

Yeah, well this is a good question that I ask myself regularly. I really don't know. Some days I feel we have the where with all and then other days I'm not so sure. I think the greatest resource is people, so I feel that adapting on my own I would be quite useless to do anything. So, we are really talking about a collective adaptation. People have to understand the need to cooperate. (We are) already using water tanks and continue with permaculture and the food forest. The privatisation of water is a sell-out and a step backward.

But we are faced with a lot of people that are dreaming old futures. They really think the world is going to continue. They are perpetual optimists and they think that they will solve all of the problems and we will go on as we've always gone on with more technological innovation that will save the day. It is probably the mainstream view that they won't have to make any transition.

Silas was one of the few respondents that did not take a primarily individualistic view of adaptive capacity, although his proposal for collective action would be dependent on being comprised of like-minded people. Contrary to prevailing notions of adaptive capacity, Silas feels that people are a greater asset than technology. This brings into question the power of collective action for generating a movement toward climate change adaption, which Silas sees as challenging his construct of adaptive capacity.

Stacey was one of the more aware and action-oriented respondents. She has years of formal education and professional experience in the domain of environmental policy. In discussing her perception of adaptive capacity, she was cautiously optimistic. She considered her current lifestyle both in terms of financial income and homeownership as augmenting her adaptive capacity and as noted above, this was also related to her developing a sense of place on the Sunshine Coast.

To a certain extent, yes. I feel that we are very fortunate. We both have incomes, which helps. We own our property, so we can make necessary changes. We don't live on the coast, so flooding is less of an issue. The recent floods were a good test because they were extremely heavy and prolonged.

We've been aware of climate change for over twenty years, so we have taken some actions. But I also see it as a political statement. We aren't going to be able to adapt to climate change just by doing our own thing. There has to be structural changes. Even if solar power or a fuel-efficient car isn't the panacea I feel that by investing in those things my dollar has voted in a certain direction. It is a market signal. So much of the way we operate is

through market signals. So for us it has value other than saving money on electricity.

Stacey references the 2011 Brisbane Floods as an availability heuristic that reinforces her personal choice of not living in a flood prone zone as a factor increasing her adaptive capacity. Similar to Silas, Stacey feels that personal actions, although positive, ultimately limit individual and collective capacity. So although she is able to enact personal choices that build capacity, she feels that her increased capacity is contingent on the actions of others in and around her community. As the conversation proceeded, she proposed that collective adaptive capacity is contingent on large-scale changes to the current political and economic framework.

Dustin is very confident that his current lifestyle enhances his adaptive capacity with mobility being his greatest asset. Through the process of reflection Dustin did not limit his assessment to himself, but also considered the strong position of the nation as a whole as well as less developed countries, which he feels might not be as well poised as Australia to adapt. Of note, Dustin does feel that climate change could affect his favourite surf spots, which coincidentally form part of his sense of place.

Hell yeah! I'm very mobile for example in a disaster scenario, but really it is more about reducing everything I do. It won't greatly affect my lifestyle except possibly a few surf spots. I am on the right track and continue to do more each day.

Climate change may not happen as badly in Australia as elsewhere. I strongly believe we have the capacity to adapt. Australia has the financial means and human capital. A week after the floods we were back on our feet.

I would feel more for the poor countries that have fewer resources and more to lose. Small islands are the ones that will experience climate change first and the hardest. They don't have the capacity to adapt, so we need to be the ones helping them.

In constructing an imagined future, Gareth acknowledges climate change, although he appears more accepting of natural events than the knock-on effects of social upheaval.

I'll say yes. I've been through the process of thinking about extreme events and it freaks me out, so I stopped. It's not helpful. Climate change is going to happen. Economic collapse, war etc., they could happen.

I think that the precautionary principle would suggest that we need to take climate change into account and plan accordingly. I'll look for ways to continue to be aware and have done some preparedness.

Since Gareth found thinking about climate change too overwhelming he distanced himself from regular interaction with such information as a coping strategy. Although he proposes taking actions in the present by intending to “continue to be aware and have done some preparedness”, it brings into question the benefit of alleviating immediate mental stress and what impact if any this might have on his adaptive capacity in the future. Although climate change overwhelms Gareth, he feels that his personal actions may enhance his sense of place and adaptive capacity.

6.4 Climate Action

This section explores the concept of climate action as an indicator of adaptive capacity. The findings revealed two key components for building capacity 1) information dissemination and 2) institutional trust (and confidence). With regard to institutional trust, nearly two-thirds of respondents expressed a medium level of trust in institutions with the remaining one-third having a low-level of trust in all levels of government. None of the respondents expressed a high level of confidence in governments at any level to provide information and/or leadership supporting climate action. Despite a low level of trust, close to two-thirds of respondents advocated for increased collaboration between government and citizens.

Over one-third of respondents did not have confidence in governments to communicate information that educates the public to effectively address climate change. Mixed communication and sensationalised content was cited as confusing and distorting the understanding of climate change, which impedes adaptive capacity and ultimately climate action. The findings for this section were drawn from analysis of transcripts and researcher interpretation of Questions 19 and 21.

When asked who is responsible for preparing the community for potential climate-related events, Troy feels that government (Council) is ineffective due to the diversity of the different settlements throughout the Sunshine Coast. He takes a closer look at Noosa Shire where he currently lives.

I don't see government being effective enough in doing so, trying to meet the needs of highly varying groups of people. Noosa is different than the rest of the Sunshine Coast and in many ways, positively and I would love to keep it that way. I don't feel the same in Maroochy or Buderim or in Caloundra. The

little communities along the coast here are so distinct and I think it is a gradual thing coming up here (north toward Noosa).

In this passage it can be concluded that Troy feels that the region is too large and diverse for local council to coordinate climate action. There is also evidence of Troy's sense of place informing his attitude toward other settlements throughout the region, which he dismisses as being of little concern, and thus underlines the subtle place-based differences among these settlements and his positive sense of place for Noosa.

When asked who is responsible for preparing for climate change, Phil included all of humanity, but cautioned about the efficacy of charging the citizenry with the responsibility of addressing a globally diverse and complex problem.

Well, it's everyone's responsibility, but I think that's unrealistic unless there's leadership. What most appalls me about the current situation is the lack of leadership, locally as well nationally, as well internationally. People need to have things explained. People need to given resources. People need to have things that enable them to take action.

Phil draws his attention to a lack of leadership as being the greatest institutional barrier to climate action. His assessment extends through all levels of government and across national and international borders. By highlighting that he feels the citizenry needs to take action, Phil is implying that the current social contract is dysfunctional and thus agencies charged with providing the necessary information and resources are not doing so and consequently impeding adaptive capacity.

When asked about responsibility for climate action, Martin focused on the citizenry and offered his European perspective on the Australian attitude.

That has to be done in the local community and in the wider global community because it affects everyone on the planet. But of course, it starts with everyone. Everyone should look at themselves and see, 'Oh, what can I do?' Maybe drive a car that uses less fuel, or maybe modify the car. Or maybe buy a Mitsubishi or an electric car, or whatever. I invested in more solar panels.

And here they say, "She'll be right, mate". That's the attitude. That is something that needs to change in Australia. On one hand it is nice to say "She'll be right", they stress less. But on the other hand they need to wake up and become aware of this and take action and be more responsible citizens.

Martin concludes that responsibility for responding to climate change resides with collective actions at the local level begins with each individual working together within a community and eventually extending across the globe. Following his suggestions of possible adaptations, he then offers an adaptation that he has undertaken to illustrate his point. With the focus on the individual, Martin admires the positive Australian attitude, but advises that this optimism might be out of step with the scope of potential climate change effects.

Lloyd believes that responsibility rests with the citizenry, but that science-based information produced and disseminated by subject matter experts is necessary to inform the public.

Well, it is always easy to push it back to the government, but it is not necessarily the way. Actually, I think what we probably need to access people that have a lifetime of study of the environment to alert us to the potential problems of climate change. We need to listen to the people with years of experience. Honestly and truly I think we are all responsible whether we agree with it or not we all have to take it in board.

In a way I think we should make environmental studies something that starts off early in school, so that everyone knows how to read the signs. I think we all need to know how to read the signs. Not something that bombards people with sensationalism, but educates them on the science.

Lloyd feels that current information is overwhelming and sensationalised and that a rational approach is needed so that individuals have the information necessary to make informed decisions. He advocates for a structured approach in education, beginning with the formal education system and extended to the public as a way to build individual and collective capacity.

Adam proposes a strategic approach consistent with legislative authority administered according to the scope of the issue(s). Adam highlighted an important shortcoming of the current legislative framework that undermines government's ability to govern on behalf of the citizenry and ultimately citizen confidence in the capacity of governments.

It is at all levels of government depending on the magnitude of the issues and corresponding legislative responsibility. The big decisions need to take place at the federal level because council doesn't have the resources to make assessments and decisions about carbon emissions and how to develop policy to address this.

Part of the problem is the litigation that takes place between council and developers in refusing development applications that council may not be able to afford to legally defend.

Stacey puts responsibility on all levels of government. She is wary of suggesting the citizenry is responsible if information is not being communicated effectively.

Definitely the council and the state. The federal government comes into it because they provide funding and direct project support. It is the responsibility of the governments to plan for climate change because in our democracy we pay taxes and they have the legislative authority to plan for such things.

You could say everybody in the community is responsible, but I'm not sure people in the community are actually aware. There is a disconnect. The relevant information is not getting out to people. It is people's responsibility to be aware, even if it not their responsibility to plan for climate change.

Stacey highlighted the conundrum of building climate change adaptive capacity – the sheer magnitude of the phenomenon being compounded by low collective capacity due to an information gap. She noted that individuals are ultimately responsible for educating themselves, so that they are aware of overarching planning and policy.

Luke feels that government is tasked with building capacity, but is not doing so. He also draws attention to corporate responsibility.

It should be government because they are paid to do so, but they're not. I think corporations are responsible. They generate a lot of pollution and seem to always get off the hook for not cleaning it up. It's sad when people lose their jobs, but it won't matter if we don't have an environment to live in. I just think there are too many issues we need to deal with and we don't know where to start.

Luke feels that the current democratic system is inefficient and that the corresponding economic model does not properly account for ecological integrity. His big picture view illustrates the complexity and immense scope of a global issue such as climate change. As such, with Luke there does not appear to be a link between climate change and (his local) sense of place, however, there may be a more global concept of place that is invoked by his imagination of climate change and its impact, as well as global sense of action.

In the following passage, Hillary draws attention to conflicting Council agendas that perpetuate the status quo and impede adaptive capacity.

Well the Council tries to but I don't know that they are responsible. I do appreciate what they have tried to do. I think that there are departments in council that are in conflict with each other. One is trying to implement sustainable programs and others that are dependent on development and growth. To me climate change and the solution to that is dependent on sufficiency and a recognition that it can't continue to develop and grow requires that we really need to make some radical changes to our lifestyle.

Hillary concludes that trying to balance development and sustainable goals designed to address climate change is unrealistic without significant behavioral change to lifestyles and ways of being. Inextricably, lifestyle is part of the reason that some people return to or have moved (Stacey, Troy, Elias, Frank among others) to the Sunshine Coast and who claim that these factors are key ingredients that contribute to their sense of place. This is perhaps part of a larger conundrum whereby sense of place in a prosperous world, however shamefully can be tied to an amenity/affluent lifestyle. In some ways, Stacey has confidence in institutions, however she feels that building capacity is also about people exercising their agency to initiate action, which may be difficult when people really prefer the lifestyle they have and the resulting sense of place that has been 'constructed'.

Derek's position is that climate action begins with a bottom-up grassroots approach. He proposes action should be localised and supported by Council.

It starts at the community level and then globally (bottom-up). There seems to be a lack of leadership at all levels. At the end of the day it should be at the local level, Council working with citizens. At the local level there would be a much better chance if we had a Noosa Council. The current council is too large to effectively coordinate a response.

Derek feels that leadership at all levels of government is lacking and that the Regional Council is too large to sufficiently meet localised needs of unique and dispersed settlements throughout the region. He advocates for a pre-amalgamation local governance arrangement, which he felt was more effective and capable of working directly with citizens to coordinate a response. In this sense, Derek is advocating for place-based strategies that allow for better opportunities for citizen engagement with planners and decision-makers.

Laurel feels that the democratic responsibility to educate the public rests with officials elected to govern on behalf of the citizenry. She feels that public education about climate change is seriously lacking and that this gap is impeding citizen awareness and action.

It is government's responsibility to make people aware because government is the state charged with implementing laws that protect society. It goes deeper than media releases. It has to be education, especially for younger generations. There is information in the school curriculum, but it needs to be more than it is right now.

All citizens have responsibility to be aware and to make the best decisions for their family and the community. If people don't have a sense of community or pride in their community, then they don't want to do anything.

At the end of the day there is this feeling that ideally as much as you would want everybody to be individually responsible and that I can make a difference, you can't help but feel that everything is just so fucked-up and you can't make a difference because it is going that way anyway. There is a sense of helplessness and hopelessness. Why don't I do more? Why do I feel powerless? It can be depressing thinking about it. People need to feel empowered to make change because that is the only way change is going to happen. We can't load it all onto government.

For Laurel, leadership and individual action go hand in hand, however she feels that a lack of leadership inhibits civic engagement. This perception has led to her feelings of discouragement when trying to comprehend the scope of climate change and how to take action. Laurel also feels that a lack of sense of community can lead to a lack of sense of place and thus, if people do not have a sense of place, they may not have the incentive to contribute to the community or take collective action on anything, including climate change.

Will is certain about anthropogenic climate change and takes government to task on designing and implementing a coordinated strategy.

All levels of government need to be on the same page. We need a regimented approach without compromise. No piecemeal approaches like we have been doing. I believe humans are significant contributors to climate change. There are natural processes that are beyond us. We have to be adaptable and give up wasting precious resources like lighting football fields all night or car racing. We need to be innovative in a meaningful way.

Will feels that the current democratic system is inefficient and constrained by outdated socio-economic preferences that do not properly account for ecological systems in its calculus. Will was adamant that the only way to address climate change is to make significant changes to the overarching political and economic systems, but he is uncertain if there is sufficient institutional capacity to do so under the current governance arrangements. Such socio-

economic and ecological systems accounting would also help to retain the sense of places that people have, but are not necessarily well linked together.

6.5 Summary

The findings from this chapter revealed that the majority of respondents expressed concern about climate change, while one-third of respondents did not express concern citing not wanting to be anxious, that climate change will not occur in their lifetime, combined with a general lack of concern. When conceptualising adaptive capacity some respondents referred to present-day natural events such as flooding, bush fires, and cyclones as a frame of reference. A temporal and spatially extended view of climate change ranged from local events and actions, to global impacts and responses such as the impact on conceivably less able developing countries and the possible arrival in Australia of climate refugees that could affect local sense of place.

Although none of the respondents had a positive outlook of climate change, those that accepted or accepted with doubt felt that they had the capacity to adapt to climate change. The majority of these respondents expressed a self-reliant can-do attitude or pioneering spirit. Examples of adaptations were drawn from present-day actions such as solar power, water tanks, and growing food. Shane highlighted place-specific natural amenities such as sunshine, rain, and rich soil as being important components that support such adaptations, and important finding in linking the two phenomena.

Respondents felt that government was responsible for information and leadership, but that adaptation is fundamentally contingent on collective action across all levels of government and the citizenry. Some respondents have become so overwhelmed by the scope of climate change and felt that sensationised imagery and messaging was counterproductive that this caused them to become disengaged with the topic of climate change, irrespective of whether they had strong links to their place.

7.0 ANALYSIS AND FINDINGS: LINKING PLACE AND ADAPTIVE CAPACITY

There are links among the themes, presented in this chapter, that underpin the connections between place and climate change adaptation found above. For example, extensibility was important in both place and climate change and lifestyle was revealed as being part of sense of place but also affecting climate change. The purpose of linking these themes was to uncover ways to express the relationship between the findings.

The nature and complexity of the topics under investigation required cross-examination of responses to draw interconnections across themes. Additionally, this chapter presents analysis and interpretation drawn from respondent transcripts for Questions 8, 9, 10, 11, 12 and 16, which specifically asked about sense of place and landscape change; and is combined with analysis and tabulated instances drawn from Questions 17 and 18 pertaining to other community considerations. Together the findings illustrate a relationship between sense of place and factors contributing to the peri-urban transformation of the Sunshine Coast, which in turn are a negative/positive contribution to climate change and the capacities of communities to adapt.

7.1 Ecological Ethos

This section examines ecological ethos as a theme that emerged from the data, one that reflects respondents' overall ways of thinking and the connection between sense of place and climate change adaption. Their ethos reflects the underlying ideologies that serve as a trajectory for ways in which place may be affected by climate. For example, a certain ideology may show a predisposition to being adapted or prepared to adapt, and also be evident in the local government patterns of preparing for this change.

Cross-referenced transcript analysis eventually led back to an examination of the links between ecological ethos and respondent backgrounds (childhood experiences, education, and professional work) as captured in their responses to the interview questions. Environmental awareness was an overarching theme of the study and the responses and researcher interpretations for this section were drawn from Questions 8, 10, 12, and 17.

Looking back at Frank's description of his sense of place (Question 8), we learned that as a teenager he spent time exploring the hinterland with his friends, and that this experience and the regional landscape hold important meaning for him. Later in his adult years, Frank migrated to the Sunshine Coast from Brisbane to retreat from urban life and initially settled in

a sustainable residential community. In his elderly years, Frank eventually moved with his wife and settled in a retirement village in a small coastal town.

It was lifestyle. As a kid I spent time on the Gold Coast. I would ride the train down and spend time on the beach. But it was getting too bloody big. The Gold Coast has grown much faster than the Sunshine Coast. The Sunshine Coast was a popular place. As a kid I knew the area. There was a group of us high school kids and we used to come up from Brisbane on the train with our pushbikes and then ride from Cooroy to Tewantin. And from there we would hire a putt boat, do a bit of fishing and be gone for about a week. That place means a lot to me, I thoroughly enjoyed it, but you are not allowed up there now unless you paddle a canoe.

Frank's early appreciation for the natural environment inspired him to seek out less crowded spaces and like-minded people on the Sunshine Coast. He spoke fondly of the region and although he has witnessed many changes to the area, he holds a deep bond with the place. He is keenly aware of climate change, even though he is uncertain he can make much difference now that he is older. Frank presents a common theme among respondents with a strong ecological ethos; they have a deep care for the environment and the local place, but are confounded by the complexity of climate change and how to effectively reduce their ecological footprint, even when specifically questioned about the interconnections. The challenge becomes identifying the ways to take action that support and protect these values.

Dustin is a recent graduate of an environmental sciences program. He is also an avid surfer and embodies the ecological ethos of the surf sub-culture (Figure 10). Dustin presented the following image as one that defines his sense of place on the Sunshine Coast. In the following passage we get a glimpse of how Dustin's corporeal experience of surfing informs his awareness and respect for nature and is intimately intertwined with his ecological ethos.

This is a photograph of me surfing. With surfing I definitely have a connection with the ocean both spiritually and physically. Surfing is very calming, but it also gives me a deep respect for the power of nature. This is my place of solace and where I draw energy. It is the place where I go to get energised and feel at peace before the busy workday. The thing about surfing is if the surf is good you will work as hard as you can to not work. There is also an environmental ethic that is part of the sub-culture. There is less focus on making a lot of money.

Immersion in the ocean combined with the demanding physical exertion of surfing is a symbiotic relationship of corporeal and existential experiences that Dustin finds both energising and calming. The desire for this activity and its associated physical sensations

seems to inform the surf sub-culture ethos to which he strongly identifies – the pursuit of experiences associated with surfing or outdoor pursuits can supersede the desire for worldly pursuits such as economic wealth. This thread of thought highlights an important aspect of coastal life – that not all people are drawn to urban life and related modern conveniences, but rather one that is perhaps more simple and uncomplicated by the trappings of modernity.



Figure 10. Dustin Rides a Wave (Source unknown).

Elias was born and raised in Europe and discovered the Sunshine Coast while travelling. For over a decade he had a picture of Mooloolaba Beach on a wall at home as a reminder that he wanted to settle in the region. He is now semi-retired and has lived on the Coast for the past fifteen years. Unlike some of the previous respondents, Elias does not have formal environmental education; he simply loves nature, so much so that his sense of place is primarily defined by the landscape and natural amenities.

This image is of the (Noosa) National Park. It is the nature, the energy and the feel of being close to nature. Nature is what makes life, what connects us, what gives us energy, whether in the form of food or inspiration. It has a calm and relaxed feeling. Seeing nature in its purest form, without any other people in it is what I value very highly. In a sense of where I want to live, it is about greenery, ocean and the National Park and other natural areas. I am very nature oriented. I connect with the energy of nature.

If you look at the water, it keeps on rushing in and out. It doesn't care if the levels are higher or lower. It just keeps bashing into these rocks. Nature forms around this and adapts to whatever there is. That is what is so special about the National Park. Whether the climate is warming up or the sea level is rising, it will stay as a natural place.

Elias has a very strong connection with Noosa National Park as shown in Figure 11. It is symbolic of the values he holds dear – the natural landscape and ecology combined with balanced human development.



Figure 11. Noosa National Park (Photo by Elias).

Elias' observations and deep appreciation for nature are consistent with Kirkland-Wright's notion of *geosophy* whereby embodied experiences within nature can be a pathway for reinforcing intrinsic ecological values. Elias' aesthetic sensing attuned to colours contained within the green of the vegetation and blue of the ocean presents a type of coastal gaze similar to the rural idyll. It is here that he confirms his preference for settings resembling a wildness experience devoid of other people, despite its being set against the protected area of Noosa National Park. Social elements that form his place construct have taken longer to form, but have ultimately enhanced his sense of place on the Sunshine Coast.

As Elias reflected on his photograph his perspective took a philosophical turn as he made links between ecology, balanced development, climate change, and his sense of place. It is here that he seems to completely remove human beings from the picture and focus strictly on natural processes by hinting that natural ecological systems will adapt and take on whatever form it becomes, although consistently in a natural state. As such, he seemed to take on a stronger ethos that the environment/nature/climate would run its own course, irrespective of humans and potential consequences for them, which in the long run is of no link to any human experience of place.

For Hillary, it is an entwined temporal and spatial orientation that is “nourishing and nurturing... keeping me grounded in my being.” Whether she is on the Sunshine Coast or elsewhere, the landscape horizon plays an important role in her ontology and sense of place. Although not specific to an ecological ethos *per se*, Hillarys’ perspective illuminates the interconnected relationships of a geographical perspective of the biosphere on a grand scale, similar to that of Alexis. Hillary’s description demonstrates how her extended sense of place is at least partially founded on her intimate awareness of global systems and broader capacity for climate change adaptation. She effectively incorporates her understanding that natural systems will run their own course, but manages to find a sense of place deeply embedded within these natural cycles and their constant change.

The whole coast as a region has meaning for me. I quite enjoy the vistas overlooking the landscape.

There has always been something important about wherever I have lived of being able to see the horizon. There’s something that has always been very nourishing and nurturing for me about watching the sunrise, the sunset, and the moonrise. Those natural cycles and phenomenon that are about keeping me grounded in my being, but also connected with the greater grounded being. Something about those crepuscule times that have always been nourishing me for wherever I am.

Colin is in his early forties and has lived in the region for twenty-five years at various times throughout his life. Family was the main ‘pull factor’ that drew him back to the Sunshine Coast as well as a pre-existing deep sense of the place, which he defined as being a combination of lifestyle and the natural environment that support his leisure pursuits. His profession is directly related to the environment and intimately informs his ecological ethos. In this passage, Colin referred to the iconic landforms of the Glasshouse Mountains in both a temporal and spatial perspective as well its cultural attributes.

This is an image of the Glasshouse Mountains. It represents my appreciation for the natural landscape, which is timeless and gives me an appreciation for

history and the past. They evoke powerful emotions. You know that no matter what happens that landscape will probably outlast humanity. Aboriginal people looked upon the same view 10, 000 years ago, and unless we do something particularly unwise, they will continue to be looked upon by future generations.

When I see the mountains as I am driving back from Brisbane I feel as though I am returning home. The mountains are like sentinels protecting the Sunshine Coast from the growing urban sprawl of Brisbane. The monumental character of the urban form doesn't compare to natural forms like the mountains. The natural landscape will outlast humanity.

In his reflective mode, Colin also transcends time and space as a way to give context to natural landscape processes as a backdrop for human evolution. He not only looks backward for context, but also forward for how the region might change in the future. As with Elias, Colin holds a strong perception that nature will run its own course over 'deep time' in which humans may not have a presence, let alone a sense of place. This is a reoccurring finding representing the endurance and change of nature, but that human beings may not be a part of it.

As someone involved in shaping the transformation of the Sunshine Coast, Colin is also deeply concerned about the loss of natural habitat as a result of expanding peri-urban development. Looking upon the mountains he projects a sense of hope that these ranges might protect the natural amenities that define his sense of place. Colin's temporal extensibility eludes to his perception that due care is needed to ensure the viability of the human species and the need to think proactively in preparation for potential climate change.

Laurel is in her early twenties and is studying environmental science at university. She arrived on the Sunshine Coast with her family at an early age. She spent three years in Brisbane before returning to be closer to family, friends and the "natural beauty of the Coast". It was her early childhood experiences that shaped her appreciation of nature. For Laurel, it is the natural environment as opposed to the built environment that most defines her sense of place on the Sunshine Coast. Like so many respondents, she is concerned about development degrading the natural amenities she most cherishes.

We didn't have a lot of money when I was growing up, so my parents took us to natural places because they were free. These nostalgic memories were definitely a factor in pulling back to the coast. I can't think of many things that are not in the natural environment that represent my sense of identity on the Sunshine Coast. It's 99% natural - the beach, rainforest, and the mountains.

Manmade things are not the first things I think of when I think of the Sunshine Coast. If the Sunshine Coast didn't have the natural amenities that it does have, it wouldn't be the Sunshine Coast to me.

It is important to note how Laurel's childhood interactions and experiences in natural spaces were facilitated by family outings, primarily determined by cost and access rather than an amenity lifestyle of consumer culture that development and affluence invokes and attempts to produce/sell – and again which exacerbate climate change and thus the capacity to adapt. Her memories are associated with positive experiences that inform her present-day nature-value construct and preferences for natural amenities.

When asked about his sense of place and its relationship to climate change, Lee attributed numerous factors that together contributed to his ecological ethos. He revealed that his deep environmental leanings were not something he thought about, but upon reflection it became clear how experiences in his youth, his ethnic background, and life as a grazier together combined to shape his “appreciation for nature.”

I've always had an association with the land and conservation. There is the social and the natural environment. I've always felt comfortable in the bush. Because my father was a forester I was exposed to the bush from a young age. I'm also part Aboriginal through my great grandmother, although I didn't know this until recently. I'm not sure if this is a factor. I'm not sure if this is related to spending time with my father. I haven't thought about it much, but I just have an appreciation for nature. When I was younger I spent a year in South America. Walking through the Amazon had an influence on my life and appreciation for nature.

Leaving the farm was a big change for me. I had a much stronger sense of identity there. People know you by what you do. It was isolated so I felt more connected with the land.

Lee's ecological ethos is similar to Lloyd's relationship working the land coinciding with conservation or 'wise use' values. These values likely led to his decision to donate a portion of his grazing land to the National Conservation Trust so as to protect its intrinsic natural values in perpetuity. Lee reveals how the physical isolation of living on the farm decreased his social interactions, but enhanced his place-identity and embeddedness within the landscape and the all-encompassing biosphere processes.

Will is passionate about the natural landscape and ecology. He attributes his childhood experiences as being the catalyst that influenced the formation of his ecological ethos. This eventually led him to become involved in activities associated with protecting and preserving

natural spaces. He is disappointed with the environmental quality of Noosa River due development and landscape modification.

I really love the natural environment. My experiences in nature as a kid were like spiritual experiences. My father was a fisherman and he took me out on the boat at a young age. I learned a lot about the river and the ocean. The water used to be so clear and you could see fish and dolphins and now they are disappearing.

The environment is my life. I couldn't live without it. The environment is everything. We need places where children can feel peace and serenity. Where they can feel safe and play and appreciate the natural world, not a noisy and polluted world.

Lee has a very strong appreciation for the Earth's biota and natural systems as a life giving force. He wants to ensure future generations are able to have similar experiences as him, but he worries that not enough is being done to maintain the balance of nature with the expanding peri-urban transformation that he sees as compromising ecological amenities and corresponding values that define the Sunshine Coast. Such landscape transformation could benefit from the application of place-based planning strategies that engage local residents in the planning process and possibly enhance awareness and engagement with climate action, as discussed below.

7.2 Becoming Urban: Peri-urban Transformation

Most respondents did not present images representing environmental change as it was challenging for them to capture a specific example of change compared with speaking about the topic as a whole. Specific descriptions of environmental change were identified and discussed as conversations proceeded throughout the interviews and links were later interpreted as a peri-urban transformation theme.

When asked what they thought was the most important consideration for the Sunshine Coast, two-thirds of respondents cited development as being most important. Additionally, nearly half of respondents made reference to the Gold Coast or the Caloundra South development, the majority of which were negative. One respondent did challenge the prevailing resistance to the Caloundra Development, which is discussed later in the section. Examples of environmental change in the natural landscape was mentioned in seven instances, four were negative, e.g. habitat loss due to development and three were positive, e.g. development or infrastructure that enhanced mobility and improved public safety.

One-third of respondents felt that population was the second most important consideration for the Sunshine Coast although respondents did not always specify what they meant by 'population'. As analysis proceeded, there were a range of implied meanings for population ranging from a purely demographic definition of individual persons (population growth) to the type and/or behavior of said individuals, i.e. consumer values and related consumption patterns. There is a direct relationship between development and population growth much of which is linked, but not confined to the sea change migration phenomenon.

For Lloyd, the most important consideration for the Sunshine Coast is the transformation of rural areas and the subsequent displacement of working farms to residential development. Associated with this rural morphology is the negative impact on regional economic sustainability, which has become less diversified with the reduction of the agricultural sector in the region. Unlike some of his fellow farmers, Lloyd has been able to find a way to convert his years of farming experience into a viable business so that he not yet had to sell his farm. He continues to engage in farming-related practices and has a lived experience of the tension between new residential developments immediately adjacent to small-scale industrial operations.

One of the things that worry me, and it has always worried me, and I've had no way of controlling this, even though the region is now diverse, rural needs to be rural. As a landowner and former farmer, I feel we have devastated the rural landscape with haphazard development. We haven't taken care to do development correctly so that farming can continue in rural areas. And I don't know if there is a way to correct this.

The last thing we want is the farmer to become the peasant society to be surrounded by people of a higher income bracket. This wasn't a problem when the land was in production, but the way development has been done it has created a tension between the farmers and the new residential developments. So the new residents complain and then this impedes the farmer doing what they do, which is farming. So it creates a tension. But ever since the development, the population has exploded and if you don't come in with a heap of money you don't stand a chance. There's no way a bloke could come in and buy a few acres of land for less than the price of a house and make a living off the land. That doesn't exist anymore.

Lloyd raises several important points that highlight the growing pains of peri-urban transformation; especially at the rural fringe and that is *ad hoc* development is fragmenting the rural landscape. As farms become unviable the land is often sold for residential development. However, because the plots of land are often not adjoined, development does not proceed in a continuous fashion. This perpetuates the dispersed settlement patterns

common throughout the Sunshine Coast whereby residential developments border longstanding industrial operations, which creates tension between farmers trying to remain viable and new residents seeking a quiet rural idyll. Furthermore, these residential developments further supplant the local agricultural economy that supported the region for the better part of the twentieth century. Apart from property taxes, once a residential development is complete, the direct economic input from cyclical residential development process eventually ceases. Spatially, lands with individual houses become more valuable than the vacant agricultural land, but residential property does not contribute to the ongoing economic viability of the region. This creates another layer of tension of economic disparity between farmers and new residents. Lloyd feels the current planning approach is not well thought out, as the economic benefits of development are short-lived, fragmenting the rural landscape and decreasing the capacity for regional economic viability. Altogether, these factors diminish Lloyd's sense of place and perceived regional adaptive capacity.

Lloyd's lived experience of being a farmer displaced from his profession as a result of deregulation highlights the plight of many large-scale rural landowners. However, as a non-farmer and newcomer to the region, Stacey has a different perspective on sea/tree change and other factors contributing to the peri-urban transformation at the rural fringe.

Of course there is the farming community that have been here for generations and I didn't realise that there is a fair bit of resentment from them about the changes that have happened in the town. And we are part of that. It is just part of the story that it takes farmers to sell their land to decide that they don't want to farm anymore for those developments to go ahead. So it's not like it is an invasion. There is a lot more complexity to it.

So those kinds of decisions about population growth I find quite interesting because people here seem to think there is too much population growth and I fully understand what they are talking about, but provided that these people are moving from somewhere else in the country, is there any logical basis for where the population should be?

Although Stacey has empathy for farmers and is an advocate of local sustainable economies, she also recognises the conundrum and consequences of farmland being sold for residential development. It is not as simple as farmers no longer being interested in farming - as demographics and economics are undeniable forces that directly contribute to decisions about retirement and/or ceasing operations.

Stacey also presents her perspective on the complexity of the locally held view that population is a problem for the Sunshine Coast. As a new arrival she understands that she is part of the sea change migration that is creating a tension with earlier settlers. However, she

raises an important point about migration in general and how some of the resentment held by locals could simply be an example of NIMBYism. Below, Stacey considers the implications of development that could be done better to retain place values and achieve sustainability and adaptive capacity – in particular she identifies the importance of local spaces but also the substitution of local place values (such as the local trees) by place names that are simply a commemorative act rather than a genuine place-based planning approach.

When asked about her feelings about place and protection of the environment, Lydia cited controlling urban sprawl as being most important. In the following passage she presents her imagined future of a megatropolis expanding outward from Brisbane, south to the Gold Coast and north to the Sunshine Coast.

The first thing that comes to mind is urban sprawl. Brisbane is expanding and there isn't a lot of space between the northern reaches of Brisbane and the Sunshine Coast. I suspect it will become one continual stretch of urban landscape. It seems inevitable, so that worries me a bit. We need to maintain green zones. We can't continue to clear fell the land and replace it with housing estates with names like Brush Box Estates after all the brush box has been removed. I'm sure we can do it a better way than we have been doing it.

For Lydia, space between the urban density of Brisbane and the Sunshine Coast is important for relieving her worry about peri-urban expansion. She feels that natural corridors between developments could help to protect ecological integrity and buffer the urban landscape, providing a sense of place as well as green space to buffer/mitigate against climate change effects. Lydia feels that the type and scale of residential development is also an important factor in enhancing the ecological ideology mentioned earlier in this chapter.

Continuing with the development theme, Dustin focuses his attention on the small seaside town of Coolum where he has observed some distinct changes due to population growth and consumerism that affect his sense of place. Again, his observations are not limited to the physical aspects of development, but how change from factors that cause climate change (such as population growth and affluence) affect climate, but without necessarily making the links to his sense of place nor the need to adapt to climate change.

Coolum has become a bit crap over the past few years with the McDonald's, Coffee Club and big name chain stores. It is too busy. It is not my idea of the Sunshine Coast. Development is distorting the original values of the Sunshine Coast. It is superstore heaven, which displaces small more sustainable local shops. Cheap imported stuff just attracts people that consume cheap stuff, which just taints the Sunshine Coast.

Dustin does not hide his disdain for the arrival of national and international conglomerates. He considers the displacement of local privately owned shops as having negative impacts to 1) local economic sustainability, and 2) sense of place values and character. Underlying his observations are the consequences of tourism development, which has resulted in the arrival of visitors and new residents, which together has resulted in the transformation of a once sleepy seaside town to a seasonally busy tourist attraction. Fundamentally, Dustin's concern stems from the consequences of the globalising forces of development that he feels exploits natural amenities and attracts consumer-oriented visitors and residents. This sentiment implies that the place character of Coolum and the Sunshine Coast in general, is slowly being eroded by these economic related factors that will ultimately exacerbate climate change and make it even harder for adaptation by communities.

James is a professional artist that has lived in region for most of his adult life. He grew up in Brisbane, but has been visiting Coolum regularly since he was a young boy. James shares similar views as Dustin, however he uses art as an outlet of expression to capture his observations of the changing coastal landscape. Here James describes two of his paintings titled 'Coolum Terrace View 4 and 5' (Figure 12).



Figure 12. Coolum Terrace 4 (Original art and photo by James).

Well, like that one there, I ended up putting two different photos with 20 years difference overtop of each other. The tape is all of the tape measures of planners and whatnot. I was playing on impermanence. Everything in Coolum happens in an ad hoc kind of way. It's got some qualities that are good like the boardwalk and that, but I don't like it at all because I was living here when it was paradise.

It's hardly an interesting place for me to live at this time. It's good to be able to surf. The beaches are still okay and there's still good friends around, but the environment for me is all messed up. I never realised what I was doing, but all of my paintings were about sea change.

In his paintings, James juxtaposes the original wooden structures against cranes used to build the first high rise buildings. For James, the landscape change is significant and has a negative impact on his perspective of the town once being a paradise. Now in his forties, James' sense of place is being disrupted to the point where he was noticeably upset and frustrated with the way the town has changed, particularly in the past fifteen years. Once an active participant in planning forums and community activities, James has all but given up hope that the original town character and sense of place values can be retained. For James, there is a clear connection between a sense of loss of place combined with a lack of interest in collective action for change. He appreciates some of the recent infrastructure, namely the Coolum Boardwalk with its lookout points and design complementing the natural features of the coastline, but this does not seem to be enough to buoy his spirits. And so, as the town continues to be transformed his attention turns toward the sea where he can escape into the surf.

Most respondents referred to landscape change observed close to where they live. Leanne lives in Caloundra, a small seaside town in the southern-most part of the region. The original town has experienced some high-rise development, however the area between the town and the Bruce Highway has experienced the most intense development. Here Leanne describes the difference between the original town where she lives and the new Caloundra South development.

I live within eight minutes of being on the beach, so I don't drive. That's part of the reason why I chose the place where I live. There isn't that whole development issue because it is already a mature community so we aren't going to have, well there's the south end of Caloundra that is diabolical. The south is becoming this huge mass of monstrous homes in cul de sacs and all that stuff. Because it is so flat it is tidal, so when they get king tides and lots of rain they can get flooding. Already in this brand new community they have had flooding. I'm not sure why they are building there.

Access to the sea without using a vehicle is an important personal decision for Leanne. Her preference for living in an established neighbourhood that most likely will not experience development was a conscious one. Reflecting on the nearby Caloundra South development, Leanne draws into question not only the scale and type of development taking place there, but also what she considers risky planning decisions. She is not alone in her thinking as other respondents raised similar concerns about Caloundra South as well as other developments throughout the region that are sited on floodplains. For Elaine, such large-scale developments affect her sense of place and shared sense of adaptive capacity.

Shane presents a counter argument to the predominantly negative attitudes toward urbanisation of the Sunshine Coast in general and in particular Caloundra South while simultaneously critiquing contemporary planning and the sustainability goals of the Sunshine Coast Regional Council.

There are people, the green movement, which I'm sort of part of, horrified by the idea of Caloundra South, this new satellite city with 50,000 people. Why are we toying around? Why don't we make it 500,000 people who only use the equivalent resources of 50,000 (people)? That would be a green city.

Shane identifies with what he refers to as the “green movement” while at the same time challenging his own preconceived ideas of urbanisation and effective use of resources. Shane recently spent some time overseas living in highly densely populated cities in two developing countries. This experience exposed him to life outside of the Sunshine Coast, which he said gave him a new perspective on sustainability. In his example, the entire population of the Sunshine Coast estimated for the year 2030 would reside in an area smaller than the current area of the town of Caloundra. This perspective is most certainly inconsistent with the majority view of respondents opposed to development and this master planned project as it presents a unique perspective counter to the prevailing attitude toward population and the types of urban development occurring and ways to embrace sustainability and adapt to climate change at a local scale.

Other examples of landscape change were also not negative. Five respondents specifically cited infrastructure improvements that were either necessary (hard engineering to preserve the coastline and/or significant beaches (Noosa Main Beach), done well (Coolum Boardwalk), or improved public safety (Tooway Creek Bridge). Colleen felt that the recently constructed Maroochydyore Bridge near her home improved traffic flow and access to amenities. However, she was not in favour of another proposed project near her home that she felt was not an example of climate change adaptation and would negatively affect her sense of place.

The new Maroochydyore Bridge has alleviated the traffic pressure and allowed for easy access to the amenities in Maroochydyore. It used to be tedious

crossing the old bridge. The new bridge is not hideous. It fits with the landscape and meets the needs of the people passing through the area. This is one example of a good council decision. If they build an industrial desalination plant I don't think I will feel the same about the place.

Here we see how personal preference for one type of infrastructure is favoured over another in a way that involves aesthetics, and an appeal to a local sense of place, despite both having potential benefits to residents of the region as a whole. It should be noted that the proposed site for the desalination plant is directly across from Coleen's residence, which faces the ocean.

Although the majority of respondents preferred less development or more thoughtful planning, Jake stood out as the only respondent clearly in favour of development. He sees development as an inevitability that needs to be embraced. Family is also very important to Jake, so when one of his sons had to move away for work it impacted family cohesion and his sense of place.

The big issue is that there isn't enough work for young people on the coast. There isn't enough infrastructure to create work for people that live here. You've got to have young people with families to carry on.

I'd like to see development. You can't stop people from wanting to come and live on the Sunshine Coast. It's going to expand. You've got to have development on the coast to create jobs. It will never be like the Gold Coast because we have a unique hinterland. I don't believe in the population cap that Noosa has. I think it is restrictive.

Contrary to the majority of respondents' negative attitude toward the Gold Coast, Jake feels that the unique landscape of the Sunshine Coast hinterland will prevent it from becoming an urban expansion of Brisbane. Where other respondents praised the planning policy of the former Noosa Shire as striking the right balance of development and environmental protection, Jake disagrees.

Encapsulating the development theme is the underlying acceptance that development is inevitable, but that perhaps there are different approaches to planning, especially local place-based planning, and development, that more effectively take into account the character of the region, its natural amenities, and a focus on regional economic diversification. Stacey examines the current state of development and wonders if sustainable goals are possible?

Well, I think that it is how we develop. I don't think we can close the gate because I am here now so no more people can move here. I think the local economy is too tied to residential construction. It's not as simple as saying we

don't want grow, it's because that is the type of growth that has grown out of a tourist destination, particularly on the coast.

There is recognition on one level that the council wants to be the most sustainable region in Australia. Yeah, right! On another level things are just going ahead as they always have as fair as I can see. I think this captures the conflict we are in. The type of economic development that is really not taking us in a direction that most people want or even sustainable.

Stacey concedes that development will continue while at the same time highlighting that the *status quo* perpetuates the underlying tension between old and new residents. In some ways, Stacey agrees with Jake, however she feels that development needs to be sustainable. She raises the point that the region is dependent on two volatile economic sectors - tourism and residential development – that are standing in for a collapsing, albeit once heavily regulated agricultural sector that previously supported the region. As such, the transformation of the landscape is becoming urban and the loss of place is of the rural idyll and that particular sense of place. She also takes Council to task on its ability to achieve its proposed sustainable planning objectives while employing a contemporary planning and development model. Inevitably, as these places change, it is their rural character and sense of place that is lost, or other natural landscapes that are affected such as the coastal foreshore. The social attributes of sense of place such as family and communities of interest align with economic development as these bring jobs and reasons for family to remain in place and even make places. Climate change adaptation therefore needs to particularly focus on place-specific attributes and impacts to the natural landscape rather than the social impacts on place.

7.3 Sense of Loss

This section examines findings related to respondents' imagined sense of loss associated with their home and the region being negatively affected by potential future climatic events. All but two respondents said that they would feel a sense of loss. Half of the respondents indicated that they might remain in the region by either rebuilding on the same site or retreating to a nearby, less affected, locale.

Despite the majority of respondents answering 'yes' to feeling a sense of loss, some respondents indicated that the actual events and impacts to life and property would need to be experienced to determine precisely how they might respond under given circumstances. This was a common theme when answering questions about climate change; respondents cautiously deferred to a lived experience as being the benchmark for accepting climate change and/or imagining a response to climatic events. Again, some respondents referred to more recent natural disasters and hazards (climate and geological processes) as a point of

reference. This section presents interview transcripts with researcher interpretation drawn from Question 24.

When asked if he would feel a sense of loss should his home and the region be negatively affected by potential climatic events, Shane expressed a sense of loss, but also a sense of optimism for himself and humanity.

Most definitely. Because to see it go would be a tragedy. These are the types of things that shape cultures. Yes, well, it will certainly affect me and the rural vistas might disappear and become great bodies of water, which might be an improvement. Who knows?

No, like, there might be some sort of loss, but there's this new ground to go to. There's always this new ground to go to. That's part of our human development. It's not necessarily going to be good, but wherever you are you can make the most of it (a difficult situation). I should qualify that, almost wherever you are you can make the most of it. Until we are there... And then I think it will happen so slowly we won't realise it's happened.

Shane expressed a type of tempered loss, one that is a catalyst for change for him and extended to all humanity. It is important to note that Shane's imagination includes a landscape transformation associated with being situated on a coastal locale adjacent to a floodplain. Present-day events such as floods, bush fires, cyclones, and other natural phenomenon were consistently referred to by other respondents throughout the study as a way to make sense of how climatic events might affect humanity and biota, and particularly events specific to Australia.

In some ways Shane is conflicted by the idea of loss when he provides an initial affirmative response followed by a rebuff. It is at this point that emotion gives way to rational thinking and he downplays the potential effects of climate change as being so gradual that the phenomenon goes unnoticed by humankind. Despite the range of imaginations, Shane holds a resourceful oriented outlook when faced with an uncertain future; a type of pioneering spirit or survivalist instinct shared by other respondents exploring an imagined future transformed by a changing climate.

Silas arrived on the Coast in his early twenties and has lived in the region for the past forty years. He has raised his family here and is actively involved with a nearby place of worship as well as a range of sustainability initiatives in the region. When asked about loss, Silas shared similar perspectives as Shane.

If something were to disturb my comfortable lifestyle I'm going to feel it. If this place were to be devastated by such events, I imagine the place will be here.

It may become a desert or whatever. The place will be here. People may have to leave the area for a period of time. On one level I'm ready for anything. On another level I'm not going to enjoy it if it is not good.

When thinking about Maslow's hierarchy of needs membership and belonging are fairly low on the list. For me personally, it is not that significant, I could go live somewhere else. With regard to laying down a foundation for future generations that will need to survive all of this, I see all of the positive things we are doing as a useful contribution to making a nurturing place that satisfies primary basic needs as well aspects of culture, for example spirituality.

But we can see that some of the alternative initiatives are gaining ground as the current goals are becoming less and less viable. There will undoubtedly be a struggle to keep the old systems in place. But really, it is about getting out of the way of it all, staying off the radar, and getting on with it.

Silas acknowledges how the effects of global environmental processes like climate change might negatively affect his current quality of life and sense of place are not a desirable outcome. Similar to Shane, Silas' imagination summons images of a dramatically transformed landscape - from coastal rainforest to desert. Despite such a dramatic transformation, the "place" (space/landscape and/or capacity for sense of place) remains intact. Here, Silas considers the tide of human and ecological evolution as a process that is in constant flux. He presents a somewhat detached perspective on the potential impacts of climate change while at the same time standing tall in the face of uncertain adversity, which is also partially another type of temporal extensibility or removal of any current concern to the future. This is partially due to his conscious decision to live with less as a way to maximise his means, which is counter to the prevailing present-day consumer-oriented perception of human progress. This attitude underpins part of Silas' motivation to locate to the Sunshine Coast nearly half a century ago - to retreat from the urban landscape in pursuit of a more balanced lifestyle.

When looking toward the future, Silas feels that his present pursuit of self-sufficient practices supports the viability of future generations and ultimately leads to a reduced ecological footprint. Silas is reluctant to admit this approach is a climate change adaptation strategy, as it appears, at least on the surface, to be more of a strategy designed to circumvent the *status quo*. Again, like Shane, a pioneering spirit is present in the face of challenging circumstances, an attitude that most certainly deserves deeper examination.

As with Shane and Silas, Adam would feel a sense of loss, but this is tempered with a sense of optimism and belief that climate change is a gradual process and that there will be

sufficient time to respond and/or adapt over time. Additionally, he feels that climate change is not necessarily comprised of similar present day events such as cyclones, another example of an availability heuristic. Similar to other respondents, the imagination is framed by dependencies such as the lived experience of a given event coupled with necessary responses and actions.

Yes it definitely would be, but you know that you can find that again. With climate change I don't think it will be as severe as say a cyclone because we will have more time to respond. If our home were taken away in a disaster there would be a certain amount of grief. So it depends on if we would have to relocate and where that would be.

For someone like Holly who was largely nomadic and made a home later in life, the prospect of losing this newfound sense of security is more daunting than the previous younger male respondents.

Definitely. I wouldn't want to have to live in a tent or something. Before moving into this complex I didn't have a sense of permanence, or a sense of home.

Holly presents a contrasting perspective compared with respondents who have been settled for longer periods of time and have consequently developed embedded place constructs. For her, the prospect of being physically displaced from her home is far from ideal and is not easily resolved through sheer physical and mental tenacity common among the pioneering males. Holly's perspective brings to light the need to fully consider the limits for adaptive capacity across generations, especially physical ability, but also emotional stability. Together this presents an interesting dimension of time and its relationship – not in how time affects sense of place, but how it affects the capacity for change as an individual ages.

For Luke, the possibility of loss is not limited to his home and possessions; it is extended outward to other less fortunate people in locales beyond Australia's borders as well as ecological biota. This perspective reveals his awareness and emotional sensitivity to the collective loss beyond his own personal sphere.

Yes, it's all I've got. But ecologically, it would be very sad. It would be traumatic for humans, but nature would survive in the long-term. I feel for the biodiversity, so I am remorseful and I live in a beautiful area compared to poor people around the world.

In summary, I am sad. I don't feel positive. I can see the changes and I didn't think I'd see it in my lifetime.

When exploring an imagined future of climate change, Luke feels a deep sense of sadness and hopelessness. And despite his concern for biota he feels that over time nature will recover. Luke's home has been flooded twice in the past and it is this experience that contributes to his lived experience of climate change. This perspective is unlike most other respondents who do not feel they have a lived experience of climate change. Consequently, Luke is not as optimistic as other respondents. Again, the notion of the lived experience of climate change is important, and perhaps the difficulty is that until the lived experience of climate change occurs, it will not be as deeply embedded or emotive as the lived experiences of place.

Similar to other respondents, Hillary looks to recent ecological and geological events that have had a negative impact on human settlements as a way to frame her imagined future of climate change and loss.

Well, hypothetically we've had a chance to look at recent events in Christchurch and Japan or the bushfires in Victoria. One of the things I found interesting to observe is that through loss there has been gain. They have lost everything and are still alive, which gives rise to deep reflection on what they value. I'm sure there would be loss, but all of this is temporary and passing anyway. I'm not trying to be trite.

That whole idea, which is a bit of the paradox that with the notion of depletion we can also touch on abundance not only in terms of what we do have and what we can discover in our own environment, but also the people and the resources.

In framing her imagined future, Hillary holds a common perspective; that human beings are already resilient and have the capacity to overcome adversity due to colossal events that are beyond their control. She is philosophical about her possible sense of loss of place by proposing a perspective of impermanence that is consistent with concepts of evolution and becoming. Making it clear that she is not downplaying the immense loss associated with earthquakes and fires, Holly sees tragedy as a potential catalyst for awakening humanity to live more harmoniously with the planet as a way of being more agile and more adaptive, which may lead to a different, more global, sense of place.

For respondents whose sense of place on the Sunshine Coast is weaker compared with other respondents the emphasis for preserving or protecting elements that contribute to their place are not limited to the Sunshine Coast. Dustin grew up in the region and has observed the developmental changes over the years. He is not at all happy about the increased

commercialisation of the region and consequently has become disillusioned about what the area once was and what it is becoming.

I'm nomadic so I don't feel attached. I could rebuild. I can't see climate change as a fire and brimstone thing.

Dustin is frustrated with the peri-urban transformation he has experienced while growing up in the region, which has impeded his capacity for attachment. He is skeptical of the way climate change is portrayed in the media and similar to others, feels that climate change will be gradual and will not consist of severe disasters. These two phenomena are seemingly linked – that change in place is inevitable when that is one's lived experience, and thus climate change adaptation will be inevitable and simply a matter of coping with it and eventually adapting. Dustin is young, and similar to his other male counterparts, he holds a confidence associated with a (nomadic) pioneering spirit. Despite his family defining his sense of place on the Sunshine Coast, he is not necessarily committed to further emotional investment in the region or attempting to preserve a sense of place that has been eroded by actions outside his control.

Lee is a retired grazier who spent the better part of his adult in rural New South Wales. He has lived on the Sunshine Coast for two years, a comparably brief period of time.

I would feel a sense of loss if the wetlands were affected, but I would probably relocate. I don't have roots here, so I'm not as connected to the place. I would feel a great sense of loss if the grazing land was affected, but I don't own it anymore. I still miss that lifestyle. I had a much stronger sense of identity on the farm.

Although Lee has lived in the region for a short period of time, he has become involved in a range of social groups and activities. Despite this engagement, his sense of place is in the process of development. In considering the impact of climate change, Lee is most concerned about ecology. This concern is also extended to his previous residence and lifestyle on the land, where he reveals he held a much stronger sense of place and sense of identity compared to living on the Sunshine Coast. With this in mind, Lee would most apt to relocate rather than rebuild or remain in the area.

Lydia expressed a sense of loss that is not only limited to her home, but also outward to the residents of the small hinterland town where she currently lives. Her sense of loss is not defined monetarily, but in emotional and psychological terms, her essence of place. Similar to others, the task of exploring an imagined future of climate change was something Lydia had not previously thought about. This is an important point because climate practitioners cannot

assume the general populace has investigated or imagined such concepts with identical vigor and depth, which is an essential priming device for adaptive capacity.

Yeah, very much so. It would be the loss of a home and a sense of belonging, not a house. My sense of place is centered on my home, but also my local community.

I've never thought about it before, so to think about what it could be like is pretty devastating. Hopefully it never happens.

Returning to Melissa, who has a tenuous sense of place on the Coast, her sense of loss is limited by the level of personal and financial investment in the property where she lives. This fact raises an important point about the relationship between financial investment and personal commitment to a locale. Although she would feel empathy for the property owner, her partner and pet most define her current construct of home and sense of place. As Melissa explains, her sense of loss would be different if she were financially and personally invested in the property.

Not where I am now. My home is where my partner and our dog are. I don't have any ownership of the house or land. I would feel badly for the owner. It would be different if we owned because we would have invested more of our selves into the house. I would be upset for the community, but no sense of personal loss.

7.4 Summary

This chapter presented key links drawn from the analysis as represented by the sub-ordinate themes of ecological ethos, becoming urban, and sense of loss. Ecological ethos is an underlying feature of both sense of place and climate change adaptation as this factor is responsible for respondents being drawn to and bonding with the natural amenities of the region. This orientation also serves as a pathway for corporeal embodiment and care for the planet as a whole and the region specifically. Place-based meanings and values are associated with an affinity for symbolic natural features such as the Glasshouse Mountains and Noosa National Park in ways that are not at all associated with monetary values.

The peri-urban transformation of the region represents two key links 1) intensive residential development impacts sense of place, and 2) the seemingly haphazard planning is perceived as being inconsistent with sustainability and adaptation goals of Council. The process of development is perceived as fragmenting the rural landscape, impacting natural amenities, and regional economic viability, which is the type of loss that is most prevalent. An underlying

feature of becoming urban is the perception that development is attracting people that may not hold the same meanings and values of care for the region. Respondents accept that development is inevitable, but they are concerned that the scale, type, and pace of such development is inconsistent with Council's sustainability goals and regional adaptive capacity, and fundamentally erodes their sense of place. Despite the overall concern about development, some respondents felt that certain infrastructure is good for the region and enhances their sense of place.

The majority of respondents expressed that they would feel a sense of loss if climate negatively affected the region and their sense of place. Consistent with findings presented earlier, a pioneering spirit was expressed as perceived capacity and resilience. For some loss would be great, both individually and for the wider region and its inhabitant. Respondents that have lived on the Sunshine Coast for a relatively short time hold less attachment and although they felt empathy for other residents, they personally would not necessarily feel a sense of loss. Finally, many doubtful respondents felt that climate change would need to be experienced to know for certain how they might adapt and if they would feel a sense of loss, effectively making lived experience a benchmark for acceptance and action. A key finding was the perception that natural processes/nature are constantly evolving and will endure overtime that leads to a type of resignation or fatalism that nature will prevail and humans may or may not. This perspective could impede, or may potentially be a reason/justification to not engage in climate action.

8.0 DISCUSSION: BECOMING PLACE IN A CHANGING CLIMATE

8.1 Introduction

Framed by the three research questions, this chapter presents a critical appraisal of the findings in relation to the theoretical and philosophical orientation underpinning the study. The chapter is organised in three sections aligned with the primary research themes. The first section presents a discussion of the key themes drawn from respondents' personal accounts of their sense of place as a resident of the Sunshine Coast with respect to scholarship in this area. The second section sets out the context and implications of respondents' perception, understanding, and engagement with climate change and adaptive capacity and its implications for knowledge. The final section concludes with an examination and discussion of the connections between these two topics, based on the findings. In particular, it suggests that these links may benefit by being framed by the concept of a pragmatic sense of place, specifically the theoretical and practical implications of the of theory place-based strategies as a framework for becoming place and becoming climate-active.

8.2 Becoming Place: Growth, change, and home as an anchor

As expected, place values and meanings were not uniform across all respondents because the research participants represented diverse demography, cultural and socio-economic backgrounds, varying levels of economic status and mobility, length of residence, and the individual personalities of each respondent. However, key findings that were predominant, shared, or particularly influential are considered.

The preceding three 'Findings' chapters presented respondents' accounts of the lived experience of residing on the Sunshine Coast. These personal accounts revealed the ways in which spatial and temporal factors served as the primary building blocks of sense of place, that is, population growth and urbanisation were clear manifestations of spatial growth of towns in the region and changes over time to the natural environment. This is consistent with the existing theories of geographical inquiry, namely the phenomenology of environmental experience and behavior (Nogué I Font, 1993). In phenomenology, an individual's natural attitude and synesthetic experiences converge as a type of experiential 'dusting' whereby minute and repeated everyday activities culminate in complete mind and body experiences that over time forms a sense of place associated with a given geographic locale (Heidegger 1962; Relph 1976; Tuan 1977; Husserl 1982). Over time, attention toward the natural environment recedes to the background as everydayness of the natural attitude and social interactions occupy the central focus of lived experiences. The landscape may not always be in the foreground, but it is readily accessible visually, mentally, or by way of physical engagement (Relph 1976). The ease of access and consistent availability for engagement

with the natural environment is perhaps one of the more appealing motivations for interviewees choosing to live on the Sunshine Coast.

A key finding about place was that the attributes of each person's spatial environments together formed the regional landscape of the Sunshine Coast rather than a single locale – a type of large-scale experience of place. Overall, respondents shared an appreciation for the region's natural environment, which is due to low-density development dispersed over a large geographic area resulting in a high proportion of green space.

Respondents expressed a range of values that illustrated their appreciation of the region and included, but were not limited to, embodiment, intrinsic, cultural, and aesthetic values. For example, respondents regularly referenced the dynamic sub-tropical climatic regime that can bring abundant seasonal precipitation and periods of drought to the region, which altogether influence the ecologically rich natural habitat that defines much of the aesthetic appeal of the Sunshine Coast. Climatic elements such as heat and humidity characterised embodied experiences, as were physical activities such as gardening, communing with nature, or the immersive sensation of swimming in the ocean. Intrinsic values associated with respect for nature and an active interest in preserving and protecting these values in their own right and for the interconnected meanings and values were related to the overall character of the region. Cultural narratives such as Aboriginal stories associated with the unique landforms, rivers, and biota are interlaced with the colonial narratives tucked into the pockets of the many small settlements dispersed through the region, which become overlain with the newer narratives of the sea change migration. These layers of diverse meanings present the formation and lived experience of the regional cultural landscape, but what are critical are the multiple micro-scale locales that are individually meaningful but quite explicitly cobbled together into a shared sense of place that encompasses the broader region of the Sunshine Coast. Decision-makers charged with local (place-based) planning initiatives may need to implement programs that capture this diversity of place experiences at regional scales where appropriate and cost effective. Therefore, a type of 'place-becoming' is needed on the Sunshine Coast, that is, a way of bringing the dispersed settlements together especially as urbanisation continues its outward (spatial) growth and increased density, and closer connections.

The abundant natural environment provides restorative properties that were considered important for living and staying in the area (van de Berg et al 2007). Correspondingly, the natural environment is very conducive to leisure activities, a key component of modern day lifestyles, and identified as an integral element of sense of place for some respondents, as found by Williams and McIntyre (2012). However, these same lifestyle factors paradoxically contribute to a changing sense of place and a changing climate. Some interviewees acknowledged this through their narratives of change/loss with respect to urbanisation and the 'becoming of place', which is consistent with Newman (as quoted in Hutton and Connors

1999). However, respondents did not share the same sentiment with respect to climate change unless prompted to do so (as discussed later) suggesting that they were less aware of possible changes to place as a result of a changing climate, as opposed to the present-day effects of urbanisation and population growth.

The built environment was also an integral feature of respondents' sense of place. It was generally represented by one's residence, and most frequently symbolised by the notion of 'home', which is characterised here as the 'private realm'. For many respondents, this essence of home is more than the physical and structural attributes associated with shelter or the setting upon which such structures rest. Home is the private domain of a concentrated inward focus of dwelling, daily interactions with cohabitants, namely family, a haven where individuals can remove themselves from the expansive and sometimes conflicting public realm, and conversely a vantage point for looking outward upon the world (Cuba and Hummon 1993; Hay 1998). Consistent with Hay (1990) and Cuba and Hummon (1993), for many respondents, home ownership reinforced a sense of place and a greater capacity for self-reliance and independence. The latter was illustrated by the types of activities and modifications that might be undertaken on the property and structure(s), i.e. landscape modification such as ornamental and food gardens, and installation of solar power and water tanks, which due to capital cost is rarely undertaken by rental tenants (McKenzie-Mohr and Smith 1999; Grothmann and Patt 2003). Home was therefore also a means of expression of both sense of place and the potential to effect change, to adapt, and/or buffer oneself against change.

An unexpected coincidence of the study was the opportunity to conduct over half of the interviews at respondent residences. Doing so provided a relaxed atmosphere for describing features of the Sunshine Coast that most represented respondent sense of place, which was often the home and adjacent surroundings. This situation enhanced personal descriptions and allowed for immediate references to physical objects by pointing at the things they were describing, bringing me to a specific location to share the view, or presenting objects such as photo albums or personal belongings that possessed ephemeral and emotional qualities not easily described in words alone. It was evident that strong bonds and deep personal emotions of attachment to place were most well defined by dwelling in and around the home. These emotions are as fluid as a person's movement through time and space. The becoming of a place has both spatial and temporal dimensions. Places grow outward over time and need to, or do, connect through infrastructure or social activity, and the private realm of the home becomes an anchor within this changing landscape. However, as discussed below, there are also 'extended place meanings' that are co-constructed through an intersection with the public realm. These meanings are multi-layered social interactions (discussed below) and together can bring about a more collective transformation of the broader, regional space into a connected, lived, place.

8.2.1 Public Realm: Extended place meanings and collective sense of place

The majority of respondents considered social interaction to be very important to their sense of place on the Sunshine Coast. Engaging with others satisfied their personal and emotional needs associated with casual encounters and the formation of friendships. Interactions were both formal and informal, which together may have the capacity to reinforce common interests and civic pride. Manzo and Perkins (2006) found a similar need for formal and informal connections in developing sense of place and place attachment. Respondents actively engaged in a range of different casual activities, social groups, communities of interest and volunteering such as surf life saving, dancing, outdoor festivals and markets, spiritual practice, and work parties. Some of these interactions involved activities that enhanced or preserved natural amenities of the region, such as planting trees, stream restoration, and guiding nature walks, which contributed to the important aesthetic and ecological qualities of the region and augmented a public, shared sense of place (Gooch 2003).

With reference to informal interactions, ease of contact at a local scale was a key determinant of sense of place. Casual encounters with neighbors, locals in the shops, or strangers in public places added a layer of social embeddedness to an individual's construct of place, demonstrating how the micro-scale of the street and neighbourhood within the immediate vicinity of their home was possible in the absence of other, wider social interactions. The dispersed arrangement of settlements within the region was at times an impediment to accessing like-minded people or communities of interest and thus these individuals retained a micro-scale sense of place in terms of its social meaning; but a more macro-scale regional sense of place through the natural environment. In other words, some respondents shared a place identity at the regional scale that was mostly founded on the natural environment rather than social attributes. Conversely, respondents more easily identified a shared sense of place at a very micro-scale with respect to their social environment. There is a tension between how to match the local/social meanings to the regional meanings about place. Again, the notion of 'becoming place', developed above, can be thought of as being formed from local senses of place, with 'home' as the anchor (discussed previously) but which develop into a collective sense of place encompassing the wider area, through the idea of 'extensibility' where senses of place are nurtured beyond the local into the private realm. This may require concerted and directed effort on the part of agencies charged with developing local place-based planning strategies to link the local and social to the regional and natural environment.

In the public realm sense of place is constructed through the dynamics of social activities and the ever-changing landscape morphology and multiple layers of shared space and sense of place. The public realm is important for social interaction and mobilising people into a shared place-identity and potential for collective action that together facilitates capacity building. However, making places requires this collective action.

8.2.2 Temporality

The temporal dimension of places is a primary factor that works synergistically with the spatial domain to frame the construct of place. Consistent with earlier research (Tuan 1977; Hay 1998), length of residence at least partially influenced respondents' sense of place, as the amount of time living in the area enriched their familiarity with the landscape, associated place names, historical narratives, and increased opportunities for regular and repeated social interaction, engagement with communities of interest, informal and formal group membership, and overall social networks and relationship bonding.

Residents of the Sunshine Coast shared similarities in their place constructs, however, length of residency influenced what has been described in the literature as deeper, stronger and more rooted in a lived experience over a longer period of time compared with more recent arrivals, especially those individuals that are having a difficult time adjusting and/or accessing communities of interest as cited by Hay (1998) and Tuan (1974). Consistent with Hay (1998) people born and raised in the region and living in the area for 40 or more years displayed a deep emotional bond with both the physical environment of the region and the social interactions therein. For some respondents the emotional sentiment associated with such bonds could simply be described as a love of place. From the scent and temperature of the air filling their lungs, a deep connection with the earth associated with working the land, to the shared narratives of generations of lived experiences, members of this group most exemplified a type of existential and corporeal embodiment and rootedness most aligned with Tuan's concept of *topophilia* (1974). This type of shared sentiment might also be associated with *genius loci*, or spiritual essence of place defined by an atmosphere of positive emotions associated with natural and built characteristics of the region.

Residents with a strong sense of place that were not born or raised in the region, but arrived in their adult life, had lived in the region for 40 or fewer years, did not undertake agrarian occupations, and were not associated with sea changers form a unique pre-changer⁹ sub-group. The pre-changers might be associated with some of the earliest 'amenity lifestyle' migrants, although this label is not nearly as clear as it is for sea changers whose primary purpose for locating on the Sunshine Coast was most often associated with lifestyle amenity pursuits.

Respondents who had lived on the Sunshine Coast for less than five years had comparably less strong connections to the region. In the absence of social bonds, the natural environment was initially more prominent in the foreground of a respondent's place construct. However, as one's gaze drifts from the horizon it gives way to the need for engagement with others and establishing social bonds that aid the formation of one's sense of place construct (Ryden

⁹ The term pre-changers is coined to distinguish between people that migrated to the Sunshine Coast prior to the distinct sea change migration that began in the 1990s.

1993). The importance for developing place-based strategies is that governments cannot work with people individually – residents need to have a broader collective shared sense of place or place-identity. This does not necessitate a singular sense of place, rather, place-based planning needs to take into account a diversity of meanings of place as found in this study when representing or at least communicating to their citizens about important things in the future and ways to enact change.

8.2.3 *Summary*

This section revealed that sense of place is constructed and co-constructed through inter-subjective embodied experiences with time, space, and social interaction that imbue space with meanings and values that are reinforced through cultural practices. Home serves as an anchor for spatial extensibility of meaning that is private compared to a public realm.

Grounding of the concept of home is needed, but in a way that uses its central anchorage as a foci for people to develop a collective sense of place or at least an understanding of how their lived experience connects with that of others and their homes, and what that might mean for individual and a collective sense of place, but also for other phenomenon that affect a shared sense of place.

From the coastline and across the floodplain and up into the rolling rural hills and rainforest of the hinterland, the abundant natural environment of the Sunshine Coast stimulates respondents' aesthetic and corporeal experiences that invoke emotions, meanings and values that have come to define a shared sense of place for the region. These natural features serve as the drawcard for an inward migration of people seeking to partake in these natural amenities, which in turn puts pressure on the natural environment, existing infrastructure, and residents' sense of place. The following section presents a discussion of the interpretation of the findings drawn from questions about climate change and adaptive capacity.

8.3 **Making Sense of Climate Change**

Climate change is a dynamic and complex natural phenomenon presently compounded by anthropogenic influences, which is largely attributed to the cumulative input of human activity associated with industrialisation and land use development (Houghton et al 2001; Hulme 2009). This section discusses the findings regarding respondents' perception, understanding, and engagement with climate change and their perceived adaptive capacity, and implications for academic knowledge. Similar to sense of place, this study has shown that making sense of the complex and dynamic phenomenon of a changing climate is integrated with time and space, and that formulating a complete understanding is in a state of evolution, or becoming. In this way, the process of making sense of climate change informs the making sense and construction of place. The concept of extensibility was evident in respondent imaginations and

constructs of climate change, and adaptive capacity in the present and future, locally and globally, and across generations and other cultures. The topic of climate change was somewhat more unsettling for respondents than were discussions about sense of place. This difference can be attributed to two key factors. First, place is more immediate and personal, making it easier to recall and provide personal accounts of one's place construct. Secondly, climate change as it is presently known, is a more recent phenomenon with evidence of its effects occurring in more distantiated, remote and isolated locales, which limit the opportunity for embodied, lived experience.

8.3.1 Comprehending Climate Change: Bridging Embodied Lived Experience

This study's findings were largely consistent with earlier research about public awareness and understandings of climate change, for example the work of Lorenzoni and Pidgeon (2006), Leiserowitz and Smith (2010), and Yusoff and Gabrys (2011). Respondents readily made intuitive connections between industrialisation, consumerism, population and the cumulative negative effects of human activity on human health, natural environments, and the biosphere. All respondents demonstrated an awareness of the concept of climate change and although most respondents expressed concern about potential negative effects of possible future climatic events, this concern did not translate into an equal level of acceptance of climate change or a need to take action in the present to reduce present and/or potential future effects. Those who had taken action made adjustments to their own private realm (e.g. water tanks, and solar panels on homes) rather than more publicly. The disconnect between their understanding of climate change and the need to take action on it can be partially attributed to the limited lived, embodied, experience of the phenomenon, which is therefore dependent on available information and second-hand accounts of its existence in distant or remote global locales, as well as any policy or program incentives that encourage actions designed to reduce greenhouse gas emissions.

As proposed by Howard (2013), the lived experience of climate change is primarily recognised as weather, seasonal changes, and more specifically the biogeoclimatic zone where one lives. Some respondents did make references to the climatic regime of the Sunshine Coast, for example "I came here for the climate", or "it is warmer and drier than when I was young", which demonstrated an awareness and understanding of the regional climate and observed change over the course of one's lifetime. Conditions that allow for comparisons of decadal climate cycles may be attributed to a persons' age, living in the same area for a continual period of time, attention paid to weather and climate patterns over time, and capacity for memory which show the importance of the temporal connection to a region and realisation of its changes over time (Tuan 1974; Howard 2013). Respondents also made references to cyclones, bushfires, flooding and other climate related processes as well a comparison with other biogeoclimatic zones within Australia and around the world. Although such observations are examples of a general understanding and awareness of climatic

processes this does not equate with an embodied lived experience of a changing climate, and as such, can lead to the formation of 'plausible deniability' about possible negative effects associated with present and/or future climate events (Kirkman 2007).

Respondents expressed confusion about climate science and lack of confidence in the institutions distributing information, namely governments, mass media, and special interest groups. Respondents suggested that making sense of climate change could be alleviated with more clear, concise, and consistent information coupled with leadership by governments comprised of individuals elected through democratic processes to act on behalf of the citizenry. Respondents also expressed an overall lack of confidence and/or trust of institutions and decision-makers bestowed responsibility to act on their behalf to inform and implement a coordinated response to prepare people for potential future effects of climate change. Respondents' confidence and trust in institutions appeared to be closely linked to their lived experience of present-day land-use planning decisions, which respondents' considered to be out of step with the character of the region and local government's publicised sustainability goals, again demonstrating the importance of the lived experience of the region over time, and the interconnections with its spatial changes (see Arnstein 1969; Sewell and Coppock 1977; Reynolds 2004; and Mostert 2005 for discussions re: public participation, trust/mistrust in planning).

This study revealed that formal and informal modes of environmental learning facilitated awareness and comprehension of climate change and had the capacity to influence acceptance and engagement with climate action. Despite the capacity of formal environmental education to have a positive influence on climate awareness, such learning and subsequent knowledge development did not always lead to acceptance of climate change, or action. Consequently, there was a tendency for some respondents of the formal learner sub-group to defer to scientists to make a definitive assessment of the validity of climate change. For this study, such deferral was labeled the 'expert syndrome', which represented a reliance on scientific experts (and corresponding information) to determine the validity of climate change in the absence of their own personally observed/measured evidence of climatic change. Although the science confirming climate change is effectively unanimous, for some respondents deferring to experts appeared to be a way to allow them to remain doubtful of climate change and thus, not fully accepting of it. While information and education may contribute to awareness, acceptance, and action, for respondents that were doubtful or denied climate change, first-hand experience of the phenomenon appeared to be the most definitive way for a respondent that remained doubtful to accept climate change and possibly engage in adaptive actions.

The assumption that adaptation is dependent on a response to stimuli (as borrowed from the natural sciences biology/ecology) is sound in theory, however to be applied to human beings

the concept needs to explicitly account for human consciousness/irrational behavior. And as noted above, the absence of stimuli may lead to conditions such as plausible deniability. Being that the current effects of climate change are occurring in remote and isolated parts of the globe, the opportunity for, and therefore reliance on embodied lived experiences to stimulate response and eventually action/adaptation could effectively limit individual (and collective) adaptive capacity on the Sunshine Coast and elsewhere. In the absence of experiencing climate change first-hand, it is proposed that emphasis for building adaptive capacity needs to be directed toward the lived experience of comprehending climate change as a mechanism for anticipating the potential future effects both locally and globally. So far, it appears that conflicting and confusing messaging has compromised comprehension and therefore, enhancing the lived experience of comprehension is contingent on consistent, clear, and concise information coupled with leadership that reinforces positive individual and collective action (see Ockwell et al 2009 re: communication and promoting attitudinal change). This is not to suggest that information and leadership alone can effectively stimulate a response to climate change, however relying on a direct response as a result of first-hand lived experience of climate change effectively delays response/action, and thus increases risk and reduces adaptive capacity.

8.3.2 *'Becoming' Climate-active: Local Focus, Global Extensibility*

Consistent with the scholarly literature, a complex integration of spatial, temporal, and intergenerational extensibility emerged from the findings that encapsulates the capacity for making sense of climate change and formulating an imagined future (Relph 2008; Yusoff and Gabrys 2011). As expected, perceptions of climate change range from very concerned to no concern whatsoever. While some respondents expressed concern about the effects of climate change in their lifetime and where they live, the majority of respondents were less concerned about their potential effects in the short-term indicating a type of 'shifting' of the problem in time. Respondents who expressed concern about climate change often presented examples from familiar present-day climate-related processes and/or hazards (weather, cyclones, flooding, sea level rise, bush fires etc.) drawn from lived experience and themes commonly represented in the media and other related communications.

Numerous respondents made reference to the concept and term 'future generations'. Specific usage of the term 'future generations' could be attributed to the term being fully integrated in the modern vernacular as a result of nearly 30 years of usage since its appearance in the publication *Our Common Future* (World Commission on Environment and Development 1987). Consistent with Tjernstrom and Tietenberg (2008), older respondents did not feel climate change would occur in their lifetime and although some of these respondents expressed concern for their children and grandchildren, they did not necessarily feel the need to take action, or that any action that they could take today would make any difference in the future, or consequently, a future shared sense of place. This indicates again that extensibility of

climate change to a more distant time is freeing people from any need to take action in the present.

Respondents are altogether aware of climate change, however, the level of acceptance of the phenomenon and its potential effects was comparably moderate. Most respondents thought that if climate change was occurring, or will occur, it would be elsewhere and affect people outside Australia, also indicating a type of spatial distancing of the problem. Additionally, some respondents felt that the effects of climate change would most likely be experienced in locales less equipped to respond to adverse effects. Some respondents expressed empathy for economically disadvantaged people living elsewhere and made connections to a disproportionate volume of greenhouse gases being emitted by highly developed countries such as Australia. While some respondents expressed concern that potential future climatic events could negatively impact people living elsewhere, which may cause mass migration of climate refugees, some respondents expressed concern that the arrival of climate refugees from developing countries could negatively impact Australian quality of life and consequently, their sense of place.

These temporal and spatial distantiations again show a type of 'extensibility' or vastness of climate change and its potential effects and any perceived need to adapt. These types of mental gymnastics are consistent with concepts proposed by Relph (2008) in *A Pragmatic Sense of Place* (2008). However, such extensible imaginations, awareness, and even empathy may not necessarily result in action, either locally or globally. Although extensibility is an important feature for conceptualising and anticipating potential future effects of climate change, according to Hulme (2009), as long as such risks remain spatially and temporally distant or un-situated, the acceptance and the perceived need to engage in adaptive actions is potentially compromised.

8.3.3 *Perceived Adaptation*

Although some respondents who accepted climate change expressed concern about its potential effects, and were confident they could adapt, this position did not necessarily translate into the need to take action in the present to reduce potential future effects. This perception is consistent with part of the theory of adaptation whereby adaptations occur as a result of a response to 'actual' stimuli (IPCC 2001). Where some respondents felt that should climate change happen, it would be a gradual process and that there would be sufficient time to adapt. Despite respondents expressing concern for potential negative effects associated with climate change (e.g. anticipated or expected stimuli per IPCC 2001) the perceived pace and dispersed effects did not appear to instill a sense of urgency to take immediate action to limit potential future risks.

Most respondents, even those who did not fully accept climate change expressed confidence in their capacity to adapt to potential future climate events. This expression of confidence is an important feature underpinning human adaptive capacity in general and forward thinking optimism, often associated with a can-do attitude or pioneering spirit that supports a sense of individual and collective capacity to adapt and migrate to other areas. When respondents expressed confidence in their adaptive capacity they often referred to present-day adaptations such as water tanks, solar, power, food gardens, and hybrid/electric cars, many of which are good examples of human ingenuity and adaptive capacity. However, for some respondents such actions are necessary due to their property not being connected to public services and not climate action *per se*. In other instances, financial benefits were the primary motivation for implementing so-called alternative infrastructure, while in other instances respondents expressed a combination of idealistic and perceived benefits ranging from not being reliant of corporate energy providers and government services, reducing environmental impacts, e.g. resources used to build homes, and an overall sense of independence and self-reliance. It should be noted that such adaptations are limited to the private domain or what Klein (2003) considers private adaptations.

Respondents who had taken a range of measures still felt that they could do more, but again also felt that government needed to take a leadership role by providing more guidance and direction on private and public adaptations, financial incentives to ease the transition to energy efficiency, as well as establishing policies that limit ecological impacts and preserve natural systems (Klein 2003; Haq et al 2008). Respondents appear to be 'primed' and ready to work collectively with each other and with their democratically elected leaders. Therefore, it is imperative for local and State government leaders to collaborate with each other and listen to local residents in order to leverage and augment existing social capital as a strategy for building climate change adaptive capacity on the Sunshine Coast.

Despite a high level of confidence in their personal adaptive capacity, the majority of these respondents felt that they would need to be faced with the effects of climate change to know what type of actions were necessary and appropriate. Consequently, proactive adaptations are difficult due to uncertain costs and benefits associated with taking action in the absence of stimuli (Hulme 2009). A linkage can be made between a perceived need to adapt and perceived benefits and costs, primarily financial, which has a direct impact on lifestyle. Being that lifestyle is one of the highest priorities for most respondents, it is possible to make a connection to understanding why people are reluctant to engage in proactive adaptations, e.g. perceived reduction of quality of life/lifestyle/sense of place (Lorenzoni and Pidgeon 2006). And although examples of climate action were limited, some respondents felt that not taking action increased risk and/or vulnerability to climate change, which is consistent with the literature (CSIRO 2014). Respondents felt that sustainability and adaptive measures could be achieved through sensible planning and development that takes local values and knowledge

into account (using place-based planning concepts), but felt their voice is not being heard, again because of the lack of genuine political will and a broader economic system tied to larger globalising forces, which magnifies the enormity of challenges for building adaptive capacity. Overall, there was a sense of uncertainty among respondents about what can be done to address climate change both locally and globally. This is a key tension – the fact that even when people do understand the enormity of climate change, they feel ill equipped to deal with it. These findings add to the body of work by Hulme (2009) by showing that this is an underlying tension and therefore, moving from awareness, to acceptance, and finally action, is crucial to building adaptive capacity.

8.3.4 Summary

The complexities of the biosphere, and the immense spatial and seemingly infinite temporal scales that are together combined with anthropogenic influences in unknown and uncertain ways, making connecting the dots of adapting to a changing climate a challenging task for many people. Thus, immediate day-to-day responsibilities take precedence over uncertain and conceptually distant matters such as a changing climate and subsequently an extensibility of the concept of climate change, and even more so, about the need to adapt. This is not to say that respondents do not consider climate change a risk or priority, it is simply that they do not see it as something they can act upon without first-hand experience of the phenomenon - they feel they would have a better understanding of how to take action once faced with stimuli and measurable risk. Therefore, it is recommended that better information and leadership are needed to act as a mechanism for anticipating climate change and thus building adaptive capacity in ways that help to 'bring it home' and explicitly help people link change in their local places to climate events, rather than distant climate change in space and time.

8.4 Links: Connections and Constraints

The previous two sections presented comprehensive interpretations of the two main themes framing this study – sense of place and climate change adaptive capacity. This section is framed by the final research question and presents a discussion and interpretation of the relationship between the two main themes as drawn from the research findings.

8.4.1 *Becoming Place: Peri-urban Transformation and Place-based Planning*

As previously discussed, the Sunshine Coast is experiencing a period of rapid peri-urban transformation associated with being an international tourism and amenity migration destination; resulting in widespread landscape change throughout the coastal zone and rural hinterland. The globalising forces of tourism and residential development have also brought with them an influx of temporary seasonal visitors and new residents that has subsequently

modified the social dynamics of the region in what might be described as a disruptive or destabilising effect on the previously more slow-paced or seemingly stable semi-rural sense of place (Williams and Stewart 1998; Tonts and Greive 2002; Carter et al 2007). Most respondents expressed concern that the pace, scale, and type of development currently underway was transforming the region in unwelcome ways. Consequently, respondents felt that maintaining low-density development that contributes to the high proportion of natural amenities would preserve these values and their sense of place.

For most respondents, becoming urban is inconsistent with their individual idealised lifestyle and future shared sense of place. However, although concern for development was shared among most respondents, it was also acknowledged that development was an inevitable consequence of the region's pleasant climate, natural beauty, and proximity to Brisbane – similar attributes that drew some of them to the region. This situation is a paradox of the twinning forces of the pursuit of personal environmental quality and the globalising economic forces that are together driving the current phase of the regional transformation, or place becoming.

In consideration of inevitable change, many respondents felt that decisions needed to be made locally by the people living in, and most affected by regional development. Most respondents felt that the amalgamated Council was now too large, which reduced respondent access to decision-makers and involvement in planning decisions, and further constrained by important residential development decisions being made by the State government in Brisbane, which is spatially, economically, and socially removed from the region. Respondents with previous involvement in regional planning expressed discouragement at the quality of resident participation to date and that in some instances such involvement amounted to 'window dressing' whereby resident input was completely ignored and development proceeded unchallenged. Some of these respondents had indicated that they had become completely disengaged with local planning, which echoed the similar sentiments about their thoughts on public engagement with planning for climate change. Although respondents acknowledged that development, population, and consumer culture were related to anthropogenic climate change, their primary concern was the more immediate negative impacts of development within the region and consequently, their individual (private) and shared (public) sense of place. And herein lies the conundrum of sense of place and lifestyle being directly tied to infrastructure that is dependent on high carbon emissions (Ockwell et al 2009). Although respondents do not care for the development and consumerism associated with the globalising forces of tourism and residential development, it is practically impossible to escape and/or not contribute to the process in some capacity.

Sense of place and lifestyle are bound together; they are constructed and co-constructed in a dynamic and complex web of human perception, experience, and collective cultural practices

(Twigger-Ross and Uzzell 1996). If anthropogenic climate change is linked to human activity, then it follows that lifestyle and thus sense of place are altogether part of a climate change. The way one lives is a key element of sense of place, and thus, lifestyle is sense of place. If lifestyle choices, such as the preference for low-density development define sense of place, then it only follows that an examination of lifestyle choices is necessary to understand the relationship between sense of place and adaptive capacity. The term 'lifestyle' was consistently used by respondents throughout the interviews and was often aligned with meanings and values associated with their sense of place. Use of the term 'lifestyle' has increased since the Second World War and can be linked to the rise of the pursuit of leisure time, and was demonstrated to be very much a part of the local vernacular together with the term sea change.

Ecological ethos was considered a linking theme as the natural environment was at least partially, if not fundamentally, the reason respondents located and/or remained on the Sunshine Coast, although social relationships become equally if not more important over time. For respondents who had more recently arrived in the region for reasons other than the natural environment, the abundant natural amenities were considered an integral part of the region. There is likely a simple explanation for the natural environment figuring so prominently in the minds of respondents that participated in this study – natural environments are aesthetically appealing, they support leisure and fitness activities, and a general sense of well-being, which are altogether attractive to most people (Tuan 1990; Williams and Stewart 1998). In addition to these more common reasons, most respondents in this study demonstrated a sensitivity and care for the intrinsic value of the local ecology and biota (and greater biosphere), regardless of how long they had lived on the Sunshine Coast. This expression of heightened awareness and consideration for nature underpinned respondent accounts of both sense of place and climate change, and was therefore an important connection between the two main themes.

An appreciation for the natural environment coupled with ecological ethos is reflected in the increased amenity migration to low-density semi-rural/peri-urban regions in pursuit of personal environmental quality, most commonly defined by the sea change phenomenon (Burnley and Murphy 2004). However, an appreciation for the natural environment as demonstrated by such migrations also creates a challenge whereby as more and more people migrate to the Sunshine Coast and similar exurban regions throughout the country (and around the world) the subsequent development needed to accommodate a growing population begins to diminish the existing environmental quality, and eventually disrupting or possibly destabilising the associated sense of place or character of a once bucolic landscape (Cresswell 2004; Torkington 2012). Such a challenge not only requires a re-evaluation of current approach to planning and development, but also a re-evaluation of the preconceived notions of sense of place in the twenty-first century (Relph 2008). The sense of place that has

so effectively been used to attract people to the region is becoming out of sync with the realities of a changing climate. Consequently, becoming place on the Sunshine Coast requires becoming climate-active and the peri-urban transformation is complicit in this. Therefore, place-based strategies are needed to link sense of place and climate awareness together with a focus on place-specific attributes (sun, precipitation, soil etc.), local government leadership coupled with citizen engagement with the planning process to raise awareness of local climate change, and altogether rebuilding relationships and trust.

8.4.2 Becoming Place, Becoming Climate-active

Consistent with the work of Carter et al (2007), this study found a similar disjuncture between a strong embodied sense of place and the changes that are expected to be brought about by climate change that were not embodied. Although there are natural links between place/lifestyle and anthropogenic climate change, it does not necessarily follow that integrating people's sense of place in the adaptive capacity framework automatically translates in to a way to deal with climate change. Although respondents were able to construct imagined futures of climate change that could potentially affect their own, and/or family/future generations' sense of place, for most respondents a gulf exists between awareness and action, even when not engaging in action could potentially impact their sense of place that they described so eloquently and desirably. Respondents' are aware that change is coming; they have experienced it through rapid development, which they know and may even be responding to, however this has not yet fully extended to climate change. Consequently, for most respondents in this study, the notion of anticipating potential future climatic change as a catalyst for adaptation, although plausible, so far does not appear to be sufficient for their current and/or future engagement in climate action.

For now, it appears that the majority of respondents are waiting for the gradual onset of climate change to become a reality of lived experience to stimulate a response. Until then, anticipating climate change is contingent on information and direction on what action, if any is needed. Respondents look to decision-makers and experts, but the messages are not being delivered in a way that links with their sense of place, or the potential loss of place. Where respondents accepted climate change some were unsure what to do about it - the concept seemed to be so abstract and enormous and the absence of leadership taking control of strategic planning has caused people to become disengaged. However, lived experiences of place (and sense of place) and the lived experience of climate change are linked. Lived experiences therefore are important in adapting to climate change and place-based planning strategies need to find local examples, not global examples, of where and how climate is already affecting their own area so they can live it and augment their climate change extensibility in space and time to something that is local and therefore becomes immediate.

The challenge of building adaptive capacity is further exacerbated by some respondents being so completely disengaged with the topic of climate change to the point of not leveraging their own agency coupled with a resignation that it is acceptable to be part of a larger environmental process over which human beings have no influence. In these cases, respondents expressed a feeling that nature will run its course over deep time and human beings may or may not have a presence, let alone a sense of place, e.g. the endurance and change of nature is so great that human beings may or may not be a part of the future and in this way sense of place does not matter. This perception could be a factor for why people do or do not engage in climate action, or at least a justification for not doing so. Consequently, there is a need to re-evaluate regional planning in search of ways to re-engage the citizenry and galvanise them around something immediate and meaningful that is linked with local planning, that is more about a shared future sense of place and builds adaptive capacity and perhaps one in which is a possible future for human beings if their extension of climate change in space and time is countered.

8.4.3 A Pragmatic Sense of Place: Place-based Strategies

Relph's concept of a pragmatic sense of place seeks to reconcile the elusiveness and ambiguity of place so that the values and meanings associated with locales around the world can be more readily integrated with strategies to address a broad range of possible challenges for the twenty-first century (Relph 2008). The key components of a pragmatic sense of place are consistent with strategic planning for sustainability and climate action, but with a specific focus on place and place-based strategies. At the individual level, a pragmatic sense of place requires a conscious decision to enact lifestyle choices that will ultimately redefine one's sense of place. This does not necessarily mean that lifestyle values are drastically diminished, however, it is most likely such values will require reevaluation and prioritisation.

Sometimes people do not make the connections between actions today and their loss of a future sense of place. Therefore, place-based planning strategies need to be very explicit and perhaps engage in campaigns and education around adaptive capacity so that people know why adaptive planning strategies are to be implemented. Consequently, focusing on lifestyle may be more readily understood and an easier concept to leverage as opposed to seemingly abstract concepts such as sense of place. Respondents expressed a need for local decision-making, and linking lifestyle with place-based strategies for better decisions could be a natural leveraging point. Private adaptations, although valuable, are limited and there needs to be a way to link these adaptations in a way that builds a collective adaptive capacity. Building collective capacity is dependent on guidance, the right tools, and incentives to take action, which are the responsibility of all levels of government and leaders working together with its citizens.

The Sunshine Coast possesses several place-specific natural attributes that are directly linked with lifestyle and also support adaptation, as demonstrated by respondents' examples of present-day and potential future adaptations. Therefore, climate adaptation through place-based planning needs to focus on impacts to the natural environment rather than primarily on the social (economy) so that both benefit. Furthermore, place-based planning needs to be more explicit, informative, and educative both in the literature and in practice so that people can make connections, as sense of place is not explicitly connected with sense of loss and the need for climate action.

Although Council has identified the natural attributes of the region as being important, adaptation has not been fully integrated into their planning processes. This limitation can be at least partially attributed to the current Council-State political arrangement that impedes local decision-making. This situation brings into question the capacity for local and place-based strategies – if decisions affecting local areas are primarily made by people living elsewhere, then the capacity for local or place-based planning is compromised and in turn, so too is local adaptive capacity.

Place-based planning is contingent on citizen engagement and access to decision-makers (Lynch 1981). Although this requirement is well documented, public participation is usually limited to public comment on prepared planning proposals. Better public participation earlier in the process is key to citizen engagement and collective climate action (Ockwell et al 2009). However, respondents are already weary of government in general and Council's ambitious sustainability goals, so Council (together with the State) has a responsibility to do more to engage its citizenry to build adaptive capacity in genuine ways. Unfortunately, opportunities for collaborative governance appears to be constrained by the political priority of the State to facilitate corporate residential development, reduce public participation, and limit ecological protection, which altogether limit local Council's capacity to achieve sustainability goals and fundamentally exacerbates regional vulnerability climate change as identified by the IPCC (2007).

The 'becoming' of the region in terms of peri-urban transformation (also the becoming of place and becoming climate-active) is a key-unifying theme of this study, which is represented by the destabilising effects of globalisation (tourism and corporate residential development), landscape modification and subsequent reduction of ecological carrying capacity, a reduction of highly valued natural amenities, a disruption of a sense of place and idealised lifestyle constructs associated with amenity migration, limits to social capacity due to external decision-making powers, and the interrelated challenges for meeting sustainability goals and associated climate change adaptive capacity. This complex situation calls for a re-evaluation of the current local and State planning approach that favours development and destabilises local place meanings and values.

8.4.4 *Summary*

This study revealed that respondent sense of place is constructed and co-constructed through inter-subjective embodied experiences across temporal and spatial scales. Home was identified as a central feature of dwelling in the private domain and point for the extended and shared sense of place in the public realm. The natural amenities of the Sunshine Coast are highly valued and contribute to the aesthetic and corporeal experiences that invoke emotions, meanings and values that have come to define shared sense of place for the region. These natural amenities are also a key reason people migrate to, and remain in the region. The preceding slow-paced semi-rural sense of place has been disrupted by increased seasonal tourist demand and growing residential development to accommodate the influx of visitors and sea changers. Increased development in this dynamic and fragile coastal zone coupled with potential future climatic change presents challenges for planners and citizens alike.

Despite broad awareness and concern for potential future climatic effects, limited embodied lived experience combined with inconsistent information and an overall lack of leadership appears to have a limiting effect on moving from awareness to acceptance and eventually climate action. Consequently, tangible and immediate every-day concerns take precedence over spatially and temporally distant concepts such as climate change. Bridging this gap requires a conscious shift toward making the interconnection between sense of place, lifestyle, and anthropogenic climate change more explicit to facilitate a movement toward a more mindful way of being in the world; of being and becoming in the Anthropocene.

Becoming place involves understanding how things are changing, including climate change. Building adaptive capacity is contingent on making clear connections between sense of place and climate change at the local scale to make the phenomenon more meaningful for residents. Non-reactive climate change adaptation requires anticipating climate change before its effects are experienced firsthand. Consequently, becoming climate active is contingent on a conscious rethinking of sense of place and ultimately an intentional disruption of current constructs of place that fosters climate change adaptive capacity. Climate change is anticipated to alter current ways of life and effectively disrupt sense of place, so it reasons that conscious and proactive climate action is necessary and preferred to reactive climate action and adaptation. Therefore, becoming climate active will require rethinking and prioritising of lifestyle preferences that provide for the well being of humanity, place, and planet earth in the emerging era of a changing climate. Guided by the concept of a pragmatic sense of place, place-based strategies bring the local into focus by engaging citizens in decisions that affect them most, building trust through government leadership, and leveraging place-specific attributes as a way to preserve natural amenities. In this way, the everyday practices of adaptive strategies can become embodied and a genuine becoming of place and becoming climate-active is manifest.

9.0 CONCLUSION

This study sought to understand how Sunshine Coast residents construct their sense of place, their understanding of climate change and adaptive capacity, and the relationship between these two dynamic and entwined phenomena. The Sunshine Coast presented an ideal case for the exploration of the relationship between sense of place and climate change adaption as the region has been identified as a climate change hotspot due to its fragile coastal ecosystem, rapidly expanding exurban development, and potential future climatic events. Answers to the research questions were achieved through the collection of recorded personal accounts with Sunshine Coast residents during face-to-face interviews. The oral accounts were supplemented with images that most represented respondents' sense of place and observed landscape change on the Sunshine Coast. Interview transcripts were subjected to a modified Interpretative Phenomenological Analysis, which consisted first of intensive-extensive analysis followed by iterative analysis and interpretation by way of a double hermeneutic to identify super-ordinate and sub-ordinate themes.

In answering the first question, the findings confirmed that temporal and spatial factors are the key ingredients of sense of place, which together define its fluid and dynamic nature. Home was identified to be an important factor in constructing sense of place as it served as an anchor for the act of dwelling and intimate social interactions, as well as a point for looking out upon the world, which is consistent with the literature. Length of residency was an important factor in determining the depth and breadth of respondent sense of place with those being born and raised in the region having the strongest and most embodied spirit of place, or *genius loci*. The aesthetic features of the natural environment figured prominently in respondent place constructs and, together with the symbolism of iconic landforms and special places, combined to create a shared local sense of place. Together with time and space, social interaction was also confirmed to be a critical ingredient in the construct of sense of place, which has the capacity to strengthen and deepen sense of place and place attachment. The region is experiencing rapid and expanding urban development, and respondents, especially those that had lived in the region for some time, identified this change as having a negative effect on their sense of place.

In answering the second question, the findings revealed that respondents were well aware of climate change and that there was broad concern for negative impacts associated with potential future climatic events. However the lived experience of the phenomenon at the local scale is limited and therefore many respondents, even those with formal environmental education, questioned its validity and the urgency to take action. Although their perceived need to adapt varied, respondents were unanimous in their perceived capacity to adapt to potential future climatic change. This perception was exemplified by a can-do attitude or pioneering spirit. Respondents indicated that the gap between awareness and acceptance

was exacerbated by the lack of clear and concise information and leadership needed to coordinate collective action and build adaptive capacity.

In answering question three, the peri-urban transformation of the region was identified as the most powerful unifying theme drawn from this study as it symbolises the convergence of sense of place and the effects of human development as factors contributing to anthropogenic climate change. Sense of place and climate change are bound together through everyday embodied lived experience, the biosphere, and humanity's effect upon it because sense of place is lived, but respondents were unable to envisage climate change, or at least their need to take action in order to adapt, without experiencing climate change firsthand.

Respondents' capacity for an extended sense of place allowed them to make connections between the globalising forces of development that are transforming the region and the links to climate change, but they felt powerless to do much about this other than private adaptations. Bridging the gap between spatially and temporally distant concepts such as climate change requires a re-evaluation of sense of place to make the connection between sense of place, lifestyle and anthropogenic climate change more explicit.

This thesis argues that these links between establishing a shared sense of place and a collective adaptive capacity for climate change both rely on a type of place becoming. As the region urbanises, the distance between dispersed settlements shrinks, and residents become more connected, the need to develop a collective sense of place becomes clearer. Similarly as the potential future effects of climate emerge locally, it is argued that there will be need for a type of becoming of place and becoming climate-active. Becoming place involves understanding these connections as a pathway for building adaptive capacity. Linking the two themes and making explicit connections through peri-urban transformation and specific, local, place-based planning can facilitate the becoming of place.

Adaptation underpins the transformation of space into place. Consequently, climate change adaptive capacity is contingent on the intentional adaptive transformation of places today into becoming climate-adapted places in the future. Climate change is anticipated to alter current ways of life. Therefore, proactive climate action that embraces a conscious rethinking and/or disruption of place is preferred over reactive climate adaptation that could effectively be more disruptive to sense of place. Through a pragmatic sense of place, place-based strategies bring the local into focus by leveraging existing care and value of the natural environment together with place-specific attributes, engaging citizens and local knowledge, building trust through dedicated leadership, and involving local residents in decisions that affect them most. In this way, the everyday practices of adaptive strategies become embodied and the genuine becoming of place and becoming climate-active is manifest.

9.1 Limitations and Validity

This research was limited to the study of Sunshine Coast resident's sense of place, their understandings of climate change, and analysis of the relationship between the two experiences. The research was also limited to the application of an existential phenomenological approach and qualitative methods used to collect personal accounts of respondents who agreed to participate in this study. The research explored a phenomenon that is complex and difficult to measure (perceptions, experience, and imagination) and therefore the study adopted an inductive, bottom-up approach to gain insight through the description and interpretation of personal constructs of sense of place and understandings of climate change and adaptive capacity. The application of the two methods sought to overcome some of the inherent limitations of research in general and qualitative research specifically.

Although sense of place is generally implied to be an important aspect of the social dimensions of climate change, very little original research has been conducted to investigate this complex and dynamic relationship. The findings from this study contribute to the broader knowledge of the social dimensions of climate change and specifically the relationship between sense of place and climate change adaptive capacity. This study has made a further contribution to the study of sense of place within the discipline of human geography as well as the application of a modified Interpretative Phenomenological Analysis as a relatively new research approach that has had limited use in geography and the study of sense of place and climate change adaptive capacity, specifically. Finally, the study has made a contribution to the SEQCARI collaborative research project and it is hoped that the findings prove useful for strategic climate change adaptive capacity initiatives for South East Queensland and the Sunshine Coast. This study explored new and largely uncharted territory within the social dimensions of climate change. Therefore, there is opportunity to build on the findings of this study, following similar and/or other approaches, both regionally and elsewhere in the world.

9.2 Reprise: Researcher Reflection

This section presents a brief reflection of the research process and my personal reflection of living on the Sunshine Coast while undertaking doctoral studies.

9.2.1 Phenomenology

This was my first attempt at adopting a phenomenological epistemology and corresponding methods. Consequently, there were moments during the research process that proved to be challenging, but not insurmountable. A reflexive technique allowed me to take into consideration each emerging challenge and make informed judgments along the way. This study provided a good foundation for applying a phenomenological approach that I will

continue to develop and apply in the future. Lessons learned from applying phenomenological methods include, but are not limited to:

1. I initially underestimated the complexity and richness of phenomenology as a philosophy and methodological approach. While at times challenging, each hurdle I overcame provided an inspirational spark that encouraged continued exploration and development. For example, I gained an appreciation for the historical origins and development of the school of thought, particularly the work of Maurice Merleau-Ponty. Overall, the philosophical school of thought resonates with my personal worldview, which in turn inspired me to pursue a comprehensive review of the literature that led to the discovery of techniques applied to this study.
2. I accepted the higher-end sample size for phenomenological research that was available in the literature to overcome:
 - i. A lack of local knowledge needed to access a smaller number of high quality respondents
 - ii. A perceived pressure to access a larger number of respondents to satisfy the commonly held belief that representative samples legitimise the research.

Working with a larger respondent sample size proved to be a valuable learning experience. Looking back, I identified two key reasons that led to my judgment about this larger sample size that, on reflection during the research, could have been better contained:

1. I relented to the pressure, whether actual, implied, or self-imposed, of the need for research validity being contingent on a representative sample. As I learned, this is a common lesson for students new to phenomenological methods.
2. I relied on resources in the phenomenological methods literature that offered a sample range that was consistent with my preconceived bias of 'more is better'.

Despite the large amount of data and time needed for analysis, I was able to collect high quality data to help answer the research questions. Should I employ phenomenological methods in the future, it would be valuable to experiment with a select number of respondents (10) from a specific group so as to narrow the research focus and manage the volume of data gathered. Through persistent review of the literature I adopted Interpretative Phenomenological Analysis as an appropriate analytic technique, which when combined with intensive-extensive analysis proved to be a very suitable approach to analysing a large volume of data.

9.2.2 *Interviews*

The interviews went very well and many respondents commented that they enjoyed the process as it allowed them the opportunity to discuss important topics that they might not otherwise discuss. Respondents were very kind and open, although articulate respondents provided high quality data that was easier to interpret, which aided identifying themes. Follow-up interviews were needed for five interviews. Of these, one respondent was unable to continue participation. Follow-up focus groups were considered, but there was not sufficient time or resources to do so. Furthermore, once follow-up interviews were complete most outstanding data collection gaps were resolved.

9.2.3 *Visual Methods*

The level of participant engagement with presenting images during the interview was not as successful as I initially anticipated. For some participants, it was just as easy to talk about their sense of place as doing so usually revolved around the home. Interviews were often conducted while seated at the kitchen table or on the deck overlooking the landscape. In some cases the discussion of sense of place focused on a single image.

Respondents seemed most interested in discussing their sense of place, particularly as it pertained to current and anticipated landscape change. However, some respondents found it challenging to capture images that represented the landscape change they talked about. This might have been due to time constraints or not understanding the requirements, or they did not make it a priority. Overall, the images were very helpful in situations where interviews were conducted in locations other than a respondent's home as the images served as a focal point that activated other thoughts and experiences that might not have otherwise been triggered without an image. The visual record was also useful for me during the analysis and interpretation phase as these provided a visual point of reference and cue while listening to the audio recordings. If I were to use visual methods in future research, I would do more to clarify the purpose and value of presenting images and offer engagement with the task.

9.2.4 *Personal Reflection*

Employing a reflexive technique for the duration of the project life cycle served as a type of auto ethnography whereby I critically examined my own understanding and biases about sense of place and climate change. The process was of great value to me personally and as a researcher, as it allowed me to go deeper with the analytical process to tease out what I feel were the most illuminating and enriching findings. The study also caused me to evaluate my assumptions of qualitative methods, and communication and language use in my professional work.

Throughout the research process I was reflecting on my sense of place. I have lived in other

countries before and I expected Australia to be different, but perhaps the biggest adjustment was going from living in a city with a compact settlement arrangement to a more dispersed settlement pattern. I had to make modifications to my established modes of mobility and adjustments to locating things that were familiar to me that were no longer available. I did not quite expect it, but it most certainly took some time for me to develop a sense of place with this particular locale. In fact, I had to work at forming a deep appreciation for the region. Despite its beauty and being situated in an Anglo-Commonwealth country, there were subtle cultural differences that took some time for me to adjust to. I also had to come to terms with driving a car more frequently and travelling greater distances to be on campus. Thus, my sense of place became more extended.

I attempted to augment this wider area of mobility by focusing on the suburb where I lived. It is important for me to patronise the local shops and to know my way around the neighbourhood. As a foreigner living in a tourist destination, locals occasionally thought I was a tourist because of my accent. I made a concerted effort to visit the same shops and vendors for two reasons: 1) to confirm I was a (temporary) resident, 2) to build a rapport as a way of forming my sense of place. One of the key features of my sense of place in the region was the farmer's market as it broadened my understanding of locally grown food. The market was also a valuable way to learn the lived experiences of farmers, for example when land was flooded after heavy rains, or cyclones devastated the banana crops, or temperature altered the growing cycles. When it was time for me to leave the country I made a point of saying goodbye to the many vendors at the market to let them know that I was leaving. I did this as a courtesy to our casual interactions, but also to confirm with myself that I was moving away.

Writing up the majority of the dissertation after I returned to Canada added another phase to the reflection process. As I would write and examine the photos, I was reminded of my time on the Sunshine Coast, which solidified the things that most represented my sense of place in the region. This included close friends made on the street where I lived, the generous respondents and their stories of place, and of course, the stunning beauty of the region. Through this process I was actively redefining my overall concept of sense of place from one founded on a general reflective construct of place comprised of living in several different locales in Canada and the United States and augmented with experiences travelling to various countries around the world, to one that was enriched by philosophy and a critical examination of academic literature and situated in the locale where I immersed myself in the research. My time in Australia and undertaking doctoral studies was a life-enriching experience. I am grateful to for the opportunity and look forward to returning to the Sunshine Coast in the future.

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APPENDIX I: PLACE DEFINITIONS

Source	Definition of sense of place (place)
Casey (1997)	"By 'space' is meant a neutral, pre-given medium, a tabula rasa on to which the particularities of culture and history come to be inscribed, with place as the presumed result" (14).
Cresswell (2004)	"Place is how we make the world meaningful and how we experience the world" (12).
Harvey (1996)	"...places, like space and time, are social constructs and have to be read and understood as such" (324).
Heidegger (1971)	"...place is the locale of the truth of being" (165).
Hess et al (2008)	"...places are nested collections of human experience, locations with which people and communities have particular effective relationships" (468).
Gieryn (2000)	"A spot in the universe, with a gathering of physical stuff there, becomes a place only when it ensconces history or utopia, danger or security, identity or memory. In spite of its relatively enduring and imposing materiality, the meaning or value of the same space is labile - flexible in the hands of different people or cultures, malleable over time, and inevitably contested" (465).
Malpas (2007)	"Place provides the fabric of our lives, of our experience, but it is also the very matrix within which life and experience are formed and articulated. Place takes us in, and in so doing it also opens up into a space for experience, for remembrance, and for imagination. Experience and memory are thus always inextricably embedded in its locale and situation, while imagination draws its own sustenance from the richness of the places in which it finds itself – as so many poets, thinkers and artists have observed" (1).
Relph (1976)	"...place can refer to social context but more generally implies something about somewhere, ...[it] is integrated and meaningful phenomenon" (1). And "the spirit of place resides in its landscape" (30).
Tuan (1977)	"...places are centers of felt value where biological needs, such as those for food, water, rest, and procreation, are satisfied" (4).
Vanclay (2008)	"...'place' is generally conceived as being 'space' imbued with meaning. It refers more to meanings that are invested in a local than to the physicality of the location" (3).

APPENDIX II: PROJECT INFORMATION SHEET



University of the
Sunshine Coast

Project Information Sheet

A copy of this form will be provided
to you for your records

Project Title	Visualographies: Image + Place + Culture
Chief Investigator	Cimarron Corpé PhD Candidate, Sustainability Research Centre University of the Sunshine Coast ccorpe@usc.edu.au
Supervisory Team	A/Professor Jennifer Carter, jcarter@usc.edu.au A/Professor Julie Matthews, jmatthew@usc.edu.au Sustainability Research Centre, University of the Sunshine Coast
Ethics Approval	HREC: S/11/315

INFORMATION STATEMENT

What is this research project about?

The goal of the project is to understand the nature and form between place¹ and community engagement with matters pertaining to the environment and community planning, and climate change adaptive capacity specifically. Place is considered an important factor in determining where people choose to live and make their livelihoods. Place has also been linked to participation in activities that contribute to the protection, preservation, or awareness of environmental and community wellbeing. Climate change adaptive capacity is a formal planning strategy designed to increase the ability of a community or region to tolerate and/or respond to the potential effects of climate change.

The project aims to understand this relationship with regard to personal and community engagement in activities that support climate change adaptation strategies as well as barriers to engagement and participation in these activities.

Limited research has been undertaken in this area of study to date and this research is being conducted to make a contribution to this emerging field.

Who is invited to participate in this research project?

Participation in this study is voluntary. Individuals across a range of backgrounds are invited to participate in the study. Participants will be asked to sign a consent form before commencing the interview. They may discontinue participation at any time without penalty or the need to provide an explanation.

Why are you being asked to participate?

Your perceptions and understandings of the concept of sense of place (place attachment² and place identity³) and its application in community planning will help the

¹ For this research, "...'place' is generally conceived as being 'space' imbued with meaning. It refers more to meanings that are invested in a locale than to the physicality of the location." (Vanclay 2008: 3).

² Place attachment can be described as "the bonds people develop with places", which is based on three core components: emotional, cognitive, and behavioral, with emotional bonds being most frequently measured (Lewicka 2008: 211).

³ The different symbolisms of place produce different identities making place important to one's personal identity (Lewicka 2008).

research team make recommendations to inform climate change adaptive capacity strategies.

What are you being asked to do?

You are being asked to contribute to this research by participating in a 60-minute face-to-face interview⁴.

Participants may be asked to take part in a follow-up interview lasting between 30 to 60 minutes. The purpose of the follow-up interview is to clarify and/or expand on information provided during the initial interview. The same conditions and signed consent for the initial interview will apply. There is no obligation to participate.

You are also asked to present up to four personal photographs, drawings, or paintings that most represent place to you. One of the images should show some form of environmental change. The photographs are intended to serve as a visual cue to assist you with recalling your personal experiences of place attachment and place identity.

Photographs containing recognisable faces will require consent from the person or persons in the photograph(s). If consent cannot be granted, the person's face will be blurred or the photograph will not be used in the study.

A request may be made for consent to use your images in a public exhibition in a gallery or other public facility at the conclusion of the research study. Your name will not be associated with your image(s)⁵.

Will the information be confidential?

Yes, all data collected during the project – name, contact information, recorded information, researcher notes, and personal images are confidential and will be secured by password protected electronic storage and locked filing cabinet. All files will be disposed in an appropriate manner at the conclusion of the PhD study.

What will be done with the information?

The findings of the study will be published in a PhD thesis, in academic journals, and/or at conferences. Participant comments will be severed to ensure participants are not identifiable in publications or presentations.

You can elect to receive information about the project results by email.

What if I have questions or complaints about the study?

If you have any complaints about the conduct of this research you can raise them with the Chief Investigator. If you prefer to speak with an independent person, please contact the Chairperson of the Human Research Ethics Committee at the University:

Research Ethics Officer
University of the Sunshine Coast (ML26)
Maroochydore, QLD 4558
Telephone: (07) 5459 4574
Email: humanethics@usc.edu.au

⁴ This is an estimated duration based on previous research.

⁵ Please refer to the attached model release/consent form.

APPENDIX III: CONSENT FORM



Part 1. Consent to participate in research

Project Title	Visualographies: Image + Place + Culture
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Ethics Approval	HREC: S/11/315
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I have read and I understand the contents of the Research Project Information Sheet for the above research project.

I realise that this research project will be carried out as described in the Research Project Information Sheet, a copy of which I have kept.

Any questions I have about this research project and my participation in it have been answered to my satisfaction.

I agree to participate in this research project.

I give consent for data collected through my participation in the study to be used in a confidential manner for the purposes of this research project including publications and/or a thesis.

Optional:

I give consent for the use of my photographs in publications, thesis and/or in exhibitions.

YES	
-----	--

NO	
----	--

--	--	--

Participant signature

Date (D/M/Y)

Participant name (please print)

Part 2. Permission for follow-up interview

Please mark the boxes below with an 'X'.

I understand that participating in the follow-up interview about my experience in the research activity is optional.

I realise that this interview will be carried out as described in the Research Project Information Sheet.

I understand that my contact information will be kept confidential.

☐ I do not agree to participate in a follow-up interview.

☐ I agree to participate in a follow-up interview.

☐ I give consent for the researcher to contact me as follows:

Phone: _____

Email: _____

Part 3. Interest in receiving results

I understand that receiving a summary of the results from this project is optional.

I understand that my contact information will be kept confidential.

☐ I do not want to receive information about project results.

☐ I want to receive information about project results.

☐ I give consent for the researcher to contact me at:

Email _____

APPENDIX IV: INTERVIEW GUIDE AND RESEARCH QUESTIONS

Participant	
ID	
Location	
Date	

Preamble

The goal of the project is to understand the relationship between sense place¹ and community engagement. Sense of place is considered an important factor in determining where people choose to live and make their livelihoods and has been linked to participation in activities that contribute to the protection, preservation, or awareness of environmental and community wellbeing. Climate change adaptation is a planning response designed to reduce the potential impacts of climate change to a community or region.

Limited research has been undertaken in this area of study to date and this research is being conducted to make a contribution to this emerging field. Your participation is very much appreciated.

INTRODUCTION	
Age	
Occupation	
How long have you lived on the Sunshine Coast?	
What drew you to the SC?	
Where do you currently live?	
Have you previously lived in any other locations on the Sunshine Coast prior to the location you are living at now and if so, for how long?	
Is your current location similar to, or different from, the previous place(s) you have lived? Can you explain?	

¹ For this research, "...'place' is generally conceived as being 'space' imbued with meaning. It refers more to meanings that are invested in a locale than to the physicality of the location." (Vanclay 2008: 3).

PHOTOGRAPHS	
<p>Please tell me about your photographs. What about them represents place to you and why?</p>	1
<p>Prompting Questions</p> <p>How do your photographs symbolise your connection with the place as represented by the photograph?</p>	2
<p>What aspects of place, if any, influence your everyday life?</p>	3
<p>Your sense of belonging, connectedness, dwelling, attachment, identity?</p>	4
<p>Photograph representing environmental change</p>	

COMMUNITY ENGAGEMENT	
Are you or have you ever been involved with any community organisations?	
Any activities or projects related to protecting, preserving and/or improving the community/natural environment?	
What inspired you to become involved, or prevented you from becoming involved?	
Can you please explain/describe how your feelings about place are related to protection of the environment?	
In your opinion, what are the most important consideration(s) facing your community?	
Whose responsibility do you feel it should it be to plan and protect community interests?	

CLIMATE CHANGE	
Climate change has emerged as an important consideration when planning for the future. Is this a concern for you (why or why not)?	
If so, what about climate change concerns you the most?	
What does climate change mean for the important aspects of place you have described to me?	
Who's responsibility is it to prepare your community for potential climate-related events e.g. natural disasters, emergency situations etc.?	
Do you feel you have the ability to adapt to potential climate change events e.g. sea level rise, inundation, sever storms?	
How would you prepare or adapt to climate change events? Changes in lifestyle, type of building, transportation etc.?	
Would you feel a sense of loss if your home were affected by climatic events, or had to relocate?	
Concluding Questions	
How do you feel the interview went for you? Was it too long/short?	
Follow up interview?	
Referral?	

APPENDIX V: ETHICS APPROVAL



18 April 2011

Barbara Palmer
Manager, Office of Research
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Email: humanethics@usc.edu.au

F17352

Mr Cimarron Corpe
Faculty of Science, Health and Education

Associate Professor Jennifer Carter
Associate Professor Julie Matthews
Faculty of Arts and Social Sciences

Dear Cimarron, Jennifer and Julie

Expedited ethics approval for research project: Visualography: Image + Place + Culture (S/11/315)

This letter is to confirm that on 18 April 2011, following review of the application for ethics approval of the research project, *Visualography: Image + Place + Culture*, the Chairperson of the Human Research Ethics Committee of the University of the Sunshine Coast granted expedited ethics approval for the project.

The Human Research Ethics Committee will review the Chairperson's grant of approval and the conditions of approval at its next meeting and, should there be any variation of the conditions of approval, you will be informed as soon as practicable.

The period of ethics approval is from 18 April 2011 to 31 October 2012.

Could you please note that the ethics approval number for the project is HREC: S/11/315. This number should be quoted in your Research Project Information Sheet and in any written communication when you are recruiting participants.

The standard conditions of approval for this project are that you:

1. conduct the research project strictly in accordance with the research proposal submitted and granted ethics approval, including any amendments required to be made to the proposal by the Human Research Ethics Committee (except as subsequently amended and approved by the Committee or approved by delegated authority exercised by the Chairperson or a Sub-committee)
2. inform the Human Research Ethics Committee immediately of anything which may warrant review of ethics approval of the research project, including: serious or

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unexpected adverse effects on participants; proposed changes in the protocol; unforeseen events that might affect continued ethical acceptability of the project; and a written report of any adverse occurrence or unforeseen event that might affect the continued ethical acceptability of the research project must be submitted to the Chairperson of the Human Research Ethics Committee by no later than the next working day after recognition of an adverse occurrence/event

3. provide the Committee with a written Annual Report on the research project by 18 April 2012 and on completion of the project on 31 October 2012 using the proforma "Annual Report on Approved Research Project Involving Humans"
4. if the research project is discontinued, advise the Committee in writing within 24 hours of the discontinuation
5. make no change to the project as approved in its entirety by the Committee, including any wording in any document approved as part of the project, without prior written approval of the Committee for any change
6. comply with each and all of the above conditions of approval and any additional conditions or any modification of conditions which may be made subsequently by the Human Research Ethics Committee

You are advised that failure to comply with the conditions of approval and the National Statement on Ethical Conduct in Research Involving Humans may result in withdrawal of approval for the project. You are required to advise the Committee in writing within 24 hours if this project does not proceed for any reason.

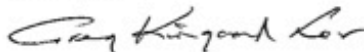
Should you require an extension of ethics approval, please submit a written request for this purpose using the proforma 'Annual Report on Approved Research Project Involving Humans'.

An Annual Report on this activity will be due by no later than 18 April 2011. An electronic version of 'Annual Report on Approved Research Project Involving Humans' may be accessed on the University of the Sunshine Coast portal at: Research and Research Training>Research Ethics> Human Research Ethics>Forms>Annual Report Form.

If you have any queries in relation to this ethics approval or if you require further information please contact the Research Ethics Officer by email at humanethics@usc.edu.au or by telephone on +61 7 5459 4574.

I wish you well with the success of your project.

Yours sincerely



Barbara Palmer
Manager, Office of Research